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PEABODY WESTERN COAL COMPANY

Peabody Western Coal Company, headquartered in Flagstaff, Arizona, operates four mines in the Western United States. These mines are in Arizona, Colorado, and Montana. Peabody Western sells over 17 million tons of coal per year and employs approximately 1,100 people. Peabody Western manages Big Sky Coal Company and Hayden Gulch Terminal, Inc., Peabody subsidiaries.

Peabody Western is one of a group of subsidiaries and affiliates of Peabody Holding Company, Inc. Peabody Holding is the nation's largest producer and marketer of coal. This group of companies operates 24 underground and 15 surface mines located in nine states, and in fiscal year 1992, sold 91 million tons of coal which was used primarily for generating electrical power. Peabody Holding is headquartered in St. Louis, Missouri.

Peabody Holding is owned by HM Holdings, Inc., an affiliate of Hanson PLC, a British-American industrial management corporation with annual revenues of \$16 billion. Hanson completed the acquisition of Peabody Holding on July 2, 1990, for a total price of \$1.23 billion.

THE OPERATIONS AND MINES OF PEABODY WESTERN

ARIZONA:

CORPORATE OFFICE

The corporate offices of Peabody Western Coal Company are located in Flagstaff, Arizona, at 1300 South Yale Street. Approximately 60 employees work at the Flagstaff office. Another 100 employees perform work functions for more than one mining location. Most of these employees work at the Mesa Joint Facilities in the areas of operations, engineering and human resources. Peabody Western operates a twice daily flight by a twin-engine DeHaviland Otter between Flagstaff and the Black Mesa/Kayenta Complex for employees.

The economic impact of Peabody Western's operations in Arizona totals over \$175,000,000 annually. This total amount reflects over \$54 million in employee wages and benefits, over \$59 million in purchasing materials and services, over \$15 million in state and county taxes and over \$46 million in payments to the Navajo and Hopi Tribes for coal and water royalties, tribal taxes and charitable contributions. The average employee salary averages exceeds \$41,000 per year. In addition, a benefit package is provided that averages \$15,000 per employee annually.

PROFILE OF BLACK MESA AND KAYENTA MINES

Peabody Western operates the Black Mesa and Kayenta Mines in northeastern Arizona near Kayenta. The mines are adjacent to each other and are approximately 130 miles from Flagstaff. Black Mesa Mine produces approximately 4.5 million tons of coal each year. Kayenta Mine produces approximately 7.5 million tons of coal annually.

BLACK MESA AND KAYENTA MINING LEASES AND HISTORY

The mines are operated pursuant to lease agreements with the Navajo and Hopi Indian Tribes. There are three leases which were signed in 1964 and 1966, one with the Navajo Tribe for the Navajo lands and minerals, one with the Navajo for the surface and the one-half Navajo mineral interest in the joint use area, and one with the Hopi Tribe for one-half Hopi mineral interest in the joint use area. The leases cover the mineral rights (excluding oil and gas) for 64,858 acres on the Black Mesa. The leases were renegotiated with both tribes in 1987. Payments by Peabody Western to the Navajo and Hopi Tribes exceed \$40 million per year.

Peabody Coal Company began explorations of Black Mesa in the 1960's. Black Mesa Mine began operating in 1969 and Kayenta Mine began in 1974. In addition to the 400 million tons of coal covered in the three original leases, an additional 270 million tons of coal were acquired in the renegotiated leases. The 670 million tons of recoverable coal lie beneath 14,000 acres of the mining lease area.

BLACK MESA AND KAYENTA RECLAMATION

Both mining operations disturb a combined total of 500 acres each year. These acres are returned to the original land use in a condition of at least its original productivity but in most cases to better productivity by a process called reclamation. Reclamation on the Black Mesa provides post-mining land uses of grazing and wildlife habitation. Reclaimed areas are fenced and monitored for at least ten years to ensure successful revegetation. Reclamation is conducted in compliance with state and federal laws and is an expensive process with costs ranging from \$8,000 to \$20,000 per acre. To date, Peabody has spent over \$97 million to reclaim land at the Black Mesa and Kayenta Mines. Research has shown that this reclaimed land will provide two to three times more grazing forage than the original land.

BLACK MESA MINE COAL SALES AND TRANSPORTATION

Black Mesa Mine supplies coal to the Mohave Generating Station at Laughlin, Nevada. The generating station is jointly owned by Southern California Edison Company, the Los Angeles Department of Water and Power, the Nevada Power Company and the Salt River Project. Black Mesa Mine has a long-term coal supply agreement to supply the Mohave Station until 2005.

Coal from Black Mesa Mine is shipped west for 273 miles to the Mohave Station by a slurry pipeline operated by Black Mesa Pipeline. This is the longest coal slurry system in the United States. To prepare for the slurry operation, the coal is ground and mixed up with water. It is then fed to the 18-inch diameter slurry pipeline for the three day journey to the Mohave plant.

Historically, the coal-water slurry mixture has been 46.5% coal and 53.5% water. Since July of 1991, the concentration of coal in the slurry mixture has been increased to 50%. Now 188 gallons of water are used to carry one ton of coal. The annual water requirements to ship 4.8 million tons of coal have been reduced from 3,252 acre feet to 2,777 acre feet. Water for the pipeline, and for all of Peabody's mining operations on the Black Mesa, comes from eight private, deep wells drilled by Peabody. Water is drawn from the Navajo Sandstone (Navajo Aquifer) formation at depths of 3,500 to 3,700 feet. Peabody's operations and the slurry pipeline have used, on average, approximately 3,800 acre feet of water per year.

KAYENTA MINE COAL SALES AND TRANSPORTATION

Coal from Kayenta Mine is shipped via a 17-mile overland conveyor system to four coal storage silos where it is loaded into an electric train which hauls it 73 miles to the Navajo Generating Plant at Page, Arizona. These electric trains, Black Mesa-Lake Powell Railway, are operated by Salt River Project. The trains arrive two to five times a day at the silos for loading. Each train consists of 45 to 60 railroad cars. These trains are loaded with coal at the rate of 6,000 tons in less than fifty minutes.

The joint owners of the Navajo Plant are Salt River Project, the Los Angeles Department of Water and Power, Arizona Public Service Company, Nevada Power Company, Tucson Electric Power Company, and U.S. Bureau of Reclamation. The long-term coal supply agreement for Kayenta Mine extends to 2011.

BLACK MESA AND KAYENTA COAL

The coal from the Black Mesa and Kayenta Mines is subbituminous with an average quality of 11,000 Btu, 0.5% sulfur and 10% ash. This coal complies with the Clean Air Act Amendments of 1990 emission standard of 1.2 pounds of sulfur dioxide per one million Btu. Kayenta Mine coal is blended to meet the more stringent state emission standards in Arizona of one pound per one million Btu.

BLACK MESA AND KAYENTA EQUIPMENT AND MINING

Black Mesa Mine has three draglines and Kayenta Mine has four draglines with bucket capacities ranging from 14 to 90 cubic yards. These draglines are used for surface mining operations. Generally each dragline operates in a separate pit. The pits are over 100 feet wide and over one mile in length. The mining operations at both Black Mesa Mine and Kayenta Mine are multi-seam which means that up to eight seams of coal may be mined in a single pit. Although there are seven major seams of coal, these seams split into different benches which create a total of 59 seams under the coal mining areas of Black Mesa and Kayenta Mines.

Several pieces of mobile equipment are required to support the mining operations including electric and hydraulic shovels, front end loaders, bottom dump coal haulage trucks with 150- to 300-ton capacities, bulldozers, graders, scrapers, service and maintenance trucks.

THE OPERATIONS AND MINES OF PEABODY WESTERN

COLORADO:

PROFILE OF SENECA MINE

Peabody Western operates the Seneca Mine in northwestern Colorado. The mine is near Hayden, Colorado which is approximately 160 miles northwest of Denver. Seneca Mine produces approximately 1.8 million tons annually. The mine has 90 employees. Most of the mining is conducted pursuant to leases of state and federal mineral rights.

Seneca Mine began operating in 1964. The reclamation program at Seneca has preserved the natural appearance of the pre-mine landscape and has actually improved the productivity of the land.

SENECA MINE COAL SALES AND TRANSPORTATION

Seneca Mine has a long-term coal supply agreement with Public Service Company of Colorado, PacifiCorp and Salt River Project, which together own the Hayden Generating Station. This long-term coal supply agreement will extend to 2011 or until the delivery of 16.4 million tons after January 1, 1993. Coal is hauled by an independent contractor from the pits to the plant, at distances ranging from eight to fifteen miles.

SENECA MINE COAL

Seneca coal is subbituminous coal with a Btu content of 10,500, ash of 9.54% and sulfur of 0.47%. The coal from Seneca Mine is compliance coal which meets the sulfur dioxide emission standards of the federal Clean Air Act Amendments of 1990 and the Colorado sulfur dioxide standards.

SENECA MINE EQUIPMENT AND MINING

Seneca Mine has two draglines with 15- and 18-cubic yard buckets. These draglines weigh approximately two million pounds each. Seneca mines the Wadge and Wolf Creek coal seams. This surface mining operation mines coal seams which are at very high elevations (to 8,000 feet) and lie on dips that exceed 35% slope. In 1992, the average productivity at Seneca Mine was 67.94 tons per manshift.

PROFILE OF HAYDEN GULCH TERMINAL, INC.

Peabody Western manages Hayden Gulch Terminal, Inc., which recently acquired the Hayden Gulch Coal Loadout facility. The facility is located near Seneca Mine. The loadout facility has the capability to crush, size, and load coal from this area to be delivered by rail.

THE OPERATIONS AND MINES OF PEABODY WESTERN

MONTANA:

PROFILE OF BIG SKY COAL COMPANY

Big Sky Coal Company is a wholly-owned subsidiary which operates a mine near Colstrip, approximately 120 miles east of Billings. Annual production is around 2.5 million tons and the mine employs 60 people. The mine has the production capacity for four million tons of coal per year.

Big Sky has been producing coal since 1969. Big Sky Coal Company is set in rolling prairie country in eastern Montana on land leased from Great Northern Properties, the federal government, and from individual ranchers.

BIG SKY COAL COMPANY COAL SALES AND TRANSPORTATION

Big Sky entered into a four and one-half year coal supply agreement in 1992 with its primary customer, Minnesota Power & Light Company. Coal is transported by the Burlington Northern Railroad to either the Boswell or Laskin Stations in north central Minnesota, a trip of about 750 miles.

BIG SKY COAL COMPANY COAL

Big Sky coal is subbituminous coal with a Btu content of 8,800, ash of 8.45% and 0.70% sulfur.

BIG SKY COAL COMPANY EQUIPMENT AND MINING

Big Sky has unit train loadout facilities that can load a unit train with 115 cars (about 13,800 tons) in less than four hours. The loadout facility consists of an 8.3 mile rail spur and loop track and one 29,500 ton capacity slot storage structure with a double plow reclaim system.

Big Sky utilizes a 30 cubic yard capacity dragline for surface mining overburden removal. This dragline weighs four million pounds. Big Sky mines the Rosebud coal seam. In 1992, the average tons per manshift at Big Sky was 161.99.

REGULATION OF SURFACE COAL MINING

Surface coal mining is a highly regulated industry in the United States. Most of the regulations are in the areas of environment, health and safety.

ENVIRONMENTAL

Nearly twenty federal statutes contain requirements applicable to coal mines which relate to the protection of the environment. The Surface Mining Control and Reclamation Act ("SMCRA"), adopted in 1977, established minimum national environmental performance standards for surface coal mining and reclamation. This act requires restoration of mine lands to original or better condition in the approximate original contour, and minimization of disturbance to the hydrologic (ground and surface water) system. The standards of SMCRA are implemented through a permit program, enforced with inspections by the Office of Surface Mining Reclamation and Enforcement (OSMRE), a federal agency in the Department of Interior, and by bonding requirements of performance bonds in an amount sufficient to recover the cost of reclaiming all mining lands to the applicable SMCRA standards.

Numerous other federal, state and local agencies are involved in the regulation of various environmental aspects of coal mining. These agencies include the Environmental Protection Agency, the U.S. Army Corps of Engineers, the Bureau of Land Management, the Bureau of Indian Affairs, the U.S. Geological Survey, and several other agencies and offices.

SAFETY

Mine safety is regulated by the Mine Safety and Health Administration, a federal agency, which enforces the Coal Mine Health and Safety Acts of 1969 and 1977. Peabody Western's primary concern in its mining operations is safety. In fact, the four mines operated by Peabody Western were the safest of all thirty-nine Peabody mines the past two years and are safety leaders in the entire coal industry. These four mines are among the safest work locations in the United States. Big Sky did not have a reportable injury accident at all during 1992. Safety and training programs are designed and implemented to give employees the knowledge, skill and confidence to do their jobs productively as well as safely.

Blending safety and productivity at Peabody is achieved through a total-concept safety program combined with training and employee development emphasizing safety and productivity. Safety awards, preventive safety measures, regular safety supervisors' meetings, and a safety program which includes inspections, hazard awareness, corrective action, and a firm commitment from employees to accident prevention are utilized. Preventive safety equipment includes safety glasses, goggles, gloves, hard hats, respirators, steel-toed boots and belts for working at heights. Employees must follow established safe job procedures. Peabody Western is committed to safety.

CONTRIBUTIONS

Peabody Western contributes generously to worthy non-profit organizations in the communities where Peabody Western employees live and work. Peabody Western has a special interest in children and education. Peabody Western contributes at least \$319,000 annually to a scholarship fund for the Navajo and Hopi Tribes. Additionally, contributions are made to Northern Arizona University and the local schools for various educational projects. Peabody Western awards two \$500 scholarships to students at Hayden High School in Hayden, Colorado.

Peabody Western emphasizes Native American activities in its contribution program in Arizona with donations to organizations such as Navajo Toys for Tots, Forest Lake Headstart, Shonto Community Library, Chief Manuelito Scholar Awards, Black Mesa Community Youth Program, Kayenta Runners' Club, Kayenta and Hopi Close-Up Foundations, the Hopi Junior/Senior High Library and Futures for Children. Additionally, Peabody Western contributes both individually and by its employees to the United Way (over \$25,000) and the Navajo Way (over \$50,000).

Support is also given to educational and community service organizations in Arizona, Colorado and Montana. Peabody Western provides annual support to the Council of Energy Resource Tribes, a Native American organization for tribes dealing with the impacts of resource development.

The goal of Peabody Western's contribution policy is to recognize and support those non-profit organizations in the areas of education, health/human services, civic/community activities, and cultural/art matters which demonstrate a philosophy and objectives that are relevant to Peabody's goals, provide an appropriate community service, demonstrate organizational competence in achieving its objectives, and render a public service that is responsible, effective, and consistent with the company's values and standards.

COAL

Coal produces clean, convenient electricity for residential, commercial and industrial use. Coal is used to generate over 55 percent of the electricity in the United States. The United States has more recoverable coal than any other country in the world. In fact, the United States has nearly one-third of the world's recoverable coal.

Coal was the primary fuel used to build America into an industrial giant over the last century. Coal is even more vital to America's future economic growth. The production of coal from domestic sources reduces our dependence on imported oil. Moreover, advances in technology allow us to meet our nation's energy needs while maintaining the quality of the environment. Future clean coal technology will improve today's environmental standards while actually reducing the cost of electricity.

Coal began to form about 300 million years ago. Primitive plants absorbed and stored the sun's energy. Over time, layers of peat deposits built up as enormous amounts of this vegetation died and accumulated at the bottoms of swamps and under prehistoric forests and seas. Geological processes involving pressure and temperature compressed and altered the plant remains, concentrating the amount of carbon present. Millions of years later, the material that had once been plant life was transformed into coal. Coal, along with natural gas and petroleum, is considered a fossil fuel because it can trace its beginnings to living material.

There are four different types or ranks of coal which are the result of the geologic forces having altered the plant material in various ways. The higher the rank of coal, the harder the coal and the greater its heating value. Heating value is measured in British thermal units or Btu. One Btu is the amount of heat transfer that must take place to raise the temperature of one pound of water by one degree Fahrenheit.

The hardest coal is anthracite which has a heating value of 15,000 Btu per pound. Anthracite has a very high heat value and burns very slowly. It makes a good home heating fuel. Virtually all anthracite in the United States is mined in Pennsylvania.

The second rank or type is a medium-hard coal called bituminous coal. It contains very little moisture and has a high heat value of 10,500 to 15,500 Btu. Bituminous coal is widely used to generate electricity and to make coke in the steel industry. The third type is subbituminous coal with a heating value ranging between 8,300 to 11,500 Btu. This medium-soft coal contains more moisture than bituminous coal. It is used primarily to produce steam for electricity generation. Finally there is lignite which is a brownish-black soft coal that crumbles easily and contains a high level of moisture. It has a heating value from 4,000 to 8,300 Btu.

COAL MINING

SURFACE COAL MINING

Coal can be mined by either surface or underground methods. Peabody Western operates only surface mines. Most underground mines are located in the eastern United States although there are some in the West, particularly in Colorado and Utah. Also known as "deep mines," these mines are often located several hundred feet below the surface and are accessible only through a shaft entry which goes vertically down to the coal seam, through a horizontal opening called a drift entry, or through a slope entry which cuts through the hillside at an angle to reach the coal. Underground mines primarily utilize either continuous mining or longwall mining methods.

Surface mining is utilized when the coal seam is located relatively close to the surface. Surface mining involves removing the rock and soil overlaying the coal seam (called "overburden") and then removing the coal. A process called reclamation restores mined lands to their approximate original appearance and condition. In some cases, land is even more productive after the reclamation process than before the mining began. Air and water resources are protected and monitored to insure that there are no long-term negative effects from the mining process.

Prior to undertaking any coal mining, lengthy preparations must be conducted. A permit application package must be submitted to the Office of Surface Mining Reclamation and Enforcement, a federal agency, or an approved state agency which is responsible for enforcing the Surface Mining Control and Reclamation Act. The package must comply with all the applicable requirements for coal mining and must include detailed data on environmental impacts, mining plans, reclamation plans, and bonds. A permit covers all aspects of mining and requires extensive research, plans, and monitoring for all areas affected by operations including vegetation, soil, air, wildlife and water. The process of obtaining a mining permit may take several years.

After a mining permit is obtained, construction of the mining facilities begins. Haul roads, buildings, and sediment control facilities must be built and the draglines must be assembled. Draglines are gigantic, electrically powered excavating machines which are tub-mounted, self-propelled and rotate in a circular motion. They have a large bucket operated by cables and are capable of lifting and dumping as much as 90 cubic yards of material in one cycle. Draglines are approximately 100 feet wide by 100 feet long, 70 feet high, and with a 300-foot long boom from which the bucket is suspended. It can take up to two years for the two

to eleven million pounds of hardware for each machine to be transported, assembled, and placed into operation.

The first step in mining operations is the removal of the vegetation from the mining area. The topsoil is then removed and stored in topsoil storage piles. Between the topsoil and the coal are layers of rock and shale, up to 180 feet in thickness. This overburden is too hard to dig without first drilling and blasting with explosives to loosen it. Generally, a dragline is utilized to dig a pit. A pit is a linear cut or strip that follows the coal seam. Pits are usually over 100 feet wide and sometimes extend more than a one mile in length. The dragline removes the overburden above the coal seam (multiple seams are mined on Black Mesa) and piles it into the cut that it excavated in its previous cycle along the length of the pit. This results in a series of parallel piles of removed overburden called spoil.

The next step in the mining sequence is the drilling and blasting of the coal seam. The coal seam is typically three to twenty feet thick. The fragmented coal is removed by large electric or hydraulic shovels or front end loaders and loaded into 150-to 300-ton bottom dump coal trucks. These trucks transport the coal several miles to coal hoppers at the mine preparation plant for crushing (sizing) and transportation to the customers.

After removal of the coal, the reclamation process begins. Piles of spoil are graded to approximate the original contours of the land. The topsoil, removed and stored before mining, is replaced. Replaced topsoil depths range from one to three feet. The topsoil is prepared for revegetation by discing to prepare the seedbed. Fertilizer is applied using a formula based on current soil test analysis. Then seeding begins using both native and selected introduced species of warm and cool season plants. Straw or hay mulch is then applied to improve moisture retention and to prevent wind and water erosion.

After completion of these reclamation activities, the reclaimed areas are monitored for at least ten years to ensure successful revegetation. All reclamation is performed in accordance with the approved permit criteria and are frequently inspected by the Office of Surface Mining Reclamation and Enforcement or the designated state agency. Reclamation costs range from \$8,000 to \$20,000 per acre.

NATIVE AMERICAN EMPLOYMENT

Peabody Western is the nation's largest private employer of Native Americans. Today, Native Americans make up 93 percent of the workforce at both Black Mesa Mine and Kayenta Mine. The average employee salary exceeds \$41,000 per year. In addition, employees receive a benefit package that averages over \$15,000 per employee per year. These wages are eight times greater than the average annual income of non-coal mine workers living on the reservation.

Seventy-three percent of the salaried employees at Black Mesa Mine and sixty-seven percent of the salaried employees at Kayenta Mine are Native Americans. Salaried positions include supervisory/managerial positions such as assistant superintendent, chief electrician, master mechanic, pit foreman, shop foreman, reclamation foreman, safety supervisor, mine accounting manager and chief mine clerk. Ninety-eight percent of the both mines' hourly employees are Native American. These positions include electricians, dragline operators, welders, machinists, mechanics, coal drillers, haulage truck drivers, and various other classifications.

LAND USE ON THE BLACK MESA

The Black Mesa is a land of austere beauty. The region gets its name from the stands of pinon and junipers which line its ridges and canyons. The climate sunny and dry with an average annual rainfall only ten inches. Black Mesa supports little wildlife and only sparse vegetation. The effect of coal mining on the land and life of Black Mesa is minimized by returning mined land to traditional uses of grazing and wildlife habitation. In most cases, reclaimed land is even more productive than before mining began.

The seed mixes planted on the reclaimed areas are designed to restore a permanent, diverse and effective vegetation cover of predominantly native species. The seeded stands must control erosion and facilitate achievement of the post-mining land uses. The seed mixes are dominated by a combination of native grasses, forbs, and shrubs. The native species and selected adapted species are used to insure permanence and succession in the plant communities, compatibility with environmental conditions and wildlife species, and provide erosion control. Shrub seedlings are planted in key wildlife habitat areas. These include pinon pine, Utah and one-seed juniper, Fremont cottonwood and some Russian olive. Both cool season and warm season grass seed mixes are used and the mixtures include western wheatgrass, fourwing saltbush, and 14 other selected species.

Reclamation efforts have resulted in land with a higher grazing capacity than it had before mining operations began. Peabody Western has reclaimed approximately 10,000 acres on the Black Mesa. Peabody Western released 2,500 acres to the Navajo Tribe in August of 1992.

The Navajo Tribe will determine the local residents to whom the land will be returned and any conditions of use. Reservation land is not owned by individual Navajo tribal members but is federal land which the federal government holds in trust for the Navajo Tribe. The individual tribal members use and build upon the land in accordance with a tribal permit system and "customary use" rights which are recognized under Navajo law. Navajo laws provide for compensation for tribal members who are required to relocate due to a tribal dispositions of lands (such as the mining leases).

The mining leases with the Navajo Tribe contemplated the relocation of Navajo families where necessary to mine the coal leased by Peabody or to protect the health and safety of the Navajo residents. Forty-three Navajo families have been relocated since 1970 and an additional 18 families will be relocated during the lifetime of the present coal supply agreements. Each affected family is notified

SLURRY SHIPMENT OF BLACK MESA COAL

Black Mesa Pipeline Company ships Black Mesa coal to the Mohave Generating Station by slurry pipeline which, at 273 miles, is the longest coal slurry system in the United States. To prepare for the slurry operation, the coal is ground and mixed up with water. It is then fed to the 18-inch diameter slurry pipeline where it is pumped to the Mohave plant. The 273-mile journey takes three days.

Water for the pipeline, and for all of Peabody's mining operations on the Black Mesa, comes from eight private, deep wells drilled by Peabody. Water is drawn from the Navajo Sandstone (Navajo Aquifer) formation at depths of 3,500 to 3,700 feet. The original lease gave Peabody the right to use water from these wells and these water usage rights were affirmed in the 1987 amendments with both tribes. Peabody pays water royalties of approximately \$3 million annually to the Navajo and Hopi Tribes. This is believed to be the highest royalty rate paid for industrial water use in the United States. Together, the coal and water royalties paid by Peabody Western provide about 80% of the Hopi tribal government's revenues and 20% of the Navajo Nation's revenues.

Peabody's deep well shafts are sealed with concrete liners down to over 2,000 feet to ensure that water is not drawn from shallow levels. The water supply for local Black Mesa residents comes from wells that average approximately 400 feet in depth. These shallow wells are completely separated from Peabody's deep wells by several layers of impervious shale, each several hundred feet thick. A continuing U.S. Geological Survey monitoring program assures that Peabody's use of water does not disturb the local water supply.

Peabody's operations and the slurry pipeline have used, on average, approximately 3,800 acre feet of water per year. An acre foot is a one-acre area covered with water to a depth of one foot or about 325,851 gallons. Over the lease period, a total of about 100,000 acre feet of water will be used by Peabody. That represents less than one-tenth of one percent of the total estimated water stored in the Navajo Aquifer. The amount of water which will be used during the total life of the mining operations compared to the total quantity of water in the Navajo Aquifer is comparable to using less than three-fourths of a cup of water from a 55 gallon barrel (without any adjustments for recharge of the aquifer).

Historically, the coal-water slurry mixture has been 46.5% coal and 53.5% water. Since July of 1991, the concentration of coal in the slurry mixture has been increased to 50%. Now 188 gallons of water, instead of 220 gallons, are used to carry one ton of coal. This represents a 14.6% decrease in water usage for the

several years in advance of their actual relocation and Navajo and Peabody officials work closely with the family on all arrangements. Peabody and the affected individual or family agree on either a lump sum payment for the value of the improvements or construction of a replacement house.

Relocations are normally within the same general area as previously used by the individual or family. Peabody assists the individual or family with obtaining a new homesite lease from the Navajo Tribe. The new replacement homes are constructed at Peabody Western's expense and often contain modern conveniences and advanced solar power technology that far exceed the original dwelling's features.

Local residents with customary use (including grazing) are compensated for the loss of any acreage pursuant to an agreement with the Navajo Tribe.

slurry. Annual water requirements to ship 4.8 million tons of coal have been reduced from 3,252 acre feet to 2,777 acre feet.

Several technical studies of impacts to the Navajo Aquifer were conducted by the U.S. Geological Survey in 1981 and by the Office of Surface Mining Reclamation and Enforcement in 1989. These studies all indicated that no significant negative impacts to the Navajo Aquifer or water users will occur from Peabody's use. Natural recharging after cessation of pumpage by Peabody will be rapid with an estimated 78% of the draw down being replenished in ten years. When mining operations are completed, Peabody's deep wells will be turned over to the tribes.

As part of the 1987 lease amendments, Peabody has initiated an additional long-term study of the Navajo Aquifer in conjunction with the Navajo and Hopi Tribes. That research will be completed by 1996.

PRODUCTION OF ELECTRICITY

Electricity is generated from coal using many different methods. The primary method is by grinding the coal into a fine powder with a pulverizer. The pulverized coal is blown into the furnace where circulating water is converted to steam. The steam at high pressure drives a multi-stage turbine. The spinning turbine creates mechanical energy from the heat energy.

A generator is powered by the spinning motion of the turbine. In the generator, a magnet spinning inside a wire coil turns the mechanical energy into electrical energy. A condenser cools the steam that has passed through the turbine changing it once again into water which returns to the boiler to continue the cycle. The electricity is sent out of the generating plant into a transformer which increases or steps up the electrical voltage (to as high as 765,000 volts).

Transmission lines carry the electricity for long distances to substation transformers which reduce or step down the voltage, usually to about 12,000 volts, for distribution to local areas. Distribution lines carry the electricity from the substations transformers to local neighborhoods where transformers reduce the voltage to the 120 to 240 volts necessary for home use.

Other methods of burning coal are fluidized-bed combustion, coal gasification, and combined-cycle systems. All these methods are now being utilized and improved.



Fact Sheet

PEABODY WESTERN COAL COMPANY

Peabody Western Coal Company manages four surface mines in Arizona, Colorado and Montana, which together ship more than 18 million tons of low-sulfur coal annually. The company is headquartered in Flagstaff, Ariz., and employs nearly 1,000 people. Within each state, operations are further organized into business units which allow increased decision-making and autonomy.

The two mines comprising the Arizona Business Unit are located on the Black Mesa, near Kayenta, and produce coal from a large reserve leased from the Navajo Nation and the Hopi Tribe. Royalties and taxes generated from the mining operations provide the tribes with approximately \$45 million in annual revenue. In addition, nearly 700 tribal members work at the Arizona mines and support facilities, making Peabody Western the nation's largest private employer of American Indians.

Black Mesa Mine was opened in 1970 and produces approximately 5 million tons of steam coal annually using two draglines in two mining areas. The mine employs about 300 people and sells coal under terms of a 35-year contract signed in 1967. Its coal is crushed and then transported through the underground Black Mesa Pipeline 273 miles to Southern California Edison's Mohave Generating Station near Laughlin, Nev.

Kayenta Mine is adjacent to the Black Mesa Mine and began operating in 1973. The mine produces approximately 7.5 million tons of steam coal annually using three draglines in three mining areas. It employs about 475 people and sells coal under a 35-year contract with Salt River Project. The coal is crushed, then carried by conveyor belt 17 miles to storage silos, where it is loaded on an electric train and transported 83 miles to the Navajo Generating Station near Page, Ariz.

Seneca Coal Company operates the Seneca Mine near Hayden, Colo., and the Hayden Gulch Terminal, a unit train loading facility which expands the potential markets for coal produced at the mine. The mine was opened in 1964 and produces about 1.7 million tons of low-sulfur steam coal annually. Seneca Mine employs more than 80 people and operates two draglines in two mining areas. The majority of Seneca Mine's coal is hauled by truck to the Public Service Company of Colorado's nearby Hayden Generating Station under a 35-year requirements contract.

Big Sky Coal Company near Colstrip, Mont., was opened in 1968 and employs more than 100 people, producing more than 4 million tons of steam coal annually with one dragline. The coal is shipped by rail to electric utilities including Minnesota Power, Wisconsin Power & Light, Northern States Power and Wisconsin Electric Power.

All of Peabody Western's coal is burned by power plants to generate electricity. About 80 percent of the coal mined in the United States is used by electric utilities, and coal-fired power plants account for about 55 percent of all U.S. electricity.



PEABODY WESTERN COAL COMPANY 1996 BLACK MESA RECLAMATION FACTS

Restoring mined land to a healthy, sustaining environment is a meticulous process that begins long before coal is uncovered beneath the Black Mesa's rocky surface. Reclamation is carried out by Peabody Western Coal Company engineers, scientists and environmental specialists who work closely with the Navajo Nation, Hopi Tribe, traditional healers and local herbalists. This partnership ensures that land is restored to meet the unique needs of residents.

Coal mining is strictly regulated, and federal laws require that mined land be returned to its original condition or better. Results of Peabody Western's efforts show that reclaimed land on Black Mesa supports two to three times more livestock than native rangeland. Furthermore, the company's erosion control program has won an international award for helping ensure long-lasting productivity of the land.

Environmental scientists begin the reclamation process by designing stable slopes that complement the existing landscape. Terraces and channels for water are placed to help guard against erosion, and ponds are built to maintain water quality as well as trap rainwater for livestock and wildlife.

Next, scientists study the soil, plants and wildlife habitats. Reclamation seed mixes include approximately two dozen grasses, flowering plants and shrubs that provide healthy ground cover. Reclamation is established to provide a diverse, year-round mix of hardy, nutritious forage for grazing as well as plants used for medicinal, religious and ceremonial purposes. Cultural plants comprise more than half of the total mix, with 65 species included. During 1996 and 1997, more than 100,000 culturally significant tree, shrub and herb seedlings will be planted at the Black Mesa on sites ranging from one to three acres. These plants include:

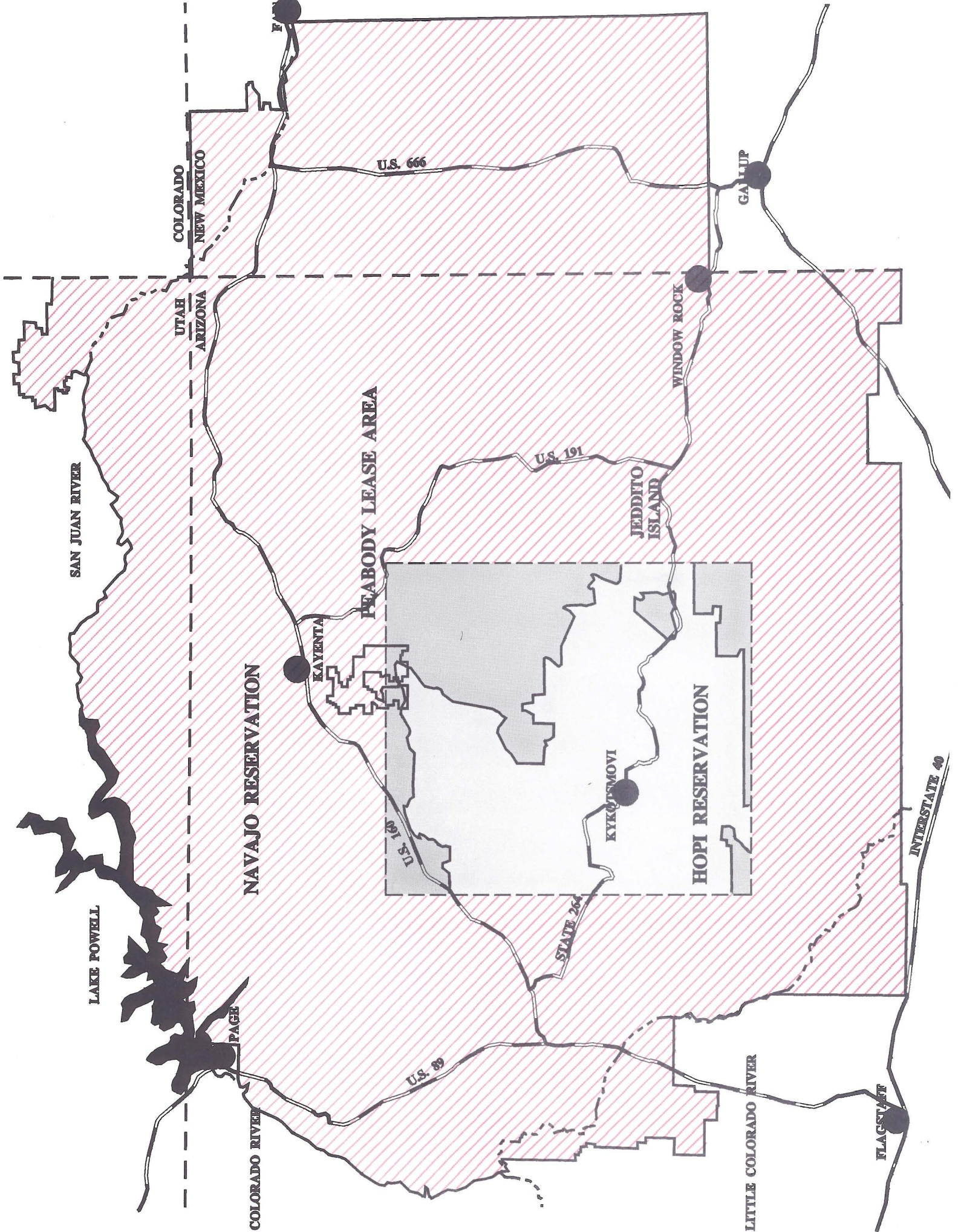
- 23,000 piñon pine
- 20,000 cliffrose
- 15,000 big sagebrush
- 15,000 rubber rabbitbrush
- 7,000 scarlet bugler penstemon
- 7,000 firecracker penstemon
- 5,000 scarlet globemallow
- 2,000 Utah juniper
- 2,000 Indian paintbrush
- 1,000 Mormon tea
- 1,000 wild buckwheat
- 1,000 skunkbush sumac
- 1,000 mountain mahogany
- 200 narrowleaf yucca
- 100 bananaleaf yucca

After coal is removed, reclamation specialists return soil and rock to the mining area. The site is graded to approximate the land's original contour to restore drainage, prevent soil erosion and provide planting sites. After grading, the topsoil, which had been removed and stored prior to mining, is again spread over the reclaimed area.

Next, the area is disked, seeded and mulched to begin new growth, with about 25 pounds of seed and two tons of mulch used per acre. Trees, shrubs or other cultural plants also are planted in selected areas.

Reclaimed land is monitored for ten years and extensive sampling is conducted to ensure vibrant plant growth. Ground cover, production, density and diversity are all elements monitored. Results from reclaimed land show:

- Vegetation is well established three years after reclamation
- Erosion control is at least equal to native vegetation stands
- Forage production is higher than native vegetation
- Forage is high-quality for livestock
- Vegetation is permanent
- More than 150 native plant species are established in the reclamation
- To date, Peabody Western has restored more than 9,000 acres of mined land.

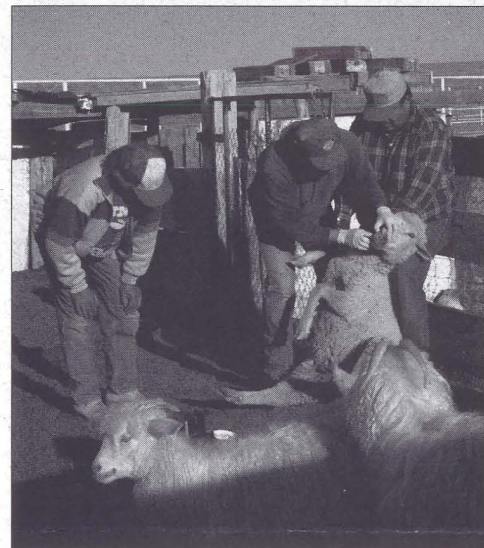


Education and Outreach

- The condition of sheep and goats on the Black Mesa varies. Some herds are very healthy, while others exhibit certain ailments. Examinations by tribal veterinarians indicate that the condition of livestock is dependent on proper diet and good animal husbandry practices. Some animals do not receive proper care or nourishment and suffer from malnutrition.
- Education is the key to providing a solution to this issue, and Peabody Western is working with the Navajo Nation to develop seminars on caring for livestock that will be given late this spring. ■

Environmental Monitoring Program Black Mesa Complex

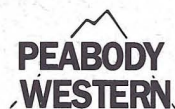
Environmental Media	Number of Monitoring Sites	Samples/Year (Approximate)
Air Quality	10	608
Meteorology	4	8760
Precipitation	8	8760
Surface Water Quantity	82	240
Surface Water Quality	52	430
Ground Water Quantity	107	3316
Ground Water Quality	89	344
Sediment Ponds	144	1008
Vegetation	10-30	150
Soils	10-40	60
Wildlife	30-50	215



Tribal seminars on caring for livestock are being developed and will be offered later this spring.

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Volume 2 Issue 4 April 1996

**UPDATE
on Kayenta
Mine Permit
Renewal**

Kayenta Mine permit renewal chronology of events

March 1995

Peabody Western submits renewal application to the U.S. Department of the Interior's Office of Surface Mining.

June 1995

Comments are provided to the Office of Surface Mining by groups opposed to coal mining. These groups include the Dineh Alliance, Colorado Plateau Ecology Alliance, Don't Waste Arizona.

A public meeting is conducted by the Office of Surface Mining at the Forest Lake Chapter House.

July 1995

The Office of Surface Mining renews Kayenta Mine permit.

August 1995

Permit appeal filed by Dineh Alliance, Colorado Plateau Ecology Alliance and Dineh Alliance board member.

Hearings held in Flagstaff before a U.S. Department of the Interior administrative law judge. Colorado Plateau Ecology Alliance appeal dismissed immediately.

March 1996

Administrative law judge rules to vacate permit.

Facts ignored in permit decision

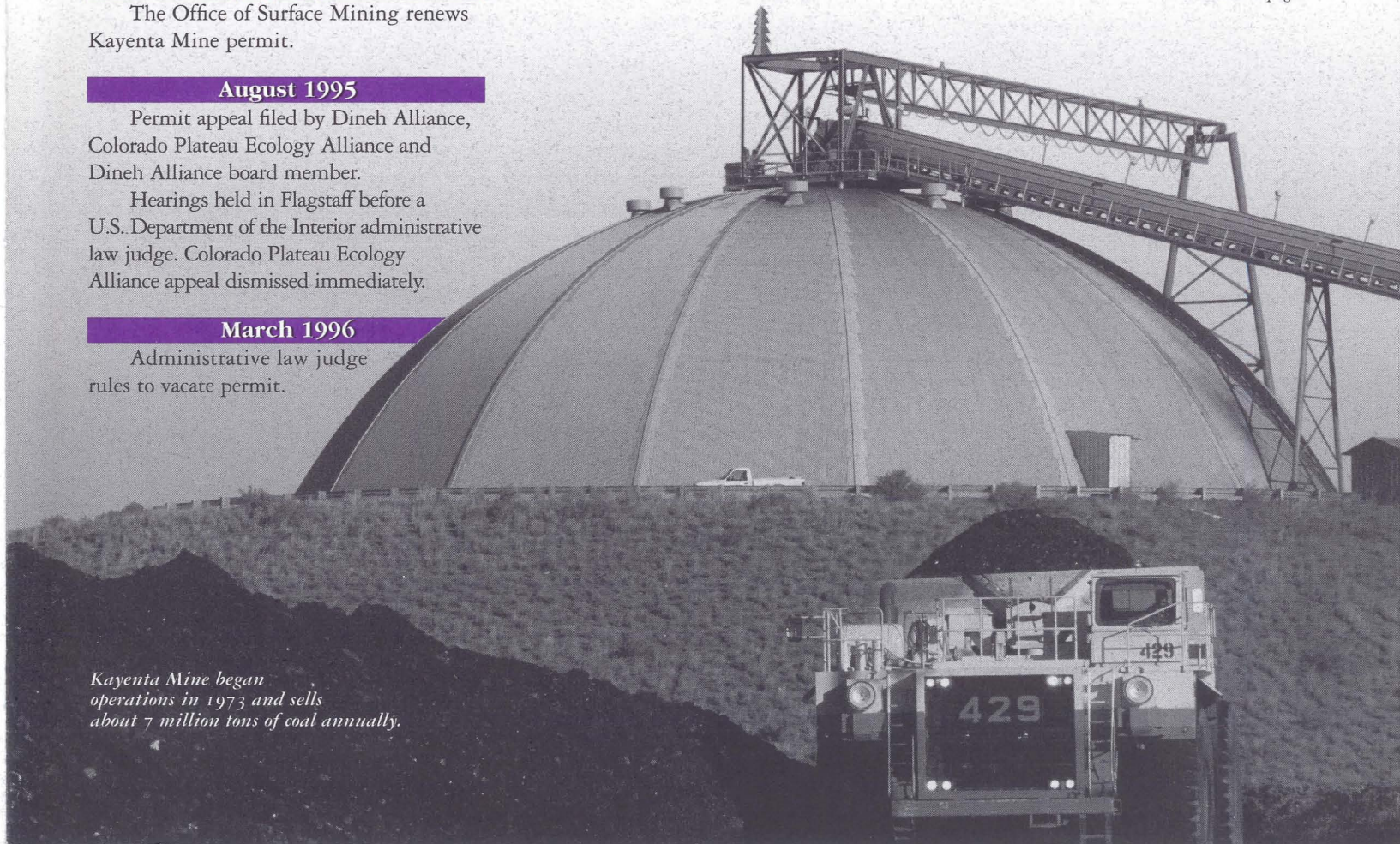
The facts about Peabody Western's environmental record were ignored in an administrative law judge's (ALJ) March 11 decision to vacate the 1995 Kayenta Mine permit renewal. The decision is being aggressively appealed to a higher authority within the U.S. Department of the Interior.

