The Harmon Creek Coal Story

Courtesy of
Harmon Creek Coal Corporation

the

HARMON CREEK COAL

story

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HARMON CREEK COAL CORPORATION

1610 FIRST NATIONAL BANK BLDG. • PITTSBURGH 22, PA.

Holes are charged with ammonium nitrate mixed with fuel oil. Supplies are carried in truck in background.

Long life of mining equipment at Pennsylvania's largest bituminous strip mine results from proper inspection and records, coupled with excellent care and expert overhauling.

By J. W. Hunt

EXPERT CARE ASSURES SUCCESSFUL STRIPPING

Florence Mine of the Harmon Creek Coal Corporation, with a 1959 production of over 430,000 tons, is the largest bituminous strip mine in Pennsylvania. With a production and maintenance staff of 86 men, the mine produces 2,000 tons of clean coal per day from the Pittsburgh No. 8 seam. Up to 75 feet of cover is removed to expose the coal through round-the-clock operation of two electrically powered overburden-removal units, one a 15-cu-yd shovel and the other a 12-cu-yd dragline. Drilling, with a truck-mounted rotary drill, and blasting is a two-shift operation, while loading, hauling, preparation, and shipping is accomplished on a single shift.

Opened in 1917 by the Carnegie Coal Company, the Florence mine was purchased in 1928 by the Harmon Creek Coal Corporation and has been continuously operated since that time with an average production of 400,000 tons per year. The company owns over 5,000 acres of land in Washington County, Pennsylvania, with more than one-third of the acreage containing recoverable coal under a cover of 75 feet or less.

The preparation plant, utilizing calcium chloride units, is located on State Route 18 between the communities of Burgettstown and Florence, Pennsylvania. It is within trucking distance of the highly industrialized Washington, Pennsylvania, Weirton, West Virginia, and Steubenville, Ohio areas that furnish a steady market for more than half the annual production. The plant is served by a branch of the Panhandle Division of the Pennsylvania Railroad, providing access to the Great Lakes and other industrial markets.

Overburden Drilling and Blasting

Overburden over the 4-ft seam currently ranges from 40 to 75 feet in thickness and must be blasted prior to being removed. A typical driller's log shows 10 feet of clay, 10 to 20 feet of sandstone, four feet of rooster coal, and four feet of sand-rock over the coal.

Bulldozers prepare the surface for drilling by removing vegetation and leveling the surface. Drilling is a two-shift operation for a crew of two men operating a truck-mounted rotary air unit. Vertical holes are drilled with 7⅛-in *Tricone* bits to within three feet of the top of the coal. In a normal shift of 7 hours and 15 minutes, the drilling crew averages 11 holes for a total footage of 475, with actual drilling time being approximately 30 minutes per hole. Holes are drilled on a staggered pattern on 25-ft centers with the initial row 25 feet from the highwall and succeeding rows 25 feet apart.

Ammonium nitrate fertilizer and fuel oil, primed with 2 x 8-in sticks of *Tungite* dynamite and *Primacord*, and detonated with electric blasting caps, are used to produce fragmentation. A two-man team charges and fires the holes using instant detonating caps on the first line and delays on successive rows. Holes are charged according to the following general pattern in order to place the charge in the area of greater rock resistance: 3 to 4 feet of stemming over

This 15-cu-yd electrically powered shovel has been in service since 1937. It has a 96-ft boom and a 58-ft stick.

In operation at the mine since 1937, this electric loading shovel has a 3-cu-yd dipper.

the coal; 1 bag of fertilizer (80 pounds) with 1 stick of dynamite; 5 to 10 feet of drill-dust stemming; 4 bags of fertilizer; 15 to 20 feet of drill dust to the top of the hole. *Primacord* is used in the holes, and it is ignited with delay and instant detonators as described above.

Transportation of the blasting material is done by the blasting team who use a truck for hauling the explosives from the storage units to the holes. The blasting agent is removed from the truck at the holes as they are loaded to eliminate excessive handling. Drill records passed on to the blasting team by the drill crew furnish the key to the placement of the explosive in the holes in order to match the explosives with the sandstone layers.

