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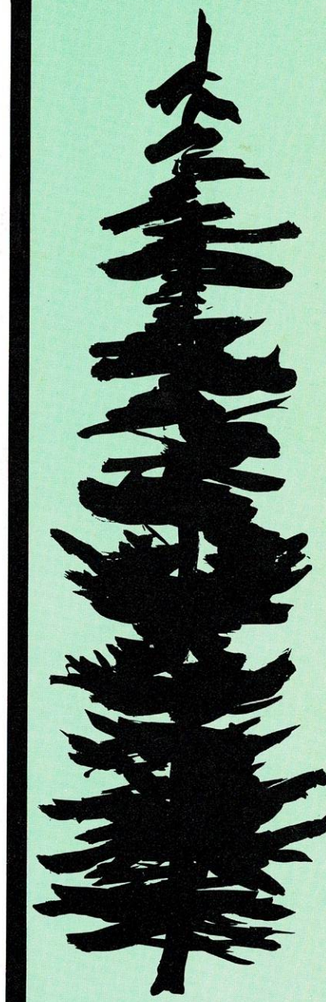
West Virginia Surface Mining & Reclamation Association

Green Lands

QUARTERLY

WINTER 1974

Contents: Winter 1974 **Vol. 4/No. 1**



ABOUT THE COVER

The energy crisis, fuel allocations, new demands on surface mining, new restrictions on surface mining and new developments in surface mining technology are all very much in the news lately. The cover of this issue of **GREEN LANDS** seemingly captures the "journalistic appeal" of our industry, but if you look closer, its also captured the mood of the industry—complicated confusion.

The mountain scene

Strip mining and the energy crisis

By Albert H. Prichard

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Stripping Alleviated Flooding, Too, Greene Says

Surface Miners Place Blame For Flood Charges

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West Virginia Breaks Reclamation Record Again

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Bagge Says House Bill Would Shut Down Surface Coal Mines

president of the National Coal
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"Our strippable reserves can meet the present needs of the electric utilities for more than a hundred years and this bill would abandon that resource— needlessly so, for the land can be reclaimed," he said. He added that underground coal seams of extreme depth cannot be mined, and only about 60 per cent can be recovered—

Ben Lusk, executive direc
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THURS., JAN. 17, 1974 Charleston

Strippers In Protest After Blame

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NEW TECHNIQUES PROFITABLE

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Strip Mining Head Blames Politicians

CHARLESTON, W.Va. (AP)
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Charges In Flooding Denied By Strippers

CHARLESTON, W.Va. (AP)
— The West Virginia Surface
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"In fact, in Lincoln County, where flooding was the worst, there has been no active surface mining in over a decade," Hamilton said.
"The surface mining industry was not responsible for flooding in Lincoln or Kanawha coun-

200 Mining, Research Personnel Expected At Surface Mine Meet

Strip Chief Hits Flooding Charges

The West Virginia Surface Mining and Reclamation Association Wednesday blamed
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BY THE ASSOCIATED PRESS
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Strip Mining Meeting Today

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Surface Mining Leader Blames State Politicians For Criticism

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Mon., Jan. 7, 1974 The Charleston Gazette

Lusk Wants More Fuel

CHARLESTON, W.Va. (UPI)
— He's happy to have it, but
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CHARLESTON, W.Va. (UPI)
— Politicians who played "on
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Block-Cutting Surface Move May Reopen Dispute

By KAY CHRISTENSEN
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Green Lands

QUARTERLY
WINTER 1974

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Coal Need May Damage Land

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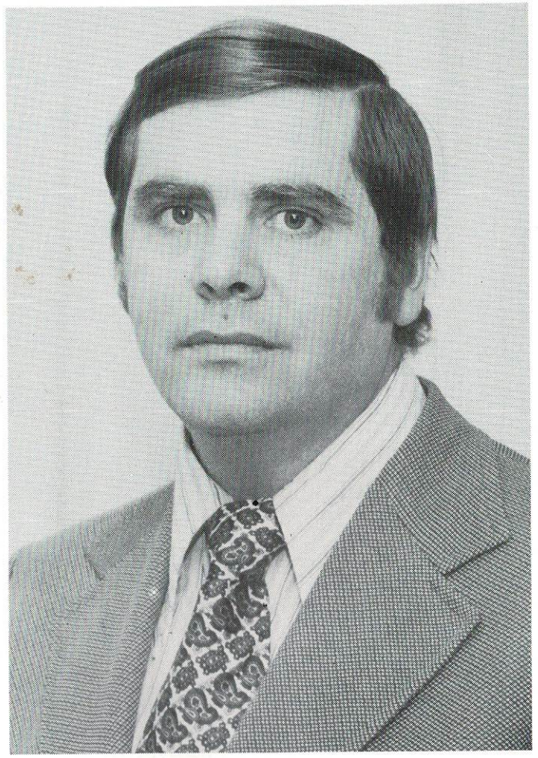
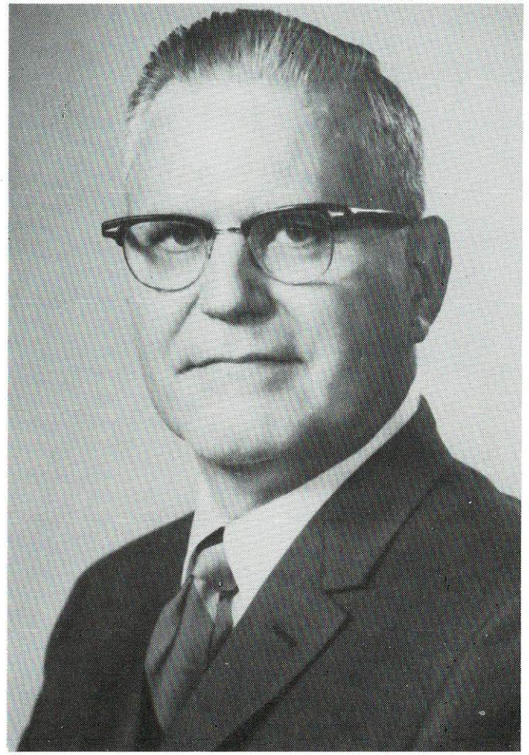


Roger L. Williams



J. Allen Overton, Jr.

WILLIAMS, OVERTON TO HIGHLIGHT SEMI-ANNUAL MEETING

Special appearances by representatives of the American Mining Congress and the Environmental Protection Agency will highlight the semi-annual meeting of the West Virginia Surface Mining and Reclamation Association, February 6-9, 1974, at the Doral Country Club, Miami, Florida.

American Mining Congress President J. Allen Overton, Jr. will be the main banquet speaker at 7:00 p.m. February 8th. Mr. Overton is expected to discuss the Washington legislative outlook, with particular emphasis on the significant energy legislation now pending in both Houses of Congress.

Mr. Overton is a native of Parkersburg, West Virginia, and a graduate of the Washington Lee University School of Law. He was a practicing attorney in his hometown for seven years, a member of both the American Federal and West Virginia Bar Associations and a former member of the West Virginia Legislature.

After leaving the Mountain State, he became Special Assistant to the Secretary, U. S. Department of Commerce, Deputy General Counsel to the Department of Commerce and Vice-Chairman of the U. S. Tariff Commission. He became Executive Vice-President of American Mining Congress in 1963 and has headed up the organization since that time.

Roger L. Williams, Director, Office of Program and Management Operations in the Office of Enforcement and General Counsel for the Environmental Protection Agency, will headline a breakfast meeting at 8:00 a.m. that same day. Mr. Williams will review E.P.A.'s position on federal surface mine legislation and the requirements for mining companies under the new Federal Water Pollution Control Act.

Since his graduation from American University in 1960, Mr. Williams has been instrumental in the development of research and pollution abatement programs related to environmental problems associated with development of the nation's mineral and energy resources. He has served in the Office of the Secretary, Department of the Interior and with the Division of Environmental Activities, Federal Bureau of Mines.

He was appointed to his present position in late 1970 and is charged with the planning and development of the Agency's program for enforcement of enivornmental quality standards and regulations.