"Our company has a solid history of conducting its coal mining activities in a manner that maintains the integrity of the environment," said Peabody Western President Howard Carson. "The decision was completely unfounded and lacked any legal or factual basis."

Carson said that despite evidence to the contrary, the ALJ decision accepted general allegations made by anti-mining groups that continue to spread inaccurate information about the company.

Kayenta Mine, which has sold coal since 1973, continues to operate under an Office of Surface Mining (OSM) permit during the administrative appeal process. The company will file an appeal to the Interior Board of Land Appeals (IBLA) by mid-April. Those opposed to the coal mine will then have 20 days to respond, and the IBLA will issue a decision about 60 days later.

continued on page 2



Kayenta Mine began operations in 1973 and sells about 7 million tons of coal annually.

"We are confident the facts about our operations will form the basis for a favorable decision by the board," Carson said.

Renewal of the mine's permit was granted in July following the OSM's intensive review of the company's environmental performance and reclamation program. These evaluations are conducted every five years as part of the permitting process.

But the renewal subsequently was appealed by a group calling itself the Dineh Alliance, whose members live primarily south of the mine in the Navajo-Hopi land dispute area.

"Peabody Western takes environmental compliance very seriously, and we carefully investigate any concerns we receive," Carson said. "The allegations made by the Dineh Alliance have been thoroughly investigated, and the facts indicate they are without merit. While we empathize with the hardships faced by those impacted by the Navajo-Hopi land dispute, we have no involvement in that issue."

Carson said the same environmental allegations had brought about a 1994 - 1995 comprehensive multi-media evaluation by the U.S. Environmental Protection Agency (EPA) at both the Kayenta and Black Mesa mines. The exam was the most exhaustive evaluation ever performed at a coal mining complex, involving 32 regulators from 13 agencies and governmental departments that studied air, water, soils and vegetation conditions at the mine. As a result, the Black Mesa mining operations were given good marks for environmental compliance by EPA.

Ongoing oversight of compliance activities at the Black Mesa mining operations by OSM, EPA, the Navajo Nation, the Hopi Tribe, Peabody Western and independent environmental consultants continue to show coal mining operations are being conducted responsibly, Carson said. Despite this record, a few dissident anti-mining groups like the Dineh Alliance continue to raise the same allegations.

"When Peabody Western's coal mining operations and environmental record are objectively considered, we have confidence the facts will prevail," Carson said. ■

Audit confirms strict compliance

An independent audit of the Black Mesa and Kayenta mines completed in January 1996 confirms coal mining activities are being operated responsibly and fully comply with rigorous federal and tribal environmental and reclamation laws.

The far-reaching evaluation was conducted to assess the company's compliance and identify recommendations for strengthening these efforts. The 90-day audit examined on-site mining activities as well as reporting and documentation for the Surface Mining Control and Reclamation Act (SMCRA), in addition to air, water, waste disposal and toxic substance regulations. Good compliance was determined in all areas, and only minor administrative recommendations for improvements were made.

"These results confirm our strong commitment to environmental compliance throughout all facets of our operations," said Brian Dunfee, senior manager of Environmental Affairs. "Our entire workforce needs to continue the diligent effort to ensure we maintain these high standards."

Surface coal mining is among the most highly regulated industries in the nation, with every aspect of the coal mining activities — from archaeology and coal recovery to reclamation and hydrologic systems — subject to strict government standards.

"Peabody Western's Environmental Affairs and monitoring program is like no other in the industry. We custom-designed our program to ensure accuracy of data as well as stringent compliance," Dunfee said.



Soils in native sites, final graded areas and reclaimed lands are tested for chemicals and physical properties to ensure soils contain essential nutrients that will encourage healthy plant growth.

Major Environmental Regulatory Programs

- Environmental Protection Agency
- Office of Surface Mining
- Corps of Engineers
- Bureau of Land Management
- Department of Health and Human Services
- Bureau of Indian Affairs
- Navajo Nation
- Hopi Tribe

Each year, the environmental monitoring program generates more than 22,000 samples of air, soil, vegetation and water from more than 350 sites. The company operates its own water quality laboratory as well as performs routine and specialized environmental audits, which involve sophisticated mapping, modeling and data handling.

Beyond self-monitoring, the company frequently uses the expertise of external consultants who provide additional assessment and recommendations for all areas of the program.

Day-to-day coal mining operations must comply with 16 permits and licenses mandated by 20 federal statutes. Each year, the company generates some 1,100 compliance reports.

In addition, eight tribal and regulatory agencies conduct thorough and unannounced field inspections which average two days weekly, often with multiple agencies. OSM inspections are the most frequent and average one week per month. ■

Facts about the coal mining operations

A laundry list of unfounded environmental concerns at the Black Mesa complex have been alleged by anti-mining groups and Black Mesa residents impacted by the Navajo-Hopi land dispute. Following are the facts regarding the coal mining operations:

Environmental Record

- Peabody Western's environmental record is supported by more than 16 years of historical monitoring data that generates 22,000 air, water, soil and vegetation samples annually. Continuing regulatory and tribal assessments, a comprehensive environmental impact statement, and the Environmental Protection Agency's exhaustive multi-media examination in 1994 and 1995 all indicate that Peabody Western has a strong record of compliance with the very stringent federal mining and reclamation requirements.
- Using an ecological approach to reclamation restores land to a condition that creates a healthier, more sustainable environment for plants and animals. Reclaimed lands on Black Mesa support two to three times more livestock than native vegetation. The seed mix includes a nutritious mixture of forage for grazing, in addition to approximately 65 culturally significant species.
- In addition to increasing grazing capacity of the land, the company's extensive reclamation program minimizes the potential for erosion. The steepness and length of slopes are reduced, hardy vegetation is selected for erosion control and numerous surface features are installed to slow down rain runoff and reduce sediment yield. The company's erosion control program is being used as an industry model and recently received a prestigious international award.

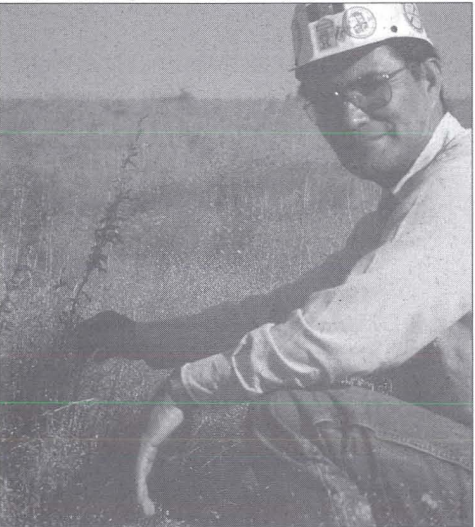
Environmental Monitoring

- Peabody Western conducts extensive monitoring of air quality throughout the lease area, which involves examining more than 600 samples from 10 sites annually. More than 16 years of monitoring data indicates that air quality standards are being achieved, and there have been no instances when the guidelines were exceeded.
- Each year, more than 4,000 surface and ground water samples are taken from 330 sites which continue to indicate that the company's mining activities do not affect surface or ground water quality. Furthermore, the company has placed more than 140 sediment ponds throughout the complex to contain water following storms.
- Strict safety measures are adhered to when rock and coal is fractured during the mining process. A network of seismographs that monitors these activities indicates air and ground vibrations created by blasting are within regulatory thresholds to protect dwellings. Studies conducted by the OSM have determined that inadequate foundations and natural settlement are the primary causes of floor and wall cracks in area homes. Homes at the mine site with adequate foundations and construction do not have these problems.

Black Mesa Archeological Investigation

- Peabody Western invested \$7 million to conduct one of North America's largest and longest-running archaeological investigations on Black Mesa, where all areas of the leasehold were explored and religious sites were identified and mapped. Fieldwork spanned 17 years, involved more than 700 people and a dozen colleges and universities. The work was thorough and complies with regulations concerning the protection of archaeological resources.
- The company, both tribes and the federal government have established procedures to identify and protect sacred and ceremonial sites. Before mining is conducted in any area, these groups meet with local residents to determine if there are sacred sites that need special consideration. A solution is then developed to address the request.

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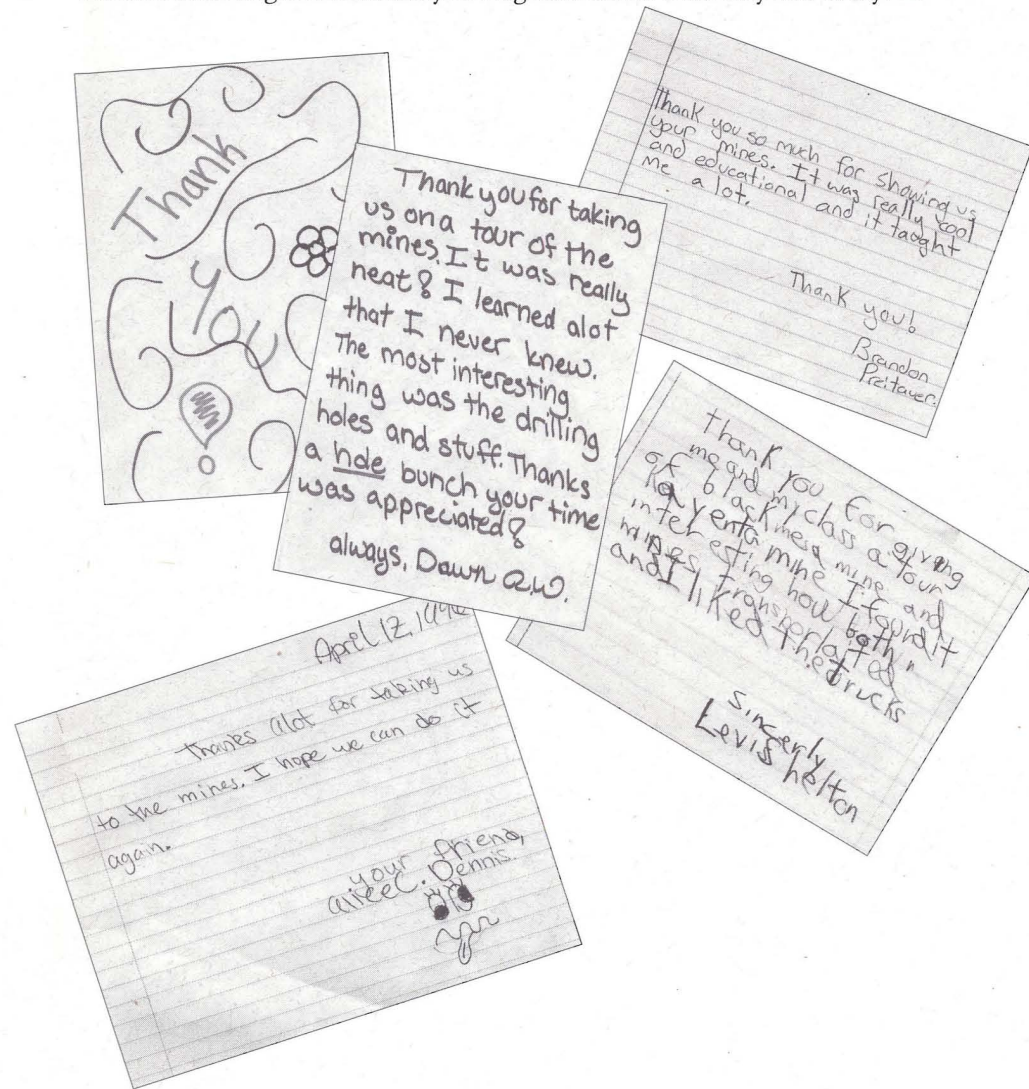
Reclamation Manager Ted Begay examines the growth of firecracker penstemon, which is among 65 culturally significant plant species included in the reclamation.



Environmental Scientist Angelee Johnson replaces a filter at an air monitoring site near Black Mesa Mine. The company operates 10 air monitoring stations which provide more than 600 samples annually.

Students rave about Black Mesa tour

An April mine tour guided by Hydrologist Jim Ohlman and Senior Revegetation Technician Eric Bronston drew rave reviews from about 15 seventh and eighth-grade students from Highland Academy in Flagstaff. Here's what they had to say: ■



CHANGES IN MINE MANAGEMENT continued from page 2

Reared in Hot Springs, S.D., Woodward obtained his bachelor of science degree in civil engineering from the South Dakota School of Mines and Technology in Rapid City.

Black Mesa mine production supervisors include Wayne Hilgedick, first shift; Barry Grass, second shift; and Ray Benally, third shift.

Botone is responsible for mine planning and mine facilities construction. Previously, he had been second-shift assistant superintendent at Black Mesa Mine for one year. He joined the company in 1990 and has held managerial roles in engineering and production.

Botone is a native of Carnegie, Okla., and earned his bachelor of science degree in civil engineering from Northern Arizona University in Flagstaff. ■

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Volume 2 Issue 5 May 1996

First livestock released on reclamation

When nearly 1,500 acres of reclaimed pastures were opened to a herd of mother cows and calves during a ribbon-cutting ceremony April 22, Black Mesa Review Board (BMRB) member Stanley Yazzie heralded the event as a historic occasion: "We're here to celebrate the return of lands to local residents," Yazzie said.

"The Black Mesa Review Board and the Bureau of Indians Affairs (BIA) have been involved in getting the land back to the people. A few years ago, we began working on ways to expedite the process. It doesn't happen overnight. Today is a momentous occasion for the Navajo Nation, for local land users and for Peabody Western."

The event marked the first livestock release on Black Mesa reclamation, and the first time local residents have signed pasturing agreements for grazing lands in common.

The grazing plan, which was developed by the BMRB and the BIA over the past three years, is being piloted by 10 families. More than 30 Herefords were released on Kayenta Mine's reclaimed pastures northeast of the N-8 Preparation Facility. All had received vaccinations and had been examined by Navajo Nation veterinarians prior to release.

continued on page 2

Flawed decision appealed to higher authority

**UPDATE
on Kayenta
Mine Permit
Renewal**

Kayenta Mine undergoes as much, if not more, regulatory scrutiny than any other coal mining operation, and the evidence shows the mine's activities are conducted in a manner that is environmentally responsible.

Petitions for review of an administrative law judge's (ALJ) March 11 decision to vacate the Kayenta Mine permit renewal state the decision was made with "almost total lack of knowledge about the facts of the case." The petitions further assert that the ALJ relied on general, unfounded allegations by anti-mining groups – who continue spreading inaccurate information about the operations of the Black Mesa and Kayenta Mines – despite scientific and factual evidence to the contrary.

Appealing the ALJ's decision are Peabody Western, the U.S. Department of Interior's Office of Surface Mining (OSM), the Navajo Nation, the Hopi Tribe and Salt River Project, the mine's customer.

The OSM stated in its petition that "the fact is the Kayenta Mine is the most studied and most thoroughly investigated mining operation in the world." The petition also indicated that employees of OSM had carefully investigated dozens of allegations at the mine and had "rarely found evidence of anything but an attempt by the appellees to use complaints as just another forum to attack the Navajo Nation, the Congress' enactment of the Navajo-Hopi Settlement Act and Peabody's mining operations."

The petition further states: "The OSM, the Bureau of Indian Affairs, the Navajo Nation and the Hopi Tribe have all cooperated with an extensive investigation by the Environmental Protection Agency and OSM of the actual facts regarding this mine. That study investigated the same environmental issues which are in dispute in this case and came to the same conclusion: There are no major or serious environmental problems at the Kayenta Mine."

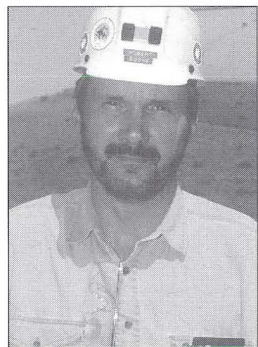
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Kayenta Mine's N-11 mining area
was opened in July 1995.



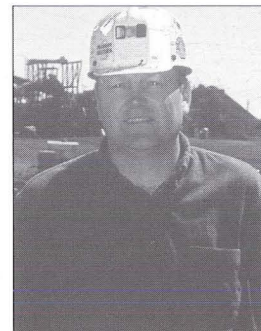
Changes in mine management announced

Arizona Business Unit General Manager Scott Williams has announced management changes at the Black Mesa complex. Bob Boone and Buck Woodward have been named Kayenta and Black Mesa mine production managers, respectively, and Doug Botone has been named engineering manager.



Bob Boone

Boone and Woodward are responsible for drilling and shooting, dragline operations and reclamation grading in five active mining areas. Previously, Boone was Black Mesa mine manager, a position he held for one year. He has 20 years of experience with the Peabody Group and has served in a number of operations and management positions, including pit supervisor and assistant mine superintendent.

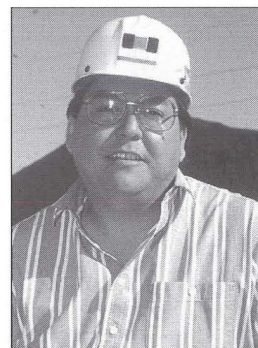


Buck Woodward

A native of Macon, Mo., Boone attended the University of Missouri at Columbia. He succeeds Joe Johnson who has elected to retire.

Joining the Kayenta Mine team of production supervisors are Randall Hendrix, first shift; Tony Bryant, second shift; and Jonas Grass, third shift.

Woodward had been engineering manager for the Black Mesa complex since 1989. He has two decades of experience at Peabody Western, primarily in engineering and production.



Doug Botone

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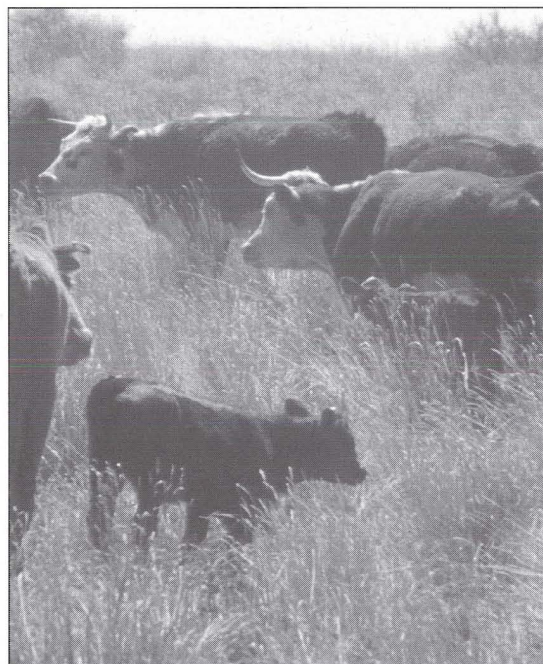
(Center) Navajo Nation President Albert Hale opens reclaimed lands to livestock. (From left) BIA Western Agency Superintendent Wilfred Brown, BMRB member Stanley Yazzie, BMRB President Willie Begay, President Hale, Peabody Western President Howard Carson, and BMRB member Charlie Billy.

"We take pride in what Mother Earth has provided," said George Abe, Natural Resource manager for the BIA, Western Navajo Agency. "These natural resources have been protected and monitored and will be kept for many future generations."

The company returned 2,500 acres of Kayenta Mine reclaimed lands to the Navajo Nation in 1993 and has applied for release of an additional 1,200 acres. Gradually the tribe is opening acreage to livestock, controlling herds to protect the vegetation and ensure proper grazing management.

"The coal that has been extracted has given us the ability to do numerous things," said Navajo Nation President Albert Hale. "From the coal, we have gained royalties, we have sent our children to school, and we have built an infrastructure. The Navajo Nation can learn from these reclaimed lands on how to reverse the overgrazing trend."

Since the company mines only about 500 new acres annually, developing a pasture large enough to support a small herd required a number of years. As the mine advances, establishing reclamation takes two to three years, plus an additional two to three years for vegetation to mature. Coal mining activities were completed in the livestock release area during the early '80s. ■



More than 30 mother cows and calves were released onto reclaimed lands.

"
The fact is the Kayenta Mine
is the most
studied and
most thoroughly investigated
mining operation
in the world.
"

— Office of Surface Mining in its petition for review

conducted in Flagstaff, Ariz., and a decision to vacate the permit was rendered by the ALJ seven months later.

"As difficult and as complex as the Navajo-Hopi land dispute is, we have no involvement in that issue," said Howard Carson, president of Peabody Western. "The dispute has been ongoing for decades. While we sympathize with the people affected by the land dispute, the issue must be resolved by the federal government and the tribes, not by injecting the coal mine into the dispute."

The Black Mesa complex employs approximately 750 people and has operated continuously for more than 25 years.

Petitions for review of the permit revocation were submitted to the Interior Board of Land Appeals (IBLA), a nine-member board of administrative law judges. Based in Arlington, Va., the IBLA has authority to make a final ruling for the Interior Department. The issues in the case will be reviewed by a panel of three judges, and a decision likely will be rendered in July.

"The facts about our coal mining activities conclusively show that Kayenta Mine has a strong track record of operating safely and compatibly with the environment," said Carson.

"Continuing federal and tribal regulatory assessments from the U.S. Environmental Protection Agency, the U.S. Office of Surface Mining, the Bureau of Indian Affairs, the Navajo Nation and the Hopi Tribe confirm good compliance. We stand by our employees' record of compliance with all laws governing coal mining operations." ■

The Surface Mine Control and Reclamation Act (SMCRA) mandates that the OSM review permanent program permits for coal mines every five years. Following intense scrutiny of the company's environmental performance and reclamation program, the OSM renewed the Kayenta Mine permit in July 1995.

Despite OSM's thorough review, the renewal was appealed by a group calling itself the Diné Alliance, whose members primarily live in the Navajo-Hopi land dispute area about 15 miles from Peabody Western's Black Mesa mining complex.

In August 1995, hearings were



Kayenta Mine produces about 7 million tons of coal annually.

Support for the appeal

What can workers and residents do to support the appeal? Continue to comply with all coal mining rules and regulations and help keep the area clean. Also, write letters to council delegates or chapter officials to express your views on the importance of the coal mining activities to the tribal economies. A list of officials follows.

The Navajo Nation

Resources Committee
Elmer L. Milford
Chairperson
P.O. Box 564
Fort Defiance, AZ 86504

The Navajo Nation

Economic Development Committee
Herbert J. Pioche
Chairperson
P.O. Box 216
Crownpoint, NM 87313

Chilchinbeto Chapter

George Mailman Sr.
President
P.O. Box 1681
Kayenta, AZ 86033

Forest Lake Chapter

Dan Y. Begay
President
P.O. Box 441
Pinon, AZ 86510

Kayenta Chapter

Ben Johnson
President
P.O. Box 1088
Kayenta, AZ 86033

Shonto Chapter

Hubert Laughter
President
P.O. Box 7537
Shonto, AZ 86054

Black Mesa Review Board

Willie Begay
Chairperson
P.O. Box 1088
Kayenta, AZ 86033

PEABODY'S ECONOMIC IMPACT continued from page 1

Kayenta Unified School District, which receives approximately \$2 million annually in state property taxes generated from the mining complex, is ranked as one of the nation's most technologically advanced learning environments. The district serves more than 2,700 students and covers more than 2,100 square miles.

"Our schools are leading the nation in technology," said Raymond Laughter, Kayenta Unified School District school board president. Laughter, who is Black Mesa Mine third-shift safety supervisor, said the district maintains state-of-the-art facilities and provides top-notch training for teachers.

"Through technology, we supply the learning tools students need to be competitive in the job market when they graduate. The tremendous financial support also helps the district provide advanced training for educators so they can achieve their highest potential."

Beyond the direct economic impact, Peabody Western renders numerous services to benefit the quality of life for employees and residents who live on the Black Mesa and surrounding plain.

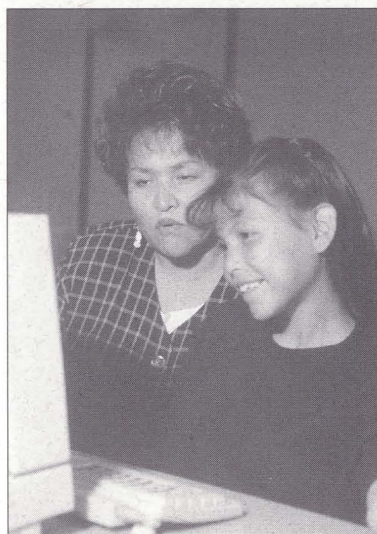
"People often look to Peabody in times of need," said Badonie. "In many ways the company has eliminated hardship and upgraded the Navajo way of life."

The only 24-hour emergency medical clinic within a 400 square-mile region is staffed by the company, and some 5,000 patients annually receive free medical treatment. Clinic personnel maintain a rescue truck for transporting special equipment, two ambulances with the capacity for carrying three patients at a time, and a small fire truck. Continuing preventative medical care is augmented by the company's financial contributions to the Kayenta Community Health Service Center and the Chilchinbeto Health Program.

Residents receive free water from company wells and free coal for home heating. Up to 100,000 tons of coal are provided during the winter months, delivering approximately the same amount of heat as firewood from 300,000 native piñon or juniper trees.

Transportation has been made easier and more reliable, especially during inclement weather. The company built and now maintains more than 150 miles of roads on the leasehold area.

"Without these roads and ongoing maintenance, many areas would not be traveled in bad weather," said Badonie. ■



Kayenta Unified School District is among the most technologically advanced in the nation.

NEW LEADERS continued from page 2

A native of Somerset, Ohio, Williams has an associate's degree in business administration from Belleville Area College in Illinois.

Cartwright takes on engineering and purchasing responsibility for Peabody Western's Arizona, Colorado and Montana operations. He succeeds Frank Farnsworth, who has elected to retire.

"It's been fun to be associated with this group," said Cartwright. "I feel fortunate that in my new role, I'll be able to continue to support Arizona's efforts as well as other Peabody Western operations."

Cartwright has more than 20 years of mine engineering and management experience. In 1993, he joined the Peabody Group as general manager for Rio Escondido Coal Company near Eagle Pass, Texas. He served two years in the same capacity for the Arizona Business Unit.

Raised in Camdenton, Mo., Cartwright earned a bachelor's degree in mining engineering from the University of Missouri at Rolla. ■

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Volume 2 Issue 3 March 1996

Wildlife research supported

Peabody Western has made a significant scientific contribution toward



A rare Northern goshawk hen rests with her chick. The species was among numerous confirmed breeders on the Black Mesa.

the quest for a better understanding of Arizona's wildlife population. The company has helped research and identify 90 potential breeding bird species on Black Mesa

for the Arizona Breeding Bird Atlas, a seven-year project coordinated by the Game and Fish Department.

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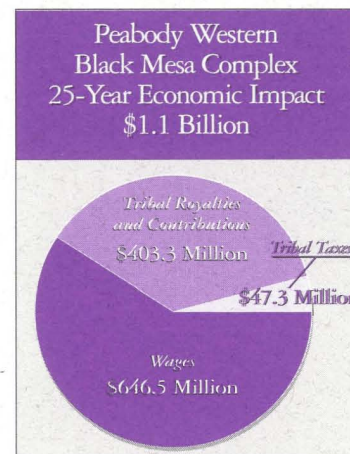
Peabody's economic impact surges past \$1 billion

Peabody Western's Black Mesa mining activities poured more than \$81 million into local tribal economies during the 1995 fiscal year, pushing the company's 25-year economic impact well over the \$1 billion mark.

The Black Mesa mining operation – among the largest private-sector industrial facilities built on an American Indian reservation – has generated more than \$445 million in tribal taxes and royalties to date. This equates to 20 percent and 80 percent of the Navajo Nation and the Hopi Tribe annual operating budgets, respectively.

Employee wages, another factor in the economic equation, exceeded \$646 million during the 25-year period.

"We can see a lot of changes the operations bring to our communities," said Eugene Badonie, Kayenta Unified School District school board member and Kayenta Mine second-shift groundman. "Revenue, taxes and contributions generated by the mines help fund important services." Badonie points to improvements in education, health care and infrastructure as examples.

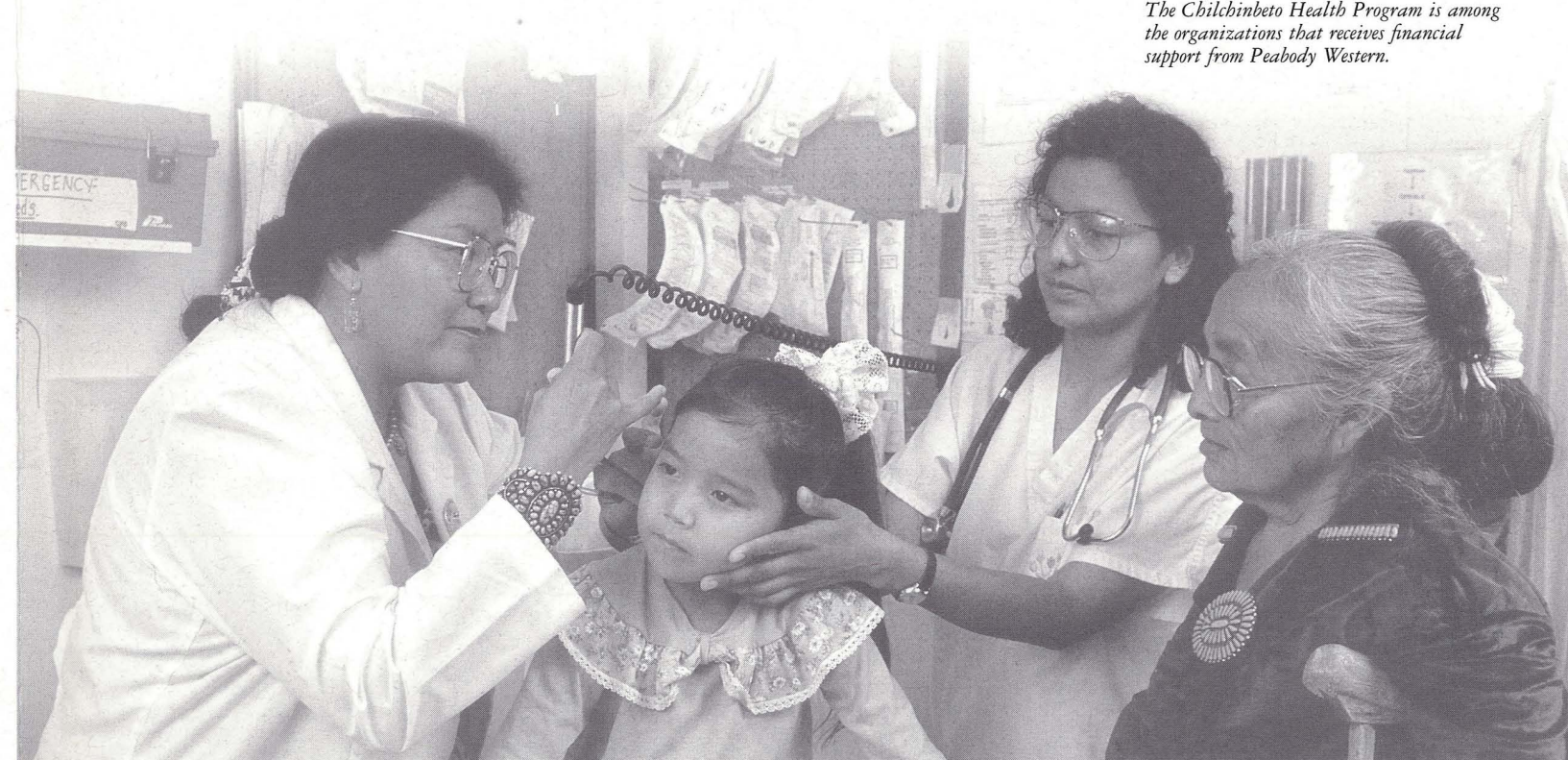


continued on page 4

The Chilchinbeto Health Program is among the organizations that receives financial support from Peabody Western.

PEABODY
WESTERN

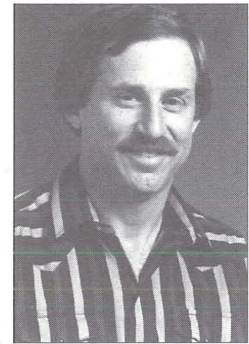
1300 South Yale
Flagstaff, AZ 86001-6385



New leader takes over the helm

Cartwright named engineering director; Williams is successor

Arizona Business Unit General Manager Dan Cartwright has been named engineering director for Peabody Western, paving the way for Scott Williams to take over the helm at the Black Mesa complex.



Dan Cartwright

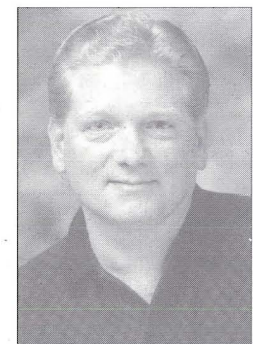
Williams is a 25-year veteran of the Peabody Group of companies and was previously general manager for Seneca Coal Company near Hayden, Colo.

During his six-year tenure there, fellow workers say he earned a reputation as a strong leader who relies on teamwork and communication.

"Scott believes a strong team makes a good foundation for a successful business and that communication builds strong teams," said Brad Brown, the new general manager of Seneca Coal Company. "He gives people the tools they need to succeed and then coaches and motivates them to do their jobs."

Williams has served in a number of operations and management positions, including mine superintendent and general superintendent.

"Scott likes to work hard, but he has fun at the same time," said Roy Karo, Seneca Coal Company Reclamation manager. "The Black Mesa is fortunate to have him."



Scott Williams

continued on page 4

WILDLIFE RESEARCH SUPPORTED continued from page 1

The project – the first of its kind in the state – is using hundreds of volunteers to record and chart the natural history and distribution of more than 280 known Arizona bird species. Few Western states, which are characterized by remote, rugged landscapes, have taken on the monumental task of developing an atlas.

"The monitoring we've conducted will help scientists enhance their knowledge of the diversity of birds in our state," said Environmental Affairs Manager Gary Wendt. "We're making a major contribution to ornithological study and demonstrating our commitment to environmental research."

Field work was done on Black Mesa during a three-year period. Mapping was conducted before sunrise or in late afternoon across a 70 square-mile area representing 11 habitat types. These areas ranged from lower altitude desert and shrub lands to higher mixed woodlands.

While 90 species were identified, 69 were confirmed as breeders by evaluating the behavior of adult birds. Their mannerisms include carrying food or nest material, defending a nest or feigning an injury to draw potential danger away from an area. Nests were discovered in a variety of locations including tree holes, banks, cliffs and even on the ground.

Breeding species ranged from nocturnal and daytime predators to those that feed on nectar, seeds and fruit. The size of birds ranged from the diminutive black-chinned hummingbird to the large great horned owl.

"Many of the birds that nest on Black Mesa are basically isolated," said Chuck LaRue, senior environmental scientist who conducted the charting. "Their nesting requirements restrict them to dense piñon-juniper woodlands growing on the mesa's higher elevations and canyons."

Some of the species reside year-round on the Black Mesa, such as the piñon jay, sage sparrow and American kestrel, while others, like the common nighthawk, leave for wintering grounds in South and Central America.

The more rare, difficult species to confirm included the Northern goshawk and red-breasted nuthatch. "The fact that these birds are primarily distributed in the Rocky Mountains – but are also found on Black Mesa – indicates the uniqueness of the region," said LaRue.

Another unusual discovery was finding a pair of hepatic tanagers nesting northwest of the lease near Navajo Route 41. The reddish-orange birds are common to Mexico and Central America. "It was a real surprise finding the pair so far north," said LaRue.

Peabody Western will submit its findings for inclusion in the atlas project's final statewide results that will be completed in the year 2000.

"Distribution patterns for Western birds have not been thoroughly studied," said LaRue. "The results we share will help build a database that conservation planners can use to clarify the abundance and diversity of Arizona's birds."



American kestrel chicks find a cozy nest. Kestrels are common on the Black Mesa.

Technology improves dragline production

Hourly production for Kayenta Mine's 8750 dragline has improved 24 percent following installation of an onboard monitoring system that enables operators to track their minute-by-minute results.

The prototype has been tested on the 8750 for nine months. It features a sensor-activated display panel mounted inside the cab as well as a wireless data transfer unit for information retrieval and automated reporting at the mine office.

"The system gives us a self-check," said Charlie Harris, 8750 dragline operator who has tested the equipment. "We can see how well we are doing."

The monitor enables operators to set goals and maintain greater consistency in their cycle time because operating statistics are continuously available. An average cycle time is about one bucket per minute, or more than 400 dumps per shift.

Bucket loading, swinging and dumping times are measured, and statistics for swing angle and yards-per-bucket also are generated. Previously, much of the reporting was done manually or by a Servis recorder which primarily measured dragline running time rather than actual production.

"This tool will provide us with more accurate information to measure our results and make decisions on future dragline operating procedures," said Lee Dugi, Kayenta Mine pit supervisor.

Dugi said units will be installed on all four Arizona Business Unit draglines later this summer. ■



Kayenta Mine 8750 Oiler and Relief Operator Joe Nelson uses the dragline monitoring system during his shift. Production has increased about 24 percent since the system was installed.

TQM trainers selected

Continuous improvement training is part of Peabody Western's education plan to ensure all workers understand quality in the same way. Twenty-two individuals have been selected from Kayenta and Black Mesa mines to become Total Quality Management trainers for the last phase of the program.