Mining Cycle

Two mining units are currently used for the production of 2,000 tons per day—namely, the "shovel" unit and the "drag" unit. In each case drilling is carried out by the one truck-mounted rotary drill.

One unit consists of an electric shovel with a 96-ft boom, a 58-ft stick, and a 15-cu-yd dipper, two bulldozers, a tractor-broom, and an electric loading shovel with a 3-cu-yd dipper.

The pit varies from 80 to 100 feet in width with a 40- to 55-ft highwall. Bulldozers are utilized for leveling the spoil and rough cleaning the surface of the coal. Fine cleaning of the coal surface is done with the tractor-broom unit to produce a high-quality raw-coal product. The electric loading shovel loads the coal, without blasting, directly into trucks for hauling to the preparation plant.

The dragline unit consists of an electric walking dragline with a 165-ft boom and 12-cu-yd bucket, two bulldozers used for leveling of spoil and rough cleaning the surface of coal, a tractor-broom, and a diesel-powered loading shovel with a 3-cu-yd dipper.

The dragline pit width varies from 110 to 150 feet with a maximum highwall height of 75 feet. The dragline works from either the highwall or the spoil bank, depending on conditions. Working from the spoil bank is advantageous when bench stripping is practiced since it permits casting of the overburden removed from the second bench far enough back from the pit to avoid the danger from falling back into the pit or to require rehandling. The dragline is operated three shifts per day removing the overburden from the pits served by separate loading units. Preparation of coal surface and loading proceeds in a similar manner to the shovel unit.

Haulage

The coal is hauled from the pits to the preparation plant by a fleet of company-owned gasoline- and diesel-powered bottom- and end-dump trucks. Haulage is entirely over private roads constructed and maintained by the company. Presently operated pits are 5½ miles from the preparation plant. The main haulage roads, 60 to 70 feet wide to provide adequate passing room, are constructed of sized rock mixed with slag. Grades are limited to a maximum of four percent on the main roads and to six percent on the pit ramps. An underpass is used at the only location where the roads cross a public highway.

Two men are assigned to road maintenance. Their duties include scraping to maintain a smooth surface, sprinkling in the summer to keep down dust, snow removal with scraper and bulldozer, and ashing to provide traction in the winter.

Drainage

Natural drainage through the spoil banks that eventually reaches Racoon Creek takes care of the main flow of water. When pumping is required, due to local dips and excessive surface inflow, 3- and 4-in gasoline and electrically-powered, skid-mounted pumps are used. Rubber hose is used for suction lines while canvas hose is used for discharge lines.

Power

Electricity is purchased from the West Penn Power Company at 66,000 volts and reduced to 4,000 volts by a 150-kva oil-filled transformer for transmission over a 1½-mile pole line. For the remaining distance, the company utilizes 14,000 feet of "partway cable," No. 2, three-conductor 5,000 volt, rubber-covered, copper wire encased with No. 12BW6 galvanized steel armor; and 7,000 feet of rubber-covered cable —5,000 volt SHD, 3-conductor copper. The cable

The second stripping unit is this electric walking dragline, shown here operating from the spoil bank side of the pit. Equipped with a 165-ft boom and a 12-cu-yd bucket, this unit has been in use since 1944.

Raw coal stockpiled adjacent to the haulage road is reloaded into 22-ton tractor-trailer units by this 2-cu-yd shovel.

is in 1,000-ft sections with three-outlet junction boxes for making safe connections. The 4,000-volt energy is carried directly to the shovels and dragline where it is converted to d-c power in each unit. Small-capacity transformers supply power for the electric pumps.

Maintenance

Maintenance of equipment is an important key to the successful operation of the Florence mine. The electric stripping and loading shovel, in operation since 1937, and the electric dragline, in operation since 1944, both operating three shifts per day are but two examples of what proper care and expert overhauling can do to keep stripping equipment operating efficiently.