PROGRAM

SEMI-ANNUAL MEETING
OF THE
WEST VIRGINIA SURFACE MINING AND RECLAMATION ASSOCIATION
February 6-9 1974
Doral Country Club
Miami, Florida

Wednesday, February 6th

1:00-5:00 P.M.	Registration ..... Gallery
2:00-4:00 P.M.	Committee meetings at discretion of committee chairmen
5:00-6:00 P.M.	Board of Directors' Meeting—Conference Room A
6:30 P.M.	Reception ..... Poolside
7:30 P.M.	Luau ..... Poolside

Thursday, February 7th

8:00-11:00 A.M.	Breakfast Meeting—Miradoral North (Semi-annual membership meeting)
10:00 A.M.	Ladies Tour ..... Bal Harbour
11:00 A.M.	Golf ..... All Courses
12:00 Noon-2:00 P.M.	Committee Meetings
1:00 P.M.	Tennis Tournament

Friday, February 8th

8:00-10:00 A.M.	Breakfast Meeting—Miradoral North Speaker—Roger L. Williams, Director Office of Program & Management Operations, U. S. Environmental Protection Agency
10:00 A.M.	Ladies Tour ..... Villa Vizcaya
11:00 A.M.	Golf—Men ..... Blue Course Ladies ..... Red Course
6:30-7:00 P.M.	Reception ..... Hall of Conquerors
7:00 P.M.	Banquet ..... Ballroom Toastmaster—Lawson Hamilton, Jr. Speaker—J. Allen Overton, Jr., President American Mining Congress

Saturday, February 9th

8:00 A.M.	Board of Director's Breakfast Meeting ..... Desoto

Registration will begin at 1:00 p.m. Wednesday, February 6th, in the Gallery, followed immediately by a Board of Directors' meeting in Conference Room A at 5:00. A Poolside reception follows at 6:30 p.m., preceding a Hawaiian Luau, complete with authentic hula girls, fire dancers and native entertainment.

The semi-annual meeting of the membership will be held during Thursday morning's breakfast meeting, beginning at 8:00 a.m., with the ladies touring the fabulous Bal Harbour shopping plaza beginning at 10:00 a.m. The tour also features a luncheon and fashion show. Open golf for the men and women will be available on all four beautiful courses from 11:00 a.m. through the afternoon, with a mixed tennis tournament beginning at 1:00 p.m.

Thursday evening's schedule has been left open, so that members and their guests will have an opportunity to take advantage of the many attractions of the Doral and surrounding Miami Beach area. Available to the members will be several special trips including an evening at the world famous Americana Hotel; a quick flight to the Bahamas for dinner and entertainment at the El Casino; Dog Racing; Jai Alai (pronounced Hi Li) and of course the many fine attractions within the Doral itself.

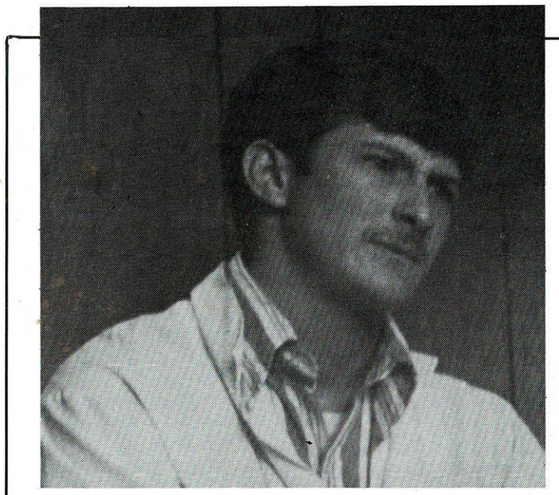
Mr. Williams will give his presentation during Friday morning's breakfast meeting, followed by a tour of the intriguing Villa Vizcaya, for the ladies at 10:00 a.m. and the men's and women's golf tournament at 11:00 a.m.

The Hall of Conquerors will be the setting for a 6:30 p.m. reception Friday evening, followed by a banquet, State-of-the-Association message by President Lawson Hamilton and Mr. Overton's presentation. Scheduled activities will be concluded by a second meeting of the Board of Directors at 8:00 a.m. Saturday in the Desoto Room.

The Program Committee, which has worked long and hard to make this meeting a success include: Jim Justice, Lawson Hamilton, Tom Horn, Jim Poindexter, Frank Boggess, Fil Frasher and Ben Lusk.

The Blue Course is for those who like a challenge. Its 7000 yards are the setting for the Doral Open, and the pros gave it the nickname "Blue Monster." (The Blue has been rated the third most challenging course on the PGA tour.) This will be the site of the men's tournament on Friday, Feb. 8th.

Doral's Convention Center is one of the nation's best designed meeting complexes . . . and certainly one of the most handsome. Housed in a special rotunda wing of the Main Clubhouse, the Center contains meeting rooms of varying flexible sizes on three levels — including the spectacular Grand Ballroom at which our semi-annual banquet will be held.



William H. Buttermore

New Process Eliminates Sulfur Dioxide Pollution

A lot of coal in West Virginia is just loaded with sulfur—four percent or more in some seams. And when this coal is burned, it gives off sulfur dioxide which pollutes the air.

For years scientists have been trying to get the sulfur out of coal but thus far they haven't been to successful.

"If you can't get the sulfur out, why not trap it in the ashes?"

William H. Buttermore, a research technician with West Virginia University's Coal Research Bureau in the School of Mines, has done just that by developing a new process known as Sulfurtain to help prevent sulfur dioxide pollution.

If it proves to be as effective as laboratory tests indicate, the process will enable more high sulfur coal to be burned to help meet the energy crisis while also preventing air pollution.

In Buttermore's Sulfurtain process, lime or limestone is combined (using novel procedures) with pulverized coal before it is burned. During burning the calcium in the lime combines in a well-known sequence with the sulfur to form calcium sulfate — the stuff that forms on the inside of teapots. The calcium sulfate is left behind with the other inert materials in coal and forms ash.

This means that the sulfur doesn't combine with oxygen to form sulfur dioxide, which may be released into the atmosphere. Sulfur dioxide in the air can combine with moisture to form sulfuric acid — which can burn the lungs of people, the leaves of trees and even the paint off of houses.

Thus far the Sulfurtain process has been very successful on a laboratory scale when the coal and lime are formed into pellets, or briquettes, and then burned.

The economically more important step of applying the process to pulverized coal, which is used in electric power plants, now is being investigated.

Technically, there are various ways to prevent sulfur dioxide pollution from coal. The three general approaches are: 1) remove the sulfur from the coal before burning, 2) remove the sulfur dioxide from the flue gases, and 3) trap the sulfur in the ashes.

The real problem in preventing sulfur dioxide pollution from coal is money.

According to 1972 figures from the National Coal Association, in the southeastern part of the United States coal with 1 percent or less sulfur and 8 percent ash costs $2.01 more a ton than coal with 3 percent sulfur and 8 percent ash.

Thus to be economically competitive, a process will have to prevent sulfur dioxide pollution at a cost of less than $2 a ton. A preliminary cost analysis of the Sulfurtain process indicates that it can be done at a cost of $1.83 a ton.

The only widespread process for reducing sulfur in coal is known as the float-sink method. In this process the coal is crushed and fed into a suspension of magnetite (magnetic iron) and water where some of the sulfur constituents, such as pyrites, sink and the purer coal floats and is recovered. With some coal this process is effective enough to reduce the sulfur content to an acceptable level.

Unfortunately, many of the coals in northern West Virginia and western Pennsylvania contain two forms of sulfur — iron pyrite and organic sulfur — and organic sulfur isn't removed by the float-sink method.

In these coals the organic sulfur ranges from 40 to 60 percent. Organic sulfur can't be removed by the float-sink method because it's locked into the coal on a molecular level. The pyrite can be removed by that method because it is locked into the coal on a particular level — like a mixture of rice and peas.

WVU's Coal Research Bureau has made extensive tests on the magnetic removal of sulfur from coal and its research indicates that, under some conditions, it might be technically better than the float-sink method. However, the magnetic method doesn't remove organic sulfur. That's why it isn't being used.

One method of removing sulfur dioxide from flue

gases is with wet scrubbers. A wet scrubber is an arrangement where the gases are conducted through a solution of lime or limestone and water. The calcium in the lime combines with the sulfur to form calcium sulfate — and just like in the teapot, it forms a scale on the equipment.