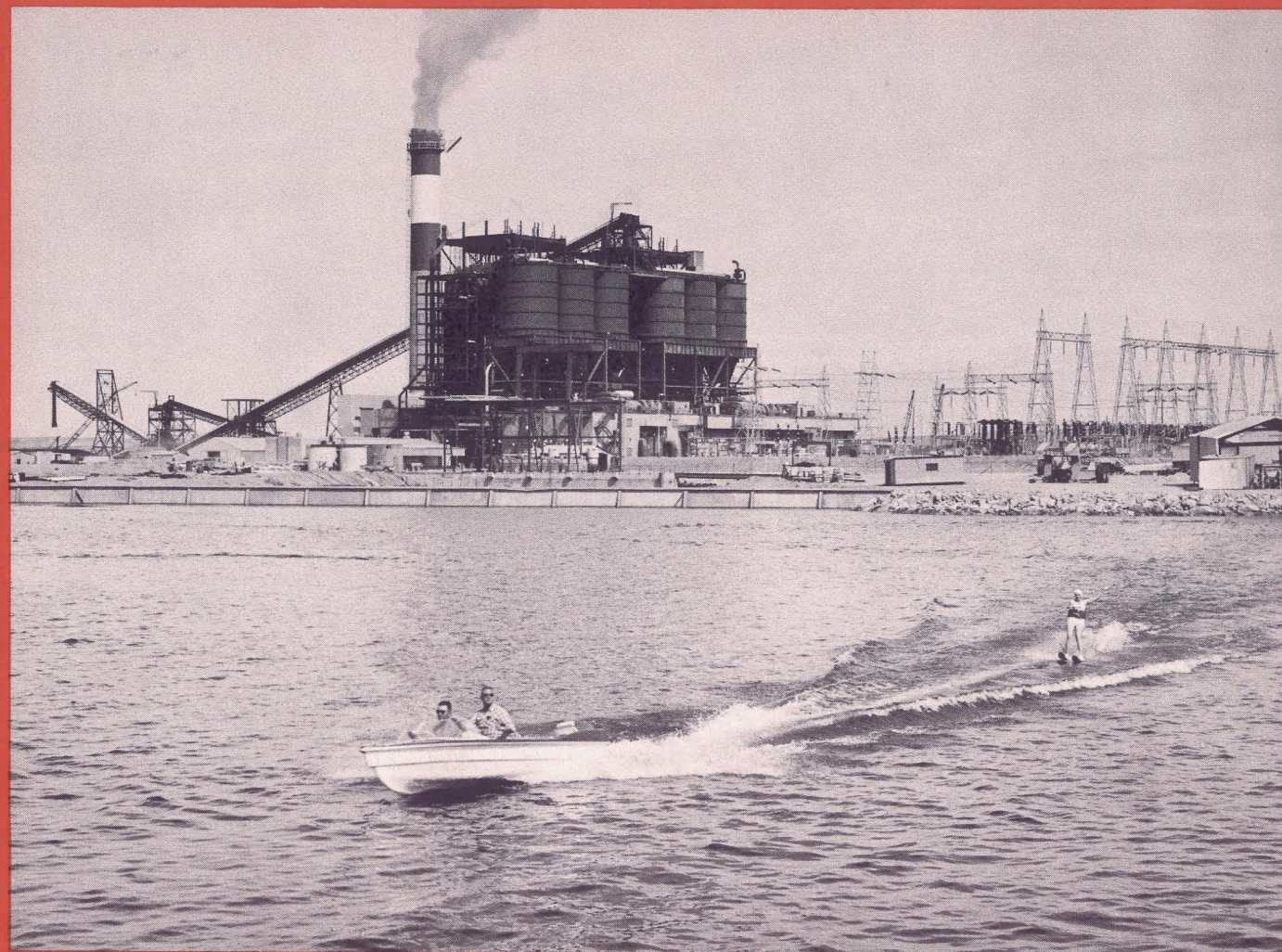
The curriculum includes a common language of quality, awareness and application. It also emphasizes understanding the employee's role in attaining quality and knowledge of a five-step elimination process. Classes are ongoing. New trainers include:

Black Mesa Mine

Tony Benally, safety supervisor
Steve Blomberg, drilling/shooting manager
Doug Botone, production supervisor
Daisy Grandson, senior mine clerk
Barry Grass, production supervisor
Tim Koszela, quality control supervisor
Raymond Laughter, safety supervisor
Erwin Roan, operations trainee
Tully Salt, pit supervisor
Trice Sims, warehouse supervisor
Dave Wauneka, drilling/shooting supervisor
Ed Whitehair, shop supervisor

Kayenta Mine

John Austin Jr., operations trainee
Mike Foley, quality control supervisor
Jerry Frederick, project supervisor
Wayne Hilgedick, production supervisor
Vern Hongeva, electrical manager
Art Kirby, preparation manager
Mike Nelson, lead shop supervisor
Don Ricci, drilling/shooting manager
Jeff Shiflett, heavy equipment manager
Marlene Shondee, mine accounting manager



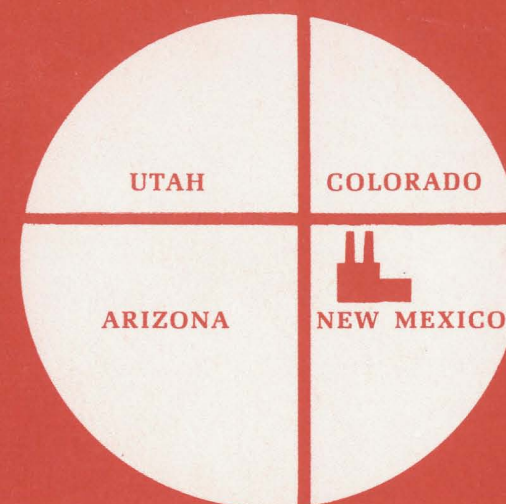
Morgan Lake

To provide water required in the operation of Four Corners Power Plant, an artificial lake backed up by an earth fill dam 6,800 feet long was constructed by the company. The lake covers approximately 1,275 acres to a depth of as much as 100 feet, and is fed by water from the San Juan River about two and one-half miles from the plant site. It required two pumps operating 394 days to fill the reservoir.

People of the Four Corners area will benefit by the creation of a recreation area at this lake. The lake has been stocked with fish and will be utilized for boating and swimming, as well as fishing. The recreational area is under supervision of the Navajo Indian Tribe, which has leased the plant site and coal field to Arizona Public Service and Utah Construction & Mining, respectively.

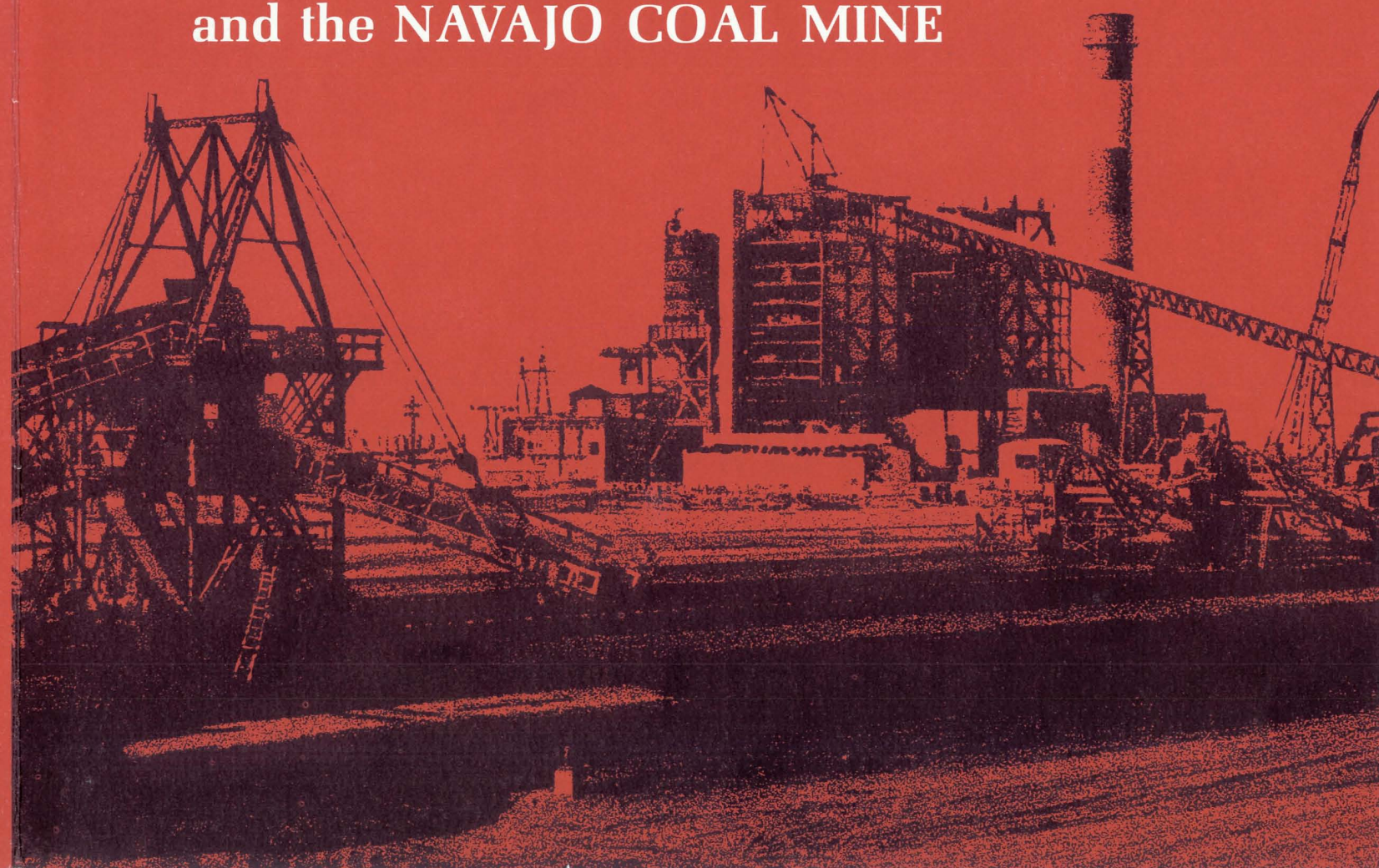


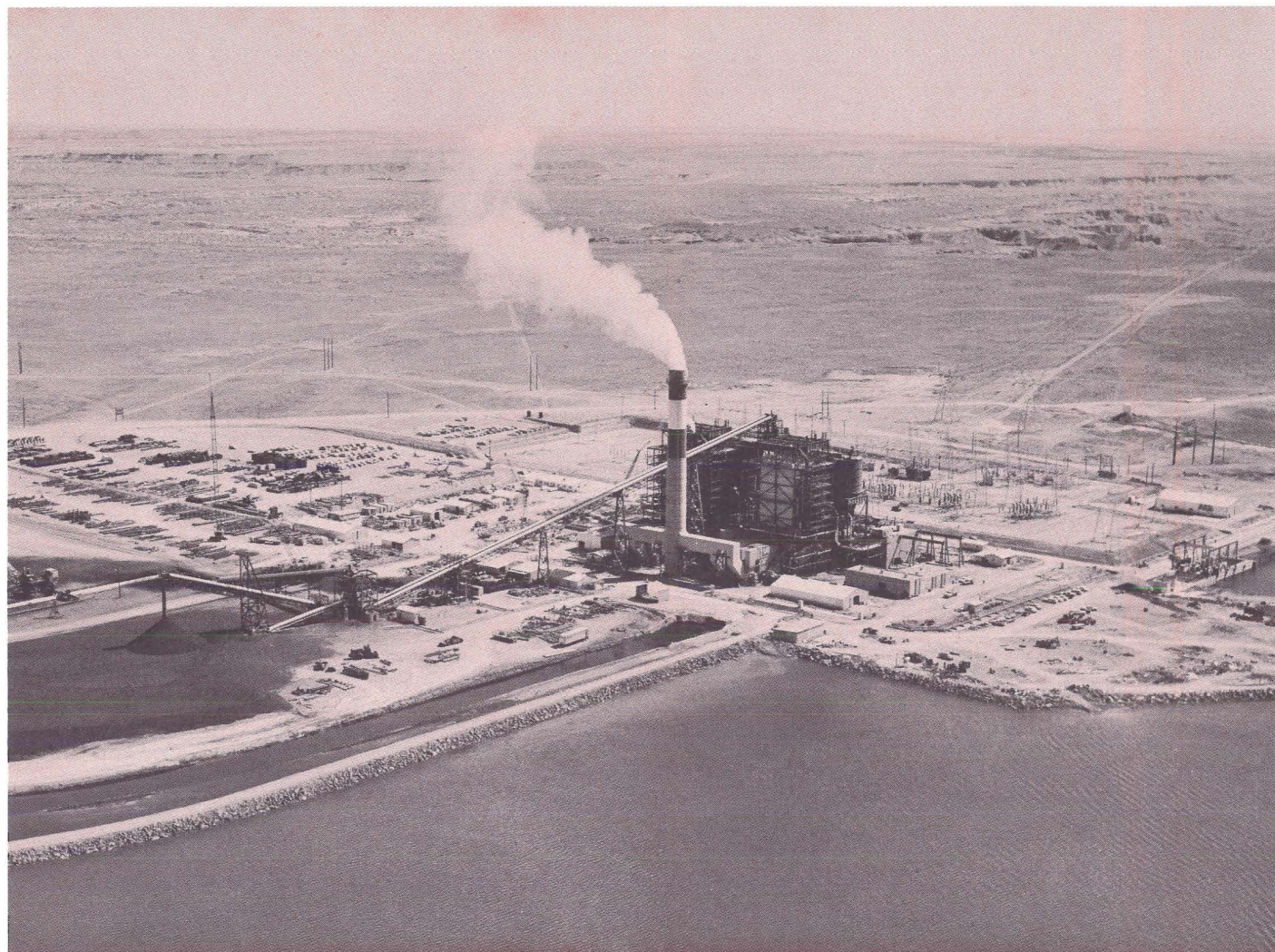
Supplying **ENERGY** for Arizona's Progress



Welcome to

FOUR CORNERS POWER PLANT and the NAVAJO COAL MINE





FOUR CORNERS POWER PLANT...

Arizona Public Service Company's newest and largest kilowatt factory!

Visitors are treated to a rare panoramic view from the top level of this, the largest coal-fired power plant in the West. Just 40 miles northwest lies the only point in the United States common to four state corners. Look closely and you might see parts of all four states from this vantage point.

In the distance to the southwest rise the Chuska Mountains along the Arizona border; 20 miles due west can be seen Shiprock, famous historical marker of early settlers; to the north you can make out mountains in Colorado; and about 22 miles northeast sits Farmington.

Visible near the plant is the Navajo Mine, where Utah Construction & Mining Company

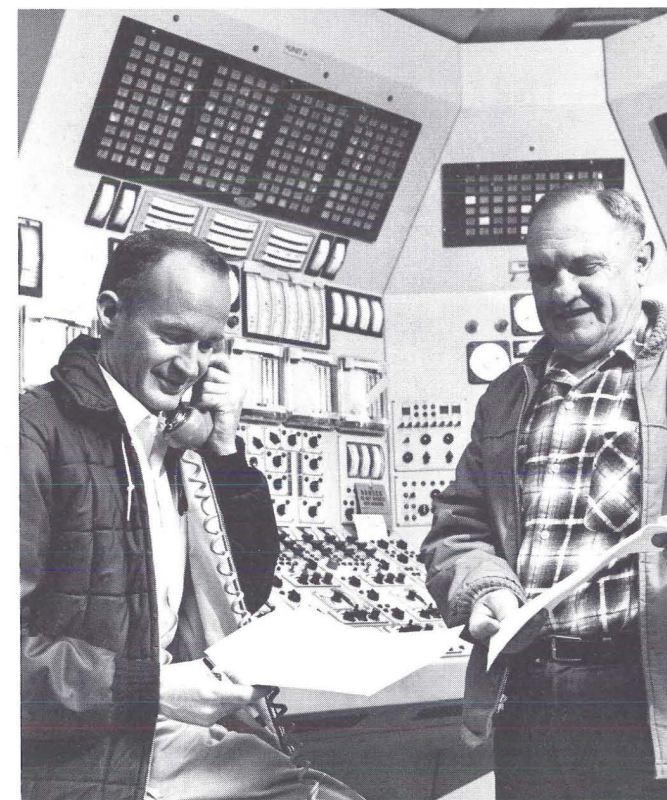
excavates coal for conversion to electrical energy in the power plant. You also can see, in the foreground, the artificial lake that provides cooling water for the plant, and the substation that takes the power from the plant, increases the voltage and sends it streaking toward Phoenix nearly 300 miles away.

A little over two years in the building, Four Corners Plant represents an investment of \$59 million in private capital. Related transmission facilities increase the cost to about \$95 million.

Yet, thanks to modern technology, this big plant can be operated and maintained by a staff of only 40 men—helping supply energy vital to today's progress.

TURBINE-GENERATORS

Steam from the boilers roars against the turbine blades of the turbine-generators, spinning the perfectly-balanced turbines at 3,600 revolutions per minute. The outside edge of the largest turbine blade revolves faster than the speed of sound. The turbines drive huge generators, each producing 175,000 kilowatts of electricity. A third unit now under construction will add 225,000 kilowatts to the plant in 1964. Before its lightning quick journey to customers, the electricity goes through mammoth transformers where the voltage is stepped up from 20,000 volts to 345,000 volts.



CONTROL ROOM

Nerve center of Four Corners Power Plant, the control room contains scores of dials and gauges which automatically inform plant operators of the various phases of operations. From this room, skilled crews of only three men per shift run the entire plant. The control room includes a MARC system (monitor and results computer) which increases the operators' information on plant operations and keeps constant check on plant efficiency.

LABORATORY

Here a chemical control specialist and water analyst check constantly to assure the purity of water used in power production. Lab personnel also includes a fuel specialist who analyzes the coal for heat value, moisture and ash. He checks the coal used at the company's Cholla Power Plant in northeast Arizona, as well as the fuel for Four Corners.

COAL OPERATIONS

The Navajo Mine, eventually to cover a strip approximately 25 miles long and averaging 1 mile wide, produces more than enough fuel to feed the plant's two furnaces 4,200 tons of coal per day. A 40-cubic yard electric dragline, one of the largest in the world, removes overburden from the coal and requires as much electricity in one day as two average families use in an entire year. Forty-ton trucks haul the coal to crushers, where it is reduced to 3/4-inch size. Then the coal, travelling at the rate of 1,000 tons per hour, passes through chutes and gates to enclosed belts which deliver the coal to the plant silos.



power for progress

SURFACE COAL — Peabody Coal Company loading surface mined coal to be used in producing electrical energy.

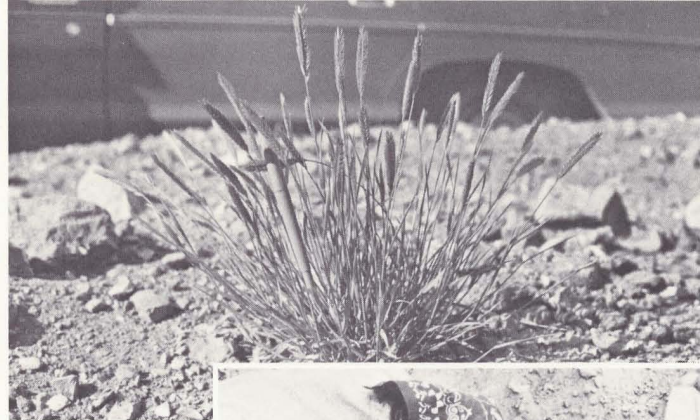


COAL PROCESSING CENTER — The Black Mesa coal processing center, operated by Peabody Coal Company and Black Mesa Pipeline, Inc.

Peabody Coal Company is surface mining coal on Black Mesa, a massive highland in northeast Arizona, on land leased from the Hopi and Navajo Indians. The coal will provide electrical power for Arizona, California and Nevada. Coal is now being moved off Black Mesa via a 275-mile slurry line to the Mohave Power Plant in southern Nevada. A second mine will supply coal for transportation approximately 80 miles by electric railroad unit train to the Navajo Power Plant near Page, Arizona. During a 35-year lease contract with the Hopi and Navajo Indians, Peabody will mine coal from 14,000 coal-bearing acres of 64,858 acres leased. As surface mining progresses, Peabody is continually restoring mined acreage to its original use as forage land through a reclamation program that includes grading the land to a compatible contour and revegetating it. Royalty payments

to the two tribes will be approximately \$100 million during the mining period. During this same period, Navajo and Hopi Indians will hold about 80 per cent of all jobs, and are being paid prevailing wages under Peabody's contract with the United Mine Workers of America. Another benefit of Peabody's mining is the continuing archaeological survey of Black Mesa, in compliance with the Federal Antiquities Act of 1906. A Peabody grant to the Center for Man and Environment of Arizona's Prescott College provides for valuable research into past Indian civilizations. The Prescott College archaeologists began working in 1968, and have located 29 sites considered sufficiently valuable to excavate. The archaeologists in their exploration of areas to be mined, remove scientifically valuable items and preserve them for posterity.

RESEEDING — A close-up view of initial grass growing on reclaimed land which has been surface mined on Black Mesa. A pen indicates relative size.



ARCHAEOLOGY — Students from Arizona's Prescott College recover a Tusayan corrugated vessel from Black Mesa. Peabody Coal Company has given a grant to Prescott College for the archaeological research.



PEABODY COAL COMPANY

St. Louis, Missouri 63102

A subsidiary of Kennecott Copper Corporation

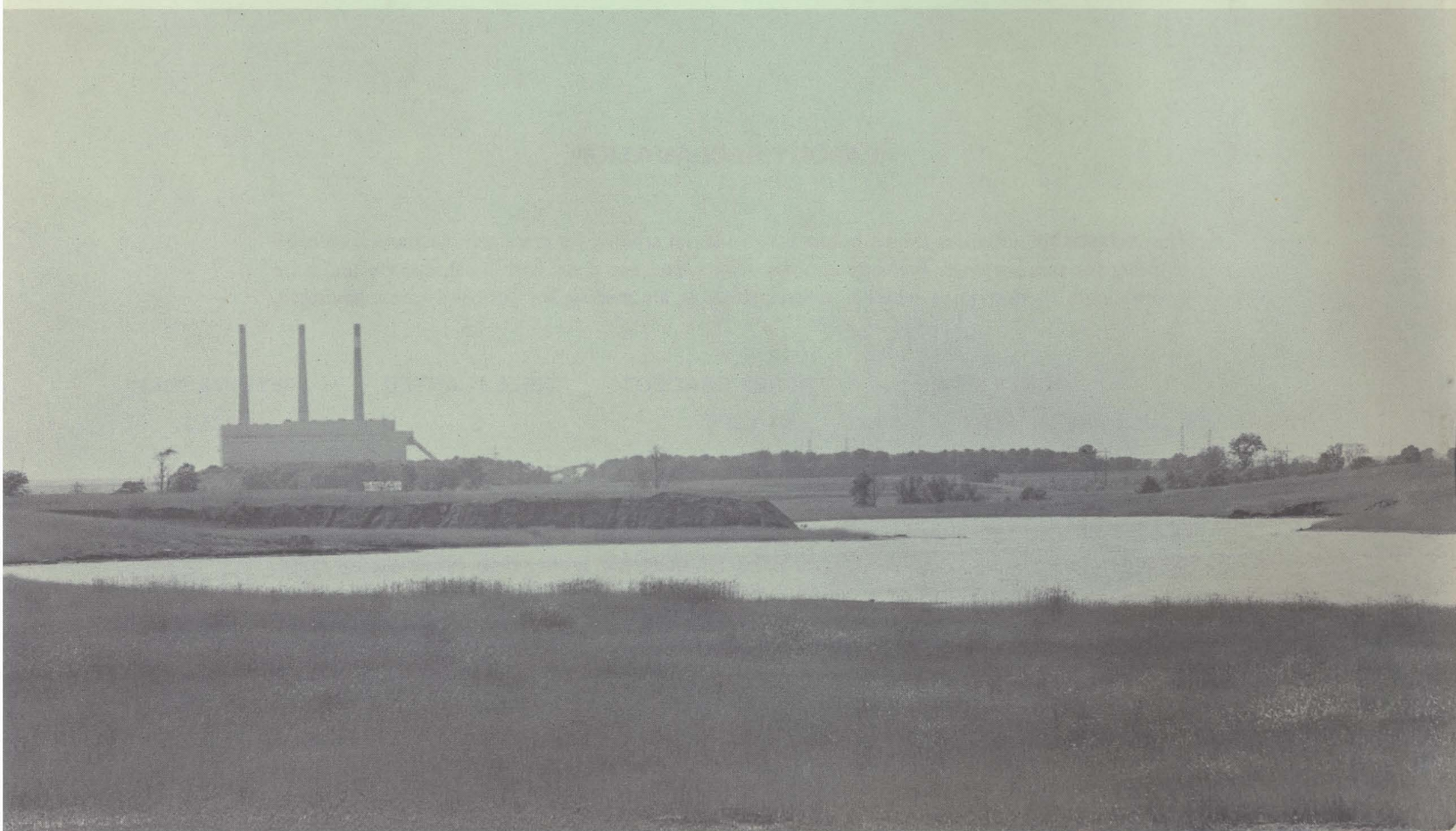
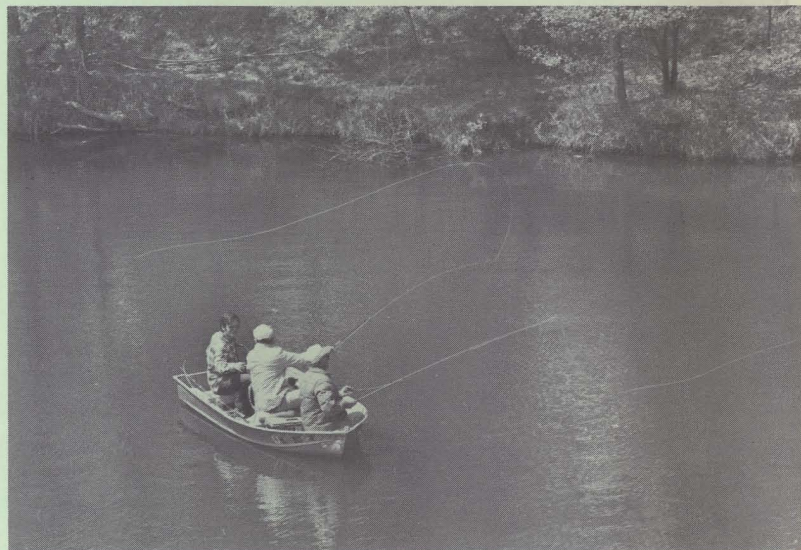


SURFACE MINING AND RECLAMATION

(left) Giant 20-story stripping shovel at River King #6 near Marissa, Illinois, uncovers approximately 9000 tons of coal every 24 hour working day!

(below center) Outdoor Writers enjoy day of fishing on strip mine lake created by stripping machinery near Farmington, Illinois.

(bottom) Illinois Power Baldwin Generating Station surrounded by reclaimed pasture land and strip mine lakes.



ECONOMIC INPUT 1977

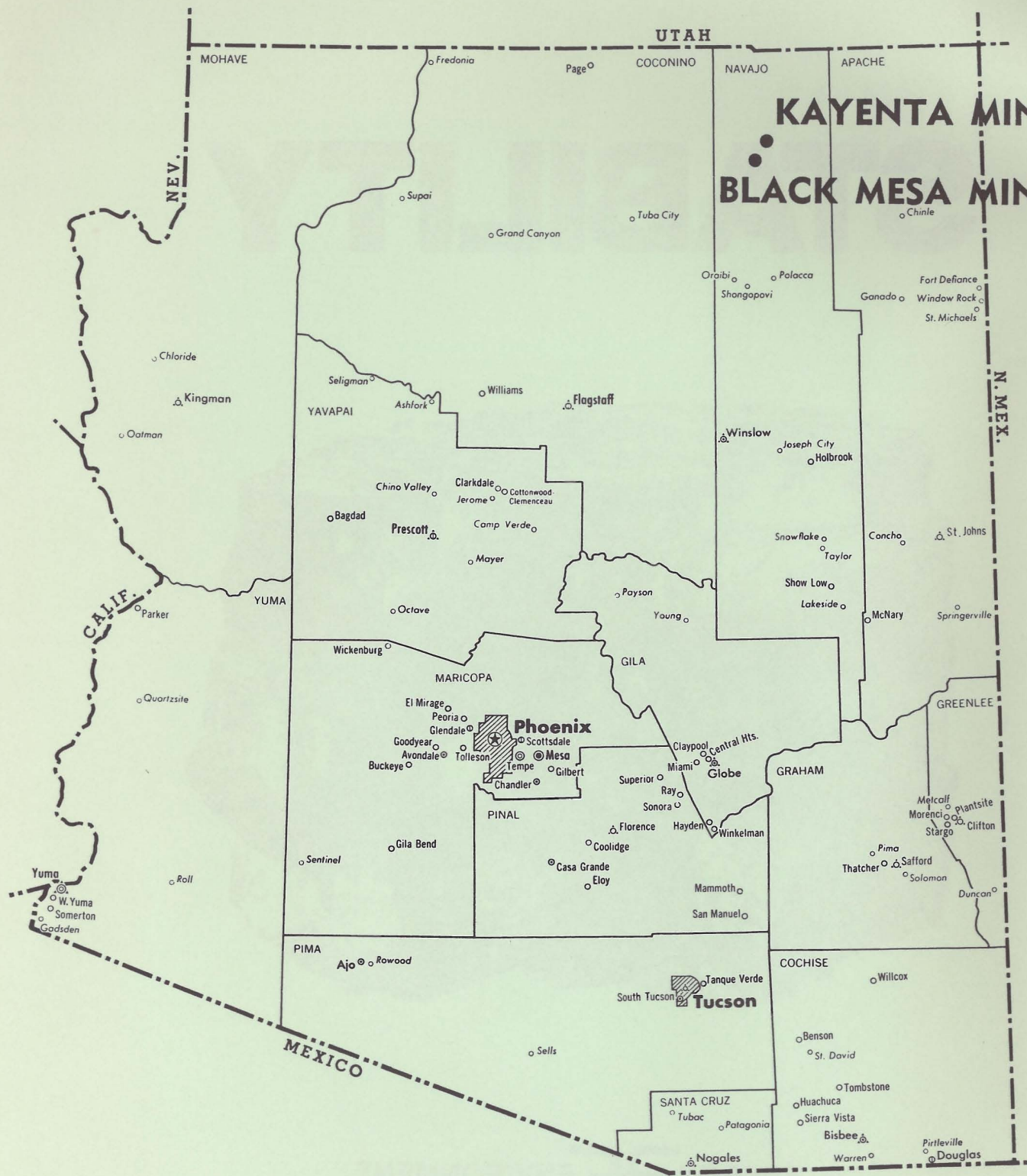
STABILITY



ENERGY **3E** ENVIRONMENT

PEABODY COAL COMPANY

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PEABODY ACTIVE MINES
ARIZONA -1977

PEABODY ECONOMIC INPUT

The following figures graphically portray Peabody's importance to the local economy.

The figures representing payroll and goods and services have a hidden benefit. This economic input creates continued prosperity through service jobs, local retail purchases, and personal taxes.

Goods and services on a ton produced will also vary because of the nature of the local mining situation, e.g. underground mining, nature of equipment required, etc.

MINE	TONS	EMPLOYEES	PAYROLL	TAXES	GOODS/ SERVICES
Black Mesa	4,428,000	367	\$ 6,942,000	\$ 458,000	\$ 8,151,000
Kayenta	6,898,000	478	9,123,000	2,592,000	13,794,000
TOTAL (Arizona)	11,326,000	845	\$16,065,000	\$3,050,000	\$21,945,000

It's a fact . . . if all of the 11,326,000 tons produced in Arizona by Peabody was consumed by your electric utility, it would generate enough electricity to run 33,000 average residential homes for 113 years.

PEABODY RECLAMATION

The reclamation activities shown below involve aerial seeding for grass and mechanical or hand planting for tree seedings. Peabody coordinates its land use plans with local, county and state governments to determine whether reforestation or air seeding for pasture is most advisable.

	ACRES MINED	ACRES GRADED *	TREES PLANTED	SEEDING (lbs.)
ARIZONA (all mines)	759	483	0	0

*Several factors can cause variances between acres mined and acres graded. These variances include different land uses, weather conditions, local mining situations requiring grading lag behind actual mining operations, extra work on some old spoils, acres preserved for water impoundments, open pits reserved for mine waste, etc.

Arkansas - 1977

PEABODY ECONOMIC INPUT

The following figures graphically portray Peabody's importance to the local economy.

The figures representing payroll and goods and services have a hidden benefit. This economic input creates continued prosperity through service jobs, local retail purchases, and personal taxes.

Goods and services on a ton produced will also vary because of the nature of the local mining situation, e.g. underground mining, nature of equipment required, etc.



PEABODY ACTIVE MINES ARKANSAS - 1977

MINE	TONS	EMPLOYEES	PAYROLL	TAXES	GOODS/ SERVICES
Ozark	92,000	33	\$699,000	\$74,000	\$875,000

It's a fact . . . if all of the 92,000 tons produced in Arkansas by Peabody was consumed by your electric utility, it would generate enough electricity to run 33,000 average residential homes for one year.

PEABODY RECLAMATION

The reclamation activities shown below involve aerial seeding for grass and mechanical or hand planting for tree seedings. Peabody coordinates its land use plans with local, county and state governments to determine whether reforestation or aid seeding for pasture is most advisable.

	ACRES MINED	ACRES GRADED*	TREES PLANTED	SEEDING (lbs.)
ARKANSAS (all mines)	69	57	0	2,500

*Several factors can cause variances between acres mined and acres graded. These variances include different land uses, weather conditions, local mining situations requiring grading lag behind actual mining operations, extra work on some old spoils, acres preserved for water impoundments, open pits reserved for mine waste, etc.

Colorado - 1977

PEABODY ECONOMIC INPUT

The following figures graphically portray Peabody's importance to the local economy.

The figures representing payroll and goods and services have a hidden benefit. This economic input creates continued prosperity through service jobs, local retail purchases, and personal taxes.

Goods and services on a ton produced will also vary because of the nature of the local mining situation, e.g. underground mining, nature of equipment required, etc.

MINE	TONS	EMPLOYEES	PAYROLL	TAXES	GOODS/ SERVICES
Nucla	94,000	23	\$ 429,000	\$ 39,000	\$ 467,000
Seneca	1,312,000	60	1,110,000	200,000	2,082,000
TOTAL (Colorado)	1,406,000	83	\$1,539,000	\$239,000	\$2,549,000

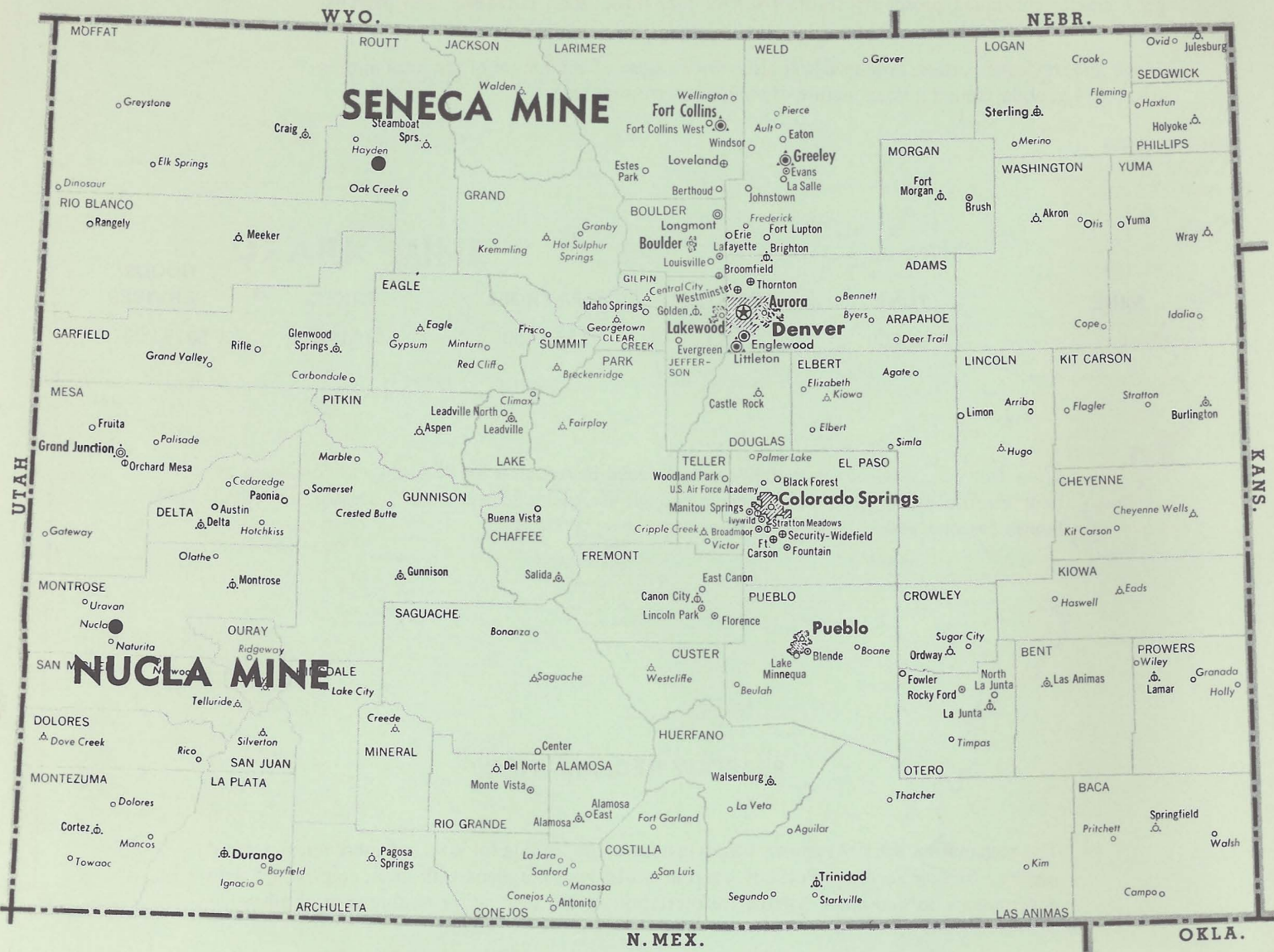
It's a fact . . . if all of the 1,406,000 tons produced in Colorado by Peabody was consumed by your electric utility, it would generate enough electricity to run 33,000 average residential homes for 15 years.

PEABODY RECLAMATION

The reclamation activities shown below involve aerial seeding for grass and mechanical or hand planting for tree seedings. Peabody coordinates its land use plans with local, county and state governments to determine whether reforestation or air seeding for pasture is most advisable.

	ACRES MINED	ACRES GRADED*	TREES PLANTED	SEEDING (lbs.)
COLORADO (all mines)	126	134	0	2,050

*Several factors can cause variances between acres mined and acres graded. These variances include different land uses, weather conditions, local mining situations requiring grading lag behind actual mining operations, extra work on some old spoils, acres preserved for water impoundments, open pits reserved for mine waste, etc.



PEABODY ACTIVE MINES COLORADO - 1977

PEABODY ECONOMIC INPUT

The following figures graphically portray Peabody’s importance to the local economy.

The figures representing payroll and goods and services have a hidden benefit. This economic input creates continued prosperity through service jobs, local retail purchases, and personal taxes.

Goods and services on a ton produced will also vary because of the nature of the local mining situation, e.g. underground mining, nature of equipment required, etc.

MINE	TONS	EMPLOYEES	PAYROLL	TAXES	GOODS/ SERVICES
Surface					
Eagle	531,000	182	\$ 3,245,000	\$ 484,000	\$ 4,212,000
River King 3	450,000	76	2,034,000	756,000	2,471,000
River King 6	2,297,000	399	8,689,000	1,325,000	15,488,000
Will Scarlet	531,000	175	3,114,000	411,000	5,185,000
TOTAL (Surface)	3,809,000	832	17,082,000	2,976,000	27,356,000
Underground					
Baldwin	1,982,000	513	10,546,000	1,015,000	7,648,000
Eagle	1,076,000	613	9,814,000	1,009,000	7,451,000
Mine 10	2,808,000	908	16,488,000	1,691,000	15,223,000
River King 1	1,776,000	585	10,652,000	1,163,000	9,055,000
TOTAL (Underground)	7,642,000	2,619	47,500,000	4,878,000	39,377,000
TOTAL (Illinois)	11,451,000	3,451	\$64,582,000	\$7,854,000	\$66,733,000

It’s a fact . . . if all of the 11,451,000 tons produced in Illinois by Peabody was consumed by your electric utility, it would generate enough electricity to run 33,000 average residential homes for 115 years.

PEABODY RECLAMATION

The reclamation activities shown below involve aerial seeding for grass and mechanical or hand planting for tree seedings. Peabody coordinates its land use plans with local, county and state governments to determine whether reforestation or air seeding for pasture is most advisable.

	ACRES MINED	ACRES GRADED*	TREES PLANTED	SEEDING (lbs.)
ILLINOIS (all mines)	762	520	158,000	40,968

*Several factors can cause variances between acres mined and acres graded. These variances include different land uses, weather conditions, local mining situations requiring grading lag behind actual mining operations, extra work on some old spoils, acres preserved for water impoundments, open pits reserved for mine waste, etc.

- Surface:
- 1. Eagle
 - 2. River King 3
 - 3. River King 6
 - 4. Will Scarlet

- Underground:
- A. Baldwin
 - B. Eagle 2
 - C. Mine 10
 - D. River King 1

PEABODY
ACTIVE MINES
ILLINOIS
1977



Indiana - 1977

Surface:

- 1. Dugger
- 2. Hawthorn
- 3. Latta
- 4. Lynnville 1
- 5. Lynnville 2
- 6. Squaw Creek
- 7. Universal

Underground:

- A. Spur



PEABODY
ACTIVE MINES
INDIANA
1977

PEABODY ECONOMIC INPUT

The following figures graphically portray Peabody's importance to the local economy.

The figures representing payroll and goods and services have a hidden benefit. This economic input creates continued prosperity through service jobs, local retail purchases, and personal taxes.

Goods and services on a ton produced will also vary because of the nature of the local mining situation, e.g. underground mining, nature of equipment required, etc.

MINE	TONS	EMPLOYEES	PAYROLL	TAXES	GOODS/ SERVICES
Surface					
Dugger	654,000	123	\$ 2,819,000	\$ 359,000	\$ 6,663,000
Hawthorn	851,000	166	3,343,000	331,000	6,548,000
Latta	914,000	125	2,892,000	315,000	4,232,000
Lynnville 1	3,008,000	415	8,596,000	873,000	14,902,000
Lynnville 2	357,000	39	1,149,000	84,000	1,851,000
Squaw Creek	1,248,000	258	4,514,000	396,000	5,099,000
Universal	2,377,000	222	4,199,000	799,000	9,011,000
TOTAL (Surface)	9,409,000	1,348	27,512,000	3,157,000	48,306,000
Underground					
Spur	409,000	127	2,190,000	215,000	2,140,000
TOTAL (Indiana)	9,818,000	1,475	\$29,702,000	\$3,372,000	\$50,446,000

It's a fact . . . if all of the 9,818,000 tons produced in Indiana by Peabody was consumed by your electric utility, it would generate enough electricity to run 33,000 average residential homes for 98 years.