The operating crew is responsible for cleaning and oiling the equipment. The first-shift operator is responsible for the complete inspection of each shovel unit. Shop repairmen follow a routine schedule of inspection of equipment of the entire plant. These men are also on call to correct any defects found on any inspection and are responsible for determining when to shut down the equipment for repairs. Case histories of each piece of equipment that includes downtime, repairs, and replacement parts are used to determine the rebuilding or replacement schedule for all equipment.

Separate repair shops are maintained for repair and rebuilding the equipment; for example, truck, tractor, machine, and electric repair shops are separate units, each with an assigned staff. The work is coordinated by the maintenance foreman. Each shop is well equipped to take care of the necessary jobs assigned to it.

The tractor shop crew rebuilds motors, master clutches, steering clutches, and water pumps. In order to reduce inventory, few parts are kept in stock since parts are readily available from near-by suppliers.

The electrical shop crew repairs all electrical units from the various pieces of equipment and power-transmission circuits. They rebuild motors, generators, switch boxes, and take care of electric cable repairs. Rewinding jobs are sent to commercial rewinding shops.

Truck maintenance is one of the major items in the efficiency of the operation. General maintenance is carried on at a large garage located near the raw-coal dumping point of the preparation plant. Drivers are responsible for checking gas, oil, and batteries each day. Records of these checks as well as the quantity of oil and gas used by each unit are filed. The care of tires is assigned to a full-time man whose responsibility includes a careful inspection of the tires for cuts and wear. He pays particular attention to maintenance of pressure and is responsible for directing attention to uneven or excessive wear that may indicate poor wheel alignment. Tires are examined internally prior to sending them to a commercial agency for repair and recapping.

Each tire is numbered when received and a tire record card made out for the tire that includes the exact specifications—manufacturer, distributor, and the date of purchase. Subsequent data recorded includes date when placed in service, vehicle on which it was installed, dates and mileage when removed, repairs, and recapping. Records show that tires provide up to 50,000 miles of service, an equal amount on the original tread and two recappings.

General maintenance including lubrication and motor tuning is taken care of at the storage garage. Inspection during this servicing and maintenance period, the reports of performance by the drivers, and the recording of the gas and oil consumption form a part of the permanent record of each truck. These records provide a case history for each truck that provides a basis for complete overhaul and replacement.

The truck repair shop is fully equipped for all repair and rebuilding jobs. Spare motors, transmissions, and differential assemblies are kept ready for use. These parts are then completely rebuilt in the shop and placed in stock.

The company maintains a well-designed stock room where small parts are stored in bins and other convenient fashion to preserve and expedite transfer to shops and repair crews. Large items are stored in a separate building. Perpetual inventory is kept on all stock items, and items removed from stock are reordered immediately. All items

John M. Jones, purchasing agent, displays the orderly storage of parts in the stockroom.

needed for repair, rebuilding, servicing, and construction are secured from either stock or suppliers by requisitions submitted to the purchasing agent who is also in charge of the stock room. All items issued are charged to the individual equipment and thus become a part of the permanent history of the equipment. The company maintains a $210,000 inventory of stocked items.

Management and Safety

The Harmon Creek Coal Corporation maintains executive offices in Pittsburgh and operating offices at the mine site near Burgettstown, Pennsylvania. Officers of the Company include James F. Hillman, president; F. A. Ward, secretary and treasurer; John R. Schell, assistant treasurer; James Wilson, vice president-sales; and Walter Robertson, vice president-operations.

Mr. Robertson's staff at the Florence mine includes Elmer Kapp, engineer; Arthur Boni, assistant superintendent; John M. Jones, purchasing agent and supply clerk; Walter Collins, office manager; William Dodds, shipper; William Woods, preparation foreman; C. W. Tope, truck foreman; Robert Bent, supervisor of domestic sales; and T. W. Van Kirk, conservation officer.

Labor turnover is extremely small as the result of the steady work provided, and the company has numerous applicants from which selection may be made when new employees are hired. The experienced labor group have had much to do with the safe, efficient operation of the Florence mine. The men are familiar with their jobs, the equipment with which they work, and the hazards involved. These factors, together with the attention paid by management to the maintenance of equipment and safe operating practices, have been responsible for the establishing of an enviable safety record, including the production of 12,000,000 tons of coal without a fatal accident.