According to some authorities, wet scrubbers are the answer to sulfur dioxide pollution. There is no question that they work, but there also is no question that they cost a lot of money to install and maintain.

According to other authorities, wet scrubbers now don't offer an economically feasible method of controlling sulfur dioxide pollution. In a recent two-year test of a wet scrubber on an operating power plant, the unit was on line for only 55 percent of the time. This means that you would need at least two scrubbers for each flue. The problem was caused by build-up of calcium sulfate in the scrubber.

Another method of preventing sulfur dioxide pollution is trapping the sulfur in the coal ashes by injecting lime or limestone into the furnace while the coal is burning.

In a modern power plant the coal, which has been ground to a fine black powder, is forced with air into the furnace. The organic sulfur and some of the pyrite also are ground with the coal and are distributed throughout.

"The lime injection process just doesn't take out enough sulfur," Buttermore said. "It's true that the lime combines with some of the sulfur and the resulting calcium sulfate can be recovered from the fly and bottom ashes. Unfortunately, too much of the sulfur escapes up the flue in the form of sulfur dioxide. It's kind of like throwing lime baseballs at sulfur ping-pong balls — you might knock down a few but too many of them escape."

The first work on the Sulfurtain process at WVU was done with coal fines, which are a waste product of regular coal preparation plants that normally are dumped into a settling pond.

The fines used had a 4.8 percent sulfur content (both pyrite and organic sulfur), which is quite high when compared with regular run-of-the-mine coal that has been cleaned.

The mixture of coal material and lime was prepared using a technique for which a patent application has been filed.

"We think that the mixing procedure is the key to the process," Buttermore explained. "In this procedure, almost every particle of coal is intimately mixed with limestone."

After mixing, the mixture was formed into pellets that were about one inch long and one inch in diameter and dried in an oven overnight at 90 degrees F. One pellet from each batch was analyzed for total carbon and sulfur content — the average carbon content was about 55 percent and the average sulfur was about 3.5 percent.

The pellets were broken into several pieces and placed in an electric furnace at 1,850 degres F. After burning, the ashes were analyzed for sulfur and carbon content.

"On good runs we achieved sulfur retentions of from 90 to 95 percent, which are within air pollution regulations, and all of the carbon was burned," Buttermore said.

"It should be remembered that we were using coal fines — a waste material with a high ash and sulfur content and just loaded with water. One of the reasons that fines are a waste product is that they contain about 20 percent water and it isn't economically feasible to remove it. It is hoped that it will be economically feasible to reduce the water content of fines to the percentages needed in variations of the Sulfurtain process.

"One disadvantage of using fines is that they have an initial ash content of about 26 to 28 percent. And once you add 20 percent or so limestone to the mixture, it means that for every ton of fuel you feed to the furnace, you end up with about a half-ton of ash. But some coal fines are free — in fact, some coal preparation plants have to pay to get rid of them," Buttermore observed.

In the initial work on the Sulfurtain process, the material was formed into pellets in order to anticipate it being shipped in large quantities and to approximate the size of nut lump coal burned in iron-grate furnaces.

It is estimated that from 10 to 15 percent of the West Virginia coal that isn't exported is burned in iron-grate furnaces. In the old days, this was the form of coal burned in automatic home furnaces. Today such coal is used for heating and generating electricity in small plants, institutions and schools. (Because of the predicted shortage of natural gas and fuel oil, it may be that such installations will increase their use of nut lump coal.

If northern West Virginia is to retain its share of this market, mechanically cleaned coal or Sulfuritain coal seems to be an answer. Because of their costs and maintenance requirements, it is doubtful that wet scrubbers ever will be used at small installations.

Both limestone (calcium carbonate) and slaked lime (calcium hydroxide) were tested in the Sulfurtain process. Both worked equally well. However, limestone is so much cheaper (about $2 a ton compared to about $14 a ton for slaked lime) that it is recommended for the process. More limestone is needed in a given mixture — about 20 percent compared to about 12 percent for lime. Thus there is more ash when it is used. Quick lime (calcium oxide) also was tried but the pellets were fragile and this form of lime is very expensive. Twice the theoretical amount of limestone needed to combine with the sulfur should be used to achieve a 90 percent sulfur retention in the ashes.

When cleaned coal (about 8 percent ash and 3 percent sulfur) was used instead of coal fines, the results were as expected. Less limestone was needed and less ash was formed. The percentages of carbon burned and sulfur retained in the ash were about the same as with the coal fines.

"Since the net lump coal market is quite small now, the real test for the Sulfurtain process will be with the pulverized coal that is used in electric power plants," Buttermore said. Electric utilities use about 39 percent of West Virginia's total coal production, or about 60 percent of the coal that isn't exported.

"In the furnace used for testing the pellets, the carbon burns for about 45 minutes at a temperature of about 1,850 degrees F. However, in a pulverized coal furnace the carbon burns for only a fraction of a second at a temperature of about 2,650 degrees F.," Buttermore explained.

"The difference in burning time might not matter, but the real concern is with the temperature. We think that when the sulfur combines with the calcium that calcium sulfate is being formed — and calcium sulfate decomposes at about 2,500 degrees F. In other words, it may be that at the temperature at which pulverized coal furnaces operate, calcium sulfate won't be formed but that sulfur dioxide will be.

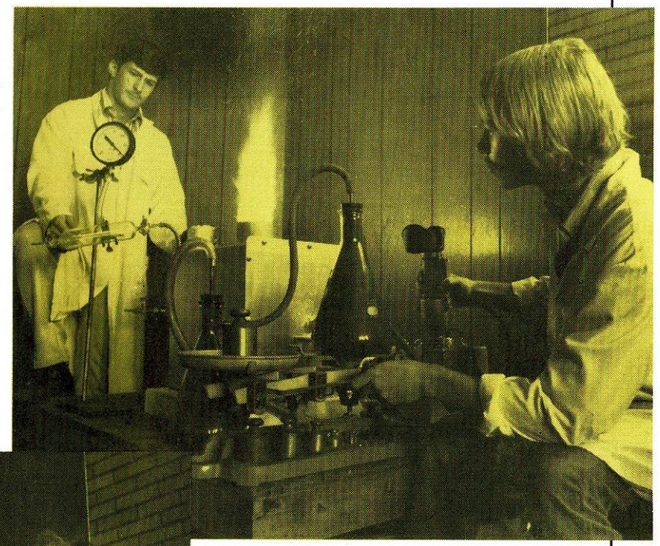
"Only the tests that we now are conducting will tell," Buttermore said.

Because a furnace to test the burning of pulverized coal wasn't available, it was necessary to build one at WVU. The furnace initially is heated by natural gas and has a firebox that is eight by four and a half by two inches. The pulverized coal is placed in a glass container that is on a scale outside the furnace. This allows the amount of coal that is burned during a given time to be measured accurately. Compressed air, which also is measured, is used to force the coal from the container into the fire box.

The furnace, which is completely air tight, also has a glass port through which the temperature of the burning coal can be determined. The furnace flue is fitted with a bleed-off valve that allows the gases to be sampled for testing.

"The question is: Will these gases contain sulfur dioxide? If the measured concentration of sulfur dioxide from Sulfurtain coal indicates a substantial reduction from that of untreated coal, we will have made an important breakthrough," Buttermore said.

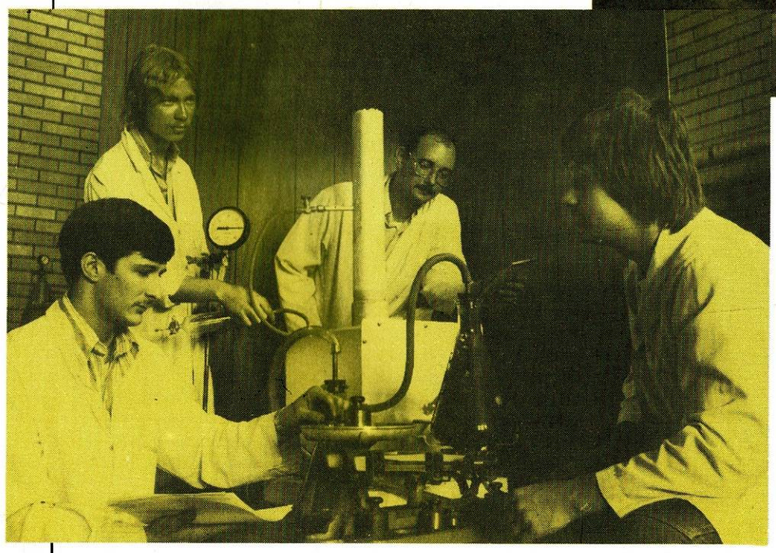
The furnace was built by Buttermore and his laboratory assistants — Barry W. Dodson, a senior in social work at WVU; Edward J. Simcoe Jr., a biology senior; and Charles M. Vidas, also a biology senior. Barry is the son of Mr. and Mrs. Hubert E. Dodson of 1205 Henry Road, South Charleston; Edward is the son of Mr. and Mrs. Edward J. Simcoe Sr., of 496 Lawnview Drive, Morgantown; and Charles is the son of Mr. and Mrs. Robert M. Vidas of 140 Miron Ave., Weirton.