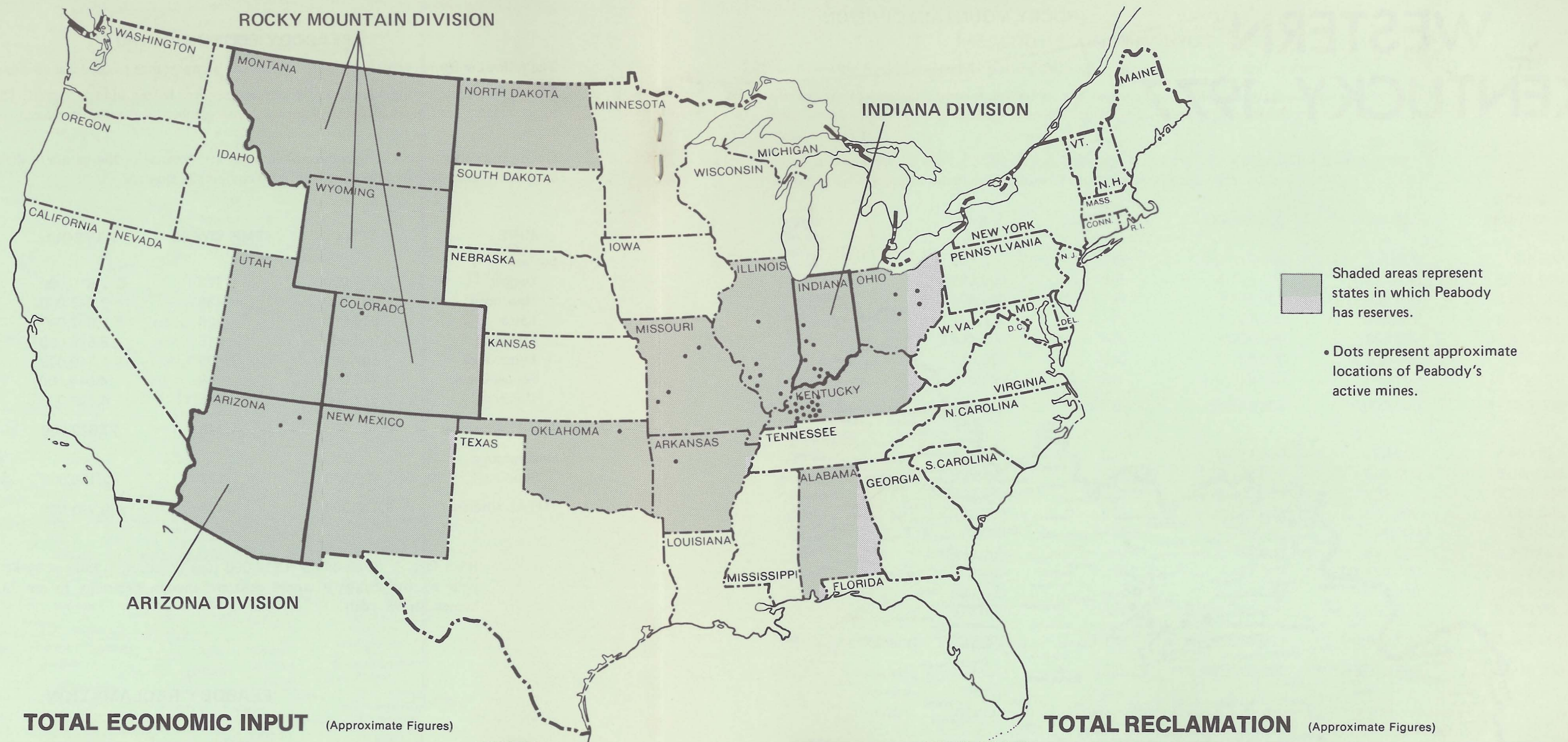
PEABODY RECLAMATION

The reclamation activities shown below involve aerial seeding for grass and mechanical or hand planting for tree seedings. Peabody coordinates its land use plans with local, county and state governments to determine whether reforestation or air seeding for pasture is most advisable.

	ACRES MINED	ACRES GRADED*	TREES PLANTED	SEEDING (lbs.)
INDIANA (all mines)	1,485	1,348	260,150	93,800

*Several factors can cause variances between acres mined and acres graded. These variances include different land uses, weather conditions, local mining situations requiring grading lag behind actual mining operations, extra work on some old spoils, acres preserved for water impoundments, open pits reserved for mine waste, etc.

PEABODY ACTIVE MINES in the UNITED STATES -1977



TOTAL ECONOMIC INPUT (Approximate Figures)

STATE	TONS	EMPLOYEES	PAYROLL	TAXES	GOODS/ SERVICES
ARIZONA	11,326,000	845	\$ 16,065,000	\$ 3,050,000	\$ 21,945,000
ARKANSAS	92,000	33	699,000	74,000	875,000
COLORADO	1,406,000	83	1,539,000	239,000	2,549,000
ILLINOIS	11,451,000	3,451	64,582,000	7,854,000	66,733,000
INDIANA	9,818,000	1,475	29,702,000	3,372,000	50,446,000
KENTUCKY	20,033,000	5,238	92,013,000	8,974,000	85,278,000
MISSOURI	2,815,000	545	11,654,000	1,121,000	14,834,000
MONTANA	2,344,000	87	1,620,000	285,000	1,766,000
OHIO	3,582,000	1,264	19,607,000	2,166,000	10,060,000
OKLAHOMA	1,587,000	206	4,156,000	369,000	5,371,000
TOTAL	64,454,000	13,227	\$241,637,000	\$27,504,000	\$259,857,000

TOTAL RECLAMATION (Approximate Figures)

	ACRES MINED	ACRES GRADED*	TREES PLANTED	SEEDING (lbs.)
ARIZONA	759	483	—	—
ARKANSAS	69	57	—	2,500
COLORADO	126	134	—	2,050
ILLINOIS	762	520	158,000	40,968
INDIANA	1,485	1,348	260,150	93,800
KENTUCKY	1,098	1,141	1,902,681	179,559
MISSOURI	957	836	51,500	50,184
MONTANA	69	70	300	4,024
OHIO	556	349	251,800	69,443
OKLAHOMA	1,038	1,329	—	28,450
TOTALS	6,919	6,267	2,624,431	470,978

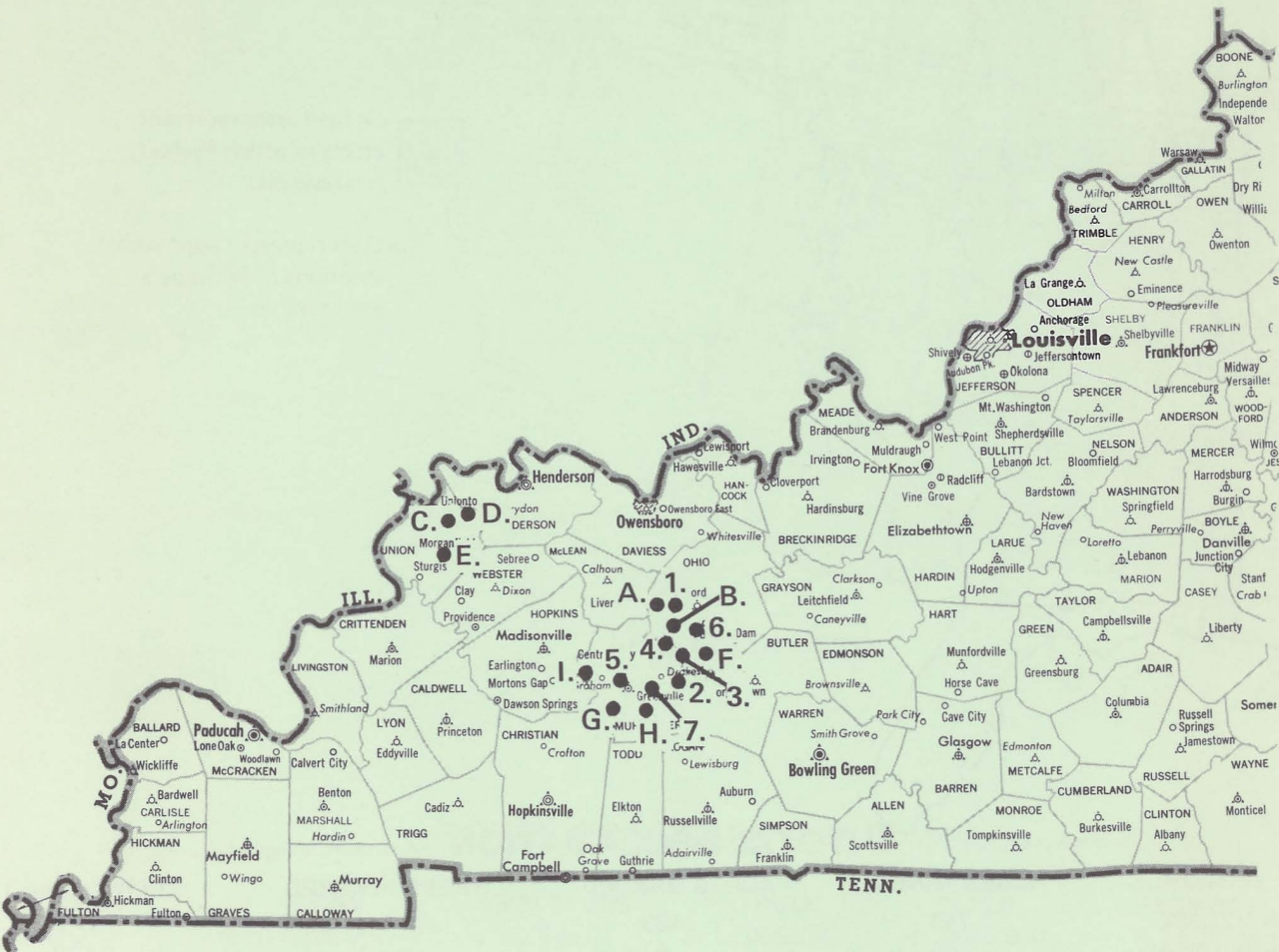
The above figures graphically portray Peabody's importance to the local economy. The figures representing payroll and goods and services have a hidden benefit. This economic input creates continued prosperity through service jobs, local retail purchases, and personal taxes.

Goods and services on a ton produced will also vary because of the nature of the local mining situation, e.g. underground mining, nature of the equipment required, etc.

The reclamation activities shown above involve aerial seeding for grass and mechanical or hand planting for tree seedings. Peabody coordinates its reclamation plans with local, county and state governments before mining begins to determine the best land use after mining. Some areas require recreation lands with lakes. Others may need farm or grazing lands or reforestation.

*Several factors can cause variances between acres mined and acres graded. These variances include state laws, different land uses, weather conditions, local mining situations requiring grading lag behind actual mining operations, extra work on some old spoils, acres reserved for fresh water lakes, open pits reserved for deposit of mine waste before filling in, etc.

PEABODY ACTIVE MINES
WESTERN
KENTUCKY - 1977



- Surface:**
- 1. Alston
 - 2. Homestead
 - 3. Ken
 - 4. Martwick
 - 5. River Queen
 - 6. Riverview
 - 7. Sinclair

- Underground:**
- A. Alston 3
 - B. Alston 4
 - C. Camp 1
 - D. Camp 2
 - E. Camp 11
 - F. Ken
 - G. River Queen
 - H. Sinclair
 - I. Star

Kentucky - 1977

PEABODY ECONOMIC INPUT

The following figures graphically portray Peabody's importance to the local economy.

The figures representing payroll and goods and services have a hidden benefit. This economic input creates continued prosperity through service jobs, local retail purchases, and personal taxes.

Goods and services on a ton produced will also vary because of the nature of the local mining situation, e.g. underground mining, nature of equipment required, etc.

MINE	TONS	EMPLOYEES	PAYROLL	TAXES	GOODS/ SERVICES
Surface					
Alston	477,000	145	\$ 2,113,000	\$ 214,000	\$ 3,492,000
Homestead	2,223,000	185	4,166,000	391,000	6,835,000
Ken	998,000	187	2,739,000	364,000	3,863,000
Martwick	717,000	75	2,227,000	279,000	2,271,000
River Queen	2,875,000	408	8,200,000	863,000	11,510,000
Riverview	543,000	142	2,788,000	319,000	3,055,000
Sinclair	2,676,000	370	7,830,000	849,000	10,960,000
TOTAL (Surface)	10,509,000	1,512	30,063,000	3,279,000	41,986,000
Underground					
Alston 3	798,000	520	8,327,000	788,000	4,953,000
Alston 4	805,000	554	9,162,000	856,000	5,090,000
Camp 1	1,860,000	502	8,743,000	821,000	7,269,000
Camp 2	1,477,000	517	9,071,000	841,000	7,061,000
Camp 11	61,000	133	785,000	64,000	751,000
Ken	1,164,000	369	6,751,000	573,000	5,310,000
River Queen	892,000	300	5,492,000	456,000	3,112,000
Sinclair	949,000	360	5,374,000	570,000	3,611,000
Star	1,518,000	471	8,245,000	726,000	6,135,000
TOTAL (Underground)	9,524,000	3,726	61,950,000	5,695,000	43,292,000
TOTAL (Kentucky)	20,033,000	5,238	\$92,013,000	\$8,974,000	\$85,278,000

It's a fact . . . if all of the 20,033,000 tons produced in Kentucky by Peabody was consumed by your electric utility, it would generate enough electricity to run 33,000 average residential homes for 200 years.

PEABODY RECLAMATION

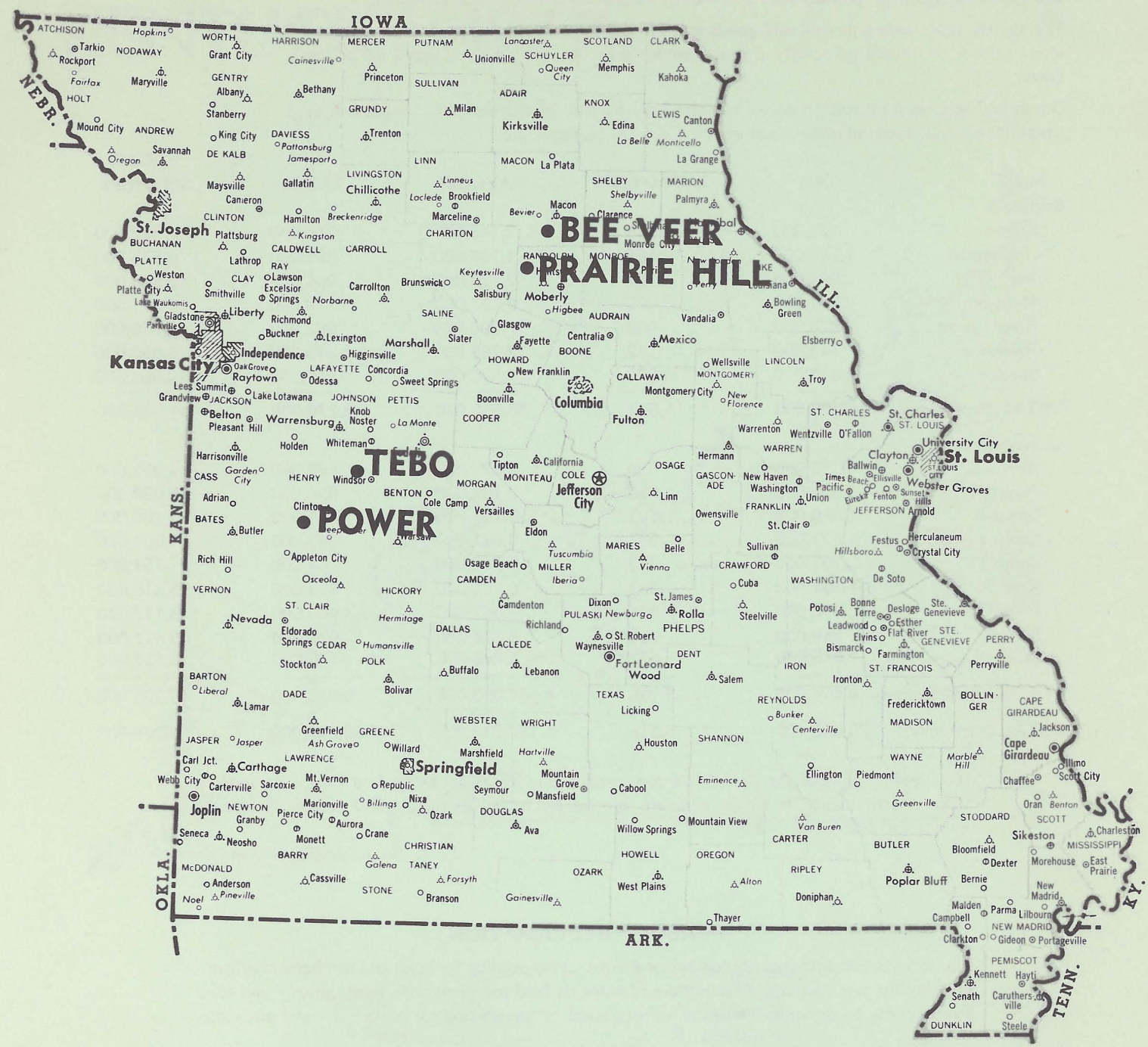
The reclamation activities shown below involve aerial seeding for grass and mechanical or hand planting for tree seedlings. Peabody coordinates its land use plans with local, county and state governments to determine whether reforestation or air seeding for pasture is most advisable.

	ACRES MINED	ACRES GRADED*	TREES PLANTED	SEEDING (lbs.)
KENTUCKY (all mines)	1,098	1,141	1,902,681	179,559

*Several factors can cause variances between acres mined and acres graded. These variances include different land uses, weather conditions, local mining situations requiring grading lag behind actual mining operations, extra work on some old spoils, acres preserved for water impoundments, open pits reserved for mine waste, etc.

Above figures approximate

Missouri - 1977



PEABODY ACTIVE MINES MISSOURI - 1977

PEABODY ECONOMIC INPUT

The following figures graphically portray Peabody's importance to the local economy.

The figures representing payroll and goods and services have a hidden benefit. This economic input creates continued prosperity through service jobs, local retail purchases, and personal taxes.

Goods and services on a ton produced will also vary because of the nature of the local mining situation, e.g. underground mining, nature of equipment required, etc.

MINE	TONS	EMPLOYEES	PAYROLL	TAXES	GOODS/ SERVICES
Bee Veer	724,000	190	\$ 4,220,000	\$ 392,000	\$ 5,866,000
Power	1,209,000	175	3,647,000	362,000	4,174,000
Prairie Hill	573,000	85	1,754,000	176,000	2,559,000
Tebo	309,000	95	2,033,000	191,000	2,235,000
TOTAL (Missouri)	2,815,000	545	\$11,654,000	\$1,121,000	\$14,834,000

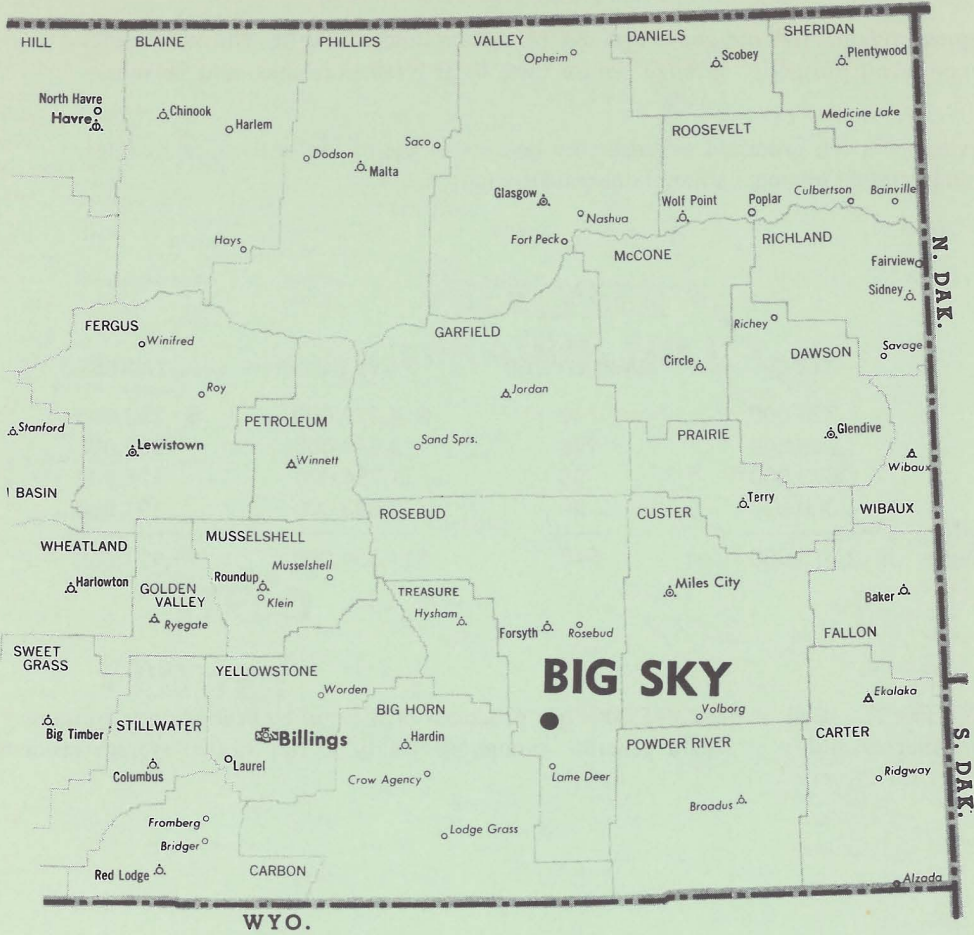
It's a fact . . . if all of the 2,815,000 tons produced in Missouri by Peabody was consumed by your electric utility, it would generate enough electricity to run 33,000 average residential homes for 28 years.

PEABODY RECLAMATION

The reclamation activities shown below involve aerial seeding for grass and mechanical or hand planting for tree seedings. Peabody coordinates its land use plans with local, county and state governments to determine whether reforestation or air seeding for pasture is most advisable.

	ACRES MINED	ACRES GRADED*	TREES PLANTED	SEEDING (lbs.)
MISSOURI (all mines)	957	836	51,500	50,184

*Several factors can cause variances between acres mined and acres graded. These variances include different land uses, weather conditions, local mining situations requiring grading lag behind actual mining operations, extra work on some old spoils, acres preserved for water impoundments, open pits reserved for mine waste, etc.



PEABODY ACTIVE MINES
EASTERN
MONTANA - 1977

PEABODY ECONOMIC INPUT

The following figures graphically portray Peabody's importance to the local economy.

The figures representing payroll and goods and services have a hidden benefit. This economic input creates continued prosperity through service jobs, local retail purchases, and personal taxes.

Goods and services on a ton produced will also vary because of the nature of the local mining situation, e.g. underground mining, nature of equipment required, etc.

MINE	TONS	EMPLOYEES	PAYROLL	TAXES	GOODS/ SERVICES
Big Sky	2,344,000	87	\$1,620,000	\$285,000	\$1,766,000

It's a fact . . . if all of the 2,344,000 tons produced in Montana by Peabody was consumed by your electric utility, it would generate enough electricity to run 33,000 average residential homes for 23 years.

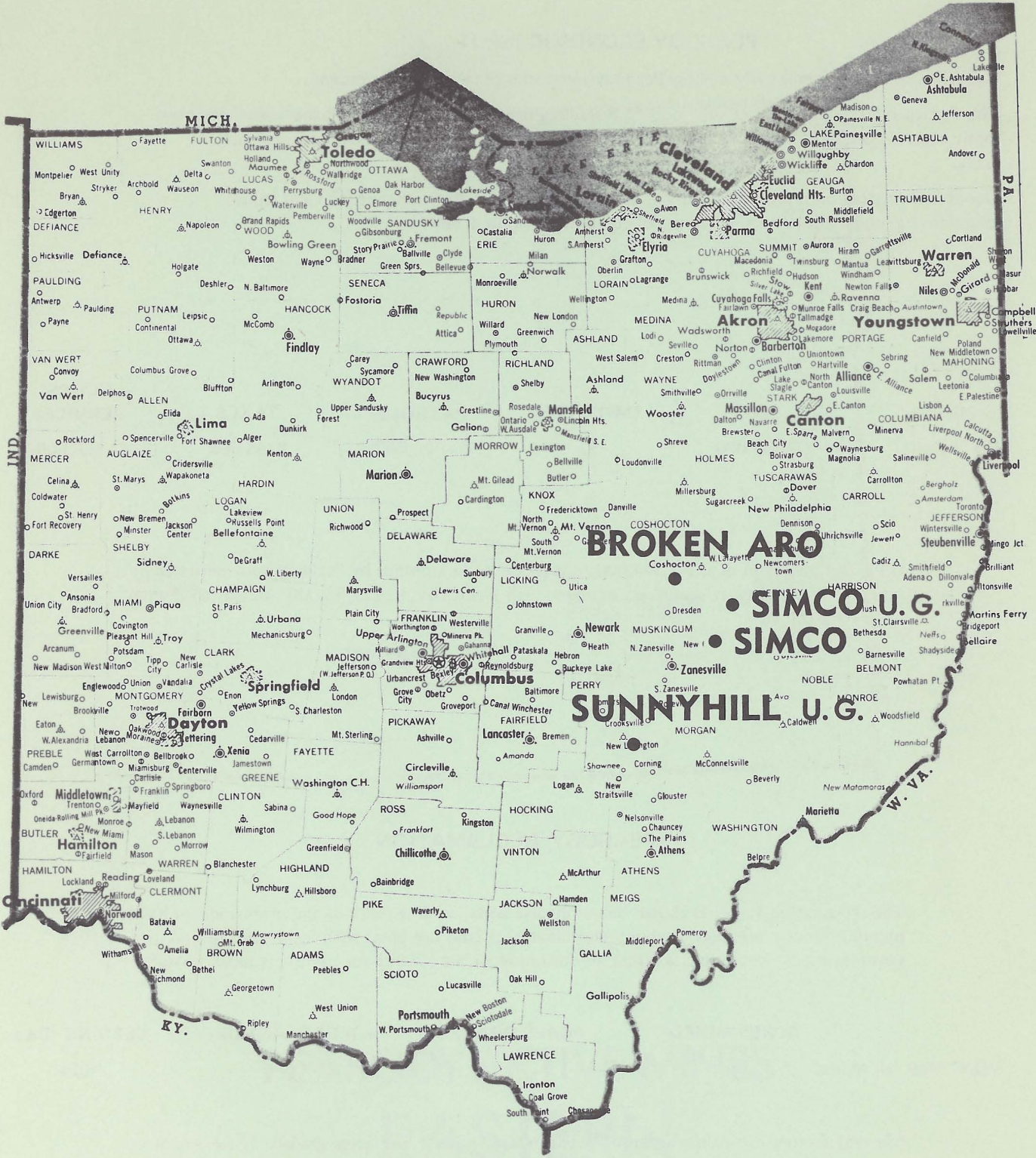
PEABODY RECLAMATION

The reclamation activities shown below involve aerial seeding for grass and mechanical or hand planting for tree seedings. Peabody coordinates its land use plans with local, county and state governments to determine whether reforestation or air seeding for pasture is most advisable.

	ACRES MINED	ACRES GRADED*	TREES PLANTED	SEEDING (lbs.)
MONTANA (all mines)	69	70	300	4,024

*Several factors can cause variances between acres mined and acres graded. These variances include different land uses, weather conditions, local mining situations requiring grading lag behind actual mining operations, extra work on some old spoils, acres preserved for water impoundments, open pits reserved for mine waste, etc.

Ohio -1977



PEABODY ACTIVE MINES
OHIO -1977

PEABODY ECONOMIC INPUT

The following figures graphically portray Peabody's importance to the local economy.

The figures representing payroll and goods and services have a hidden benefit. This economic input creates continued prosperity through service jobs, local retail purchases, and personal taxes.

Goods and services on a ton produced will also vary because of the nature of the local mining situation, e.g. underground mining, nature of equipment required, etc.

MINE	TONS	EMPLOYEES	PAYROLL	TAXES	GOODS/ SERVICES
Surface					
Broken Aro	830,000	135	\$2,501,000	\$292,000	\$1,379,000
Simco	703,000	151	2,312,000	433,000	1,344,000
TOTAL (Surface)	1,533,000	286	4,813,000	725,000	2,723,000
Underground					
Simco	460,000	333	4,940,000	488,000	2,081,000
Sunnyhill	1,589,000	645	9,854,000	953,000	5,256,000
TOTAL (Underground)	2,049,000	978	14,794,000	1,441,000	7,337,000
TOTAL (Ohio)	3,582,000	1,264	\$19,607,000	\$2,166,000	\$10,060,000

It's a fact . . . if all of the 3,582,000 tons produced in Ohio by Peabody was consumed by your electric utility, it would generate enough electricity to run 33,000 average residential homes for 36 years.

PEABODY RECLAMATION

The reclamation activities shown below involve aerial seeding for grass and mechanical or hand planting for tree seedings. Peabody coordinates its land use plans with local, county and state governments to determine whether reforestation or air seeding for pasture is most advisable.

	ACRES MINED	ACRES GRADED *	TREES PLANTED	SEEDING (lbs.)
OHIO (all mines)	556	349	251,800	69,443

*Several factors can cause variances between acres mined and acres graded. These variances include different land uses, weather conditions, local mining situations requiring grading lag behind actual mining operations, extra work on some old spoils, acres preserved for water impoundments, open pits reserved for mine waste, etc.

Oklahoma - 1977

PEABODY ECONOMIC INPUT

The following figures graphically portray Peabody's importance to the local economy.

The figures representing payroll and goods and services have a hidden benefit. This economic input creates continued prosperity through service jobs, local retail purchases, and personal taxes.

Goods and services on a ton produced will also vary because of the nature of the local mining situation, e.g. underground mining, nature of equipment required, etc.

MINE	TONS	EMPLOYEES	PAYROLL	TAXES	GOODS/ SERVICES
Rogers County 2	1,587,000	206	\$4,156,000	\$369,000	\$5,371,000

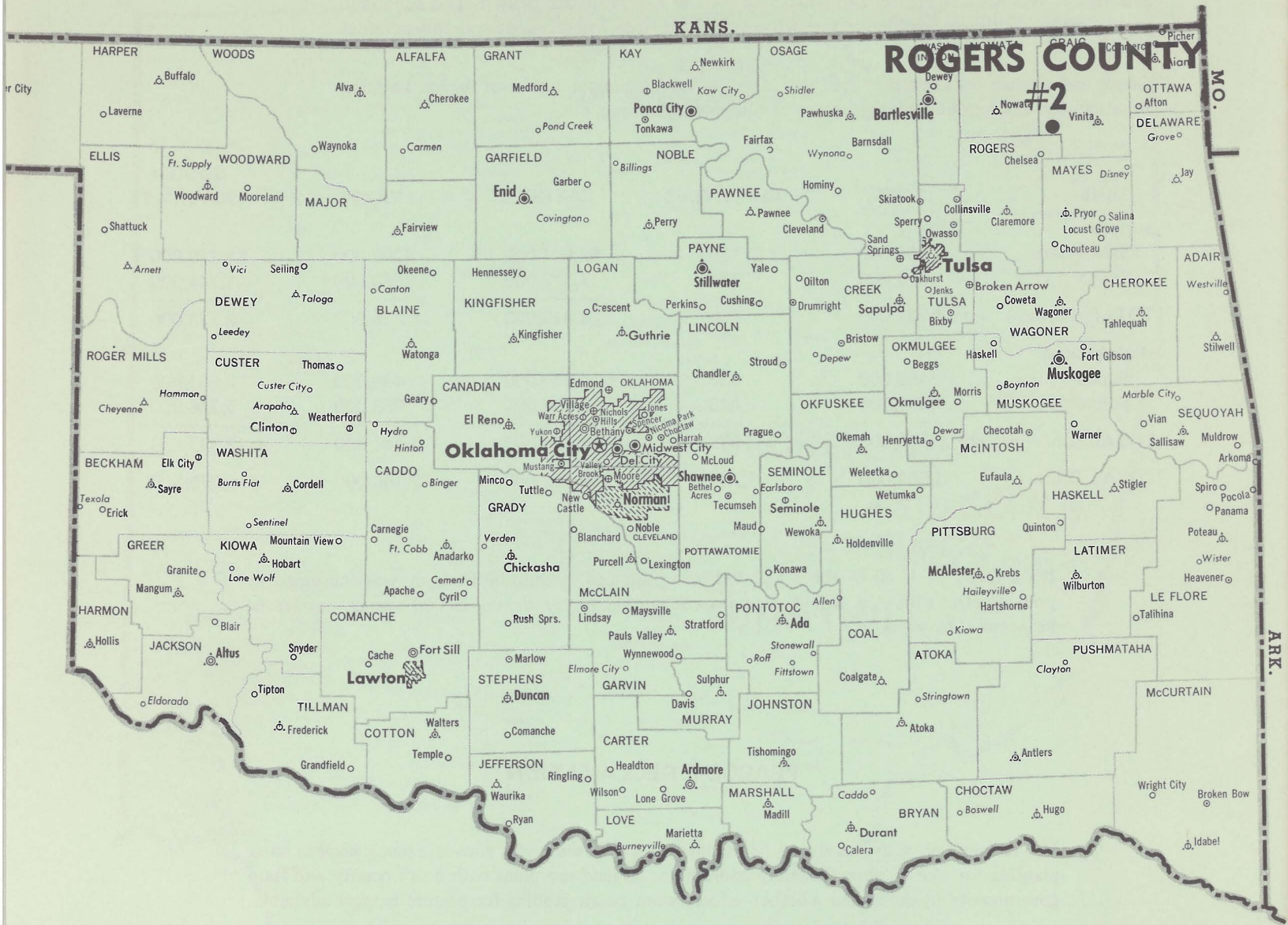
It's a fact . . . if all of the 1,587,000 tons produced in Oklahoma by Peabody was consumed by your electric utility, it would generate enough electricity to run 33,000 average residential homes for 16 years.

PEABODY RECLAMATION

The reclamation activities shown below involve aerial seeding for grass and mechanical or hand planting for tree seedings. Peabody coordinates its land use plans with local, county and state governments to determine whether reforestation or air seeding for pasture is most advisable.

	ACRES MINED	ACRES GRADED*	TREES PLANTED	SEEDING (lbs.)
OKLAHOMA (all mines)	1,038	1,329	0	28,450

*Several factors can cause variances between acres mined and acres graded. These variances include different land uses, weather conditions, local mining situations requiring grading lag behind actual mining operations, extra work on some old spoils, acres preserved for water impoundments, open pits reserved for mine waste, etc.



PEABODY ACTIVE MINES OKLAHOMA - 1977

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Mining Coal on Black Mesa

Peabody Coal Company



Mining Coal on Black Mesa

*Peabody Coal Company
Subsidiary of
Kennecott Copper Corporation*

November 1970

*Peabody General Offices
301 North Memorial Drive
St. Louis, Missouri 63102*

*Peabody Southwest Office
304 Del Webb Building
3800 North Central Avenue
Phoenix, Arizona 85012*

Introduction

Coal mining on a major scale brings a new era to Black Mesa. It means increased activity and change for parts of a highland traditionally used for grazing livestock. It develops an important part of the natural resources of the Navajo and Hopi tribes, making a substantial contribution to their efforts to advance their economic development. Black Mesa coal will have a large role in helping meet the rapidly rising power needs of Arizona and its neighboring states. And growing out of this industrial activity, archaeological research is beginning to put together the first picture of prehistoric life on the mesa.

It is clear that coal cannot be mined without affecting the land and life of Black Mesa. This impact can be kept small and mined land can be returned to traditional uses in a condition similar to its natural state. Through careful grading and planting, it is even possible to make the land more useful than it was originally. Mining operations will not disturb the water supplies now used on the mesa, which are close to the surface. Water for coal transportation will be drawn from separate sources far below the mesa, but these deep reserves will not be significantly reduced. The following pages contain a fuller discussion of these and other matters.

Black Mesa, its inhabitants and its environment are comprehensively protected by the terms of leases between Peabody and the Hopi and Navajo tribes, as well as the laws of the tribes and the United States. Peabody Coal Company intends not only to meet these requirements, but to do all the things which good will and common sense indicate are best for everybody living and working on Black Mesa.

Black Mesa is a highland (at left) used by Indian ranchers to graze sheep, goats and cattle. Native vegetation includes piñon, juniper, sagebrush and grass.

Mining on Black Mesa

Black Mesa is a massive highland in northeast Arizona which rises gently northeast from the Little Colorado River to a peak altitude of 8,110 feet at its northern rim. There, it drops abruptly to the surrounding plain along an uneven wall as high as 2,000 feet. Most of the 2-million-acre mesa is rolling country covered with sagebrush and grass, with piñon and juniper growing along the slopes and ridges. Wildlife is largely limited to rabbits, lizards and snakes. Near the north rim, the highland is broken by canyons which form the beginnings of washes draining to the southwest. The piñon and juniper are denser in the canyons, and they are joined by stands of pine and fir, giving the mesa the dark appearance which leads to its name.

Black Mesa lies on both the Navajo and the Hopi Indian reservations, as well as on land reserved for the joint use of the two tribes. Navajo families graze sheep, goats and cattle on the northern part of the mesa, while Hopis farm the land some 60 miles to the south of the mine.

Just south of the northern rim, Peabody Coal Company has opened a surface mine which began supplying coal in 1970 to the new Mohave electric power plant in southern Nevada. The mine later will be expanded to produce coal for a second power plant, now under construction on the Navajo Reservation at Page, Arizona. Although Indians have mined coal commercially on the mesa, the new Peabody installation represents the first major industrial activity there.

The company is operating under leases with the Navajo and Hopi tribes which award mineral rights on 64,858 acres. There is coal under approximately 14,000 acres, about seven tenths of one percent of Black Mesa, and the tribes have granted Peabody rights to sufficient use of the surface to remove it. The company expects to be mining an average of 400 acres of land in the course of each year of operation. Contracts to supply the power plants run for 35 years.

The leases, in addition to specifying royalties for each tribe, require Peabody to operate in a safe and workmanlike manner and avoid waste on the land. The mined areas must be returned to a condition compatible with the surrounding mesa. All users of Black Mesa water supplies are completely protected. The company will hire as many Navajo and Hopi Indians as it can, pay them prevailing mining wages and work them into higher-level jobs.

The Black Mesa mine has been launched by a firm with long experience in coal production. Founded in 1890, Peabody became a subsidiary of the Kennecott Copper

Corporation in 1968. In addition to Black Mesa, the company operates coal mines in Alabama, Arkansas, Colorado, Illinois, Indiana, Kentucky, Missouri, Montana, Ohio and Oklahoma, as well as in Australia.

Peabody has become the nation's largest coal producer by following a course of innovation in mining, transportation and marketing. The company has pioneered the long-term contracting of coal supplies for electric utilities, a market that today dominates industry sales. Advanced concepts in transportation are reflected in the underground pipeline which will ship coal 275 miles from Black Mesa to the Mohave plant. Peabody also has pioneered in land reclamation, and its Operation Green Earth provides for restoration of all 6,000 acres the company surface mines annually.

The Mohave plant is a 1,500-megawatt installation located in Nevada, near the state's southern tip. It is jointly owned by the Southern California Edison Company, the Los Angeles Department of Water and Power, the Nevada Power Company and the Salt River Project Agricultural Improvement and Power District. Each of the owners will transmit a share of the Mohave power to customers in its service area.

The Navajo Generating Station near Page, Arizona, is being built under a similar arrangement. In this case, the joint owners are the U. S. Bureau of Reclamation, Salt River Project, Los Angeles Department of Water and Power, Arizona Public Service Company, Nevada Power Company and Tucson Gas & Electric Company. Three 770-megawatt units will be installed, to begin operating in 1974, 1975 and 1976.

The two plants produce enough power to meet the normal needs of a city of 3,750,000 people.

Why Coal for Western Power

Large-scale coal mining and the construction of power plants in isolated areas of the West are encouraged by the constantly rising demand for electricity, which has been doubling every 10 years. When participants studied their power needs in the Southwest before launching the Navajo Generating Station project, they discovered they would be short of electricity even with the 2,310 megawatts projected for the Navajo project. Total load with 15% reserves anticipated for 1973 was 10,569 megawatts, while resources were estimated at 10,133 megawatts. For 1976, the requirements were projected as 13,089 megawatts and resources at 12,545 megawatts. Thus, even with the large generating plants being built in the Southwest, utilities serving the area will have to find added sources of power.

Coal is an essential means of meeting this demand. It also is an economically attractive way of supplying energy when compared with the increasing costs of oil, the restricted supply of natural gas and the high cost and uncertain delivery of nuclear power equipment.

The ability of coal to fuel low-cost electricity is diminished when there is a great distance between mine and power plant. The power plant must be adjacent to a cooling water supply and fairly close to the mine if coal is to be economical to use.

Since coal is one of the major natural resources of the Navajo and Hopi Indian reservations, location of several new power plants in the Southwest makes it possible for the tribes to put these resources to work for the 120,000 Navajos and more than 5,000 Hopis who live there. The Black Mesa mine is the fourth to be leased for operation on the reservations, and it joins oil and gas production, forest products, light manufacturing plants and tourism as important elements in the economic development of the tribes. The mine is the first major source of industrial jobs in the western part of the reservations.

Economic Benefits

Distinct economic benefits flow to the Hopi and Navajo tribes generally through the royalty terms of the leases negotiated with the two tribal councils between 1962 and 1966. Peabody met with local councilmen and residents as well as top tribal officials while working out the agreements. They will bring total payments as high as \$3,250,000 a year to the two tribes.

The initial contract, signed February 1, 1964, with the Navajo Tribal Council, covers mineral rights, except for oil and gas, on 24,858 acres within the Navajo Reservation. It calls for Peabody to pay the tribe 25 cents a ton — a higher royalty than had ever been negotiated for coal developed on Indian or public lands — for coal used off the reservation and 20 cents a ton for coal used on the reservation. If the price of coal should rise above \$4 a ton, there is a graduated scale for increasing the royalties. There also are provisions for royalties on uranium and any other valuable minerals Peabody might develop.

Leases covering another 40,000 acres were signed in June, 1966, with the Navajo and Hopi councils. These acres lie within a zone known historically as the Executive Order Area of December 16, 1882. This area, which covers a large part of Black Mesa, was long disputed by the two tribes, but the Federal Courts now have designated it for their joint use. So similar leases have been signed through which each tribe receives half the royalties and

other payments on a scale similar to the earlier Navajo lease. Peabody will pay the tribes \$6.67 for each acre foot of water pumped from the leased area. Other terms of the leases are substantially the same. The leases are for 10 years, but they are automatically extended as long as the company is productively mining the area.

The actual flow of royalties depends on the pace at which the two power plants use the coal. When all units of both plants are completed and operating at peak capacity in 1976, the Mohave plant is expected to consume coal at an annual rate of 5,000,000 tons, and the Navajo plant is scheduled to use 8,000,000 tons a year. If both plants draw the anticipated total of 13,000,000 tons from the area paying a 25-cent royalty, the two tribes will receive \$3,250,000 a year during that period. Royalties will be lower at times when the two power complexes run at less than peak capacity, but the payments will average about \$3,000,000 annually through the anticipated 35-year operating lives of the plants if the plants average 85% of their operating capacity. This will total approximately \$100,000,000.

All three leases were negotiated and executed by the respective tribal councils and received the approval of officials of the U.S. Department of the Interior.

Along with revenues to the Indians, Black Mesa mining operations also will be a source of tax income to the State of Arizona, the county and any special tax districts associated with the area.