EQUIPMENT REFERENCE

Overburden drills, vertical, 8-in	Davey Compressor Co.; Salem Tool Co.
Ammonium nitrate	American Cyanamid Co.
Primer charges, 2 x 8-in dynamite	Atlas Powder Co.; National Powder Co.
Detonators, instant and delay	Atlas Powder Co.
Dragline, *9-W*	Bucyrus-Erie Co.
Stripping shovels:	
5321	Marion Power Shovel Co.
77 Lorain	The Thew Shovel Co.
Air compressor, *No. 125*	Schramm, Inc.
Loading shovels:	
855 P&H	Harnischfeger Corp.
480	Marion Power Shovel Co.
Dippers and buckets:	
12-cu-yd	Bucyrus-Erie Co.
12-cu-yd and 1½-cu-yd	Esco Corp.
15-cu-yd	Marion Power Shovel Co.
3-cu-yd	Pettibone-Mulliken Corp.
Wire rope	H. K. Porter Co., Inc., Leschen Wire Rope Div.; John A. Roebling's Sons Div., Colorado Fuel & Iron Corp.; Union Wire Rope Corp.
Trailing cables, 5,000-volt, type SHD, 3 cond. Power transmission cables, steel armor	General Electric Co.
Electrical transformers, 5 to 150-kva, oil-type	General Electric Co.; Westinghouse Electric Corp.
Electrical switches and controls	Cutler-Hammer, Inc.; General Electric Co.; Westinghouse Electric Corp.
Coal-haulage units:	
Tractors (14)	Mack Trucks, Inc.
Semi-trailers, 16-cu-yd, *Austin-Western* (11)	Baldwin-Lima-Hamilton Corp.
Dump bodies (6)	Gar Wood Industries, Inc.
Tires, 1100-24-14P, 1200-24-16P	B. F. Goodrich Tire Co.
Air brakes and dump controls	Bendix-Westinghouse Automotive Air Brake Co.
Refuse dump trucks (2)	General Motors Corp., Truck & Coach Div.
Dump bodies, *Penn*	The Hockensmith Corp., Penn Body Div.
Tires	B. F. Goodrich Tire Co.
Bulldozers, *D-8* (4), *D-7* (3)	Caterpillar Tractor Co.
Pit pumps, 3- and 4-in	Barnes Pump Co.; Jaeger Machine Co.
Pump motors, electric	Allis-Chalmers Mfg. Co.
Pump motors, gasoline	LeRoi Div., Westinghouse Air Brake Co.; Wisconsin Motor Corp.
Welding equipment:	
600-amp	General Electric Co.
300-amp	Hobart Brothers Co.
300- and 175-amp	Lincoln Electric Co.
300-amp	Westinghouse Electric Corp.
Welding electrodes	Arcos Corp.; Eutectic Welding Alloys Corp.; Harnischfeger Corp.; Hobart Brothers Corp.; McKay Co.
Lubricants	Brooks Oil Co.; Mobil Oil Company; Valvoline Oil Co., Div. of Ashland Oil & Refining Co.; Whitmore Mfg. Co.

View of truck-loading section, which handles more than one-half of annual plant output.

PREPARATION FOR DOMESTIC MARKETS

With more than 50 percent of production being trucked to local markets, the heavy-media plant at Florence mine is equipped with storage facilities to enable it to handle periods of peak demand in winter. Closed-circuit television for control of loading operations is an additional plant feature.

A Staff Report

The preparation plant of the Florence Mine prepares strip coal from the 4-ft Pittsburgh No. 8 seam. Distribution is by trucks to local markets and by rail to more distant points. Local markets, served by the trucks, accounted for 250,504 tons of the 428,872 tons produced in 1959. Facilities for handling of domestic distribution include seven storage bins with a total capacity of 465 tons. A constant supply of prepared coal ranging in size from plus 5-in lump to minus ¼-in slack is provided. Yard storage for lump and slack is maintained during the summer in order to provide an adequate supply of these sizes during peak demand in winter. Facilities for rescreening, dust-proofing, and freeze-proofing insure customer satisfaction.