This furnace was constructed by Buttermore (left) to test the burning of pulverized coal in order that sulfur dioxide emmissions could be measured accurately after the "Sulfurtain" process.

Only when a substantial reduction in sulfur dioxide is realized will Buttermore consider his process a significant breakthrough.

"If you can't get the sulfur out, why not trap it in ashes?" This is the theory behind research currently being done at West Virginia University to minimize sulfur dioxide emmissions during the burning of coal by William H. Buttermore.



Excerpts of Statement of The West Virginia Surface Mining and Reclamation Association

by

Ben E. Lusk

Executive Director

Before the Joint Interim Committee on Mines and Mining West Virginia Legislature

January 6, 1974

Strict enforcement of the 1971 Surface Mining and Reclamation Act, unstable market conditions, shortages of supplies and equipment and unrealistic enforcement restrictions have brought about a drastic curtailment of the surface mining industry in West Virginia during the past three years. Production of coal by the surface mining method in West Virginia dropped from 27.6 million tons in 1970 to 18 million tons in 1973. The number of surface mines in the state dropped from 616 to 192 and the number of companies failed from 219 to 103 during that same period.

Although the adverse effects are obvious from the production standpoint, environmental protection, with respect to surface mining, is increasing at a rapid rate. During the past five years, West Virginia has lead the nation in the total acres reclaimed, while ranking only fifth in production.

One reason West Virginia has lead all other states in mine land reclamation is due to its outstanding research program. With rapid changes in the rules and regulations of the 1971 law, operators in West Virginia have had to develop new mining methods in order to comply. One such newly developed technique is the controlled placement method of surface mining which is now being used by many operators on steep southern West Virginia slopes. Some other methods include mountain top removal, valley fill, boxcut, modified block cut, modified contour mining with highwall elimination and the new lateral movement method recently developed in Logan County.

The industry is hopeful that the state and federal governments will give these new methods time to prove their effectiveness by reducing highwalls, controlling spoil material and bringing about a better balance between mining and the environment.

If any change is to be made in the current law in West Virginia, it is recommended that the state repeal the provision calling for prohibition of surface mining in areas within sight of highways or state parks or in the 22 counties where the moratorium now exists. In view of the energy crisis, it is essential that the industry open up new areas for expanding its operations to produce more coal in order to meet the energy needs. The second area where a change might be considered in the 1971 Act would be to repeal the bench width restrictions and drainage requirements which are now outdated and obsolete in view of the new controlled placement method currently required by the Department of Natural Resources.

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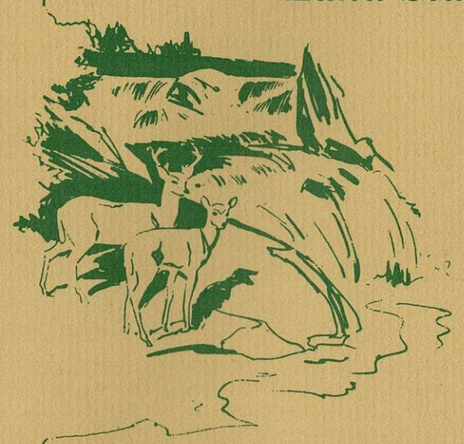

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Erosion and Sediment Control

David J. Ozmina
President

General Consultants

R. Wayne Morgan
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OVER 230 ATTEND FIRST W. VA. SURFACE MINING SYMPOSIUM

Over 230 mining and reclamation personnel, researchers, legislators, legislative representatives and members of the news media attended the first annual West Virginia Surface Mining Symposium January 17th and 18th, making it one of the most successful meetings in the Association's history.

Following the theme 'New Mining Methods for Better Reclamation," the program was jointly sponsored by the Association and the Steering Committee for Surface Mine Research in West Virginia. Representatives from West Virginia and six surrounding Appalachian states were in attendance.

Over 230 mining and reclamation personnel, researchers, legislators, legislative representatives and members of the news media jammed into the Ballroom of the Daniel Boone Hotel in Charleston for the first annual West Virginia Surface Mining Symposium. Only 150 had been pre-registered before the opening session on Thursday morning.

West Virginia Department of Natural Resources Director Ira S. Latimer, Jr., welcomed the numerous out of state guests on behalf of Governor Arch A. Moore, Jr. Latimer pointed out the change in the industry's attitude towards reclamation, and encouraged the symposium to become an annual event.

"We couldn't have been happier with the way things turned out," Association President Lawson Hamilton said following the program. "I'd like to extend my personal thanks and appreciation to the speakers for their down-to-earth presentations concerning their experiences with these new mining methods."

"I'm sure everyone who attended, left the meeting feeling they had really benefitted from the program," Hamilton said.

Steering Committee President Dave Ozmina of Beckley moderated the Thursday morning program beginning at 9:00 a.m. He introduced Department of Natural Resources Director Ira S. Latimer, Jr., who welcomed our out-of-state guests on behalf of Governor Moore and noted the significance of this particular symposium.

'I think we have turned a corner in the surface mine industry and it's reflected by the theme for this symposium, New Surface Mining Methods for Better Reclamation,' Ira Latimer said.

"In the past, we have always worked on the curing, or correcting problems that have been the first priority for initial prevention of the problems through new mining technology," he said.

Tony Haley, Mining Consultant for the Caterpillar Tractor Company, started off the technical portion of the program by discussing "New Methods and Equipment Use in Contour Mining." He presented a quick overview of all the newest mining methods from an equipment standpoint, relating how to utilize certain types of equipment in particular mining situations.

Following morning coffee, Tennessee Valley Authority's Reclamation Specialist Al Curry and Wendell J. Long, President of A. B. Long, Inc., teamed up to discuss their joint "Multiple Seam Contour Backfilling" project, (text enclosed), which preceded Ben E. Lusk's discussion of "Longwall Surface Mining." Lusk's talk concerned the recent federal grant the West Virginia Surface Mining and Reclamation Association received from the Environmental Protection Agency to study a new mining method that would minimize environmental disturbance.

Kicking off the morning session, Tony Haley, Mining Consultant for Caterpillar Tractor Co. gave an overview of several new mining methods from an equipment use standpoint. His presentation touched on box cut, lateral movement, mountain top removal and valley-fill and conventional surface mining methods.

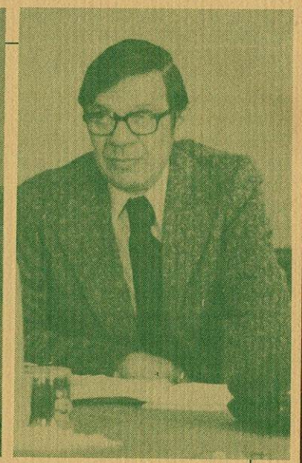
After the lunch break, representatives of Falcon Coal Company and the Kentucky Department of Natural Resources gave a presentation on "Flat Top Mining and Valley Fill Reclamation." Roy Mullins, President of the Hazard, Kentucky corporation, and Bill Hayes jointly discussed the varied experience of an operator and an inspector on mountain-top mining in the rugged hills of eastern Kentucky. (text enclosed)

The much publicized "Pennsylvania Boxcut" was the next subject on the program. W. E. Guckert of the Pennsylvania Bureau of Surface Mine Reclamation and Ed Mears of Mears Coal Company made a joint discussion of this mining method, that many people in the Keystone State and Washington are trying to make manatory on a nationwide basis.