Revenues from royalties and other payments go directly to the tribal councils and benefit all members of both tribes. But Peabody's operations on Black Mesa increasingly will bring economic benefits directly to individual Indians as well. The company favors and is committed to hiring qualified Navajos and Hopis and to using Indian contractors whenever it can. Indian employees will receive prevailing industry wages and benefits, and the company has pledged to make a special effort to move them up into skilled technical and other higher-level positions. Indian employment has averaged about 75% of the total work force as Peabody has built up to the 150-man crew required to supply coal to the Mohave plant. When the mines for both plants are in full operation, the work force will increase to 375, with about 80% scheduled to be Indians. Right now, new men are learning on the job, but special courses might be established later to prepare Indian employees for the various skilled jobs required in surface mining operations.

The Indians employed at the mine earn about \$10,000 a year, compared with the estimated average Navajo family

income of just over \$3,000, and they also enjoy medical, retirement and other normal Peabody employee benefits. With 300 Indians at work, the Peabody payroll will contribute about \$3,000,000 annually to the reservation economies. Applying standard economic projections, this amount will be increased by perhaps another \$8,000,000 in income to those providing goods and services to the Peabody wage earners.

The work crew at the Black Mesa pipeline facility is expected to total 33 when the pipeline is in full operation. About two-thirds are expected to be Indians.

Exploration is continuing. If new deposits are found, new leases may be negotiated which undoubtedly would contain benefits to the parties involved similar to those in present leases, as well as appropriate provisions for protecting the Indian tribes in the development of their resources.

Mining Operations

Coal on Black Mesa is close enough to the surface to be removed through surface or strip mining methods, which permit 100% recovery of the mineral. At some points the coal seams reach the surface, but in most areas they are covered by shale and rock up to 120 feet deep.

The coal coming from these deposits is a bituminous variety which is superior to most types of western coal. It is rated at 11,000 BTU per pound, has an ash content of 8% and sulfur content of 0.5%. This means that, compared with other western coals, it will produce more heat per pound while generating considerably less fly ash and sulfur dioxide. Although some eastern and midwestern coals have higher BTU ratings, their sulfur content may range above 5%.

The underground coal seams vary from four feet to 30 feet thick. To reach them, the overlying rock and shale, known as overburden, is stripped away by dragline equipment. Then the coal is mined and loaded by power shovels into off-highway trucks which can haul 120 tons at a time. Fifteen such haulers will carry coal from the open mine to the processing center.

The processing center consists of a truck receiving hopper, a system of conveyors and two rotary breakers which reduce the coal to two-inch size and remove rock and other extraneous material. The system also includes sampling and weighing facilities, a live storage pile of 30,000-ton capacity and a dead storage pile of 200,000-ton capacity. Water spray systems have been installed to avoid coal dust problems where trucks are unloaded and at the

stockpile site. A 90 by 216-foot building houses Peabody's offices, maintenance shop, garage and warehouse.

Adjacent to the processing center, Black Mesa Pipeline Company has built a plant to grind, mix and pump the coal slurry which is transported to the Mohave plant. An airstrip has been constructed near the processing center.

Power lines have been built to bring in electricity for the processing center and the mining operations, where the power shovels and draglines are to be electrically powered. Small plots have been leveled to accommodate transformers, switch houses and oil circuit breakers. This equipment will be moved as mining progresses.

The mining operation will be duplicated when a second area is established to supply the Navajo station with coal by unit train. The company has identified 42 separate coal deposits, and mining operations will move to a new deposit as each active deposit is finally depleted.

These deposits lie under a total of nearly 14,000 acres within the 64,858-acre lease area. The coal areas, scattered throughout the lease territory, are the only sections where the surface will be affected. This means that an average of about 400 acres will be mined in any one year. The deposit now being mined for the Mohave plant, for example, covers 525 acres and contains about 24,500,000 tons of coal. It will take five years to mine this deposit.

Of the 78 Navajo families living within the leased area, 53 have their homes on coal deposits. Provisions have been made by the tribal council to relocate these families gradually over the 35-year period. Many live in the traditional Navajo hogans, although there also are a few modern structures on Black Mesa. In either case, the families are to be compensated by Peabody for the improvements they have made on their homesites, and they will be assisted in moving elsewhere on the mesa. The company has agreed to prepare the land at the new homesites. So far, only one family has relocated.

Compensation to the relocated Navajo families is guaranteed by the tribe. Peabody has agreed to reimburse the tribe for all awards made to individual Indians.

The tribes have retained surface rights in the entire lease area. They can put the land to other uses, including industrial development, while coal is being mined. Peabody is only to have sufficient use of the land surface to get the coal out. In addition to the mine itself, this includes an area where an office and maintenance building, the preparation plant for the coal pipeline and an airstrip are concentrated. Other surface uses have included the

construction of an access road and power line, plus the installation of wells. Later, a conveyor system will be installed to transport coal to the rail loading facility for the Navajo plant.

A new access road has been constructed, replacing an older, less reliable road which climbed from the valley highway onto the mesa through a series of switchbacks. This route has been straightened out, and the road now runs more directly onto the mesa, generally following an Arizona Highways Department routing for a road the state eventually expected to build, but with less cut and fill than the state's design would have required. Although it is a private road, the Indians living on Black Mesa are also using it for their own purposes.

The new road not only is safer, but it is built to all-weather standards. Culverts have been installed through the washes. Peabody maintains the road and will keep it open all year. This is advantageous to mesa residents, particularly during periods of heavy snow. There have been times in the past when helicopters provided their only link with the rest of the reservation.

Construction of the road inevitably required more land than would be needed for the finished roadbed, as is the case in all road construction. Where the cut did not blend with the adjoining land, it was graded to the surrounding country, where feasible, and seeded. Haul roads from the mining areas to the processing center will be built when needed to handle the 120-ton off-highway trucks.

Coal is mined on Black Mesa through surface methods in which overlying shale and rock is stripped away and coal is loaded into trucks by power shovels such as this.



Restoring the Land

Peabody is required under its lease to return Black Mesa to the tribes "in as good condition as received, except for ordinary wear, tear and depletion incident to mining operations." The company's reclamation department has developed plans which are designed to make the mined areas as productive as possible. These plans have been reviewed and approved by the Hopi and Navajo tribal councils, the Bureau of Indian Affairs offices for each tribe and the U.S. Geological Survey.

After the leases were signed, new federal regulations regarding land reclamation were instituted. Even though these stricter rules did not apply to areas already under lease, Peabody has voluntarily agreed to abide by them.

It is not possible to restore mined land exactly to its original condition since millions of tons of material will have been removed from it. But it certainly is possible to grade the surface, so that its contours blend with the surrounding land, and to replant native vegetation.

Each mined area offers both an opportunity and a challenge to the reclamation specialists. Each area will be individually evaluated when it is ready for reclaiming, and a plan will be developed for the specific uses the land is to serve. Plans will be submitted for review to the Indian tribes, the U.S. Geological Survey and the Department of the Interior.

Whenever feasible, Peabody plans to divert surface run-off water so the final mining cuts can be used to create lakes and serve as water reservoirs for an arid community. This water would be available to animals, with access down the haulage ramps, or it could be pumped for various other purposes. Since it would be an impoundment, there would be no erosion or sedimentation problems. Where it is not feasible to create a reservoir in the final cut, the mined coal seam will be covered with overburden material.

Restoration work can proceed closely behind the production program. Coal is mined in long parallel strips, with the overburden from a new cut dumped into the mined-out pit running alongside. As this process moves across a coal deposit, a point is reached where grading of the overburden will not endanger mining operations and restoration can begin. Grading usually will proceed two or three rows away from the active pit, although there can be areas in which the reclamation work can proceed just one row removed from the mine cut. With this system of reclaiming land in pace with mining, the affected surface can be kept to a minimum.

After grading is completed, vegetation will be restored.



Black Mesa and the Peabody Mining Area

Black Mesa is a highland rising northeast from the level of the Little Colorado River to a peak altitude of 8,110 feet at its northern rim, where it drops abruptly to the plain near Kayenta. Although Black Mesa lacks sharply defined boundaries, the general outline shown at left by the white dashed line represents the basic mesa area. It covers approximately 2,100,000 acres.

The mesa lies within the Navajo Reservation, which covers 12,500,000 acres in northeast Arizona, northwest New Mexico and southern Utah. Most of the Hopi Reservation is on the southern part of Black Mesa, which also includes much of the joint Navajo-Hopi area known as the Executive Order Area of December 16, 1882.

The 64,858 acres leased by Peabody are shown in white near the northern tip of Black Mesa. A lease negotiated with the Navajo Tribal Council covers operations in the 24,858-acre portion entirely on the Navajo Reservation, just north of the joint use area. Similar leases with the two tribes cover the 40,000-acre portion within the joint use area.

There is coal under nearly 14,000 acres, about seven-tenths of one percent of Black Mesa's surface, within the leased territory. The black square represents the average proportion of the surface, about 400 acres, that Peabody will mine annually during the 35 years coal is to be supplied to power plants near Page, Arizona and in southern Nevada.

In its leases with the tribes, Peabody agrees to “cooperate fully with the Lessor and the Secretary of the Interior in reseeding areas where strip coal mining activities have been completed and to bear the full expense of such reseeding program.” Peabody’s land-use experts also are studying grasses for their adaptability to the land. Native grasses, such as Indian rice grass and blue grama, will be reseeded, but the company also will experiment with other grasses which might be better adapted to the arid soil and which might furnish Black Mesa’s sheep with better feed. In addition, legumes will be added in the reseeding operation because of their capacity to carry much-needed nitrogen from the air into the soil.

Although restoration work begins promptly, it usually takes a few years before the forces of nature bring vegetation to a mature state.

Overgrazing is a potential problem with new grasses, and it might prove advisable to conduct cooperative experiments with Indian ranchers in which certain reseeded areas would be isolated from grazing for a few seasons until the new grass becomes firmly established.

All of Peabody’s reclamation work will be aimed at restoring the land to the best condition for the uses which now can be foreseen.

In planning the restoration of Black Mesa mining areas, Peabody draws on the knowledge and experience of its Land Use and Conservation Department. Under Operation Green Earth, the department has developed a reclamation plan for each of Peabody’s 40 mines. Each plan meets the conservation regulations of the appropriate state — and in one state with no conservation law, the requirements of an adjacent state are applied. Since 1956, Peabody has planted 38,000,000 trees and seeded over 100,000 acres.

The department is comprised of 11 land management specialists whose fields include agronomy, forestry, geology, farm management, engineering and chemistry.

Shipping the Coal

Black Mesa coal will be delivered to the Mohave power plant through a slurry pipeline that runs 275 miles underground from the mine to the plant. Coal for the Navajo Generating Station is to be carried off the mesa on a conveyor system, then loaded on unit trains for the projected 80-mile rail trip to Page.

When coal is delivered to the pipeline facility on Black Mesa, it is pulverized and mixed with water to form a slurry which is half coal and half water by weight. This water comes from five deep wells located on the leased land. The slurry is pumped into an 18-inch steel pipeline which goes into the ground right at the plant and remains underground until it emerges in Nevada, near Bullhead City, Arizona. Running at full capacity, the pipeline will hold 43,000 tons of coal. It takes coal slurry 2.8 days to make the trip.

There are four pumping stations along the way. They carry the slurry from the 6,600-foot elevation of the mine area down to 4,200 feet, then back up to 6,500 feet before the line descends to the 500-foot level at the Mohave installations. The pipeline runs at a minimum depth of three feet throughout, including its crossing under the beds of the Colorado and other rivers.

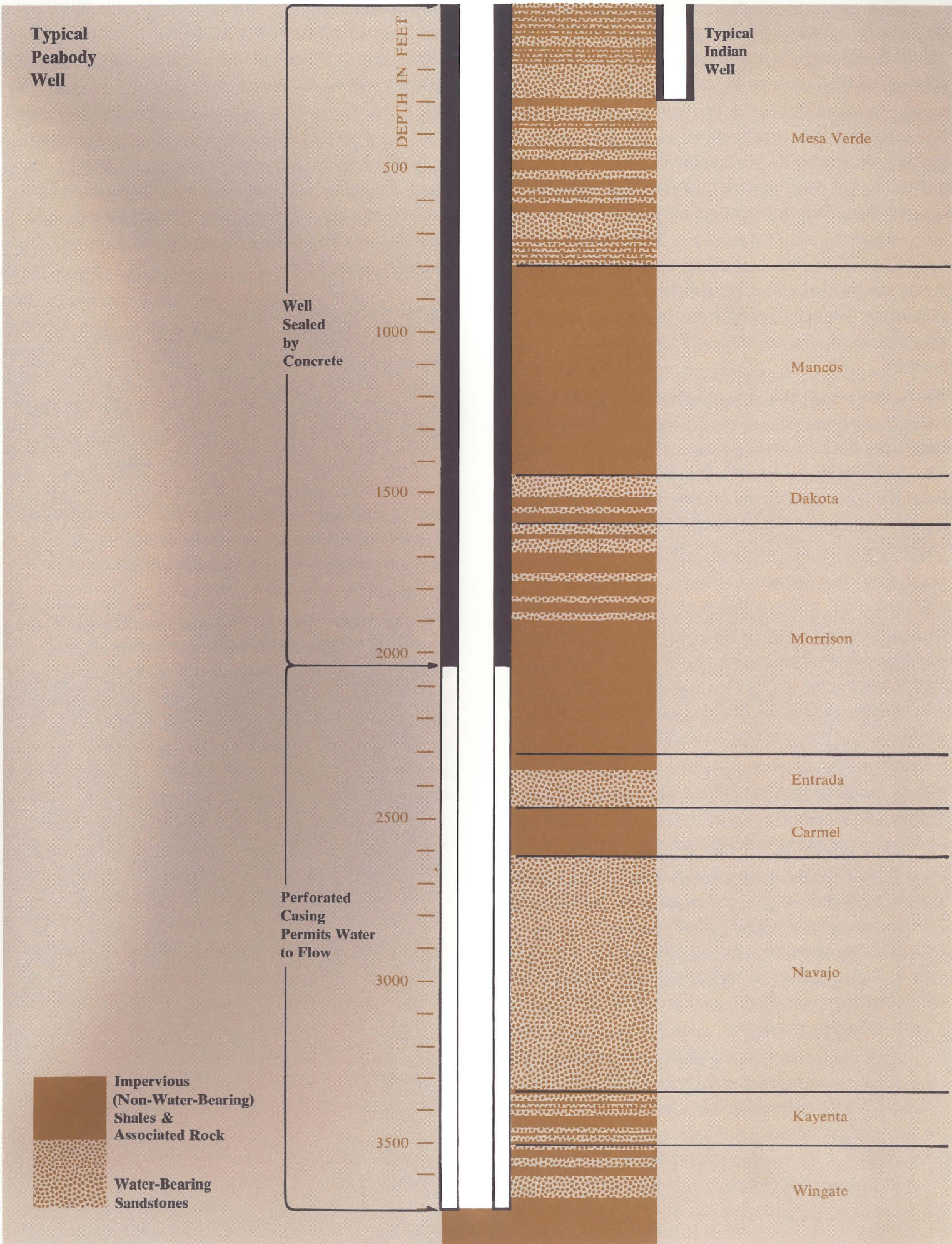
Burying the pipeline has advantages both to its operator and to the public. Since it is underground, it is protected from the elements and from surface accidents which might rupture it. From the public viewpoint, it is out of sight and will not interfere with either private or commercial activities on the surface.

Black Mesa Pipeline, Inc., a subsidiary of Southern Pacific Pipelines, Inc., has a contract from Peabody to operate the pipeline.

Water for the Pipeline

Water is scarce in the Southwest, and its use for industrial purposes always calls for careful study. Knowing this, Peabody conducted extensive hydrologic studies through independent specialists before asking for authority to draw from deep wells on Black Mesa.

Water for the slurry pipeline comes from water-bearing formations, or aquifers, which are completely separated from the water supply tapped by the Indians now living on Black Mesa. Their water comes from the Mesa Verde formations, which run to a depth of about 800 feet below the surface (see illustration on page 9). Below the Mesa Verde is an impervious layer of shale 500-600 feet thick which seals the water supplies near the surface from the deeper aquifers. Below this Mancos shale formation there



are additional aquifers, and then there are other shale layers, several hundred feet thick, lying above the water-bearing formations from which Peabody draws its water.

Highest of these water-bearing formations is the Entrada, which begins at about 2,300 feet below the ground surface. Below that are the Navajo-Kayenta-Wingate formations, with the Navajo sandstone providing by far the largest supply of water. The Navajo formation is similar to a giant saucer which lies deep beneath Black Mesa at its center and which in some places rises and outcrops on the surface in the lower lands surrounding the mesa. The town wells of Kayenta, for example, draw from the Navajo sandstone where it comes to the surface on the plain north of the mesa.

The Navajo formation is recharged by rainwater from the north. This water migrates very slowly through the sandstone, and as it travels downward toward the center of the saucer-like formation, it builds up pressure which forces the water before it out to the south. Thus, the water travels south and southwest through the entire formation, rather than gathering at the low point in the middle.

Peabody has drilled five wells into the deep aquifers, to depths of 3,535, 3,559, 3,596, 3,636 and 3,737 feet. They were put down about two miles apart. The Indian leases prohibit Peabody from drawing water at levels less than 1,000 feet from the surface, but to make sure that surface water will not be affected, Peabody has sealed the well shafts with concrete down to the 2,000-foot level.

With the pipeline operating at full capacity, 3,200 acre feet per year would be required. With the loads now anticipated over the 35-year contract period, an average of 2,400 acre feet is expected to be drawn annually from the wells.

It is estimated that there are some 10,000,000 acre feet of water in the Navajo-Kayenta-Wingate formations. Even if the slurry operation requires 100,000 acre feet over a 35-year period, that would be only 1% of the estimated water in storage. Assuming that nature will recharge these water sources in some degree, it is likely that the net withdrawal will be even less.

Peabody has taken every precaution to safeguard the local water supply of the Navajos and Hopis. Nevertheless, the company must either provide the Indians with water in quantity and quality equal to that formerly available to them or obtain water for slurry operations from another source if the Secretary of the Interior finds at any time that the local supply is endangered. A monitoring program is now being established by the U.S. Geological Survey,

at the request of the Bureau of Indian Affairs, to ensure compliance with this provision in the Indian leases. Peabody also will monitor its operations to guarantee this performance.

Peabody's wells thus far have proved beneficial to Indians living on Black Mesa. They take water free for personal use and for their stock from the company's deep wells instead of traveling to the more distant tribal wells on the mesa or to Kayenta, 35 miles away. When mining operations are completed, the five deep wells will be turned over to the tribes.

Preserving Black Mesa's History

Black Mesa was largely an archaeological mystery until Peabody's mining plans stimulated exploration of the area, beginning in 1968. Until then, the only scientific exploration had been conducted as a minor element of the 1936-37 Rainbow Bridge-Monument Valley expedition. The mesa has been considered a possible source of answers to many questions which have developed in the course of exploring the surrounding area. These questions concerned the Southwest's prehistoric period, which extends to the arrival of Spanish explorers and the beginning of recorded history in the area.

Under the terms of the Federal Antiquities Act of 1906, public lands must be evaluated for their archaeological value before the surface can be disturbed. So Peabody secured the expert services of the Archaeological Survey at Arizona's Prescott College, directed by Dr. George J. Gumerman. The Survey is an integral part of the college's Center for Man and Environment and is charged with exploring the areas which are to be used and with preserving whatever data and artifacts might be discovered. The first Prescott College field survey was conducted in the summer of 1968, and there have been further surveys each year since then. Peabody has paid for the field work and for the reports which have been published as a result.

Prescott's archaeologists have reconnoitered the area by helicopter and by foot. They have located 138 sites, and 29 of them have been considered valuable enough to excavate. The ruins indicate an ancient Pueblo people lived on Black Mesa between 600 A.D. and 1200 A.D., probably a group known as the Kayenta Anasazi Indians. They apparently were farmers, living simple lives even for those times. They were found in small, scattered communities which consisted at the most of a few extended families.

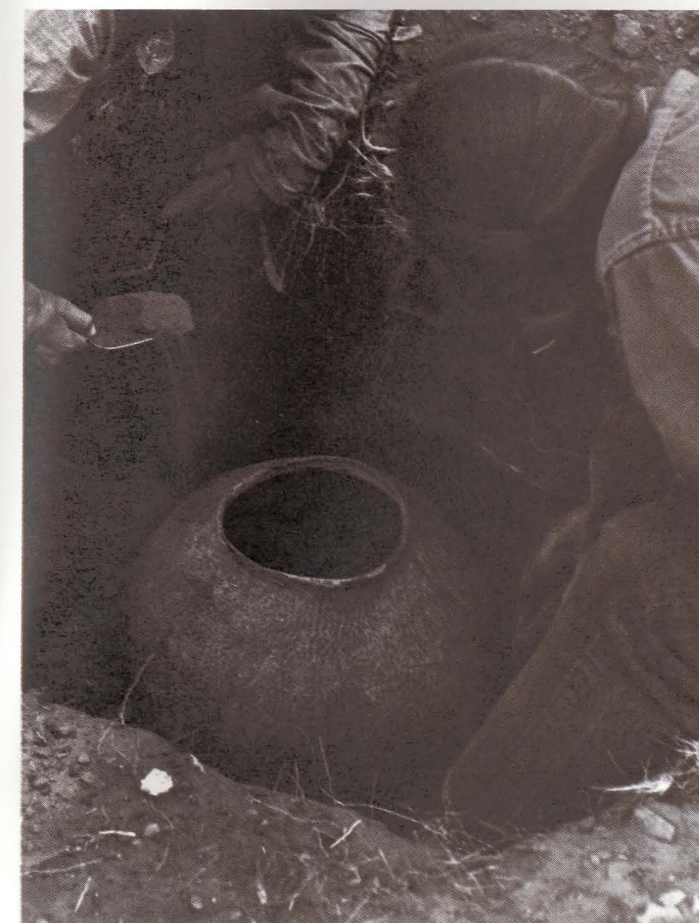
The most distinctive artifacts found have been pieces of pottery which are similar in decoration and construction

to Kayenta Anasazi pottery from other areas. There is some evidence that these prehistoric Indians used coal to fire their pottery, as well as for cooking and heating. Polished coal pendants and similar jewelry also have been found in the excavations.

By the end of the twelfth century, the Anasazi had abandoned Black Mesa in an apparently orderly departure. The reasons are not yet clear, although it is possible that the arid highland environment, with its short growing season, was finally regarded as too inhospitable.

The Center for Man and Environment is continuing its work, a process called salvage archaeology. This technique involves the salvage of all data and material of scientific interest from an area that is to be altered by some new activity such as mining. The support of the company is helping to generate new knowledge from an area that might not otherwise have been explored for many years. And the work is being done before the prehistoric sites on Black Mesa fall victim to the increasingly serious archaeological hazard of vandalism.

Indian artifacts are carefully removed by Prescott College specialists during archaeological surveys of areas to be mined.



The Prescott College scientists have planned their program to explore the leased area in the sequence in which Peabody is scheduled to mine the land. They conduct their reconnaissance, decide which sites merit excavation, then excavate, photograph, measure and otherwise preserve every detail of the site. All items of scientific value are removed, then the land is released for mining. Along with studies of Black Mesa's prehistoric people, the Prescott archaeologists are examining manifestations of Navajo life in recent centuries.

On a contemporary level, the National Science Foundation is sponsoring a continuing study of present Navajo life on Black Mesa which will monitor changes stimulated by the new industrial activity there.

Parallel to its basic scientific function, the program has developed considerable educational value as an archaeological field school. Undergraduates have received on-the-job training in field work which they normally would not get until they entered graduate school.

New Environmental Advisory Council

Black Mesa is a part of the Colorado Plateau, an area rich in resources which lies in parts of Arizona, New Mexico, Utah and Colorado.

Orderly development of the resources of the Colorado Plateau calls for the cooperation and good will of many people and organizations. It is essential to have one central place in which all of the scientific, engineering and environmental material can be brought together and coordinated. A forum for expressing ideas concerning the entire area is equally important. Some guidance must also be provided for additional studies and research projects relevant to the proper development of the region.

The Museum of Northern Arizona, under the direction of its Board of Trustees and director, Dr. Edward B. Danson, has taken the initiative in creating such an organization. It is called the Colorado Plateau Environmental Advisory Council (CPEAC). Its membership is open to any person interested in the Colorado Plateau, and more specifically includes representatives of institutions of higher education, federal, state and local government, conservation groups, business organizations, and those public and private entities engaged in industrial development of the plateau.

The principals in the Navajo Project, the steam plant to be constructed near Page, Arizona, adjacent to Lake Powell, have already deposited extensive and informative studies underlying their development. Peabody has deposited with the Museum of Northern Arizona copies of its leases with

the Navajo and Hopi tribes, which are reviewed in this report. Peabody has also provided copies of its geologic and hydrologic studies, on which it has predicated its limited groundwater development in Black Mesa. The company will continue to deposit relevant documentation of its activities with the museum. CPEAC will advise the public of its role as an information bank, and will invite inspection of the documents lodged with it.

The council will hold meetings of its membership to discuss pertinent environmental subjects and to make progress reports concerning industrial developments on the Colorado Plateau. In addition, it will seek to promote additional research projects concerning the area and its environmental welfare.

Anyone interested in reviewing the documents discussed here, as well as other materials made available by those concerned with the environment of the Colorado Plateau, may visit the Museum of Northern Arizona on Fort Valley Road in Flagstaff, Arizona, or write to the Museum at P. O. Box 1389, Flagstaff, Arizona 86001. The telephone number is 602 774 2433.

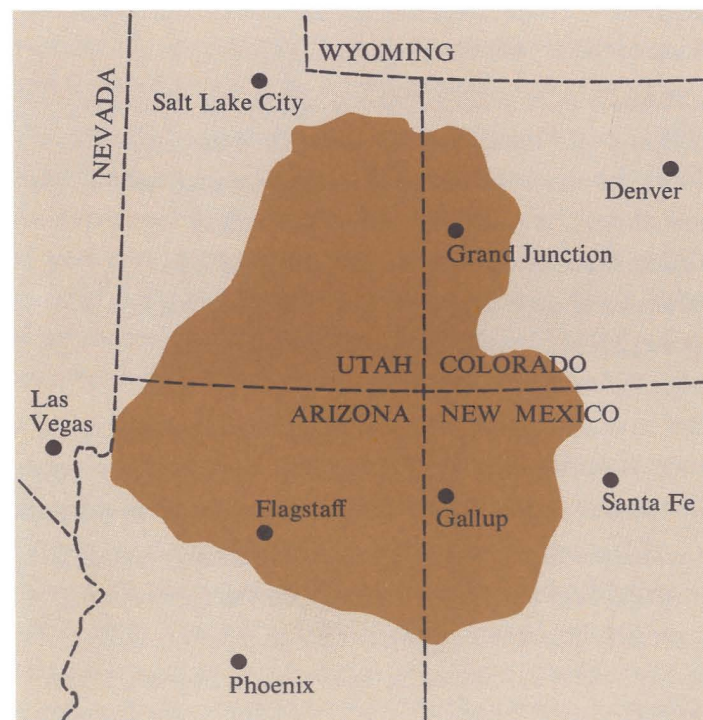
Conclusion

Peabody will continue to mine coal to meet the nation's fuel demands with a full understanding of the environmental constraints relating to its operations. The company believes that development of Black Mesa's resources is beneficial to the Navajo and Hopi tribes, who have granted the leases, as well as to Indian and other workers who will mine the coal and operate the power plants, and to the shareholders who have made possible the large capital investment required. Black Mesa's resources ultimately will benefit millions of people in the Southwest who require a steadily increasing flow of electric power.

With the assistance of CPEAC and others, these objectives can and will be attained within an environmental framework conducive to the best interests of everybody concerned with the Colorado Plateau and its proper development.

Peabody Coal Company will welcome comments and questions concerning the Black Mesa mine or any other phase of its operations. The company is determined that its Black Mesa mine will be the finest development of its kind anywhere.

Colorado Plateau, including Black Mesa, is the concern of CPEAC, an environmental council formed in 1970.



Photographs inside covers and on Page 11 courtesy Prescott College.





Peabody Group's Kayenta Mine

OPERATIONS AND ENVIRONMENTAL REPORT

1995 - 2000



PEABODY GROUP

701 Market Street
St. Louis, Missouri 63101
314.342.3400

Dear Citizen,

Peabody Group's Arizona surface mines have operated successfully for three decades because our employees continue to maintain a strong record of environmental stewardship measured by compliance with 32 federal, state and tribal statutes. Coal mining is one of the most thoroughly regulated industries. Extensive rules govern protection of air, water, soil, vegetation and archeological resources as well as wildlife, including raptors and endangered species. Because we are in the unique position of sharing our lease area with tribal residents, the level of environmental study and care taken to ensure compliance is extensive.

Our environmental performance is continuously measured through data collection and monitoring at 686 sites along with independent study of environmental data, third-party auditing and weekly federal and tribal field inspections. I am proud to say that a multi-year study directed by the U.S. Environmental Protection Agency (EPA) confirmed the good compliance record of Peabody's Arizona mines.

Our mined lands are reclaimed to a condition that is typically 20 times more productive for grazing than unmined lands in the area. We've reclaimed tens of thousands of trees, hundreds of thousands of traditional plants and about 10,000 acres of range to date. These extraordinary efforts have been recognized by the scientific community and set the pace for the mining industry. I believe our operations echo our mission of being a low-cost supplier of energy that contributes to economic prosperity and a better quality of life.

From productive reclaimed lands to community development, mining provides lasting benefits. We are proud of the contribution the Kayenta and Black Mesa mines bring to the Navajo Nation and the Hopi Tribe. The two mines provide more than 700 jobs, generate about \$45 million in annual tribal royalties and encourage economic development.

The 1977 Surface Mining Control and Reclamation Act requires the U.S. Department of the Interior's Office of Surface Mining (OSM) to renew life-of-mine surface mine permits every five years. Peabody's Kayenta Mine permit renewal was submitted in the spring of 2000, and an extensive review process will culminate in renewal of the permit in July 2000.

Continuing our longstanding and successful partnership requires open and candid communication about issues surrounding our operations. What follows is a compilation of operations, environmental and safety highlights reflecting Kayenta Mine's excellent performance over the past five years along with a summary of regulatory requirements and our compliance status. I urge you to contact us directly if you have questions or comments about these activities.

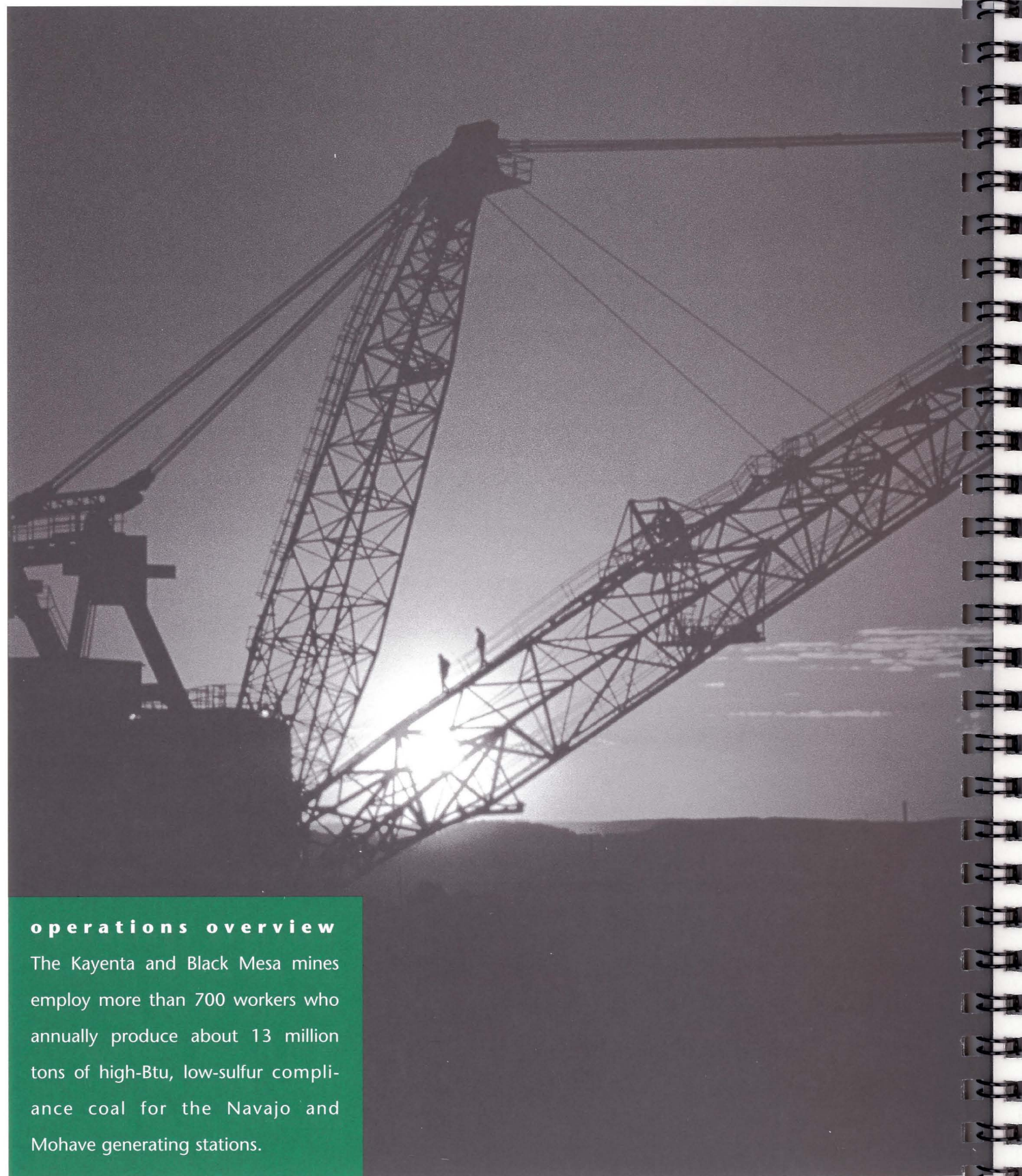
Sincerely,

Doug Wagner

Doug Wagner
Group Executive
Southwest Operations

c o n t e n t s

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operations overview

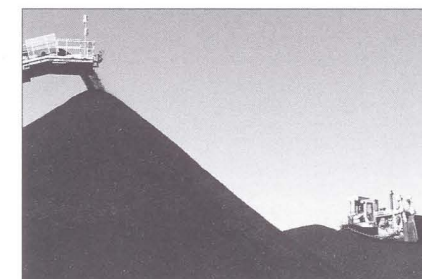
The Kayenta and Black Mesa mines employ more than 700 workers who annually produce about 13 million tons of high-Btu, low-sulfur compliance coal for the Navajo and Mohave generating stations.

Peabody's Arizona mines are located on a highland plateau called Black Mesa that rests within the borders of the Navajo and Hopi reservations. The adjacent Kayenta and Black Mesa surface mines employ more than 700 workers and are operated through lease agreements with the Navajo Nation and the Hopi Tribe that were renewed and ratified in 1987 and renegotiated again in 1998. Under complex geological conditions, approximately 13 million tons of high-Btu, low-sulfur compliance coal are mined each year from multiple seams and splits of seams ranging in thickness from three to 18 feet.

OPERATIONS OVERVIEW

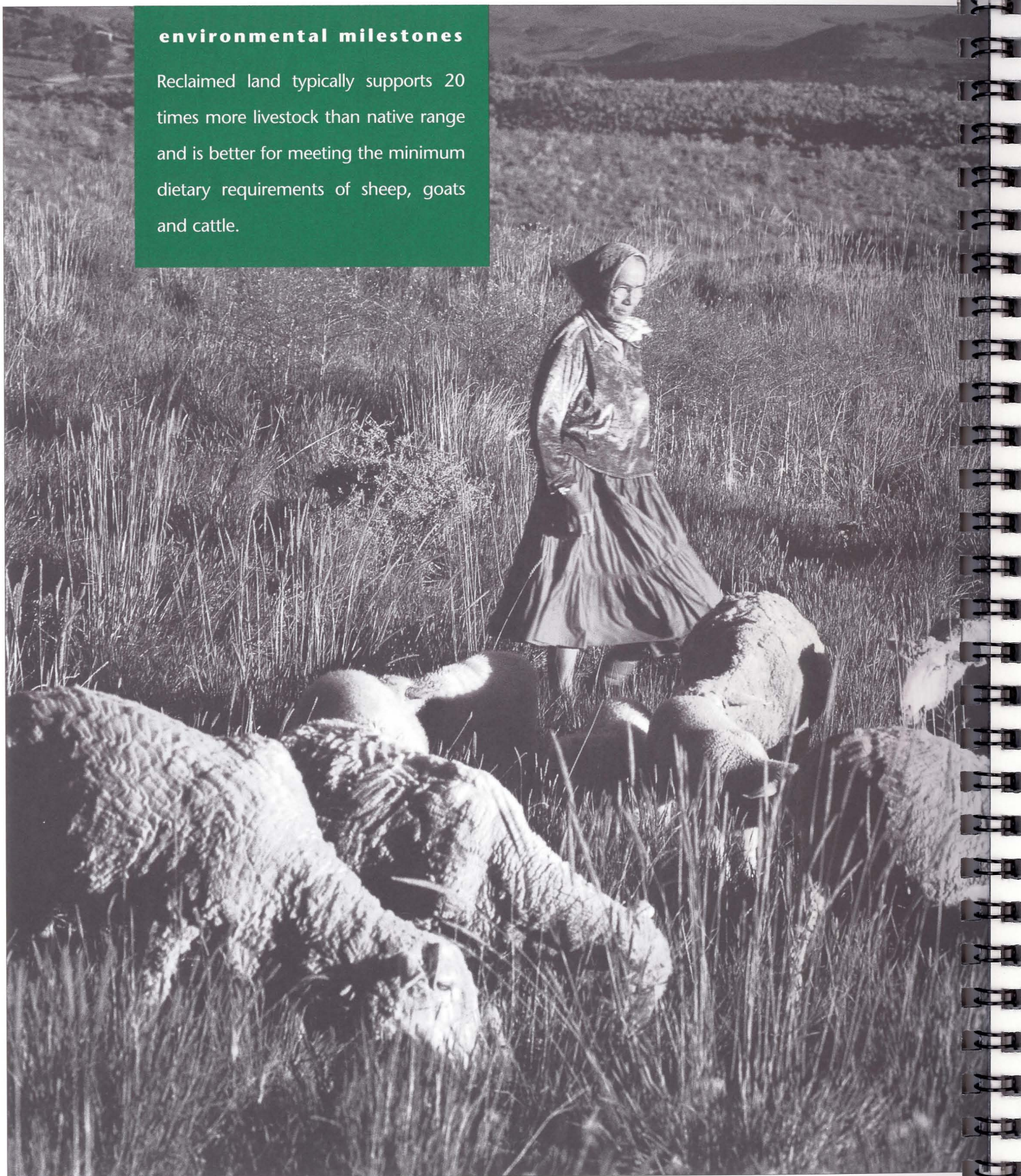
Kayenta Mine employs about 420 workers and began producing 12,300 Btu coal in 1973. The facility ships approximately 8 million tons annually to the 2,250 megawatt Navajo Generating Station near Page, Ariz., which is equipped with scrubbers to reduce emissions from Kayenta's already low-sulfur coal. The mine's fuel supply contract is effective through 2011 and has extension options for 15 additional years of operations. The coal is shipped 83 miles via electric train to the Navajo Station.

The Black Mesa Mine employs about 265 workers and began production of 12,300 Btu coal in 1970, shipping nearly 5 million tons annually to the 1,600 megawatt Mohave Generating Station near Laughlin, Nev. The Mohave owners have committed to install additional control equipment, including a scrubber and baghouse, which will reduce the plant's sulfur dioxide emissions by at least 85 percent by Jan. 1, 2006. Black Mesa Mine's fuel supply contract runs through 2005 and also has options for up to a 15-year extension. Its coal is crushed and conveyed through a 273-mile underground coal-water pipeline that annually transports the equivalent of about 50,000 railcars of coal.



environmental milestones

Reclaimed land typically supports 20 times more livestock than native range and is better for meeting the minimum dietary requirements of sheep, goats and cattle.



Being a responsible energy producer goes hand in hand with being a good environmental steward, restoring mined lands to a productive condition that provides lasting benefits. Reclamation at Black Mesa is an exacting process carried out by a team of engineers, scientists and agricultural specialists who work closely with the Navajo Nation and the Hopi Tribe as well as tribal medicine men and herbalists. This partnership promotes an exchange of traditional ways and ensures land is restored to meet the unique needs of future generations. Based on the wishes of the tribes, Black Mesa range is reclaimed for livestock grazing, wildlife habitat and cultural plant cultivation.

ENVIRONMENTAL MILESTONES

Federal, state and tribal environmental regulations ensure mined land is returned to productive uses, often superior to their original condition. Peabody's results go beyond the minimum requirements, returning lands to a healthy, sustainable environment that supports up to 20 times more livestock grazing than unmined lands. On Black Mesa, the success of reclamation is particularly important to many American Indians whose livelihood depends on cattle, sheep and goats.

Peabody's environmental team has achieved a number of accomplishments over the past five years at Kayenta Mine, underscoring the company's commitment to lead the industry in restoring mined lands, while exercising its responsibility of being a good neighbor. What follows are significant environmental achievements.