Provisions for rail shipping include a 4-track loading system that is pushbutton controlled from a centralized control station. The system includes closed circuit television enabling the operator to view all four loading stations from his control booth inside the plant.

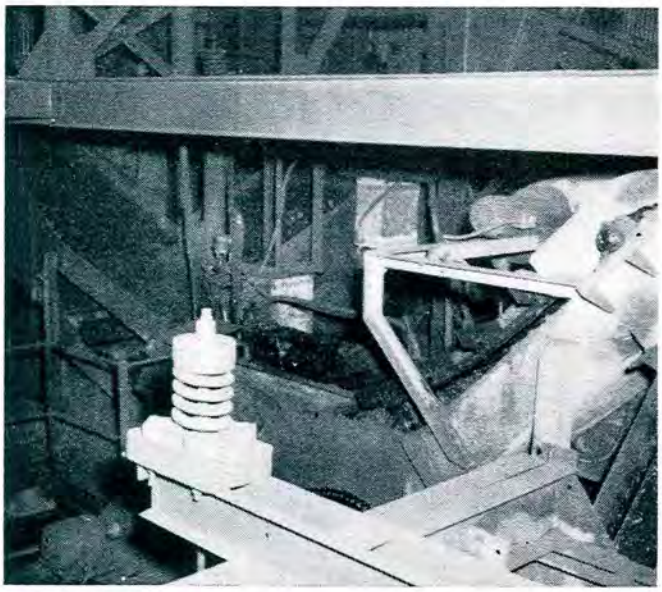
The plant, a wood and steel structure, has a capacity of 2,000 tons per shift of clean coal. Screening and crushing facilities are designed to produce plus 5-in lump, 5 x 2-in egg, 2 x 1¼-in nut, 1¼ x ⅝-in stoker, 1¼ x ¼-in stoker, minus ¼-in slack, and variations of these sizes. The lump coal is hand-picked while the remaining sizes are cleaned in dense-media units using the calcium-chloride process. The plant operates with a 10 percent reject to produce quality high-volatile fuel for steam plants, home and commercial heating, and general industrial purposes.

Quality control begins at the pits with careful cleaning of the coal surface prior to loading and continues in the plant with hand picking of the large sizes and constant control of the several washing units. Regular sampling and analysis provides a constant check on the plant operation that enables the company to meet the quality demands of customers.

Plant Cycle

Coal is hauled from the pits over private roads by a fleet of bottom- and end-dump-trucks to a 150-ton bin located on the hillside above the preparation plant. The top of the rectangular steel bin is covered with steel rails spaced to screen out plus 18-in material that is subsequently broken manually. Coal from the bin is fed by a 40 x 60-in plate feeder to a 36-in belt conveyor 350 feet long. The feeder is remotely controlled from two points—at the bin and at the preparation plant. The belt serves as a picking table for large pieces of slate.

The belt feeds onto an adjustable double-deck shaking screen normally set at plus 5 inches for the maximum size. The oversize material is discharged onto a 42-in picking belt where two men remove the refuse



A 30-tph calcium-chloride washer processes the 5/8 x 1/4-in raw coal.

This closed-circuit television camera is focused on the stove-size chute normally out of view of loading-station operator.

from the coal. This belt discharges onto a 5-ft apron conveyor where a third hand-cleaner operates. The clean plus 5-in coal is conveyed directly to loading centers for rail and truck or may be diverted to a 36-in single-roll crusher to produce 5 x 2-in egg coal.