Wrapping up the afternoon session, F. B. Nutter, Jr., Executive Vice-President of Hobet Mining and Construction Company, presented facts and figures on his new "Lateral Movement" method at Scarlet, in Mingo County.

Formal presentations continued Friday morning during the regular meeting of the Steering Committee, which was again chaired by Dave Ozmina and Bill Plass.

Dr. David Samuels of West Virginia University gave an intriguing progress report on his wildlife experimentations on reclaimed surface mines in Preston County and Charles Greenawalt of the U.S. Corps of Engineers discussed the proposed $13 million federal clean-up program for the Cabin Creek watershed.



Steering Committee President Dave Ozmina and Secretary Bill Plass moderated the morning and afternoon sessions respectively and were very instrumental in lining up an outstanding program. Plans are already in the making for the second annual West Virginia Surface Mining Symposium.

Following the meeting, Association President Hamilton reflected on the program and why the Association had sponsored the symposium.

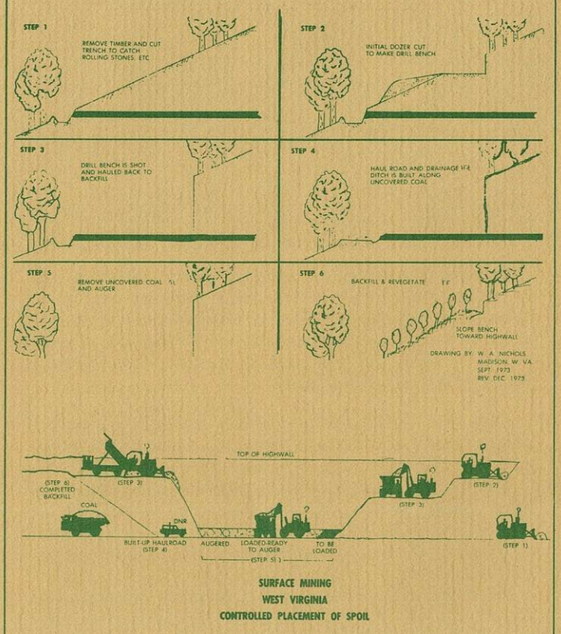
"During the past few years, surface mine operators have been developing new mining techniques in order to comply with the various state laws and obtain a balance between mining and the environment," Hamilton said.

He noted that in the past, reclamation research was already geared towards restoring the land after mining, "but now reclamation begins with and is part of the mining operation. We are improving our reclamation simply by not causing as many problems during actual mining."

Roy Mullins, President of Falcon Coal Company (left), of Hazard, Ky., and Bill Hayes of the Kentucky Department of Natural Resources lead off the afternoon session discussing "Flat Top Mining and Valley-Fill Reclamation." The two gentlemen discussed their experiences from the standpoint of an operator and a state regulatory agency.

F. B. Nutter, Jr., Executive Vice President of Hobet Mining and Construction Co., gave an outstanding presentation on his companies' "Lateral Movement" operation in Mingo Co., W. Va. The method includes, backfilling the highwall, elimination of the outer spoil slope and hauling overburden in trucks.

"Considering the new increased emphasis on coal and the continuing emphasis on environmental protection, we believe that a detailed look at these new mining methods is both important and timely," he said.



SURFACE MINING
WEST VIRGINIA
CONTROLLED PLACEMENT OF SPOIL

Co-sponsoring the event was the Steering Committee for Surface Mine Research in West Virginia, which has been responsible for or taken part in nearly all the surface mining and reclamation research during the past seven years. Steering Committee President Dave Ozmina explained his organization's participation in the symposium.

"Historically, the Steering Committee has basically been concerned with soil preparation, revegetation and stabilization of mined land," he said. "Now that we've found the answers for solving these problems, the next logical step is to look for changes and improvements in mine operation that will lessen the effect on the environment, and make the reclamation process quicker and easier."

"We in the research end are most encouraged by the enthusiasm of the operators and their willingness to experiment on their own. Obviously, they are better equipped for such experimentations in mining methodology and we are convinced that their continued cooperation will lead us to a sound mining and reclamation program for the Appalachian region," Ozmina said.

Nearly as significant as the technical papers given, was the response and attitude of the news in attendance. Representatives from WCHS-TV, WSAZ-TV, WKAZ Radio, The Charleston Gazette, Daily Mail, Huntington Herald-Dispatch, Beckley Raleigh Register, West Virginia Hillbilly and Mining & Processing Magazine were all on hand for filmed reports and interviews.

The following WCHS-TV commentary was given by Charles Ryan during the 6:00 p.m. news Thursday, January 17th, and suggests that maybe we are all going in the right direction after all.

"WHETHER ONE FAVORS OR IS OPPOSED TO SURFACE MINING OF COAL SEEMS OF LITTLE QUESTION IN THIS TIME OF ENERGY CRISIS AS AMERICANS ATTEMPT TO BECOME INDEPENDENT OF MIDDLE EAST OIL. FROM ALL SIDES, THE INDICATIONS ARE THAT SURFACE MINE COAL IS A NECESSITY. WITH THE NEED FOR MORE SURFACE MINING THERE IS THE THREAT OF MORE RAPE OF THE LAND. THE SPEED WITH WHICH WE ARE PLUMMETING TOWARD MORE OF THIS TYPE MINING WOULD MAKE IT EASY TO STRIP AND FORGET. FOR THAT REASON IT IS OF SPECIAL CONCERN TO ALL EASTERN KENTUCKIANS AND WEST VIRGINIANS TO WATCH WHAT IS HAPPENING AT THE FIRST ANNUAL WEST VIRGINIA SURFACE MINING SYMPOSIUM NOW UNDERWAY IN CHARLESTON. IT WAS CALLED SPECIFICALLY TO DISCUSS NEW MINING METHODS FOR BETTER RECLAMATION. IN ATTENDING THAT MEETING TODAY I FOUND FIRST, A FAR GREATER NUMBER OF MINING COMPANIES IN ATTENDANCE THAN EXPECTED — OF FAR GREATER IMPORTANCE, HOWEVER, IS THE ATTITUDE OF THOSE PARTICIPATING. THE SURFACE MINERS SEEM TO SENSE THAT THE ENERGY CRISIS HAS GIVEN THEM BACK STATUS THEY HAD LOST — TO QUOTE BEN LUSK OF THE WEST VIRGINIA SURFACE MINE ASSOCIATION — 'WE HAVE ONCE AGAIN GAINED ACCESS TO THE WHITE HAT.' THEIR TALK AND DEMEANOR SUGGEST THAT THE OPERATORS DO NOT WANT TO LOSE THAT STATUS AND THE RIGHT TO SURFACE MINE COAL. IN SHORT — THEY SEEM DEADLY SERIOUS WHEN THEY SAY RELAXATION OF COAL RECLAMATION EFFORTS WOULD GREATLY DAMAGE USE OF COAL AS A SOURCE OF ENERGY AND THEIR FUTURE, ECONOMICALLY.

SUCH AWARENESS IS TO BE APPLAUDED AND SIGNIFIES A MAJOR STEP FORWARD FOR THE INDUSTRY AND THE ECONOMY OF THE TRI STATE COAL REGION."

—(Reprinted with consent of WCHS-TV)

MULTIPLE SEAM CONTOUR BACKFILLING

Prepared By
Natie Allen, Jr., Supervisor
Fossil Fuels Engineering Section
Tennessee Valley Authority
and
Wendell J. Long
President, A. B. Long, Incorporated

In the early 1950's, the Tennessee Valley Authority began construction of coal-fired steam electric generating plants to supplement an essentially completed hydroelectric system. Since 1951 the agency's annual coal use has grown from 1.7 million tons to more than 40 million tons today. Over one-half of this coal is produced by surface mining methods in the Appalachian and Illinois Basin coalfields.

Even before TVA became a major coal user, the agency was concerned with the effects of surface mining on the environment. Through the years, extensive cooperative efforts have been carried out with other federal agencies, state agencies, landowners, and the mining industry to help find better and more effective mining and reclamation techniques. Described here is one such effort planned in 1971 and begun on the ground in 1972 to determine the feasibility and costs of returning a multiple seam coal surface mine on a steep slope to approximate original contour.