Cultural Plant Restoration

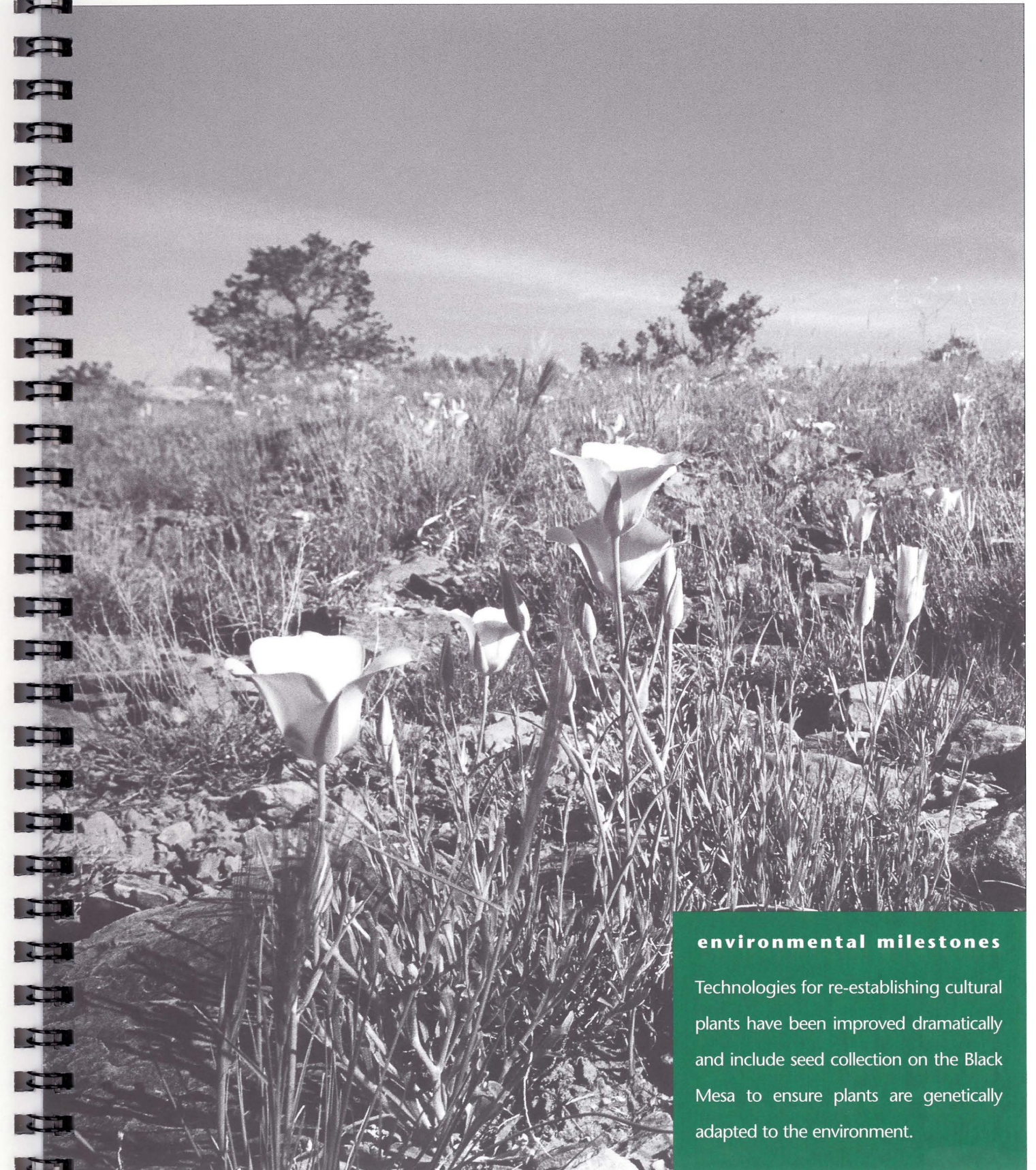
A comprehensive, ecologically-based reclamation program to restore medicinal and cultural plants has been expanded 10-fold since 1995. Field research has identified 65 species and current efforts focus on hand planting about 30 species at sites ranging from one to three acres. In the past five years, approximately 125,000 culturally significant trees, shrubs and flowering plants have been planted on more than 70 acres.

Improved Technology

Technology and protocols for re-establishing traditional plants have been improved dramatically, resulting in better plant survival. Procedures include nursery practices that maximize the potential for survival and growth in the field. Additional protocols include specific seed treatment and germination methods, fungi inoculation to improve survival as well as development of handling and hand planting methods in the field.

Award-Winning Results

Research and development of technologies for re-establishing culturally significant species brings national attention to both the Kayenta and Black Mesa mines. The environmental staff earned a 1998 U.S. OSM Excellence in Reclamation Award and a 1996 American Society of Surface Mining and Reclamation Award for cultural plant restoration. The company also received the International Erosion Control Association's Environmental Excellence in Design Award for reclamation techniques and surface stabilization in 1996.



environmental milestones

Technologies for re-establishing cultural plants have been improved dramatically and include seed collection on the Black Mesa to ensure plants are genetically adapted to the environment.

environmental milestones

Local residents run livestock on about 1,300 reclaimed acres at Kayenta Mine, a project marking the first land release and the first cooperative grazing agreements for area residents.



Managed Grazing

The first managed grazing plan for reclaimed lands under bond at the Black Mesa Complex was implemented at Kayenta Mine, involving seven pastures and potentially opening 5,500 acres to livestock. Managed grazing aids in seed dispersal and allows plant material to be knocked down and incorporated into the soil to improve nutrient cycling. Grazing reclaimed range benefits the livestock because of the forage quality and quantity, while aiding in maintaining ecosystem function and health. It also demonstrates achievement of the post-mining land use and provides residents with grazing resources that are typically improved 20-fold over native range.

First Land Release

In a project noted for several milestones, the Navajo Nation released 1,300 acres of Kayenta Mine's reclaimed pastures to leasehold residents in 1996, marking the first reclaimed lands released and the first cooperative pasturing agreements for area residents.

At the same time, veterinarian examinations of the cattle grazing on these lands showed the condition of the animals improved several levels after they were brought onto the pastures. After the cattle had grazed there just two months, initial low health scores jumped to a range of good to excellent, which mirrors the condition of healthy Western range animals. These results are evidence that reclaimed forage is better for meeting the minimum dietary requirements for livestock than native lands.

Record Results

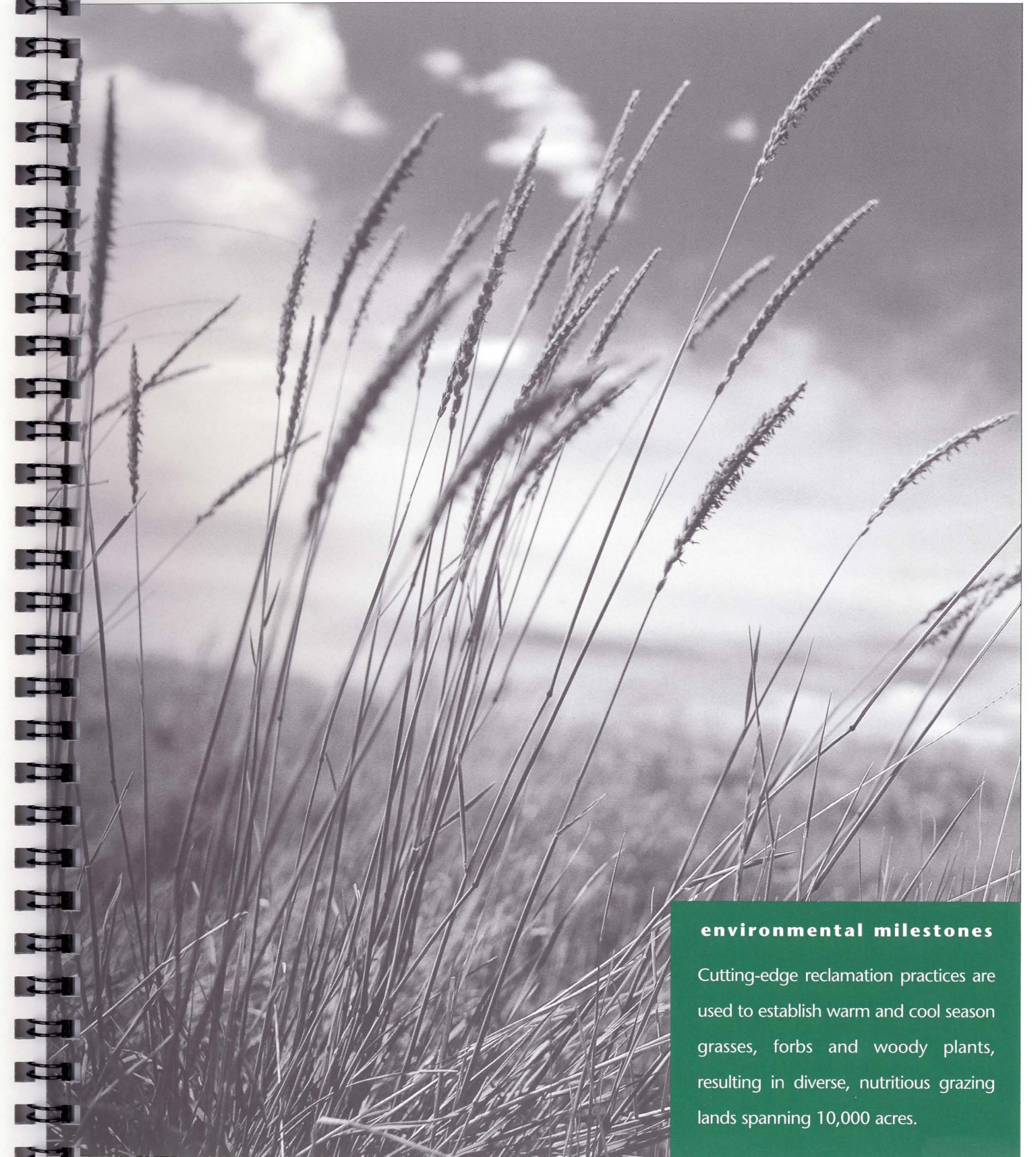
A new record for the most land restored in a single year was set in 1999, after Kayenta Mine reclaimed nearly 700 acres. Standard seed mixes include more than 20 predominantly native species, and reseeded lands are mulched with native grass hay to improve seed germination and stabilize the soil surface. State-of-the-art reclamation practices establish diverse vegetation consisting of warm and cool season grasses, forbs and woody plants that average about 450 pounds per acre. Monitoring results show properly managed reclaimed lands support about 20 times more livestock than native range. Peabody has reclaimed more than 10,000 acres to date, returned 1,300 acres to tribal members and applied for release of an additional 2,400 acres that is pending before the Navajo Nation and the U.S. OSM.



Wildlife Study

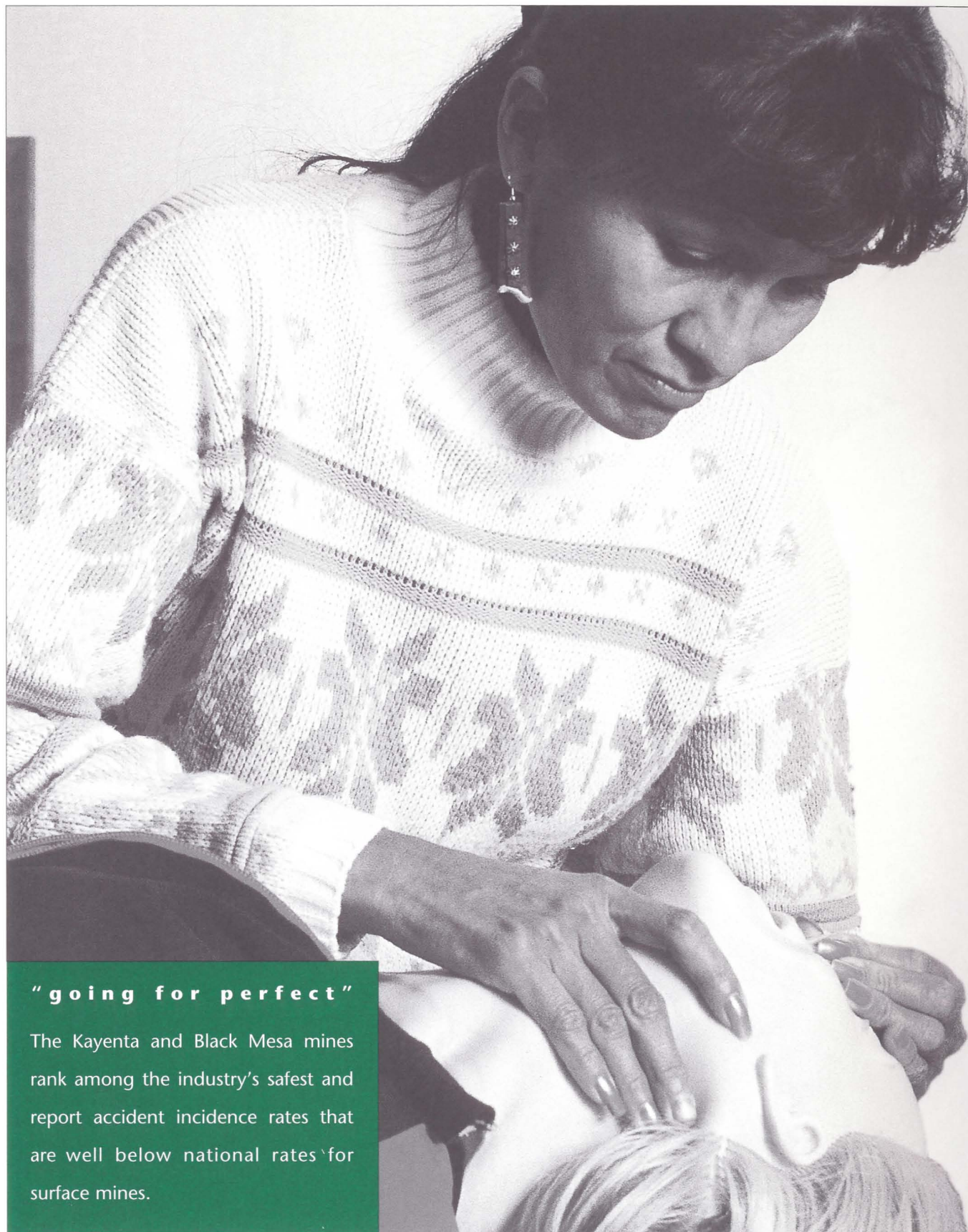
Peabody's monitoring efforts represent the most comprehensive wildlife inventory work ever performed on northern Black Mesa, confirming that reclaimed areas provide increased habitat diversity that attracts a broad range of wildlife. Monitoring has documented more than 200 species of birds, including 33 species of waterfowl such as mallards, teal, and geese; 35 species of mammals, including mule deer and elk; predators such as the mountain lion, bobcat and coyote; 16 species of reptiles and amphibians including snakes, salamanders, lizards and toads; and three species of fishes: largemouth bass, green sunfish and channel catfish.

Peabody also is conducting studies of the Mexican spotted owl and has completed studies of the peregrine falcon, both species that the Navajo Nation and the U.S. Fish and Wildlife Service have a high interest in protecting. The information Peabody collects is valuable in assisting the Navajo with their recovery efforts on the reservation.



environmental milestones

Cutting-edge reclamation practices are used to establish warm and cool season grasses, forbs and woody plants, resulting in diverse, nutritious grazing lands spanning 10,000 acres.



"going for perfect"

The Kayenta and Black Mesa mines rank among the industry's safest and report accident incidence rates that are well below national rates for surface mines.

Ensuring a safe work environment is among Peabody's highest priorities. Workers strive for a perfect safety record through an ambitious effort emphasizing zero tolerance for injuries on the job. It's an important focus that is yielding big dividends: The Kayenta and Black Mesa mines are among the nation's safest, and statistics show that it is safer to work at a Peabody mine than in virtually any other major industry.

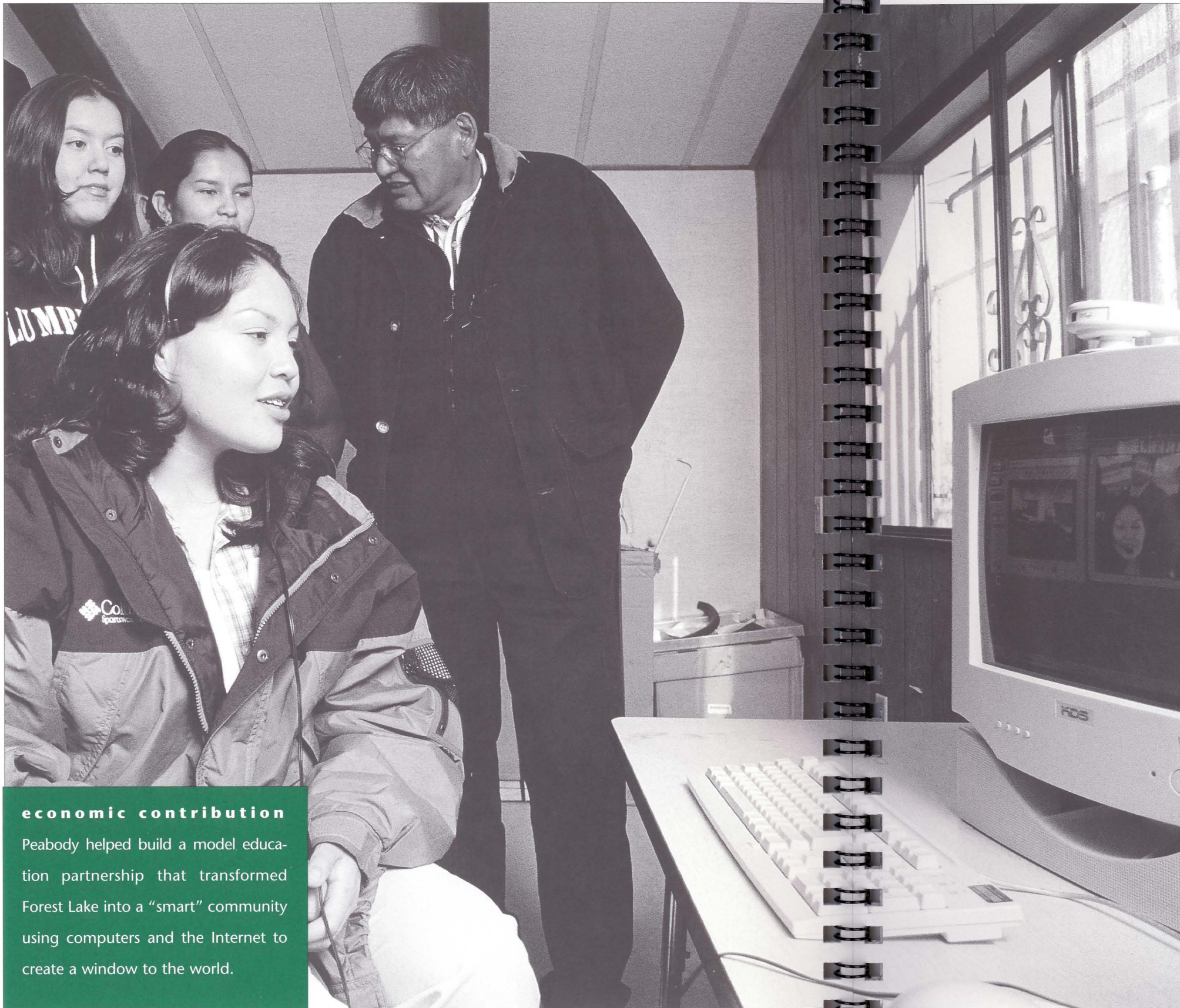
"GOING FOR PERFECT" SAFETY RESULTS

Since fiscal year 1996, the accident incidence rate for the Kayenta and Black Mesa mines has averaged 1.48 accidents per 200,000 hours worked, which is 62 percent below the national average for surface mines. Fiscal 2000 weighed in as the best year on record for the operations, with a 0.94 accident incidence rate that is 72 percent below the national average for surface mines.

At Kayenta Mine, employees posted a 1.47 average incidence rate over the past five years, besting industry peers 62 percent. In fiscal 2000, the mine completed the safest year in its history, with an accident incidence rate of 1.27. That eclipsed the mine's record of 1.30 incidents set a year earlier.



*Industry data not available.



economic contribution

Peabody helped build a model education partnership that transformed Forest Lake into a “smart” community using computers and the Internet to create a window to the world.

Mining operations provide more than 700 jobs on reservation lands, making Peabody one of the nation’s largest private employers of American Indians. About 90 percent of the mine work force is American Indian, including more than half of the management team. Annual mine wages and benefits exceed \$50 million. On average, workers earn wages and benefits that are four times higher than the average non-miner’s salary. These jobs are important to reservation communities where unemployment hovers at 50 percent.

ECONOMIC CONTRIBUTION

Royalties, taxes and other payments generated from the operations provide approximately \$45 million annually in tribal revenue or more than \$1.8 billion since mining began. Royalty rates renegotiated with the Navajo and Hopi in 1998 will increase annual revenue by about \$45 million over the next decade. These revenues equate to about 40 percent of the Navajo Nation’s general budget and about 80 percent of the Hopi Tribe’s budget.

Peabody has a long history of supporting local communities and schools through charitable giving, with particular emphasis placed on promoting excellence in education. Each year, the company’s taxes generate about \$1.5 million in revenue for Kayenta Unified School District. Peabody has an active co-op student intern program and provides more than \$320,000 in annual scholarships to Navajo and Hopi students across the reservations.

Kayenta Mine Economics

Kayenta Mine annually injects \$74 million into reservation economies.

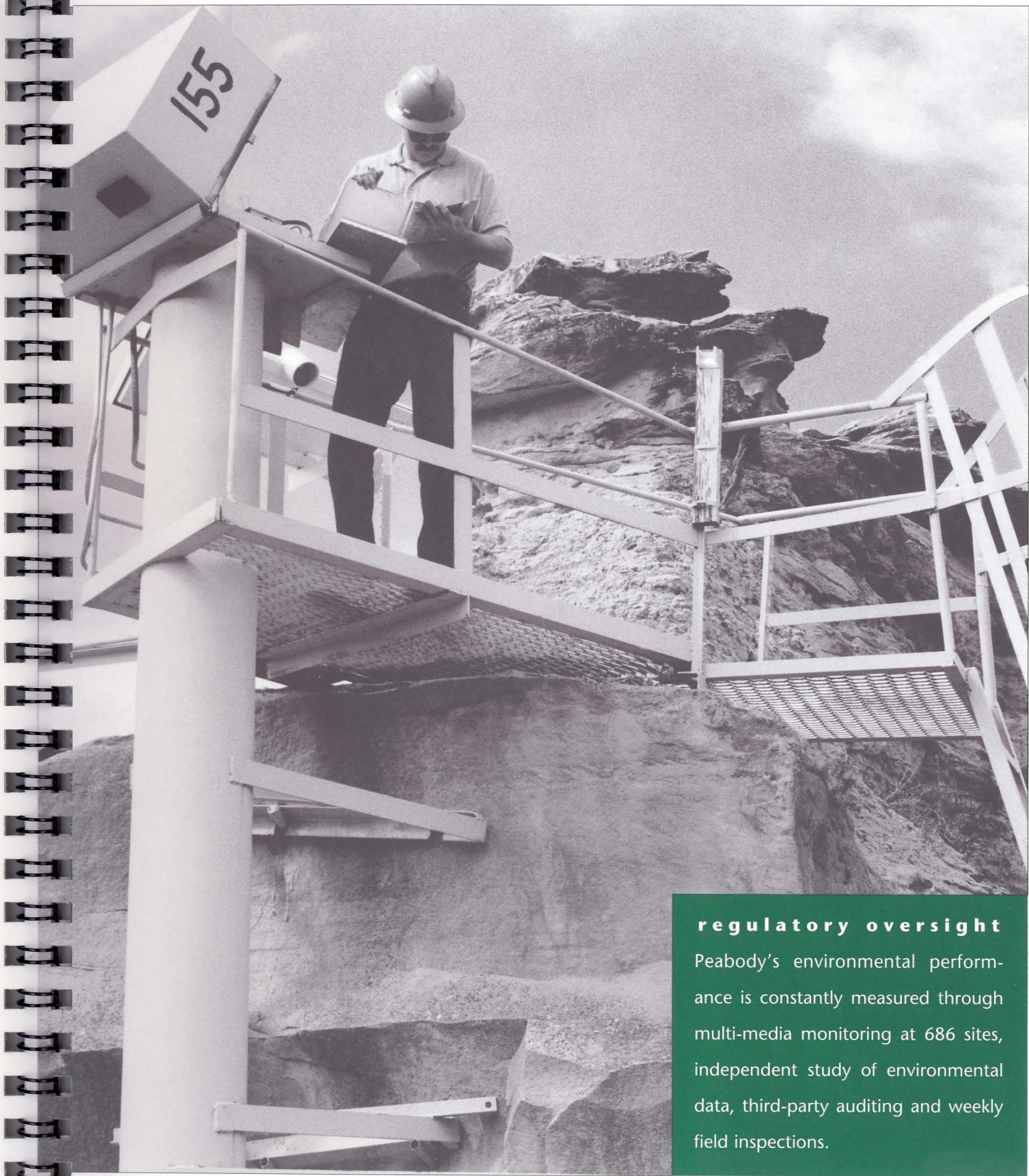


The foundation of sound environmental management is compliance with rigorous tribal and federal regulations that govern coal mining activities. Plans for minimizing the effects of coal mining on Black Mesa are developed for every facet of operations, from initial mine planning to release of reclaimed land. Peabody continues to use the best available technology for monitoring and reporting and is recognized as an industry leader for developing new methods to improve land restoration.

REGULATORY OVERSIGHT

The mines employ a 25-member team of environmental scientists, engineers and technicians dedicated to mine planning, permitting and compliance activities. The operations require 21 permits and licenses mandated by 32 federal statutes established to protect human health, air, water, soil and vegetation as well as wildlife, raptors, endangered species and archeological resources. Field inspections are unannounced and conducted weekly, often with participation from multiple federal and tribal agencies.

ENVIRONMENTAL REGULATORY AUTHORITIES
Arizona Department of Health Services
Arizona Radiation Regulatory Agency
Indian Health Service
U.S. Army Corps of Engineers
U.S. Bureau of Alcohol, Tobacco and Firearms
U.S. Bureau of Indian Affairs
U.S. Bureau of Land Management
U.S. Department of Health and Human Services
U.S. Environmental Protection Agency
U.S. Federal Communications Commission
U.S. Fish and Wildlife Service
U.S. Geological Survey
U.S. Mine Safety and Health Administration
U.S. Office of Surface Mining
The Hopi Tribe Cultural Preservation Office
The Hopi Tribe Natural Resources Department
The Hopi Tribe Office of Mining and Minerals
The Hopi Tribe Water Resources Department
The Navajo Nation Archeology Department
The Navajo Nation Department of Agriculture
The Navajo Nation Division of Natural Resources
The Navajo Nation Environmental Protection Agency
The Navajo Nation Historic Preservation Department
The Navajo Nation Land Department
The Navajo Nation Minerals Department
The Navajo Nation Water Resources Department



regulatory oversight
Peabody's environmental performance is constantly measured through multi-media monitoring at 686 sites, independent study of environmental data, third-party auditing and weekly field inspections.

Peabody's compliance status with state, federal and tribal laws governing its operations is good, according to the U.S. EPA, which released its findings following a 1994-1996 multi-media, multi-agency inspection of the Kayenta and Black Mesa mines. This compliance record continues to be validated through ongoing environmental monitoring, continuing regulatory and tribal assessments, and a ruling from the highest administrative authority within the U.S. Department of the Interior when Kayenta Mine's permit was renewed in 1995.

C O M P L I A N C E S T A T U S

Multi-Media Examination

The U.S. EPA directed a three-year environmental compliance examination performed in two stages. Phase I involved a 450-hour examination by 32 inspectors from 13 agencies and federal departments who reviewed existing environmental data. Phase II involved site assessment and sampling under the Comprehensive Environmental Response Compensation and Liability Act. Results of the examination concluded that the mining operations are conducted in a manner that protects human health and safeguards wildlife and livestock.

Environmental Monitoring

Potential mining impacts are evaluated through extensive environmental study that annually generates tens of thousands of air, water, soil, vegetation and meteorological samples from 686 sites. This data is reviewed by federal and tribal regulatory authorities.

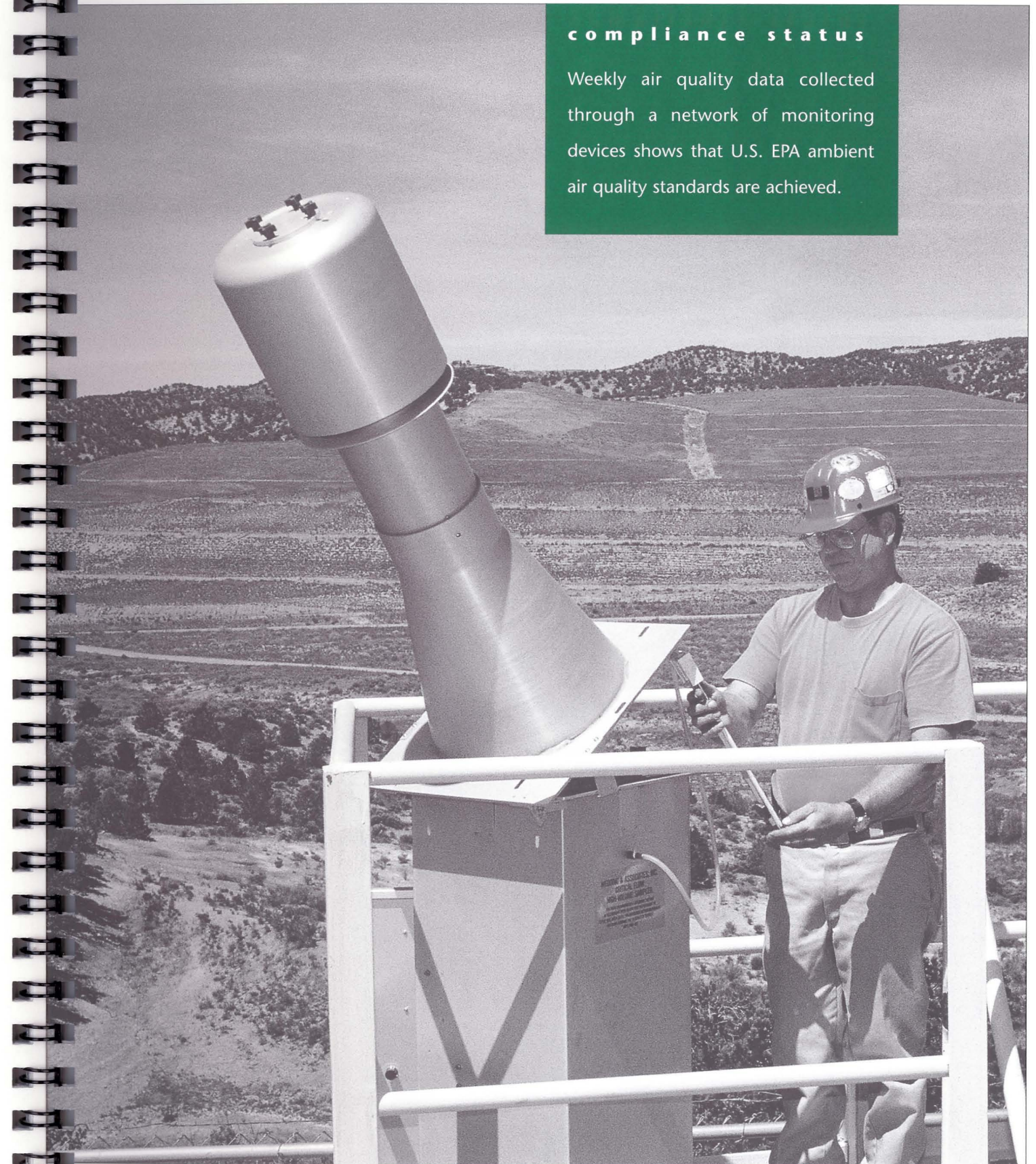
Air Quality

Peabody operates an air quality monitoring program based on U.S. EPA guidelines that provides weekly data. This information continues to indicate that mining operations are achieving overall ambient air quality standards. The program involves annually examining more than 600 samples from 11 sites, with each site providing about 60 samples per year. Test results are studied by independent air quality specialists and further reviewed and evaluated quarterly by the Navajo Nation Environmental Protection Agency and the U.S. OSM.

Emissions at the complex that are subject to federal New Source Performance Standards have been found to be in compliance. At the same time, Peabody has submitted a permit application under the U.S. EPA's Title V program which will include additional performance-based operating procedures to ensure protection of air quality.

compliance status

Weekly air quality data collected through a network of monitoring devices shows that U.S. EPA ambient air quality standards are achieved.



Water Quality

Surface and ground water flow, levels and quality are measured at varying frequencies throughout the year, generating more than 1,700 samples taken from 271 monitoring sites. This data continues to indicate that mining does not adversely affect ground water supplies and that water quality is consistent with sources found elsewhere on Black Mesa. In addition, 142 sediment ponds have been sited throughout the complex, which is the best available technology to contain surface water runoff following storms. This monitoring program is reviewed and approved by the Navajo Nation and the Hopi Tribe as well as federal regulatory authorities. The data is reviewed and reported to regulatory agencies on a monthly and quarterly basis.

Soil Quality

Soils in final graded areas and reclaimed lands are tested for chemical and physical properties and are evaluated based on suitability standards approved by the tribes and federal regulatory authorities. Approximately 500 samples are taken from about 150 locations each year, confirming soils contain essential nutrients and characteristics needed to encourage healthy plant growth.

Vegetation Monitoring

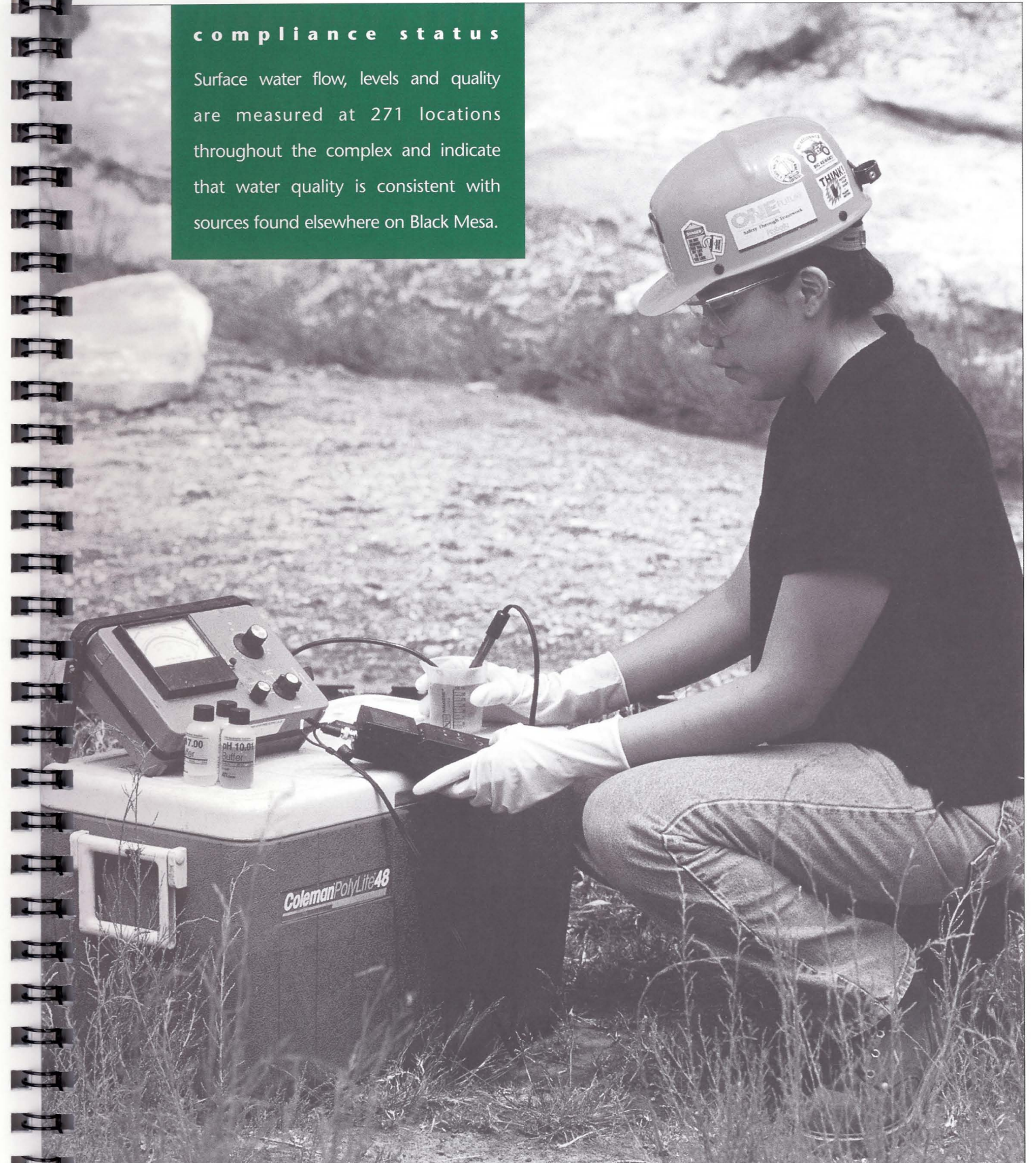
Every spring and fall, vegetation monitoring is completed to document ground cover, production, woody plant density and species diversity on reclaimed areas to ensure reclamation meets the success criteria established by the Navajo Nation, the Hopi Tribe and federal regulations. Baseline samples are collected in native areas and compared with reclaimed areas to document progress, and 50 monitoring sites have been established to gauge the change in vegetation over time. The sampling is intensive and provides data for establishing grazing capacity. Reclaimed acreage contains more than 175 vegetation species and supports an average of 20 times more livestock than native range.

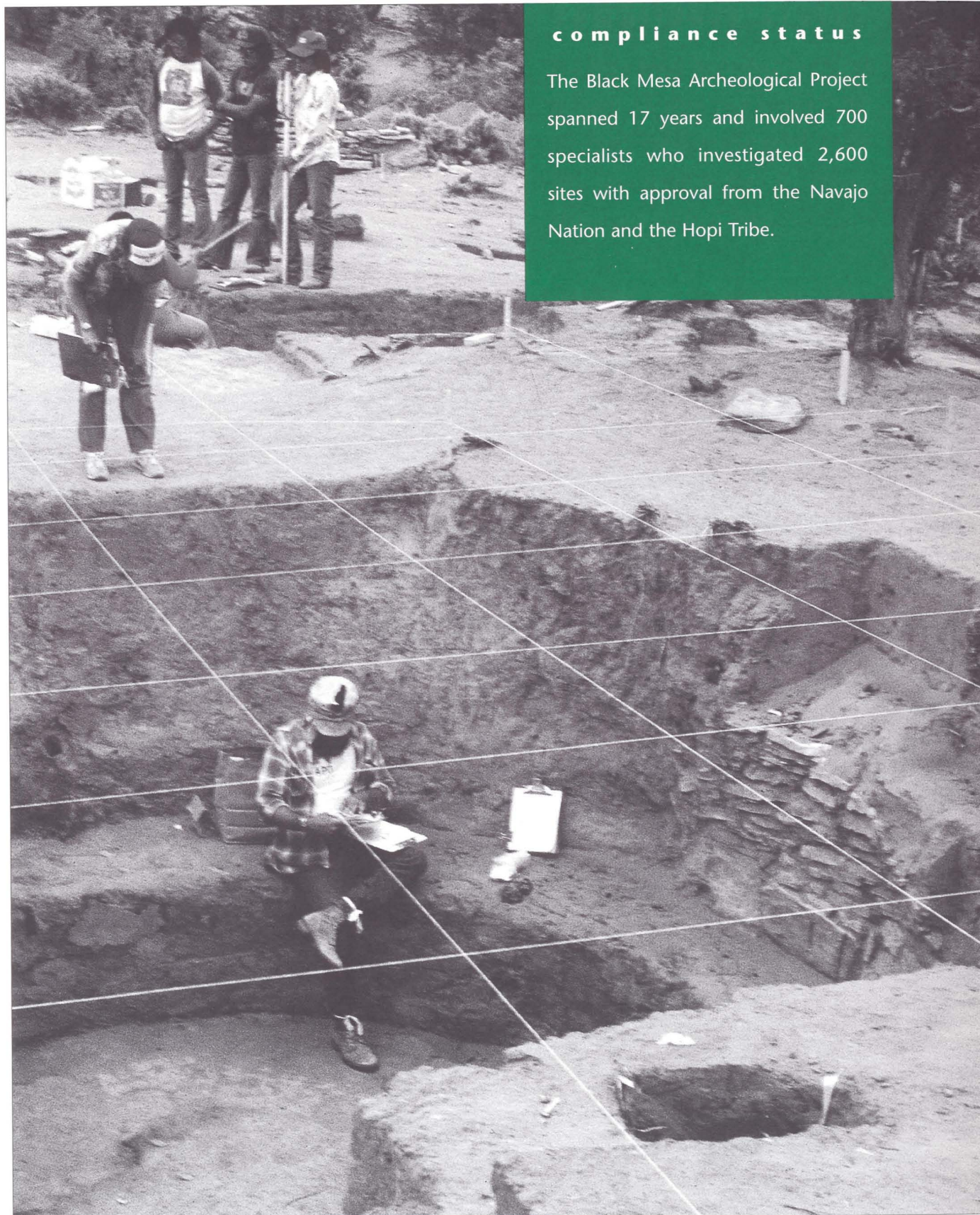
ENVIRONMENTAL MONITORING PROGRAM

Environmental Media	Monitoring Sites
Air Quality	11
Meteorology	4
Precipitation	8
Surface Water Quantity	45
Surface Water Quality	45
Ground Water Quantity	95
Ground Water Quality	86
Sediment Ponds	142
Vegetation	50
Soils	150
Wildlife	50
Total	686

compliance status

Surface water flow, levels and quality are measured at 271 locations throughout the complex and indicate that water quality is consistent with sources found elsewhere on Black Mesa.





compliance status

The Black Mesa Archeological Project spanned 17 years and involved 700 specialists who investigated 2,600 sites with approval from the Navajo Nation and the Hopi Tribe.