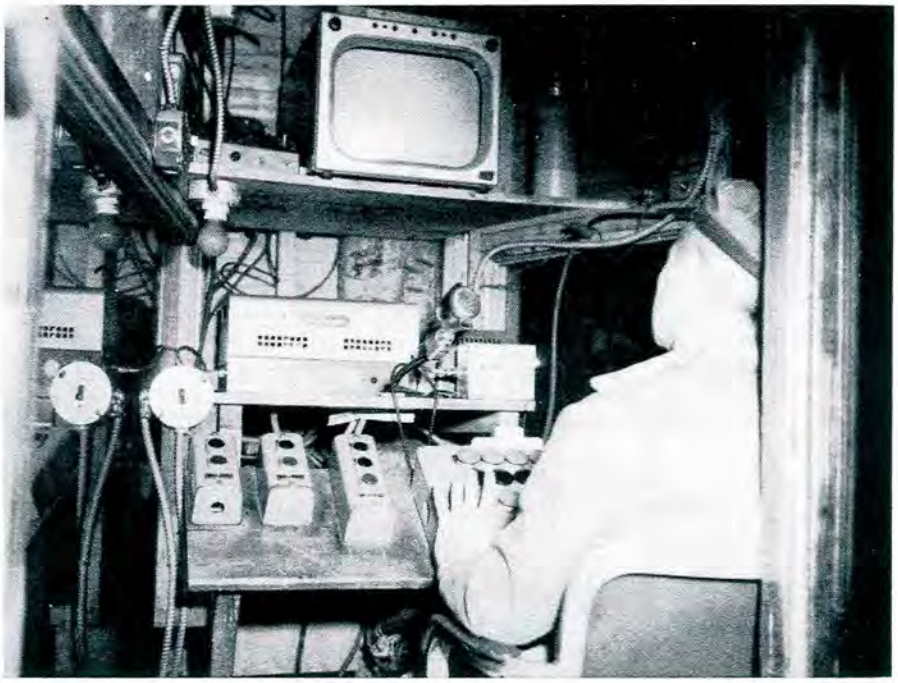
The underflow (minus 5-in) from the screen drops onto a 30-in drag-chain conveyor that elevates it to the top level of the plant where it is separated into four sizes, 5 x 2-in, 2 x 1¼-in, 1¼ x ⅝-in, and minus ⅝-in by a *Ripl-Flo* vibrating screen. The minus ¼-in fines can be picked up by a drag-chain conveyor and carried directly to storage bins for loading or stockpiling.

The coarse sizes (5 x 2-in, 2 x 1¼-in and 1¼ x ⅝-in) from the vibrating screens are separately fed by a shaker feeder into separate compartments of a 190-tph capacity *Belknap* washer. Separation is made at a 1.5 specific gravity using a 1.3-gravity solution of calcium chloride and circulators for building up the additional specific gravity.

Refuse from the 5 x 2-in compartment is screened on a 1-in bar screen, and the oversize is conveyed to the 30-tph middlings washer, where it is cleaned at a 1.6 specific gravity. The clean-coal product is crushed to minus 1-in and conveyed to the slack conveyor for loading. The undersize is conveyed to the refuse bin for subsequent disposal.

Clean coal from the large washer is dewatered and sized on a 6 x 12-ft triple-deck vibrating screen that produces three sizes of clean coal; namely, 5 x 2-in; 2 x 1¼-in and minus 1¼-in. The material passing through the bottom screen flows to a 3 x 8-ft desludging screen that recovers the chloride and water for recirculation to the 5 x ⅝-in washer. The recovered sludge is returned to the slack conveyor and is carried to the loading bins.

The minus 1¼-in clean coal from the bottom screen is conveyed to a dispatching chute for blending with stoker or egg sizes, to the double-compartment chain conveyor for car



The pushbutton central control station enables one man to do the work of four. Operations on track No. 4 are viewed on the television receiver.

This rock garden, together with other landscaping of adjoining areas, adds beauty to the preparation facilities.

Stockpile of plus 5-in lump is accumulated during summer months to meet domestic truck demands in the winter season.

loading, or to the domestic bins.

The 5 x 1¼-in coal from the top screen is discharged onto a 54-in belt conveyor that carries it to the cars or domestic bins for loading. This coal may also be diverted to a 24-in double-roll adjustable crusher to produce sizes of two inches or smaller that may be blended back into nut, slack, or any combination under two inches.

Loading

Coal for rail shipment is loaded on a 4-track system. The loading booms and car movement are operated from a central control booth where the operator has a direct view of three loading tracks with the fourth viewed over closed-circuit television. The central control station and the television viewing system permit car-loading operations to be better controlled with greater safety by elimination of car droppers at the loading stations.