The area selected for the experimental mining involved TVA coal reserves on Massengale Mountain in the Northern Cumberland Plateau region of Campbell County, Tennessee. The topographic relief of the mountain varies from 1,410 feet elevation above sea level to 3,250 feet. The coal seams being mined are shown in Figure 1: Red Ash (elevation 2,460), Walnut Mountain (elevation 2,510), PeeWee (elevation 2,515), and the PeeWee Rider (elevation 2,560). Total seam thickness exceeds 10 feet. Slope steepness averages 25 degrees but varies from 21 to 36 degrees. The overburden is gray shale and sandstone. As much as three and one-half miles of this multiple seam outcrop has been dedicated to this experimental mine.

The mining plan restricts the fill below the lowest coal seam to 20 vertical feet (Figure 2) where original steepness is 28 degrees or less. (No fill permitted if slope exceeds 28 degrees.) It also specifies that all pits be backfilled to approximate original contour, with excess material hauled by truck to permanent off-site disposal areas.

Using truck hauling cost of $.30 per cubic yard for overburden placement on-site and $.50 per cubic yard for disposal at off-site areas, it was originally estimated that mining costs would be increased by $2.60 per ton.

The Long Pit Mining Company contracted to do the experimental mining job on a cost plus, fixed fee contract. Since Long Pit was producing coal for TVA in 1972 on the same mountain and on the same coal seams using conventional mining techniques, there was little lost time in beginning this experimental work in July 1972. While it was originally thought that cost information on Long Pit's previous conventional mining operation could be used for comparative purposes, it soon became apparent that factors such as weather, changes in the nature of the overburden, and varying coal seam thicknesses would make this type of cost comparison impossible.

Long Pit's stripping equipment for this test mine consists of our Caterpillar front-end loaders (two 992's, one 988, and one 966), four Caterpillar D-9 dozers and one D-8 dozer, two Robbins RR10S vertical highwall drill mounted on D-9 tractors, four Caterpillar 773 rear dump trucks and one Salem 1530 coal recovery auger.

The plan calls for working 3,000-foot sections completing the mining and reclamation on all four seams before moving to the next section. The mining sequence is shown in Figure 3. Initially, a 1000-foot cut was taken on the Red Ash (Figure 1) beginning where the access road intersected the seam. A limited fill (as previously described) was built with the remaining overburden hauled off-site for permanent placement at selected areas on Long Pit's former mining operation. While the stripped coal was being removed and the coal face augered at the beginning cut, overburden removal began on the remaining 2,000 feet of the first mine section. The initial spoil was hauled off-site. When augering was completed on the first 1,000-foot cut, off-site haulage from the 2,000-foot cut ceased and backfilling of the first pit began using lateral truck hauls. When the highwall was eliminated the fill was reduced to a 1½:1 slope. The outer 30 feet of the mine bench was kept clear of spoil to provide a roadway and to help control surface water runoff. Revegetation efforts began as soon as spoil was in final placement.

When stripping was completed on the first 3,000-foot section of the Red Ash, mining began on the PeeWee-Walnut Mountain seams some 55 feet higher on the slope. To the maximum extent possible, spoil from this cut was pushed into the lower pit with excess hauled off-site to permanent disposal areas. Mining then moved to the highest seam where a 40-foot highwall was taken. Approximately half the spoil was pushed into the Pee-Wee-Walnut Mountain seam and the balance hauled off-site.

The second cut on the PeeWee-Walnut Mountain was then taken and pit backfilling began using lateral overburden hauls. The Rider seam augering was not done until backfill reached the coal level. After augering, the highway was backfilled completing mining of all four seams in the initial 3,000-foot section. This sequence was repeated on the next 3,000-foot section and continues today on the third mining unit.

The back-to-contour mining has been in operation long enough to establish that:

1. With careful planning it can be integrated into the normal mountain contour stripping cycle for either single or multiple seam mining.
2. The objections to highwalls and outslopes resulting from conventional stripping can be overcome and the surface returned to the approximate premining configuration.
3. A higher recovery of coal reserves can possibly be obtained when compared with mines operating under reclamation laws imposing bench width restrictions to control the size outslope permitted in conventional mining.
4. For the same amount of basic mine production equipment, excluding the overburden haulage units, mine capability is reduced while restoring to original contour. This results primarily from the loss of yardage normally obtained from bulldozers pushing material downslope.

Data has been obtained on the Long Pit experimental mining on tonnage, total yardage, yardage hauled, average length of haul, and operating hours of trucks and dozers involved in the haulage. Using hourly operating costs of $37.75 for off-highway rear dump trucks, $35.60 for D-9 dozers, and $25.00 for D-8 dozers, the costs per cubic yard for loading, hauling, and placing overburden were established for both level and grade hauls. Experience to date shows a haulage cost of $.36 per cubic yard for a 1,700-foot one-way level haul, and $.51 per cubic yard for a 2,100-foot one-way haul with approximately half the distance on a 6- to 10-percent upgrade.

The cost increase for overburden removal and placement is obtained by applying these unit costs to the amount of overburden handled.

As far as this experiment is concerned, average stripping ratio has been 9,87 cubic yards per ton of strip coal. Of this total, 2.40 cubic yards per ton has been handled by dozers pushing to a lower seam, 4.11 cubic yards per ton has been transported 1,900 feet by level haul truck for a cost increase of $1.56 per ton, and 3.36 cubic yards has been transported 2,700 feet upgrade haul for a cost increase of $2.02 per ton. The total overburden removal cost increase is therefore $3.58 per ton of strip coal. When auger coal production is included, the increased overburden removal cost is $2.82 per ton.

For this method of cost determination, reclamation costs consisting of grading and revegetation are less with back-to-contour mining than in conventional mining because the disturbed area is greatly reduced since there is little or no outslope, and grading work consists only of back-blading final slopes. At Long Pit reclamation costs have been reduced by $.25 per ton over conventional mining.

Production capability is reduced as the dozers which customarily push overburden downslope are utilized to assist the front-end loaders in loading trucks. Studies have shown that when assisted by dozers, front-end loaders have the same cycle time placing material downslope as in trucks.

It is difficult to determine the amount of production loss resulting from backfilling to original contour. When either the stripping ratio or mining conditions vary, a comparison with past production is not valid. Probably the best estimate of production loss is based on the calculated capacity loss of the dozers. Long Pit has experienced approximately 15 percent loss in production. The cost increase due to production loss is obtained from the actual production costs reduced by costs directly related to tonnage, such as royalty, union welfare, trucking, and variable supplies, and the increased cost of overburden removal attributed to this method of mining. At Long Pit where the mining cost has been $11.14 per ton, the cost due to lost production is calculated to be $1.09 per ton.

On this experiment, TVA has experienced significant cost increases over conventional mountain coal surface mining. This indicates to us that back-to-contour mining on steep mountain slopes could result in material price restructuring of surface mined coal.

MINING AREA WITH SEAM INTERVALS

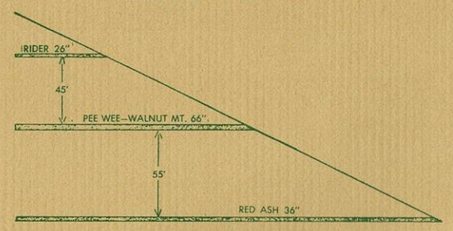


FIG. 1

APPROXIMATE FINAL PROFILE OF BACKFILLED AND GRADED PIT AREA

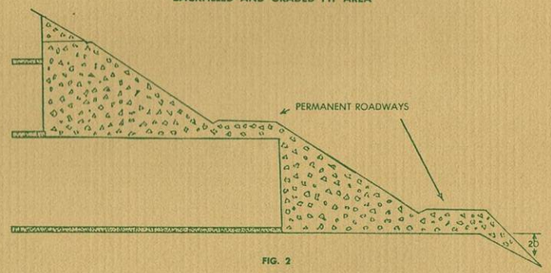


FIG. 2

STRIPPING SEQUENCE

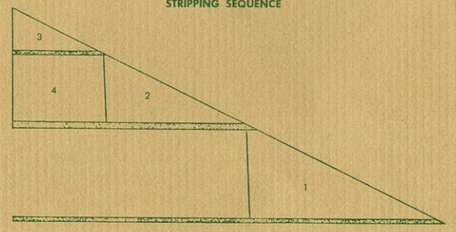


FIG. 3

FLAT TOP MINING AND VALLEY-FILL RECLAMATION

Roy Mullins
Vice President, Falcon Coal Company
Hazard, Kentucky

I'm a little bit hesitant to speak after Al Curry, who spoke this morning. It so happens that my Company delivers all the coal we mine to his Company, TVA, and one of the things that I had planned to say with regard to reclamation is what, our Company President, once told some of the people at TVA. When they asked whether or not he could comply with the new TVA reclamation regulations, his response was "Yes, I think we can do that or whatever you like. If you'd like an 18 hole golf course on every one of our strip-mines, I think we can do it. It's just a matter of money." I think that so many times in this business of producing coal, we've lost sight of the fact that the operator is simply an instrument in the total cycle of supplying this fuel. Yet, the increased cost of a new mining technique may be a very large percentage of the total cost of coal. The public and the legislators want and demand of us different results from our mining. There's no question we can do it. But businesses like ours, which are operated under the U. S. free enterprize system, have an investment; we expect to make some reasonable return on that investment. And ultimately, the people who are making these demands, the power companies and the homes and the individuals who are using the power from these companies, will have to pay the price.