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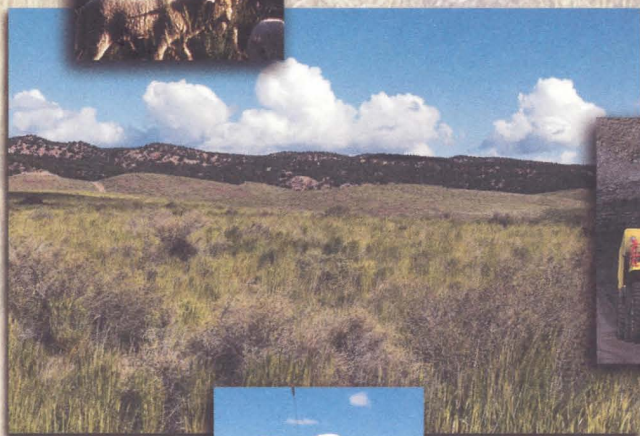
COMPLIANCE STATUS

Archeological Study

Prior to the commencement of mining, Peabody began an extensive archeological investigation to explore the entire lease area with approval and participation by the Navajo Nation and the Hopi Tribe. The Black Mesa Archeological Project (BMAP) began in 1967 and was directed by Dr. George Gumerman, Director for the Center for Archeological Investigations at Southern Illinois University at Carbondale. The project ran 17 years and was one of the largest and longest-running archeological investigations in North America. All areas of the lease were explored and prehistoric and historic sites were identified and mapped. Fieldwork involved more than 700 people; approximately 2,600 sites were investigated and 225 sites were excavated. The study yielded important information about the people of the Black Mesa that will be preserved for generations.

Peabody representatives also have ongoing communication with the federal government, the tribes, the Black Mesa Review Board and local residents to identify traditional cultural properties. Before mining begins in any area, the company works with residents to determine if there are any such places that need to be addressed.

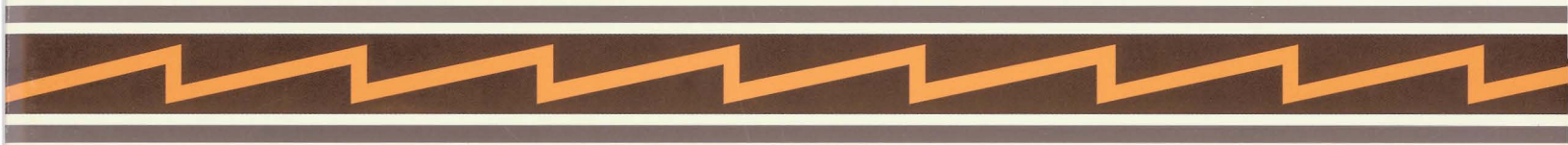




**PEABODY
WESTERN**

P.O. Box 650
Kayenta, Arizona 86033
520.677.3201

A Q U A R T E R C E N T U R Y O N B L A C K M E S A



Tens of millions of years before the Grand Canyon was formed, warping of the earth gradually caused ancient seas to recede in what is now northern Arizona. In the millions of years it took the seas to withdraw, great basins and uplifts were created in the earth's surface.

That was how Black Mesa was born.

In the millennia since, Black Mesa has loomed above the surrounding desert floor with dark majesty. Its large mass, some 2.1 million acres, is easily visible to the south of Monument Valley.

At its rugged northern rim, elevations exceed 8,000 feet but average about 2,000 feet above the desert. From north to south, the Mesa slopes down gradually, becoming rolling plateau, covered with sagebrush and tufts of hardy grasses and cut by arroyos or washes. Stands of pinyon and juniper on its higher elevations give the Mesa its dark appearance and name.

Small groups of people have lived on this highland for more than 8,000 years. At some point, the early people discovered that Black Mesa held coal. More than a thousand years ago, Native Americans used Black Mesa coal to fire their pottery.

In the early 1960s, Peabody received permission from the Navajo and Hopi Tribes to explore the Mesa. Engineers discovered great quantities of coal, enough to propose surface mining to supply electric utilities in the rapidly developing Southwest.

Strong population growth in Arizona and Southern California had forced utilities to build new generating capacity. Black Mesa coal could fire these new plants and produce energy for millions of people throughout the Southwest. Also, coal mining would mean much-needed revenue for the Navajo and Hopi Tribes and high-paying jobs for their people.

These converging interests resulted in an agreement between the Navajo and Hopi Tribes and Peabody for surface mining on Black Mesa.

What has happened since then constitutes an important chapter in the history of the tribes, the Southwest and Black Mesa itself. For never before had an industrial complex of this size been built on American Indian lands. Never before had such a large project been developed principally by Native Americans. And never before had Native Americans benefited so much and in so many different ways from a partnership with industry.

This is a report to the public about how mining has been conducted on Black Mesa. And it is a story about different cultures coming together to pursue common interests and working as one for more than a quarter century.



The Mesa was, and is, a land of austere beauty. By necessity, its people have always been hardy and resourceful, because the Mesa supports little wildlife and only sparse vegetation. Average rainfall of less than 10 inches per year and poor soil make farming beyond family gardens impractical.

Before mining began, Black Mesa had no industrial activity. In fact, there was almost no commercial activity—no banks, grocery stores or gas stations. Bartering at trading posts was the only real commerce.

Black Mesa also had virtually no roads or utilities. The only electricity came from gas generators at trading posts. Food was cooked over wood fires. Homes were

heated with wood or coal. Water had to be carried from springs.

There were no paved roads, and few were gravelled. Wagon trails led to family sites, traditional Navajo hogans made of wood and earth. Rain or snow could immobilize the entire Mesa. Among other things, this meant that school buses couldn't be used. So Black Mesa children typically attended boarding school off the Mesa, away from home and family for months at a time.

Health care was another problem. Emergency care was generally impossible, and even routine care wasn't easy, because there were no health care facilities or doctors on the Mesa. The lack of routine care meant that

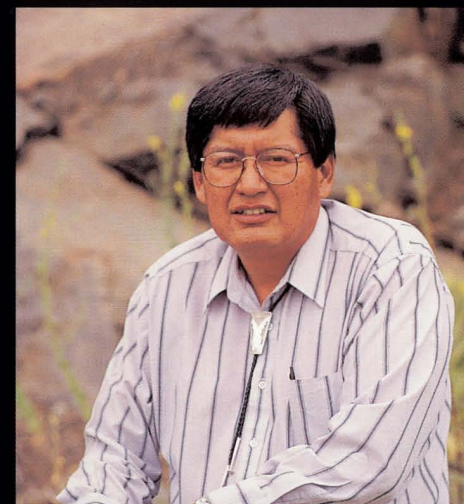
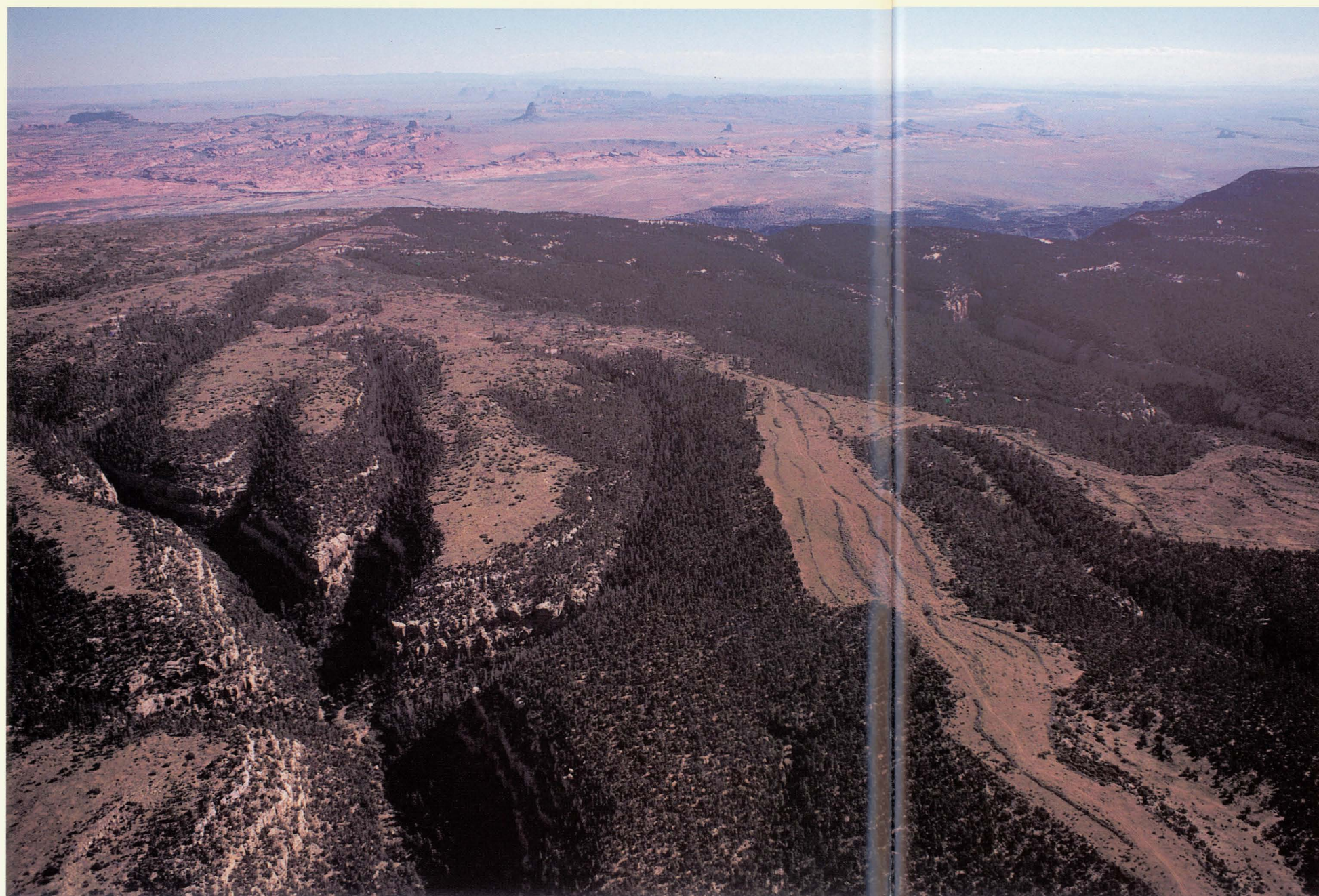
many people suffered from preventable illness.

Because of their physical isolation, residents of Black Mesa lived much as their ancestors had—herding goats, sheep and cattle and farming small plots. There were few vocational alternatives then. And those who sought them had to leave their families and the Mesa.

Physical isolation had another result. Few Black Mesa residents spoke or read English 25 years ago. Children who received a high school diploma were a minority. Almost no youngsters went on to college.

Put simply, as recently as 25 years ago, life on Black Mesa was as austere as the Mesa itself.

Encompassing 2.1 million acres, the Black Mesa in north-eastern Arizona has remained virtually unchanged for centuries. Coal mining affects less than seven-tenths of 1 percent of its surface.



There were no jobs on the Mesa before the mining. People would barter trade with the trading posts—jewelry, blankets or the wool we sheared in the spring. Some men left the Mesa for jobs on railroad gangs. They might wind up in Chicago or San Francisco and be away from their families for years at a time.

Walter Begay

*Tribal and Government Affairs Manager
Peabody Western*

Coal mining has a long history on Black Mesa. Coal seams break through the surface in many places, and Native Americans dug it out with hand-fashioned tools. As early as A.D. 825, they used coal to fire pottery and for heating their homes.

In the 1940s and 1950s, the Navajo dug coal from underground mines on northern Black Mesa. Mule-drawn wagons carted the coal to the school at Tuba City, some 60 miles to the south, and to what was then Arizona Teachers College in Flagstaff, about 150 miles to the southwest.

The difficulty—and the cost—of moving the coal off the Mesa made large-scale mining impractical without

modern technology and a sizable capital investment.

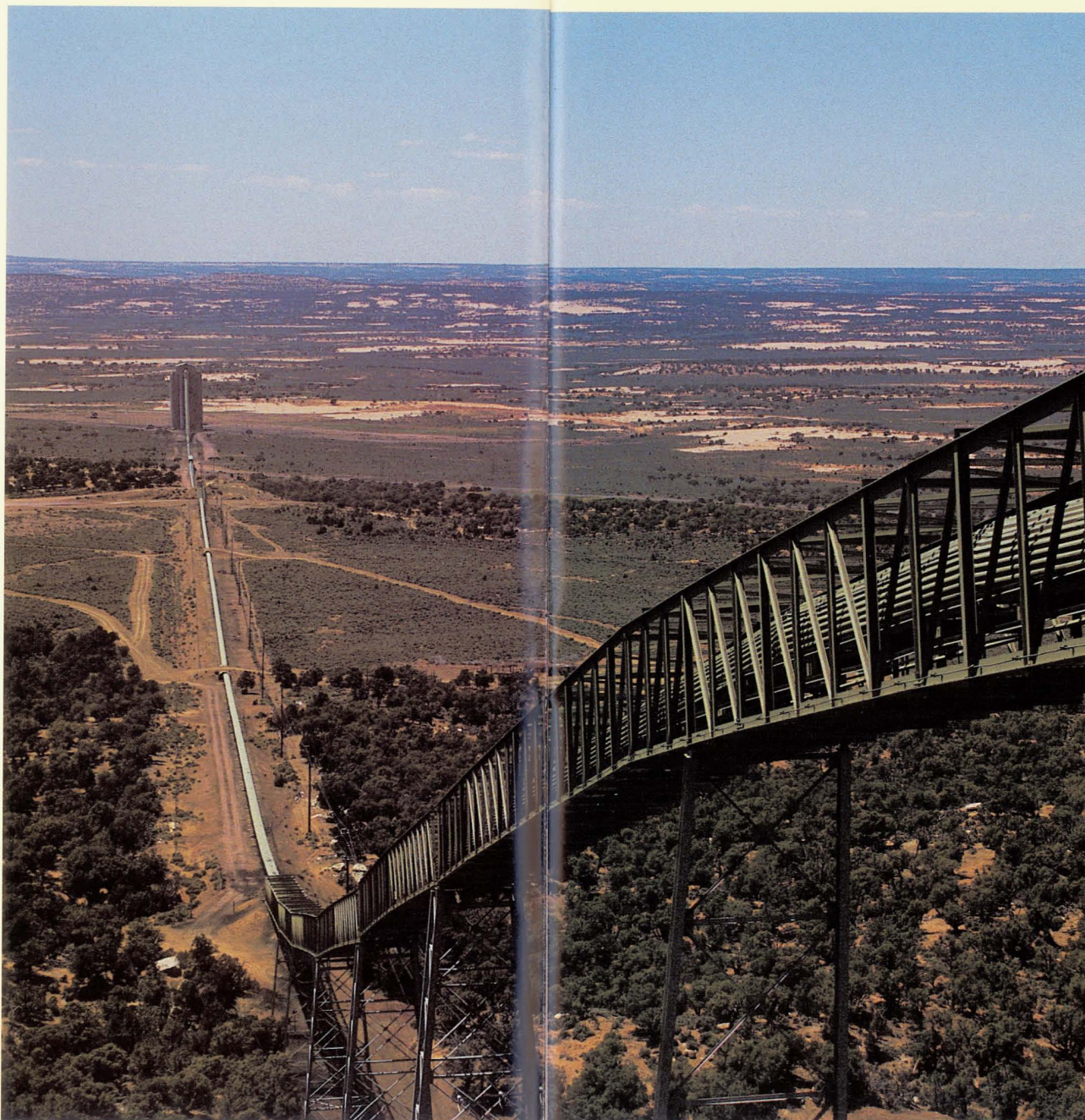
In the early 1960s, when Peabody engineers obtained rights from the Navajo and Hopi Tribes to explore the coal field on northern Black Mesa, they found large quantities of high-quality coal. Peabody had the technology and capital to make mining on Black Mesa work.

At that time, the Southwest was growing rapidly. Demand for electricity was doubling every decade. Black Mesa coal would give utilities the new capacity they needed. And it would give them a more inexpensive fuel than the oil and natural gas they had used. In turn, lower cost fuel would help utilities hold the line on rate increases.

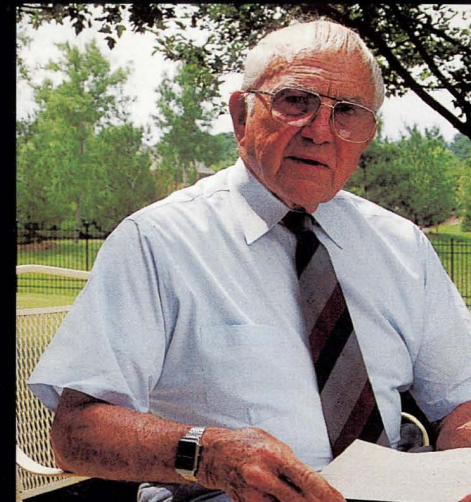


Since the first days, Peabody has hired and trained as many Navajo and Hopi as possible offering prevailing wages and benefits and providing bi-lingual instruction and cross-cultural training to all employees.

Peabody engineers first explored Black Mesa for coal deposits in the early 1960s and discovered underground mine works dating back to the 1940s.



A 17-mile conveyor system carrying Kayenta Mine's coal to silos for loading into railcars has replaced the wagon and mules used by the earlier miners.



Soon after we started operating, I remember a fellow who wanted to be a driller, to drill holes for explosive charges. The problem was, he didn't speak English. I told the interpreter a driller had to keep really good records of the location of every hole. The fellow insisted he could do it, and the interpreter thought he could, too. So I hired him. After he was trained and went to work, I saw his records. They were perfect logs of holes' locations, and in good English. Later I found out his 12-year-old daughter would translate his work every night. They were hard workers, and they learned easily. I have a lot of respect for them.

Edwin R. Phelps
Retired President
Peabody Coal Company

Before development could begin, the Navajo and Hopi Tribes had to agree to allow mining on Black Mesa. The Tribes' agreement was necessary because the area Peabody wanted to mine fell partly in an area where the coal is jointly owned by the Navajo and Hopi Tribes.

Black Mesa's coal represented significant economic benefits for the tribes. Coal mining would bring continuing royalty payments for both coal and water, high-paying jobs where there had been none, new tax revenue for the tribes, new infrastructure built at Peabody's expense, and payments for tribe-supplied services.

In 1964, after two years of negotiations, an initial contract was signed with the Navajo Tribal Council. By 1966, two more lease agreements were signed by the Navajo and Hopi Tribal Councils and approved by the U.S. Department of the Interior.

The tribes leased to Peabody the mineral rights, except oil and gas, for 64,858 acres of Navajo and Hopi land. Mining would be conducted on only about 14,000 acres of Navajo land within the leasehold, or about seven-tenths of 1 percent of Black Mesa. The additional leased land was needed for facilities to support mining and for access to coal resource areas.

In addition to providing for royalty payments to the tribes, Peabody also agreed to hire and train as many Navajo and Hopi as possible, at prevailing wages and benefits. Other provisions guaranteed that mined lands would be reclaimed to a condition at least as productive as the original land, and that Black Mesa water users would be protected and the tribes paid a royalty for all water Peabody used.

After lease agreements were finalized, Peabody negotiated its first sales contract for Black Mesa coal in 1967. That 35-year contract called for Peabody to deliver coal to Southern California Edison's new Mohave Generating Station near Laughlin, Nevada. The Black

Mesa Mine was built to supply that coal. In 1970, a second long-term agreement was executed to provide coal to the Salt River Project's Navajo Generating Station near Page, Arizona. The Kayenta Mine was built to meet this contract.

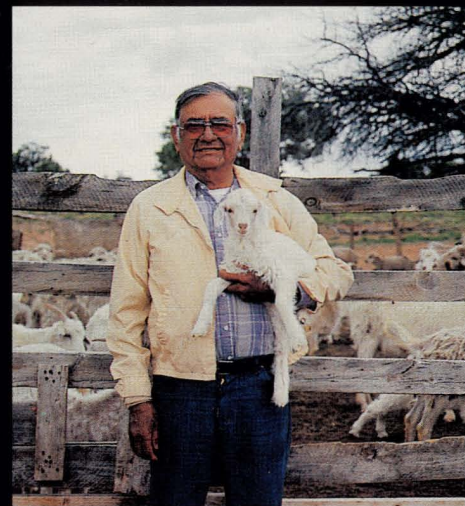
Work began to prepare the lease area and, for the first time, there were good jobs on Black Mesa. Indeed, Peabody offered not only the first major employment opportunity on the Mesa, but also the first major opportunity for industrial employment in the western area of the reservation.



Southern California Edison's Mohave Generating Station near Laughlin, Nev., is supplied by Black Mesa Mine.



Kayenta Mine's coal goes to the Salt River Project's Navajo Generating Station near Page, Arizona.



Those of us who live on Black Mesa saw coal mining as an opportunity for jobs. We were glad to have jobs here rather than farther away in Flagstaff or Phoenix where we would have to pay more for housing and transportation. In the early days, a majority of the supervisors were Anglos. Now our people have key jobs in mine management. I've seen people with limited education pick up skills and apply them. From that, they are able to support families. I worked at the mine for 18 years, and it's allowed me to enjoy my retirement on Black Mesa—raising sheep and farming.

Fred Smith
*Retired Tipple Laborer
Black Mesa Mine*

Black Mesa surface mining operations are unique in several respects. First, the coal itself is of very high quality. It's rated at 11,000 Btu per pound, with an ash content of 10 percent and sulfur content of 0.5 percent. Most Western coal has significantly lower Btu ratings and produces less heat per pound. Some Eastern and Midwestern coals have higher Btu ratings than Black Mesa coal, but their sulfur content generally is eight to 10 times as high.

A second unique characteristic is that Black Mesa mining operations involve multiple coal seams in several pits. Most surface mines have only one or two seams and one or two pits. Combined, the Black Mesa and Kayenta Mines have five active pits with coal being removed from up to six major seams in a single pit.

Black Mesa's actual mining process is a methodical, continuous operation. It begins with the removal of topsoil from the area to be mined. (Fewer than 500 acres are mined each year.) Topsoil is either stockpiled to be used later for reclamation or redistributed immediately onto areas that have been mined and are ready to be reclaimed.

The next step is to remove the material between the topsoil and the coal. At Black Mesa, coal seams are generally covered by shale and rock up to 180 feet deep. This overburden, as it's called, is drilled and then blasted to break it up. A dragline, one of the world's largest land-based machines, removes overburden in buckets that hold up to 90 cubic yards. Seven draglines work constantly on Black Mesa.

Partings, the rock between coal seams, range from six inches to more than 50 feet in thickness. They also must be removed during mining. Pits can be up to four miles long and 80 to 150 feet in width. Black Mesa's coal seams are four to 20 feet thick.

Once seams are uncovered, they're drilled and blasted to break up the coal. Power shovels and front-end loaders dig out the coal and load it into off-highway trucks that each carry up to 300 tons.

Trucks transport the coal to a hopper, where it's crushed and weighed. Then coal from the Kayenta Mine is taken off the Mesa to holding silos by a 17-mile-long conveyor.

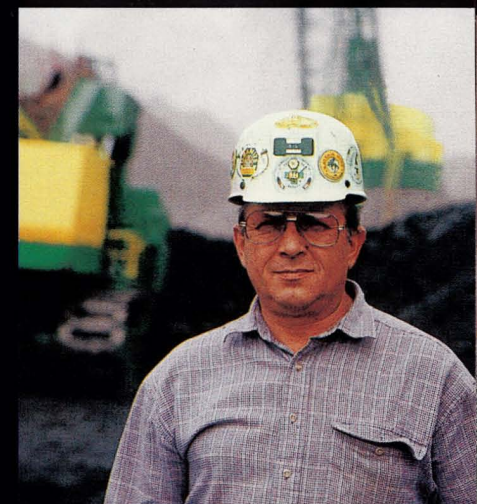
From the silos, coal is loaded on a 50- to 70-car electric unit train for an 83-mile trip to the Navajo Generating Station. Coal from the Black Mesa Mine goes by conveyor to the Black Mesa Pipeline, Inc., facilities, where it is converted to a coal-water slurry.



Haul trucks carry up to 300 tons of coal per load from active mining pits to hoppers for crushing and weighing.



Coal lies up to 180 feet below topsoil, shale and rock. Once this material is removed, the coal is loaded onto trucks from the pit, which may stretch for 4 miles and be 80 to 150 feet wide.



Our mines here are unique. We're in a remote location in the heart of the reservation. There are no major urban areas nearby so we have to be self-sufficient in every part of the operation. Mining multiple seams in several different pits requires a lot of support equipment and sophisticated planning. Every day is a challenge because of the topography, the irregular coal seams and the variances in quality. We use a complex blending system to keep coal quality consistent and meet customer emissions standards. We couldn't do it without the people—they're cooperative, willing to work and loyal.

Silvano J. Perla

*General Superintendent-Surface Operations
Peabody Western*

Coal has no value unless it can be delivered to the customer at a reasonable cost. Sometimes power plants are located near a mine, which makes delivery inexpensive and efficient. Usually, though, coal is transported by rail or barge.

Neither rail nor barge was feasible for Black Mesa's coal. Studies determined that the cost of building a railroad through the rugged terrain from the Mesa to Nevada would be prohibitive. And the lack of a nearby river excluded barge delivery. Another way had to be found to move the coal 273 miles from Black Mesa Mine to the Mohave Generating Station at Laughlin, Nevada.

Engineers proposed an unconventional solution: that coal be mixed with water and moved through an underground slurry pipeline. No slurry pipeline like this had ever been built.

Construction was challenging because the pipeline had to be buried under some of the most rugged terrain in the country. The pipeline would have to cross desert, mountain ranges and go under the Colorado River to reach the Mohave Plant. Another problem was that its course runs from a 6,600-foot elevation at the mine down to 4,200 feet and then back up to 6,500 feet before it descends the final 500 feet to the Mohave facility.

These weren't the only problems. To keep the coal and water slurry moving properly through the pipeline, the coal had to be ground to an exact, powder-like consistency, and the slurry's flow speed had to be precisely controlled. The solution called for a flow speed of about four miles an hour—for an almost three-day trip from Black Mesa to Mohave. This flow rate would give the pipeline a capacity of about 660 tons of coal per hour.

To keep the slurry moving, the world's largest positive displacement pump was developed. To monitor pipeline flow, a network of sensors relays information to the Black Mesa control station constantly via microwave communications. One operator at Black Mesa controls the slurry's 273-mile journey.

This pioneering effort has worked superbly. Since it was put into operation in 1970, Black Mesa Pipeline has moved more than 80 million tons of coal without a major interruption.

There are other strong advantages to the Black Mesa Pipeline. Because it is underground, it's protected from weather and accidents. It doesn't preclude any other use of the land. It doesn't interfere with wildlife, livestock or plant life. And even though it moves the equivalent of about 50,000 railcars of coal each year, it doesn't mar the environment.

Coal is processed at Black Mesa Mine's Preparation Plant before being ground to a powder-like texture and mixed with water into a slurry at Black Mesa Pipeline.

The equivalent of 50,000 railcars of coal per year travel 273 miles in an underground pipeline, leaving the environment undisturbed by not interfering with human, animal or plant life.



This is not just any pipeline. Black Mesa Pipeline is the only long-distance coal slurry pipeline operating in the world. Over 22 years, we've had an operating reliability of more than 99 percent and an outstanding environmental record. The pipeline has proven its long-term viability as a low-cost transportation method for coal. Black Mesa is the only supplier of coal to the Mohave Generating Plant, and the plant has never been shut down because of lack of coal inventory.

H.J. Brolick

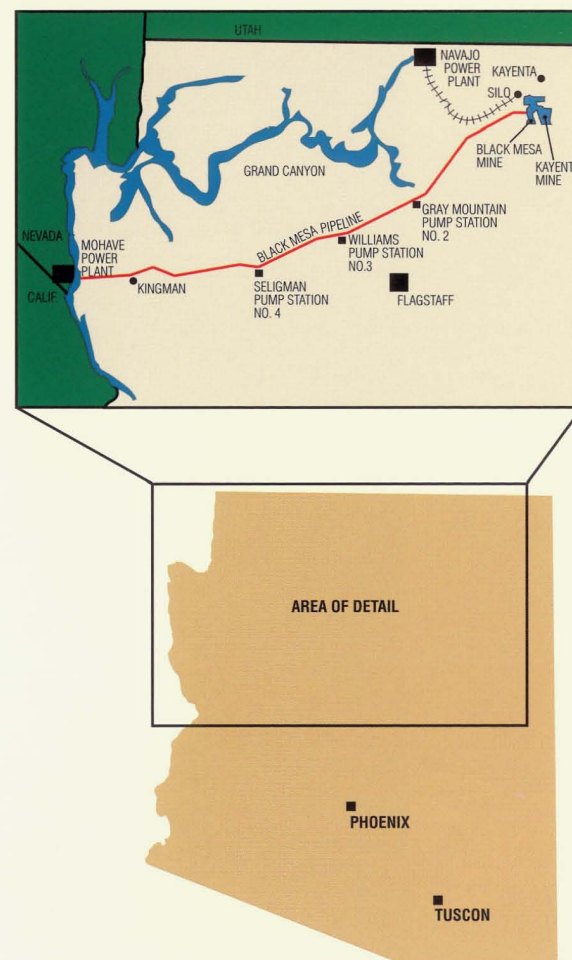
Vice President

Williams Technologies, Inc.

The Black Mesa slurry pipeline raises the issue of water—a perennial source of concern in the American West.

Peabody uses water not only for the slurry pipeline but also for the suppression of mining dust and, to a much lesser extent, for sanitary uses and drinking water. To put the quantity of water used in perspective, Arizona's total annual water consumption is estimated by the U.S. Geological Survey at about 6 million acre-feet. (An acre-foot is a one-acre area covered with one foot of water.) Black Mesa uses only about 3,867 acre-feet annually—or about .06 percent of the total state's use.

Black Mesa Pipeline crosses rugged mountain ranges and desert, then goes under the Colorado River to reach the Mohave Plant.



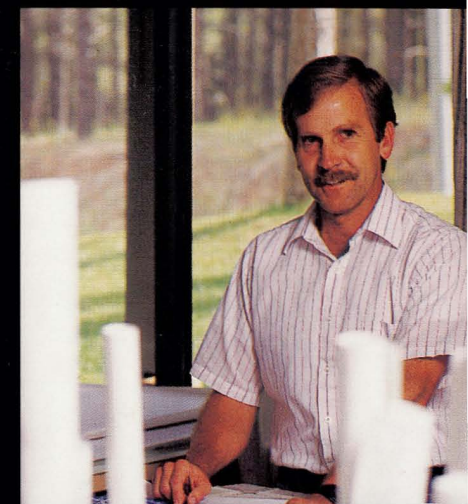
Another useful perspective comes from analyzing consumption in Arizona's four Active Management Areas for water. Black Mesa doesn't happen to be in any of the Active Management Areas (Prescott, Phoenix, Pinal and Tucson), but because state regulation requires large water users in these areas to be metered, there is a data base that identifies water users and their purposes. The data show that Black Mesa isn't even in the top 100 water users in Arizona. And if consumption figures for large water users located outside Active Management Areas were known, Black Mesa would probably rank below the top 200.

None of the sophisticated studies of the effects of Peabody's water use on Black Mesa have identified any significant impacts. A U.S. Geological Survey monitoring program has been in place since 1972 to ensure that Peabody operations do not disturb local water supplies.

Significant drought in recent years has reduced the Mesa's surface water and spring water. For example, throughout the 1980s, Black Mesa got about nine inches of rain a year. But for five consecutive years—1987 though 1991—rainfall dipped even lower, dropping in 1989 to less than half the average.



Mohave Generating Station is uniquely designed to handle coal in slurry form. Water is spun out of the slurry and cleaned for reuse in the plant's cooling towers, thus reducing the amount of water needed from the Colorado River.



Water pumped from Peabody's deep wells is monitored at the mining complex and more broadly in the Black Mesa region. Federal agencies have performed their own very sophisticated, technical studies. In fact, these studies include the most detailed hydrologic analysis ever performed by the Federal Office of Surface Mining. No significant negative impacts—either to the hydrologic system or to water users—have been identified. Studies will continue, to make certain the system and users are protected.

Ted Smith
Senior Hydrologist
Peabody Coal Company

Even in these dry years, Peabody's water use doesn't impact surface or spring water, because its water doesn't come from these sources. The water used for mining comes from eight wells on the leasehold that range from 3,417 to 3,719 feet in depth. These wells were designed specifically to prevent any effect on local water sources. They tap into water in the Navajo Sandstone (Navajo Aquifer) formation, thousands of feet below the formation that local wells access with their average 400-foot depth.

Peabody's Navajo Sandstone source is separated from local wells' water source by nature and by man. Nature has provided layers of impervious shale hundreds of feet thick between the two aquifers. Engineers have provided additional separation in the form of concrete that seals well shafts to depths greater than 2,000 feet.

In the long term, what effect will Peabody wells have on the Navajo Sandstone Aquifer?

All studies to date indicate that there will be no significant, long-term effects on the aquifer. Over the life of the Black Mesa lease, about 100,000 acre-feet of water will be used for mining. That represents less than one-tenth of 1 percent of the more than 10 million acre-feet estimated to be stored in the Navajo Sandstone Aquifer. For perspective, taking that much water from the aquifer over the life of the mines is comparable to taking a little more than half a soda can of water from a 55-gallon barrel.

This comparison doesn't take into account natural recharging of the aquifer. Obviously, rainfall will further reduce the effect of Peabody's water use. In fact, an estimated decade after mining ends on Black Mesa, natural recharging will have replenished virtually all water taken by pumping.

Peabody has initiated a new study of the Navajo Sandstone Aquifer with the Navajo and Hopi Tribes. This study will be completed by 1996 or before.

Also, new technologies are being tested to conserve water. In recent years, these efforts have resulted in an approximate 10 percent reduction in water used for the Black Mesa Pipeline and another 10 percent reduction for mining operations.

In addition, Peabody will continue to pay the Navajo and Hopi Tribes for water, a strong incentive in itself for conservation. The royalty rate depends on the amount used. It can exceed \$800 per acre-foot, for an annual total of more than \$3 million, half of which goes to each tribe.

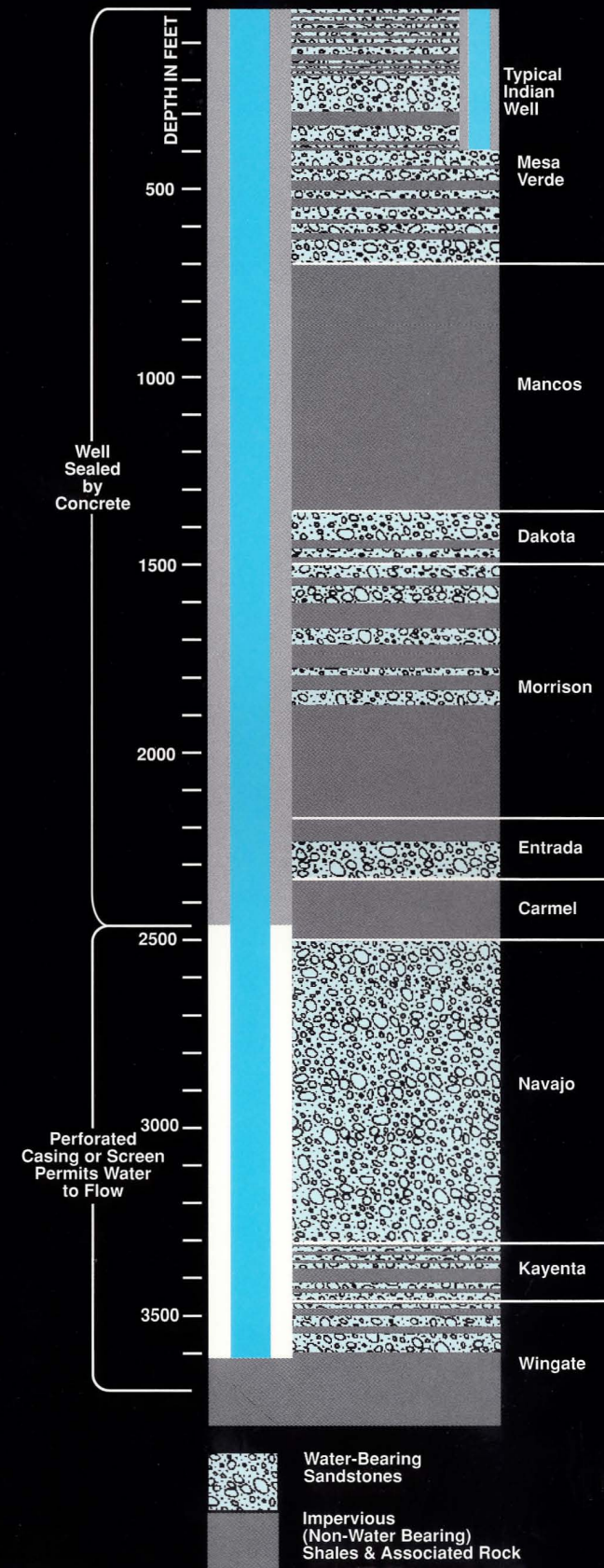
Strong regulatory safeguards also protect against any adverse effects of Peabody's water use. For example, if the Secretary of the Interior finds that local water supplies are endangered, the company is required to provide Native Americans with water of comparable quantity and quality—or to obtain water for slurry operations from another source.

In short, Peabody has every reason to continue to protect Mesa water supplies carefully.

As for the water used in the Black Mesa Pipeline, it isn't wasted when it arrives at the Mohave plant. Once water and coal are separated by high-speed centrifuges and a cleaning process, the Mohave plant reuses the water in its cooling towers. This means the facility takes considerably less water from the neighboring Colorado River than it otherwise would. And it means that water from the Navajo Sandstone Aquifer thus performs two vital functions in helping to bring electrical power to the Southwest.



Peabody's water use is regularly monitored, and new technologies are tested to conserve water. All studies indicate that there will be no significant long-term effects on the Navajo Aquifer.



Shortly after Peabody began mining Black Mesa's great coal seams, company reclamation specialists began working with local residents and government officials to study the land and its vegetation.

At that time, there were no federal regulations requiring land reclamation after mining. But Peabody's lease agreements explicitly required mined lands to be restored and returned to tribes "in as good condition as received." That condition has been met—and improved upon.

The reclamation process used on Black Mesa follows these steps.

Once coal is removed, overburden and partings are returned to the mined pit. They're graded to approximate the land's original contours. Then stockpiled topsoil is brought in to cover the overburden. The surface is disked to hold moisture and prevent erosion. Then it's fertilized,



The mining and reclamation sequence as it proceeds from left to right: A) topsoil removal, B) drilled highwall, C) active pit, D) spoil piles, E) grading of spoil, F) topsoil replaced and G) revegetated land.

seeded and mulched to start the revegetation process. Seeded areas are also fenced to prevent accidental damage and premature grazing.

Mined areas are reseeded with a mixture of warm- and cool-season plants and with native and introduced species. Additional grasses have been introduced because of their superior adaptability to the Mesa's poor soil and their higher nutritive value for livestock grazing. Legume's also have been added because they provide nitrogen that nourishes grasses. And shrubs have been planted to enhance reclaimed land for wildlife.

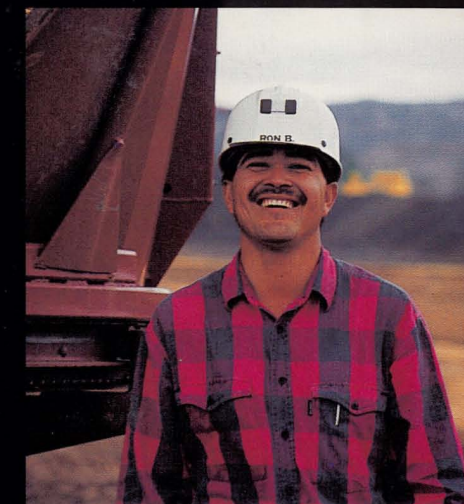
Reclaimed areas are monitored by environmental specialists who track reclamation progress and thereby establish a data base. These computerized measurements help specialists adjust reclamation methods as necessary to achieve maximum results.

Even though relatively little land actually is mined, reclamation is an expensive process, with the cost ranging from \$8,000 to \$20,000 an acre. However, the investment has paid off. Reclaimed lands are estimated to have two to three times more grazing capacity today than before being mined.

The coal is gone from the earth, but reclaimed land remains for continued productive use.



Reclaimed land (left side of fence) returned to the Tribe will support two to three times more grazing than it originally did.



When I got a job at the mine 12 years ago, I never thought I could become a supervisor. I worked hard. I'm still learning. The last two years supervising a staff of 20 has been a challenge. I study on my own to further my education and to help me do the job better. I try to pass on what I learn. It doesn't do any good to keep it to yourself. Most of the revegetation staff are Native Americans. We were taught to help others. That's what it's all about—giving each other a hand.

Ronnie Bradley
Revegetation Supervisor
Black Mesa and Kayenta Mines

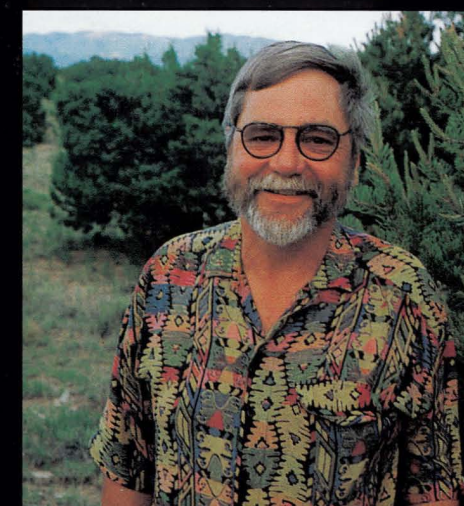
Even though it has supported people for 8,000 years, Black Mesa was largely an archaeological mystery before mining plans were made. The only other time archaeologists had studied the area was in the 1930s, as a cursory part of a larger expedition.

Black Mesa's first comprehensive exploration occurred because federal law required that public lands' archaeological value must be professionally evaluated before the land is disturbed. So, in 1967, Peabody retained Prescott College in Arizona to conduct an evaluation. In 1975, the project was transferred to the Center for Archaeological Investigations at Southern Illinois University-Carbondale.