Domestic coal is collected in seven steel surge bins, six of 50-ton capacity, and the seventh with a capacity of 115 tons. The bins are fed by a 36-in double-compartment drag conveyor. Trucks are loaded by gravity feed from three of the bins that contain lump and stoker coal; by a 36-in belt conveyor from the slack bins, and by a chain-drag conveyor from the two egg bins. The egg coal is rescreened by shaker screens to remove any fines created by degradation.

Marketing

Approximately 430,000 tons of clean coal per year are marketed through the company and its sales agencies. Rail shipments, 180,000 tons per year, go to lake ports and other areas served by the Pennsylvania Railroad. Truck shipments are centered around the industrialized Washington, Pennsylvania; Weirton, West Virginia; and Steubenville, Ohio areas. Homes, schools, hospitals and apartments utilize the high-quality, dust-proof coal transported by trucks from the Florence Mine.

EQUIPMENT REFERENCE

Plant design and construction	Fuel Process Co.
Feeder, belt-type, 36-in	U. S. Rubber Co.
Shaking screen, 2-deck, 5 x 20-ft	Champion Mfg. Co.
Shaking screen drive, 5-hp	Link-Belt Co.
Screen plates	Salem-Brosius, Inc.
Vibrating screens 4 x 10-ft, 6 x 12-ft Heated screen, 6 x 12-ft, *Thermodeck*	Allis-Chalmers Mfg. Co.
Dewatering screen, 3 x 8-ft, *Lecco*	Galis Electric & Machine Co.
Coarse-coal washer, *Belknap* Middlings washer, 30-ton, *Belknap* Fine-coal washer, ⅝ x ¼-in, *Belknap* Intercommunication system	Fuel Process Co.
Pump motors (8)	Allis-Chalmers Mfg. Co.
Motor controls	General Electric Co. Westinghouse Electric Corp.
Crushers:	
20 x 24-in and 30 x 30-in	Jeffrey Manufacturing Co.
24 x 36-in	McNally Pittsburg Mfg. Corp.
Drag conveyors Belt conveyors Loading booms, belt and apron types	Champion Mfg. Co.
Conveyor belting	U. S. Rubber Co.
Refuse-handling dump trucks	General Motors Corp., Truck & Coach Div.
Car retarders	Galis Electric & Machine Co. Sanford-Day Iron Works, Inc.
Speed reducers:	
Dodge	Dodge Mfg. Co.
Reeves-Vari-Speed	Reeves Pulley Co.
U. S. Syncro Gear	U. S. Electrical Motors, Inc.
Plant motors	Allis-Chalmers Mfg. Co. General Electric Co. Louis Allis Co. Westinghouse Electric Corp.
Oil-spraying equipment	Sanford-Day Iron Works, Inc.
Spray oil	Ashland Oil & Refining Co.
Calcium chloride for washers	Fuel Process Co.
Lubricants	Valvoline Oil Co., Div. of Ashland Oil & Refining Co.
Welding equipment	Air Reduction Sales Co. Lincoln Electric Co.
Welding electrodes, *P&H* low hydrogen	Harnischfeger Corp.
Laboratory equipment:	
Oxygen bomb calorimeter	Parr Instrument Co.
Sample crusher	Robert Holmes & Bros., Inc.
Muffle furnace, *Hevi-Duty* Screens, 8-in x 60-mesh Analytical balance Sample splitter	The Harshaw Chemical Co.

This reclaimed and stocked area was planted in 1952 and 1953. Combined with native deer, squirrels, and grouse the area is a hunter's paradise.

This spring-fed 11-acre lake was being drained for cleaning when this photo was taken. When water reaches normal level, it will be re-stocked with trout, pike, and small-mouth bass.

RECLAMATION—

Integral Part of the Mining Cycle

Conservation officer S. W. Van Kirk (left) and L. C. Smiley are shown looking over seedlings at the company nursery.

This swimming pool and playground are part of a 77-acre park donated to the community of Burgettstown by the company.