Before beginning a discussion of our Mining and **Reclamation Practices** I would like to bring to your attention the **Definitions** of certain terms frequently heard and almost as frequently misinterpreted in these times.

First: **ENVIRONMENT** — Webster defines environment as — All the conditions, circumstances, and influences surrounding and affecting the **DEVELOPMENT** of an **ORGANISM.**

Second: **ECOLOGY** — The branch of Biology that deals with the **RELATIONS** between **LIVING ORGANISMS** and their **ENVIRONMENTS.**

Next: **RECLAMATION** — To reclaim is to **CLAIM BACK** or to demand the return of.

Then: **ENERGY** — The capacity for doing work and overcoming resistance.

Finally: **BALANCE** — Defined simply as **HARMONIOUS PROPORTION.**

Now with these definitions fresh in our minds, can we of the surface mining industry harness our **ENERGY,** while protecting our **ENVIRONMENT** and preserving our **ECOLOGY** through effective **RECLAMATION** practices, and maintain these forces in proper **BALANCE?** I submit to you — **YES,** it **CAN** be and **IS** being done. Through pursuit of proper **OBJECTIVES** in **SURFACE MINE RECLAMATION** and **LAND USE PLANNING** we can maintain or improve the conditions affecting our development. We can balance relations between ourselves and our environment and we can return mined lands to the same, equal, or improved condition and use.

With the emphasis placed on energy crises that we have in the U. S. today, I fear that the increased demand of coal as a source of energy, might become so great that the mine operators, the conservation interest and those responsible for administering the surface mine law might relax their efforts in properly reclaiming the mine areas. This, in my opinion, would be one of the most damaging influences that could happen to the mine operators and the future use of coal as a source of our energy needs. With the ever increasing demand for the purchase of coal, which ultimately leads to an increase price, the operator will have more revenue for the proper planning of his mining operation and the attaining ultimate goal of proper reclamation. This, I hope, will be the attitude of those responsible for protecting our environment.

Proper Reclamation should control **SEDIMENTATION,** prevent **LANDSLIDES,** prevent excessive **MINERALIZATION,** provide **REVEGTATION,** and accomplish equal or better **LAND USE** than before mining.

These reclamation objectives are accomplished through various controls and techniques, many of which are common to all types of surface mining. **SEDIMENTATION** may be effectively controlled by **DIVERSION OF SURFACE RUN-OFF WATER** away from disturbed spoil and by careful construction and placement of **SILT BASINS** to slow down run-off water so that sediments will separate out. A prompt **VEGETATIVE COVER** on disturbed areas will greatly diminish sedimentation.

LANDSLIDES are best prevented by careful choice of **SPOIL STORAGE** areas. **SPOIL STABILIZATION** is accomplished in many instances by storing it on outslopes through the **SLOPE REDUCTION** technique. This technique, however, is safe only when limited amounts of spoil are carefully placed on the downslope. In cases where it is advantageous to handle more spoil than can be securely stabilized on the downslope, it is convenient and safe to prepare a **HEAD-OF-HOLLOW** fill to accommodate excessive spoil. By careful selection and preparation of **HOLLOW FILLS, SLOPE REDUCTION** type spoil storage may be kept at a minimum. This practice is preferable since **SPOIL STABILIZATION** is more easily accomplished in **HOLLOW FILLS** than in **SLOPE REDUCTION** storage. I will try to demonstrate **WHY** later, with the help of visual aids.

MINERALIZATION in East Kentucky mining operations is a problem only where coal seams of relatively high **SULFUR** content are mined. All **TOXIC** materials should be separated from the spoil and **BURIED** at the bottom of the mine pit. **DRAINS** should be prepared to divert all surface water possible away from the buried toxic materials.

The **HYDROSEEDER,** used in conjunction with the proper mixture of **WATER, SEED, FERTILIZER** and **MULCH,** is a good technique for accomplishing **REVEGETATION** effectively. Various mixtures of seeds including **TREES, GRASSES** and **LEGUMES** may be sowed to give the desired plant cover.

LAND USE PLANNING as a vital part of surface mine reclamation is in its infancy. We have, however, successfully proven that land suitable for **GRAZING, FRUIT ORCHARDS,** and **TIMBER** is possible from reclaimed surface mined land in East Kentucky. Tests are currently underway on the feasibility of **VINEYARDS** and **STOCK** feed plantings with encouraging results thus far. **CULTIVATED LAND** seems a realistic longer range probability once the disturbed material has had ample time to weather and settle. Where **MOUNTAIN TOP** mining has left extremely large **FLAT AREAS** with substantial access roads from old mining haul roads, large **CONSTRUCTION PROJECTS** and **SETTLEMENTS** will be possible in future years when mining is completed.

Governor Arch A. Moore, Jr.

Excerpts from the

State of the State Message

by

Governor Arch A. Moore Jr.

Before the Opening Session of the

West Virginia Legislature

January 9, 1974

I now wish to take up the subject of the nation's current energy dilemma and discuss the opportunity it provides the State of West Virginia.

Much of our country today is in the midst of considerable economic and personal hardship because of the failure of this nation to develop a national fuels policy consistent with our best interests. While a member of the U. S. Congress in 1959, I proposed such a policy. That proposal would have prevented over dependance on oil and natural gas as fuel sources for this nation and would have recognized and required coal, our nation's most abundant natural fuel, to play a larger role in providing the nation's fuel requirements.

The Congress of the United States did not act upon that piece of legislation and, as a result, in 1973, the action of one group of nations has provided the most serious economic threat to the life of this nation and indeed the world in the last 40 years.

We in West Virginia, are the possessors of some of the world's richest resources in coal. Yet, we find that because of ineffective Federal Government leadership we are almost helpless in aiding our nation meet the current energy challenge.

I believe that, without a doubt, the current crisis provides coal and West Virginia with a second golden opportunity. I believe West Virginia coal can provide the answers to most of our nation's energy problems.

Let me make it clear that while I perceive this as a second golden opportunity for coal in West Virginia, I also recognize that we must better manage this opportunity than we did the first golden opportunity for West Virginia coal.

If West Virginia coal is to provide an answer for the nation's energy dilemma, it must do so without doing irreparable harm to the State we love. It must do so by bearing adequate and fair share revenue burdens for the privilege of taking this precious natural resource. It must do so by way of creating viable economic communities with continuity, and it must do so by facing and solving technical difficulties which make it impractical, undesirable, or unsafe to utilize this precious energy material.

The era of treating coal as a stepchild in the family of the nation's fuel sources is at an end. The current oil shortage which West Virginia and the nation are now facing requires a period of transition. The manner in which we solve our current energy problems will, in a very real way, cast the mold for the future economy and quality of life for West Virginians.

It is my sincerest hope that in 1974, we can lay the ground work which will ensure that future generations of West Virginians will be able to enjoy not only abundant energy, but also the unmarred beauty and splendor of our State and the fruits of a stable and progressive industry.

To that end, I am calling for the creation of a super commission in government, the Governor's Commission on Energy, Economy, and the Environment. This Commission will be composed of several department heads, each of whose departments has major responsibilities related to the goals of this Commission.