The resulting study became one of the largest and longest-running archaeological investigations in North America, involving a dozen colleges and universities and more than 700 people. Fieldwork on Black Mesa by a team of professional archaeologists, graduate students and local Native Americans spanned 17 years, every summer from 1967 through 1983.

At a cost to Peabody of more than \$7 million, all 64,858 acres of the leasehold were explored, and some 2,500 sites were identified, mapped and surface-collected. Some 220 of those sites were also excavated, producing more than a million artifacts. All artifacts remain the property of the Navajo and Hopi Tribes.

After each season's fieldwork, a report conforming to government regulations was written. In addition to these reports, more than 300 books, papers and articles have been published. For non-scientists interested in the Mesa's archaeology, Peabody underwrote publication of *People of the Mesa: The Archaeology of Black Mesa, Arizona*.



More than a million artifacts were found. They remain the property of the Navajo and Hopi Tribes.

The unusual aspect of the Black Mesa Archaeological Project is that Peabody went beyond the letter of the law in exploring and collecting the artifacts of the extinct peoples of Black Mesa. Peabody helped us discover how people really lived, and it changed the way we looked at people of the pre-historic Southwest. Too often, archaeologists search for the oldest, the most spectacular, the most exotic. This project gave us a social history of how average people lived back then and helped us understand their day-to-day lives. It brought the average Anasazi to life.

George J. Gumerman, Ph.D.

Director

Center for Archaeological Investigations

Southern Illinois University-Carbondale



In 17 years of fieldwork, archaeologists excavated 220 sites on the Black Mesa. The \$7 million study was one of the largest and longest-running archaeological investigations in North America.



The last quarter century has brought change to Black Mesa—change not so significant to the land itself, perhaps, as to the people of the Mesa and the surrounding reservations of the Navajo and Hopi.

For example, before mining, no Native Americans had industrial or commercial jobs on the Mesa. Today, Peabody has become the nation's largest private employer of Native Americans.

Peabody employs more than 850 Native Americans, representing 93 percent of the total employees at the Black Mesa complex. Their average pay exceeds \$41,000 per year, a wage about twice the national average, and eight times as high as the aver-

age for non-mining jobs on the reservation. Peabody benefit programs add another \$12,000 to the average employee's annual compensation.

Peabody's Arizona operations contribute more than \$100 million annually to local economies in wages, fringe benefits, and purchased goods and services.

Royalties on coal and water amount to an additional \$36 million annual payment to the Hopi and Navajo Tribes, a significant percentage of both tribes' total annual revenues.

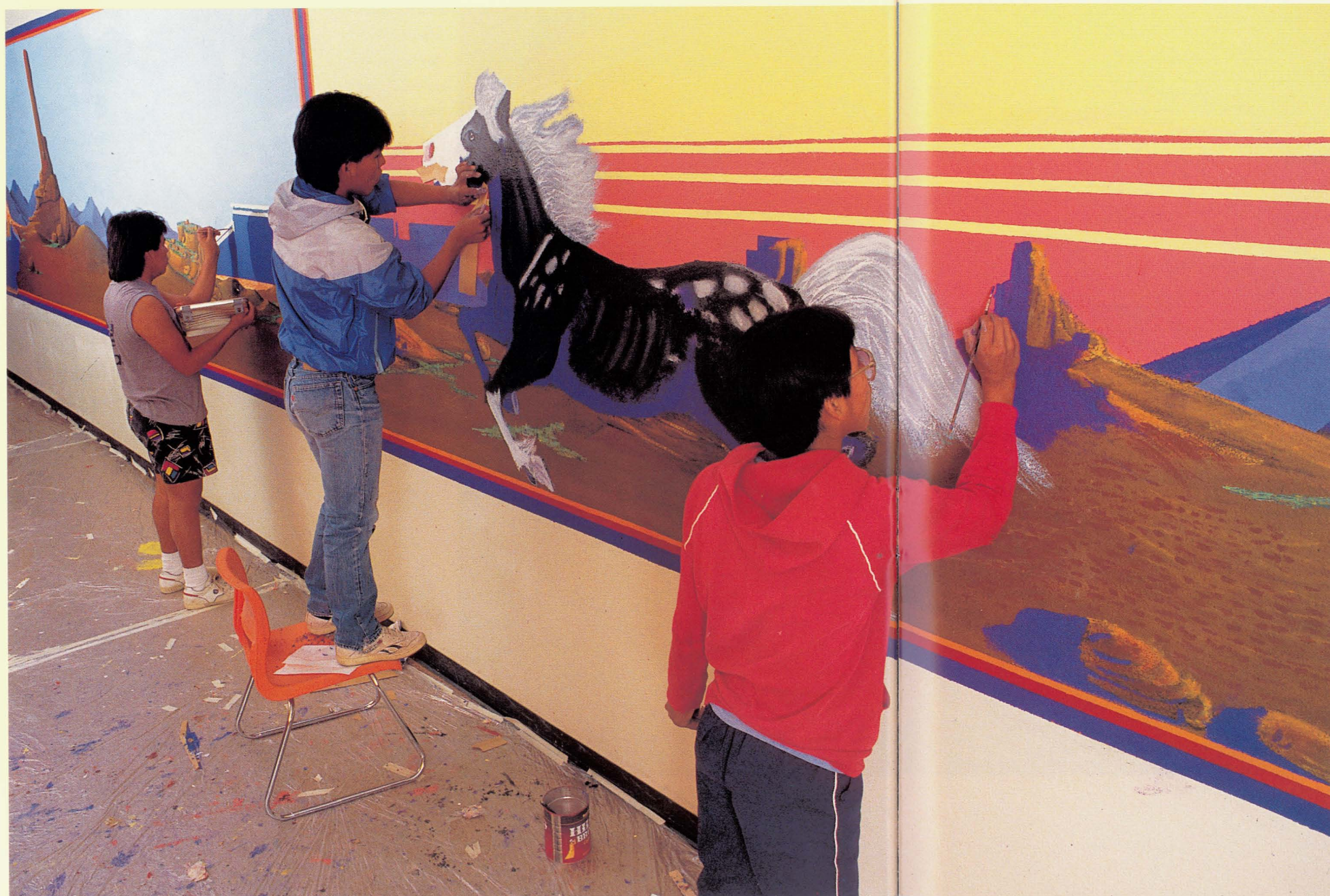
Peabody's tax payments exceed \$35 million and support community services in the districts in which we operate. For example, about half the annual operating

budget of the local Kayenta School District comes from Peabody taxes. This school district serves 2,700 students from a 2,130 square-mile area of the reservation.

Corporate contributions to tribal programs and surrounding communities are another important economic impact. In recent years, contributions have averaged more than \$500,000 annually, with a substantial percentage going toward scholarships for Native American students.

Beyond these direct economic inputs, indirect effects of mining operations are substantial. For example, Peabody, its employees, vendors and subcontractors account for 50 percent or more of the revenues of

High-quality educational opportunities are now available to area youngsters in Kayenta. Peabody taxes represent about half of the school district's budget.



The tax revenues Peabody pays to the state and county allows us to build and grow. In the last few years, we've improved the quality of our facilities and classroom equipment, we've expanded bus routes, and we're attracting kids who were going to boarding schools. Our student body numbers 2,700, up by 600 since 1986. The impact of Peabody taxes on our bonding capacity means we can generate more money for capital improvements. In addition, Peabody employees help student groups with field trips and serve as resource speakers. And we use Peabody people to help us brainstorm improvements in curriculum offerings and to help us anticipate what skills will be needed in the job market.

Dr. Joseph Martin

Superintendent of Schools

Kayenta Unified School District

area businesses, which have grown dramatically since mining began. These businesses provide additional job opportunities for Native American residents.

Once practically non-existent, Black Mesa's infrastructure has changed significantly since mining began. Where there were no paved roads, there are now dependable, all-weather access routes to the Mesa. Where once people had to carry water from springs, they now can get free water from Peabody wells.

Health care on the Mesa and surrounding plain has been much improved. On the Mesa, Peabody maintains a 24-hour, seven-day-a-week emergency

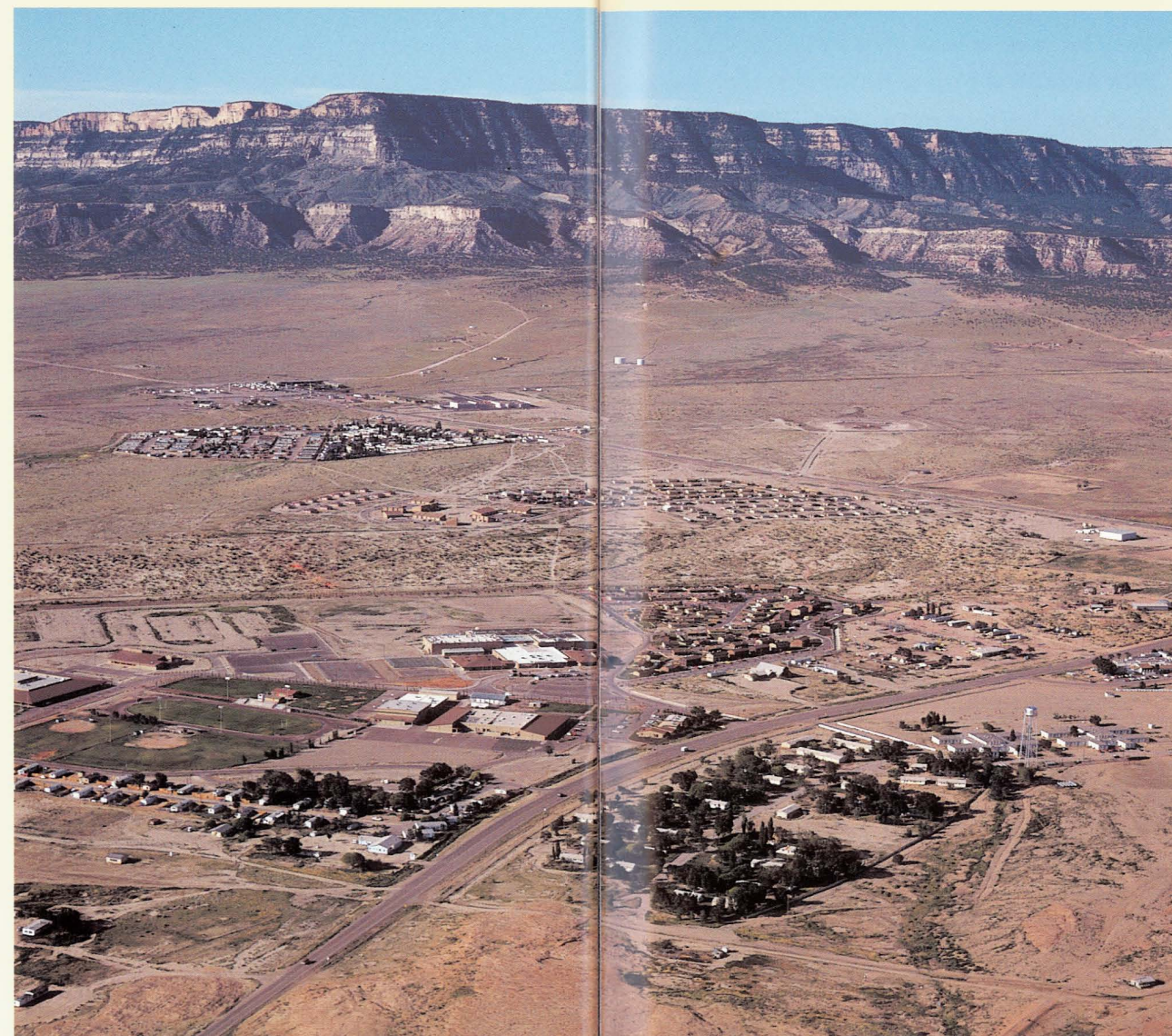
clinic staffed by a registered nurse and certified emergency medical technician (EMT). An ambulance, a four-wheel drive rescue truck, a fire truck and more than 40 EMTs and other trained emergency personnel are on call. Off the Mesa, in Kayenta, there now is a Community Health Service Center that has received substantial Peabody funding. Easy access to continuing care means that fewer people suffer from preventable illness.



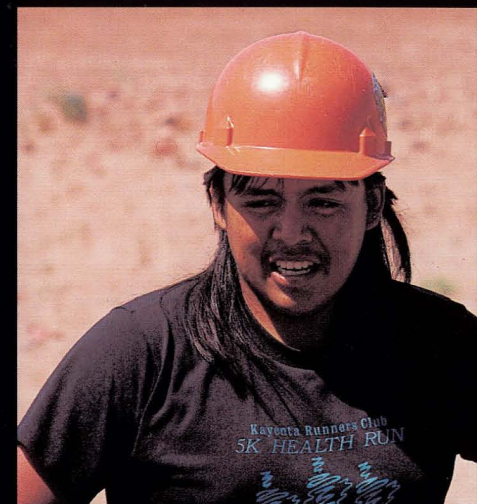
Peabody contributions to the Kayenta Community Health Service Center have helped make possible continuing preventive care for local residents.



Peabody employees plan the annual Coal Miner's Stampede Rodeo in Kayenta. The company is a major contributor to community activities.



The town of Kayenta, just north of Black Mesa, has experienced dramatic growth since Peabody began mining. New businesses there have created even more job opportunities for Native Americans.



I would like to come back to Peabody to work after college (Mesa Community College) so I could stay on the reservation. Too often people get a degree and leave. Peabody offers professionals a chance to stay on the reservation—to stay home. I get tired of the city. I like the scarcity of people here.

Lorenzo Dugi
Summer Intern
Kayenta, Arizona



I've lived on Black Mesa my whole life—63 years. Without the mines, life would still be rough up here. Before, to sustain ourselves, we had to grow as many agricultural products as possible to use for trade. The only jobs were off the reservation. Most children were sent off to boarding school for the whole school season. If you got sick, you relied on home remedies. We traveled by horseback. It took a day or two to bring barrels of water in by wagon. Mining may have reduced grazing areas, but in return, life is easier. Reclamation is bringing back grazing plots, and I'm grateful for that. I may not use it before my passing, but it's there for my grandchildren. I appreciate what's come about. We've gone from a harsh way of life to a gentler one.

Lily Crank

Black Mesa Resident


No one can say with certainty to what degree change on Black Mesa would have occurred without mining. What we can say with confidence is that Peabody is proud to have worked with the people of Black Mesa for the last quarter century.

More than 25 years' experience in the largest industrial project ever undertaken on Native American land has proved that different cultures can work together as equal partners, learning from one another and sharing responsibility to realize mutual benefits. We have proved that industrial technology and a spiritual reverence for the earth can be compatible. Indeed, in the last 25 years, we have demonstrated that the interests of a corporate entity and the people of Black Mesa are inseparable.

After Black Mesa gives up the last of its coal, sheep and goats again will roam and graze where men and machines once worked. The ancient Black Mesa still will loom darkly over the plain as it has for millions of years. Mining will have touched its rugged expanse lightly and its history only briefly.

It is our privilege today to work with respect for Black Mesa's future and with honor for its people.

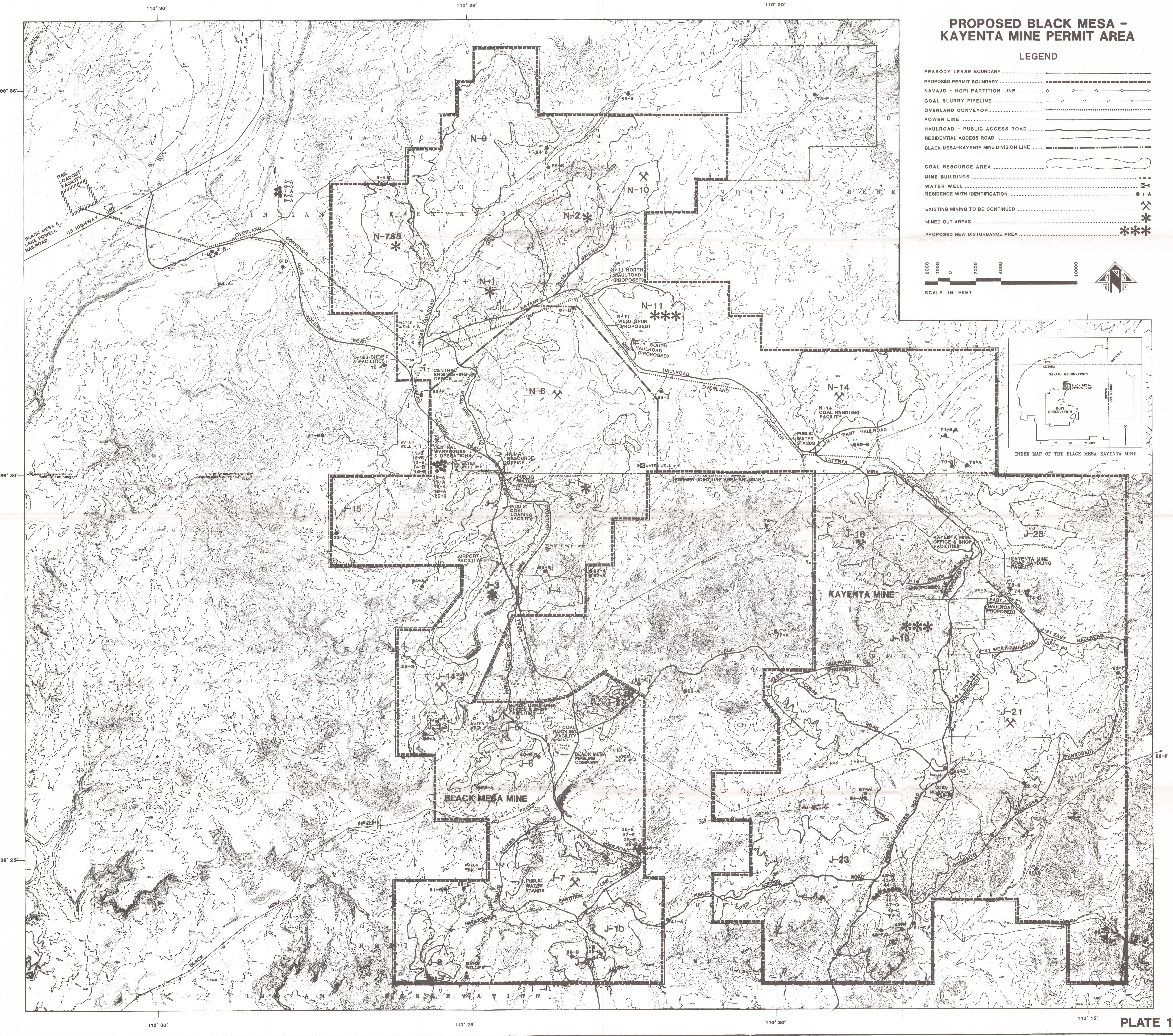
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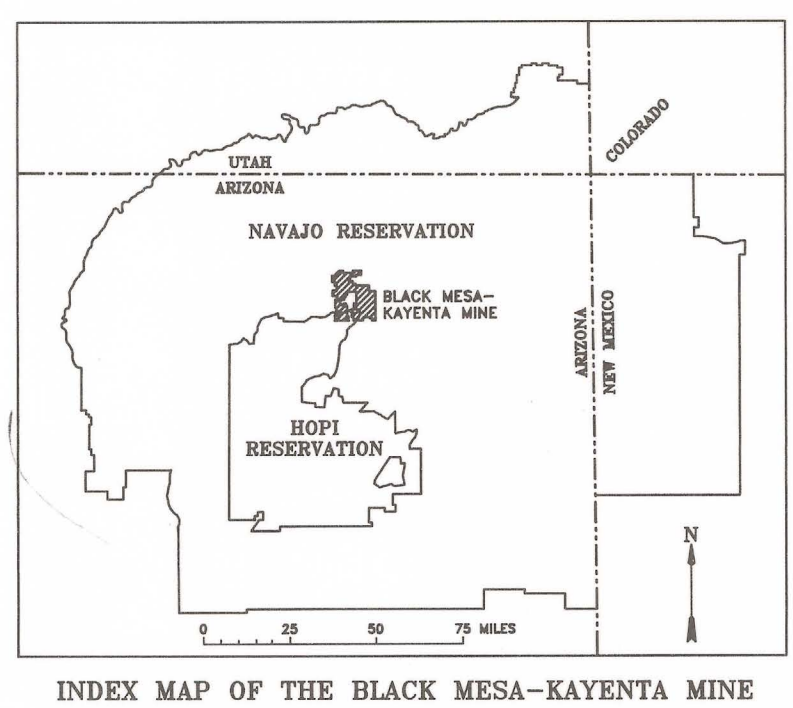
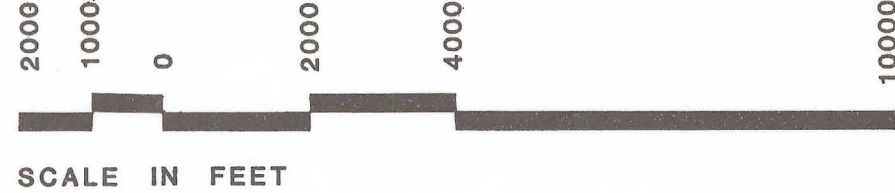
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PROPOSED BLACK MESA - KAYENTA MINE PERMIT AREA

LEGEND

- PEABODY LEASE BOUNDARY
- PROPOSED PERMIT BOUNDARY
- NAVAJO - HOPI PARTITION LINE
- COAL SLURRY PIPELINE
- OVERLAND CONVEYOR
- POWER LINE
- HAULROAD - PUBLIC ACCESS ROAD
- RESIDENTIAL ACCESS ROAD
- BLACK MESA-KAYENTA MINE DIVISION LINE
- COAL RESOURCE AREA
- MINE BUILDINGS
- WATER WELL
- RESIDENCE WITH IDENTIFICATION
- EXISTING MINING TO BE CONTINUED
- MINED OUT AREAS
- PROPOSED NEW DISTURBANCE AREA

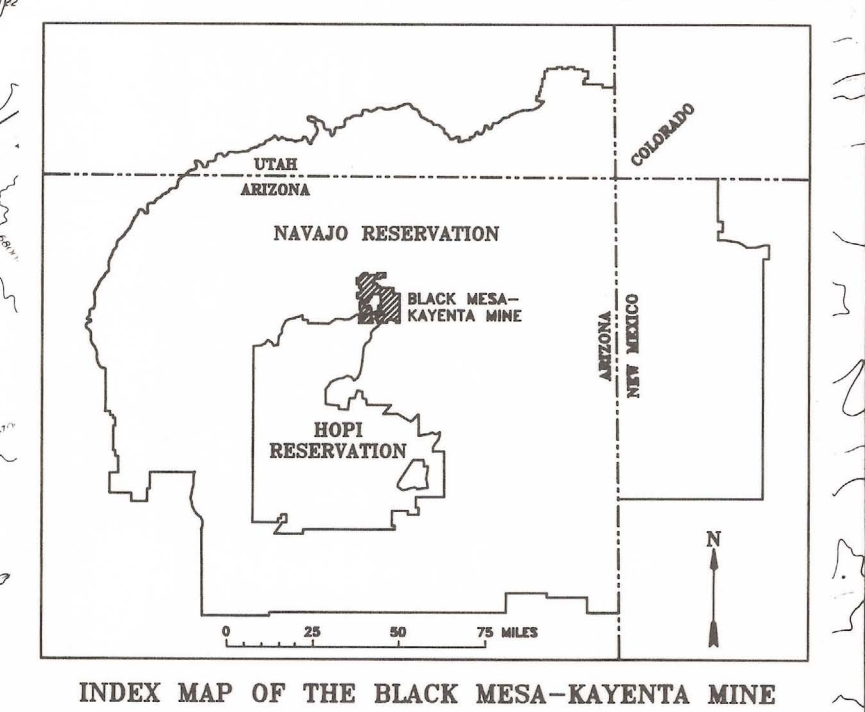
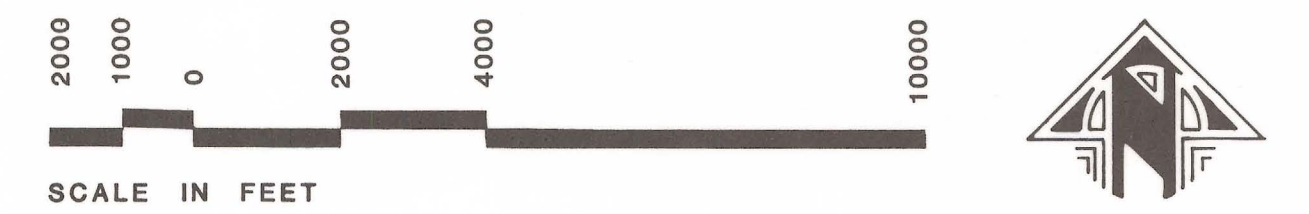


AIR QUALITY IMPACT ASSESSMENT PROPOSED BLACK MESA - KAYENTA MINE PERMIT AREA

LEGEND

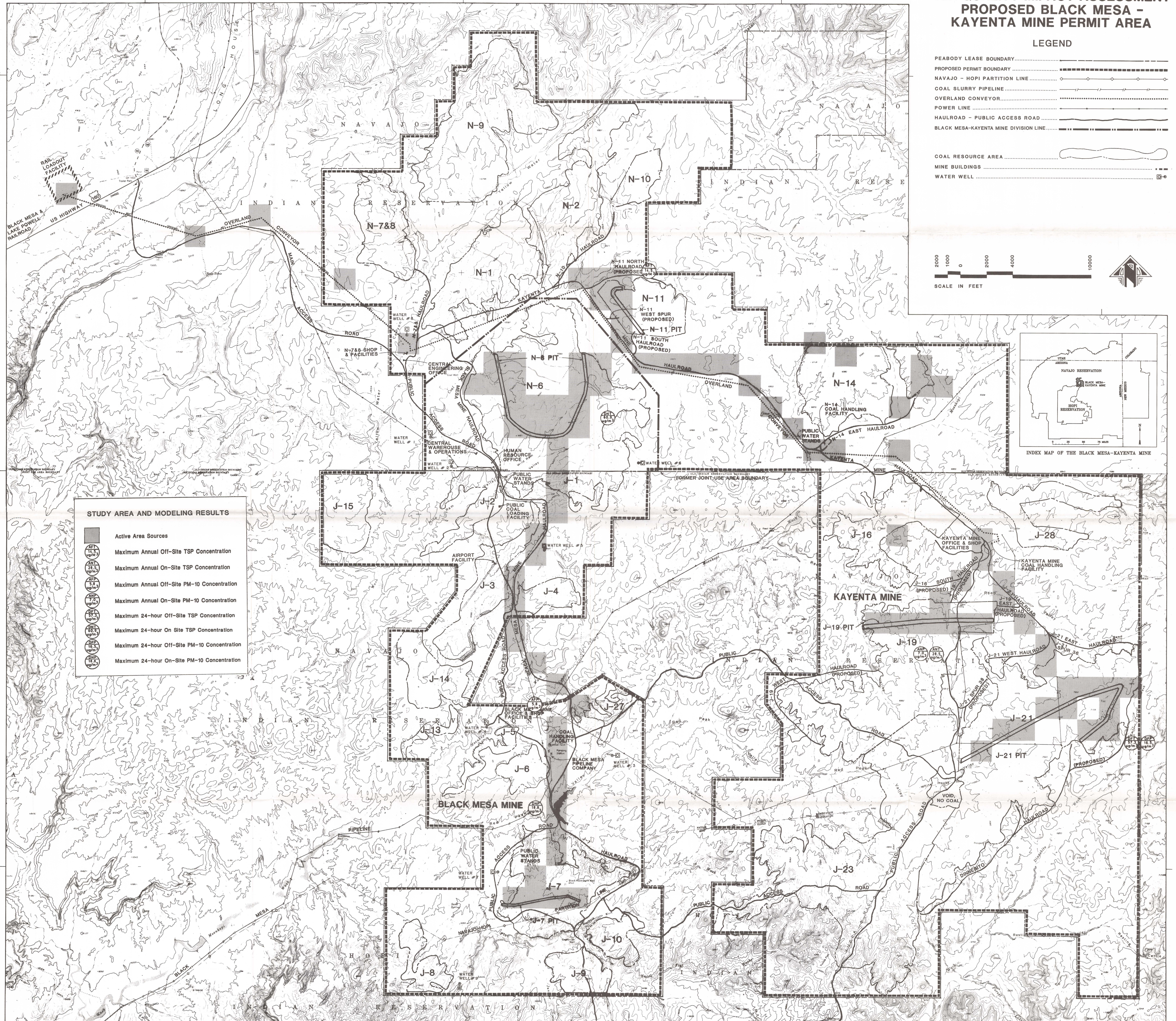
- PEABODY LEASE BOUNDARY
- PROPOSED PERMIT BOUNDARY
- NAVAJO - HOPI PARTITION LINE
- COAL SLURRY PIPELINE
- OVERLAND CONVEYOR
- POWER LINE
- HAULROAD - PUBLIC ACCESS ROAD
- BLACK MESA-KAYENTA MINE DIVISION LINE

- COAL RESOURCE AREA
- MINE BUILDINGS
- WATER WELL



STUDY AREA AND MODELING RESULTS

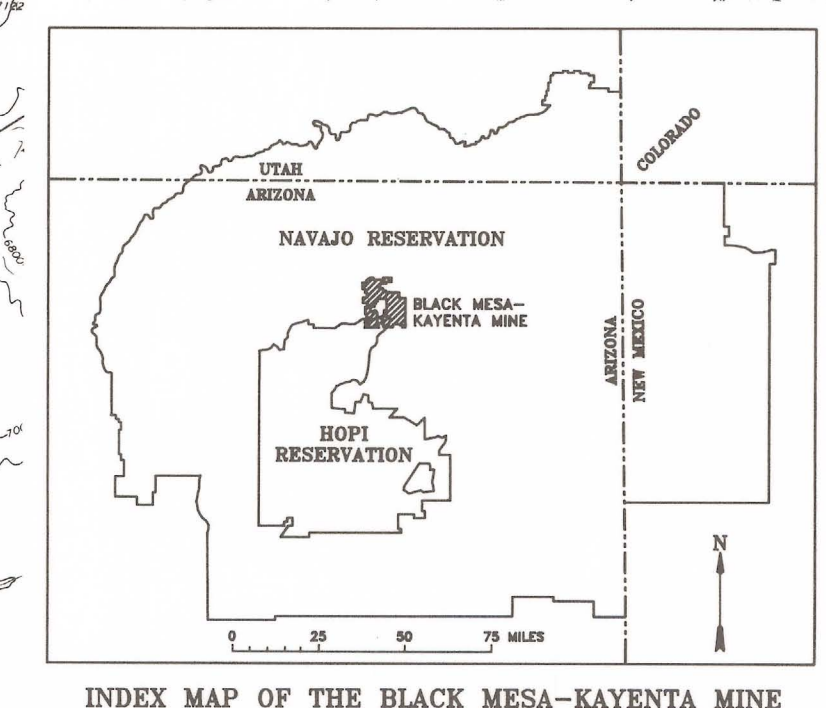
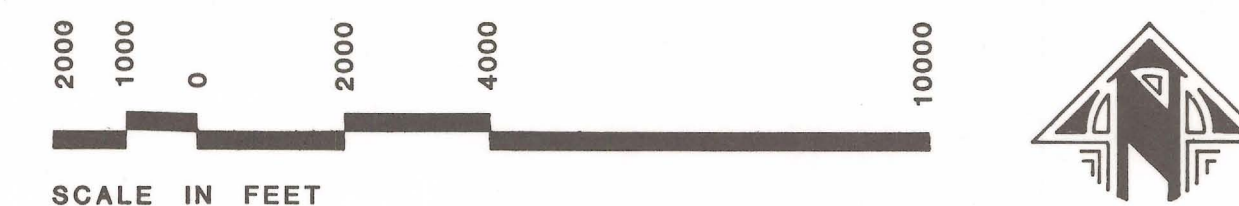
- Active Area Sources
- Maximum Annual Off-Site TSP Concentration
- Maximum Annual On-Site TSP Concentration
- Maximum Annual Off-Site PM-10 Concentration
- Maximum Annual On-Site PM-10 Concentration
- Maximum 24-hour Off-Site TSP Concentration
- Maximum 24-hour On-Site TSP Concentration
- Maximum 24-hour Off-Site PM-10 Concentration
- Maximum 24-hour On-Site PM-10 Concentration



PROPOSED KEY WILDLIFE HABITAT LOCATIONS

LEGEND

- PEABODY LEASE BOUNDARY.....
- PROPOSED PERMIT BOUNDARY.....
- NAVAJO - HOPI PARTITION LINE.....
- COAL SLURRY PIPELINE.....
- OVERLAND CONVEYOR.....
- POWER LINE.....
- HAULROAD - PUBLIC ACCESS ROAD.....
- BLACK MESA-KAYENTA MINE DIVISION LINE.....
- COAL RESOURCE AREA.....
- MINE BUILDINGS.....
- WATER WELL.....
- DRAINAGE CHANNEL.....
- DRAINAGE PLANTING LOCATIONS.....
- WILDLIFE CORRIDOR LOCATIONS.....
- PONDS ALREADY CONSTRUCTED OR TO BE CONSTRUCTED BY PGC.....
- PREMINING PONDS WHICH WILL NOT BE DISTURBED BY MINING.....



INDEX MAP OF THE BLACK MESA-KAYENTA MINE

NOTE: THE LOCATION AND SIZE OF THE KEY WILDLIFE HABITATS ARE NOT TO SCALE. THE GENERAL LOCATIONS ARE PLOTTED TO ILLUSTRATE THE CONCEPT OF PROPOSED MITIGATION FOR WILDLIFE HABITAT.

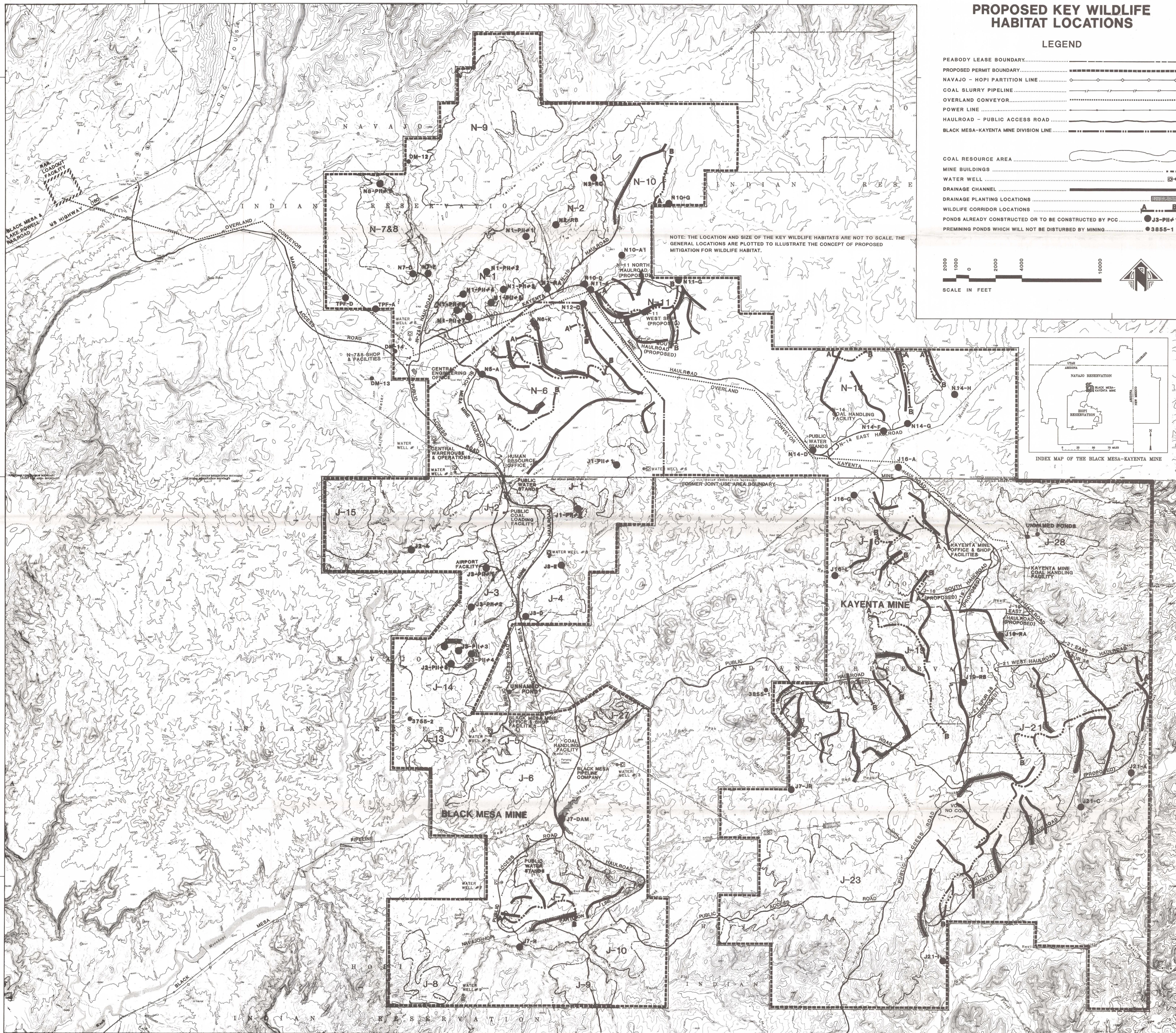
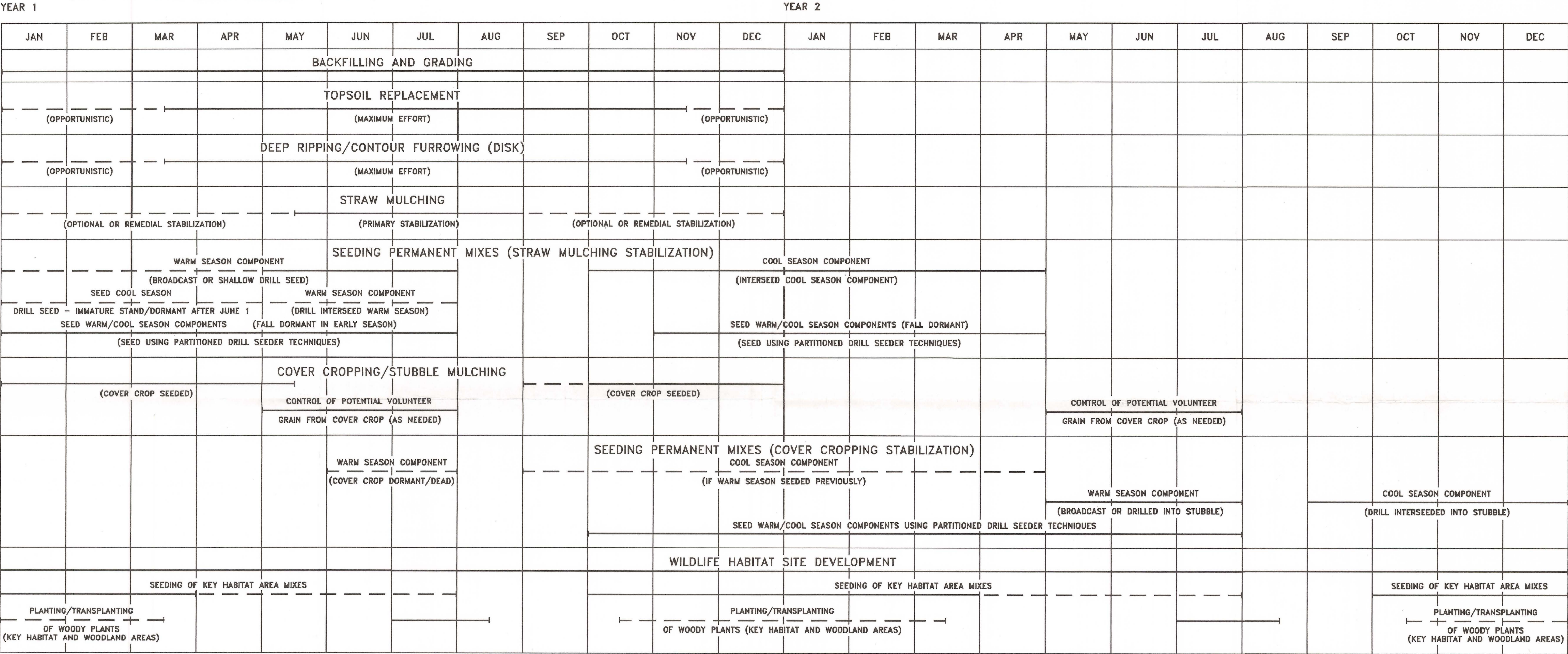


PLATE 4. RECLAMATION SEQUENCING AND SUMMARY OF REVEGETATION ACTIVITIES
 [Source: PCC, Permit Application Package, v. 11, ch. 23]



_____ DENOTES THE PERIOD OF MAXIMUM EFFORT OR OPTIMUM TIME FRAME FOR A METHOD/PRACTICE.
 - - - - - DENOTES THE PERIOD OUTSIDE OF THE OPTIMUM TIME FRAME OR PERIOD OF MAXIMUM EFFORT WHERE, UNDER PROPER CONDITIONS, A METHOD/PRACTICE MAY BE USED. IT ALSO SYMBOLIZES THE OPTIONAL USE OF A METHOD/PRACTICE DURING A PARTICULAR TIME.
 DOWNDRAINS AND DRAINAGES ARE LOCATED DURING BACKFILLING AND GRADING, TERRACES ARE CONSTRUCTED FOLLOWING TOPSOIL REPLACEMENT (SEE CHAPTERS 21 AND 26).
 FERTILIZATION: WHEN USED, FERTILIZER APPLICATIONS (FORMULATIONS, RATES) ARE SUBJECT TO THE RESULTS OF SOIL TESTING. PHOSPHORUS MUST BE INCORPORATED AND IS APPLIED PRIOR TO MECHANICAL SURFACE OPERATIONS (CONTOUR FURROWING/DISKING). NITROGEN IS APPLIED AS A TOP DRESSING AFTER THE FIRST GROWING SEASON.