A Staff Report

With mining operations scheduled for a lifetime of 50 years, this progressive management decided at the outset on a land-conservation program which would improve community relations and at the same time turn the spoil banks from a liability into an asset.

Harmon Creek Coal Company has a "fifth wheel" that to them is not considered superfluous. It is their conservation department that operates on equal status with the engineering, production, preparation and marketing departments. The department, headed by T. W. Van Kirk, conservation officer, pioneered in the restoration of strip-mine spoil banks to useful purposes.

Company interest in land conservation seems only natural since its Florence mine has been producing coal by strip mining since 1917 and continuously under the present management since 1928. Designed to produce some 400,000 tons per year during its projected life of 50 years, the mine assumed a permanent status back in the days when strip-mining was sometimes considered to be a "fly-by-night" venture, or at best a means of securing additional production in times of national emergencies.

With this feeling of permanence, it was reasonable that interest in the welfare of the local community and the strip-mining industry should lead company management into a land-conservation program that would improve public relations and at the same time turn the spoil banks from a liability into an asset. The result of the program is the present area of reforested land with abundant wild life that can be properly considered a hunter's paradise.

The selection of reforestation as the reclamation project was based on several factors: (1) the naturally rough terrain did not lend itself to farming, and (2) at the time the project was started it was thought that trees were the only thing that would grow on spoil banks. The early success of the reforestation and the natural influx of wild life into the restored area was reason enough to continue the program.

The conservation program begins as a part of the mining cycle with bulldozers leveling the peaks from the cast spoil and, in the case of deeper cuts with the electric shovel, pushing spoil back from the highwall to avoid having it fall back into the pit. No additional releveling is done since it has been found that natural arrangement of the spoil is better for the retention of moisture as well as for the development of an adequate root system.

The conservation program is under the direction of the conservation officer, who together with a staff of two or three full-time employees and seven or eight additional men in the spring, are responsible for the land reclamation work. They operate a nursery that provides 30,000 seedlings a year for planting. These include six varieties of pines, red and white oak, white ash, larch, chestnut, and multiflora rose. Major planting of the seedlings is mechanized although some hand planting is performed.

Planting is generally confined to spoil banks although a more recent development includes fields adjacent to strip areas where mining is not contemplated. During the last three years, 70,000 seedlings for production of Christmas trees have been planted in these fields. Harvesting of these trees will begin six years after planting. The conservation department has also planted 118,000 trees for the soil-bank program in Washington County, Pennsylvania.

Wildlife Program

Along with the reforestation program, the company has encouraged the natural development as well as stocked game in the reclaimed area. This game, as well as racoons, groundhogs, and other native animals and birds, have migrated from other areas to provide an area well stocked with wildlife. Feed plots have been developed in several areas to provide feed for the game. Some 20 plots varying in size from ¼ to 2 acres, are planted with corn, sorghum, sunflower, mulberry and small grains. Some of the corn is harvested for winter feeding and for feeding hatched pheasants before they are released.

Provisions for fishing are also provided in the Florence mine area. In 1946, an 11-acre lake with a maximum depth of 37 feet was built. The spring-fed lake was stocked with native fish that thrived in the clear, cool water. The lake has just been drained, cleaned out, and is now in the process of refilling. It will be restocked with trout, bass and pike to provide better quality fishing. The discarded fish will be stocked in smaller lakes or into streams.

Community Projects

The company is active in all community activities with the major emphasis on recreational aspects. They have developed a 77-acre plot on a hillside ¾ mile north of Burgettstown as a public park. Facilities include a swimming pool, complete with dressing rooms and water supply and filtration system; a children's playground; and picnic areas equipped with fireplaces for outdoor cooking. In town, a baseball field was constructed, complete with stands and fencing for use of the community. Both park and baseball field were constructed entirely at company expense and turned over to the community.

Reclaimed land has also been made available to the State Game Commission for a game preserve. In this section, as well as on the reclaimed land retained by the company, wildlife abounds.

Leveled spoil banks have been made available to the Greater Pittsburgh Chapter of AMA for flying model planes. The company has constructed a hard-surfaced landing field from which radar-controlled model planes are flown by members which include former pilots as well as teen-age boys.