The primary concern of this Commission will be to maximize returns from existing energy resources while minimizing detrimental repercussions. This broad undertaking will ensure that coal is fully utilized as the key to West Virginia's development without endangering the environment of our beloved State. I am asking that the Commission be empowered to employ an Energy, Economy and Environment Coordinator for the State of West Virginia to manage on a full-time basis the following three areas of responsibility:

1. The first responsibility of this Commission will be to identify all sources of demand for energy and attempt to allocate by using State reserves, or by requesting federal redirection, available supplies to meet demand. This function is now being performed by the Fuel and Energy Office which I created by Executive Order when the fuel scarcities first appeared. For at least the foreseeable future, petroleum and natural gas supplies will be available in quantities less than full need. A special government agency is needed to hear the individual problems of West Virginians so that no one must carry too much of the burden. This office will also provide recommendations on conservation opportunities for all of us.

2. The second responsibility of the Commission will be to ascertain the volume of natural resources now existing in West Virginia. I propose that the West Virginia Geological Survey be granted the funds to locate all fuels in West Virginia and to categorize those fuels according to characteristics of importance with respect to their potential use. This is essential if we are to know the role West Virginia will play in providing the nation with ample energy resources. We must know the extent of our natural wealth in order to obtain the maximum advantage of the opportunity now presented to us without jeopardizing the future economic viability of West Virginia.

3. Finally, and probably most important, the Commission shall be entrusted with the responsibility of initiating Research and Development efforts through the Bureau for Coal Research of West Virginia University. In order that our vast resources of coal may be used in a manner consistent with a clean and healty environment, basic research efforts will be directed at solving those chemical, physical, and material handling problems which must be solved before coal gasification, liquification, leaching, and other processes can be profitable with West Virginia coal. Several methods of converting coal have been discovered. However, because crude oil has been relatively cheap, coal conversion efforts have not been economically feasible. Specific scientific research is needed for solving the problems effecting coal's efficient and clean use. Therefore, I propose that West Virginia University be funded for basic research important to full use of West Virginia coal.

Now is the time for coal and for West Virginia. I must emphasize, however, that in order for this Commission to be effective, we will need the full cooperation of all agencies of government, especially in the first days following its birth. So that disruptions in our government may be minimized, I am asking for additional authority to direct that specific operations of other State agencies and institutions be coordinated and supervised by the Commission to meet any potential emergencies. I can assure you this authority would be used sparingly and only when it is essential to the best overall interests of the State of West Virginia.

The creation of one Commission by itself cannot cure the ills accumulated through years of unenlightened energy policies. The fuel shortages of today demand that other State agencies take part in the solution of our problems. I am asking that the Public Service Commission be enabled to regulate gas and electric utilities in a manner consistent with ideals of responsible energy management.

Specifically, I am requesting that the Public Service Commission be authorized to reverse the present inverse rate structure of gas and electric utilities so as to encourage energy conservation without unduly penalizing large industrial employers, who, by reason or nature of their business, rather than by waste, require large amounts of energy.

So that we may intelligently plan for the future, I further ask that the utility companies be required to provide the Public Service Commission with estimates identifying anticipated loans, resources, and new facilities. Annual estimates supplemented by 5, 10, and 20-year projections would provide a sound basis for planning the pattern of growth for West Virginians.

I shall cause to be introduced legislation for your approval giving life to this suggestion and ask your favorable consideration of this proposal.

I believe that the opportunity is ours, that we can make of it what we will. I believe that the proposals I am submitting for your consideration can maximize those opportunities. I ask your approval of this imaginative program.

In these times of national and world crisis I believe it is appropriate that the leadership of the State of West Virginia assert itself by conceiving and advancing a program for consideration by the coal producing States.

As the leaders of the oil producing States of the world have melded their common interests and are now acting in concert with respect to policies directed toward their abundant natural resource, oil, I believe now is the time for the Governors of the coal-producing States to meet and ascertain whether the common interests of their respective citizens could not best be advanced by their considering state policy affecting their prime natural resource in concert.

In furtherance of this suggestion, I have today sent telegrams to the Governors of the sixteen major coal-producing States to meet at White Sulphur Springs, West Virginia, on January 26, 1974, for the express purpose of discussing and developing a legislative program to be advanced for consideration by each of the legislatures of the participating States. This conference shall also consider the present fuel crisis and our mutual role of providing the Nation with energy. A copy of my telegrams to the respective Governors will be available at the conclusion of my presentation. I firmly believe this action to be in our State's interest, to the interests of the coal-producing States of the United States, and to our Nation's interest.

I am deeply appreciative of your indulgence to me in these necessarily long remarks.

These are times that require action. I feel compelled to act.

I ask your good will and understanding in these remarks presented for I believe them to be demanded of me if I merit the designation as Governor of West Virginia.

May I leave this last word—
If we should stumble, as we have and will,
Let us stumble going up the hill;
Let the stumbling be because our eyes
Are fixed upon some star high in the skies.
Thank you so very much!

Row 1—Troy Yoakum, Paul Amick, Dr. Edward Ciolkosz, Richard Googins, Ron Talbert, Dr. George Holmgren, and Lowell Haga. Row 2—W. W. Willey, G. J. Post, Richard Jones, Robert Daniell, Donald McCormack, Dr. G. G. Pohlman, Keith O. Schmude, Richard H. Anderson, Dr. John Witty, and Walter Ellyson. Row 3—Dr. George Hall, James B. Newman, Joe Parker, John Houghton, Robert Bond, Lawson Hamilton, James DeMent, Dr. R. M. Smith, Frank Glover, Tom Ammons, John Sencindiver, Dr. Willem van Eck, and Frank Carlisle. 1973 Field Study for Classification of Mine Spoils in West Virginia.

Field Clues Useful for Characterization of Coal Overburden*

Walter E. Grube, Jr. and Richard Meriwether Smith

In earlier articles discussing minesoil and coal overburden research conducted at West Virginia University, we have presented both some basic facts concerning how particular soil properties could be emphasized in p'acement of selected overburden strata, and distinctive laboratory methods for evaluating toxic or potentially toxic rock materials. The usefulness of data and methodology developed in the laboratory is likely to be increased if simple clues are available by which important rock and soil properties may be recognized in the field.

Calcareous materials

Although limestone of fairly high purity is easily recognized by many field workers it is not so widely appreciated that many rock materials are somewhat calcareous and may provide excellent material for surface placement on disturbed land that is to be revegetated.

Geologists and soil scientists commonly test rocks and soils for the presence of carbonates by applying a few drops of dilute (1:3, 1:4, or 10% HC1) hydrochloric acid to the sample. If noticeable reaction, evidenced by effervescence, or bubbling, or even an audible "fizz", occurs, our results indicate that at least the equivalent of 20 tons $CaC0_3$ per thousand tons of material is present. Some rocks may not show immediate reaction, but if a powder is scraped from the rock with a knift or other tool, and tested with acid, an otherwise unnoticed limerock may be detected. Using the practices described, dilute hydrochloric acid can aid in easily distinguishing a wide range of favorable versus unfavorable minesoil materials.

Rock and Soil Colors

Although colors can be named by most individuals, differences of opinion are inevitable unless standards are used, such as the Munsell Soil Color Charts, published by the Munsell Color Co., Inc., Baltimore, Md., and a few other publishers.

In these color charts, the **Hue** notation indicates the relation to red, yellow, green, blue and purple; the **Value** notation indicates the degree of lightness; and the **Chroma** indicates strength of color, or departure from neutral of the same lightness. With practice it is possible for different individuals to rate different materials consistently by comparison with the chart standards.

Hue can be used in a very general way as a clue to indicate rock quality. A striking example of a favorable minesoil material having a readily distinguished color hue and chroma, in addition to most rock from the weathered zone, is the dusky red shales and mudstones common in western and northwestern West Virginia. Strata of these "red beds", commonly several feet or more in thickness, are frequently found overlying some coal seams, and invariably also contain some lime.

Value can be used to readily distinguish highly carbonaceous black shales from true gray shales that appear black to the casual observer. Bonecoal, roof shales, and other dark or black appearing rocks frequently contain significant amounts of pyrite and may be a source of extreme sulfuric acid acidity unless neutralizing carbonates are present. The field clue to such material is a black (Value of 3 or less on any Munsell Hue) streak when rubbed on a porcelain plate or hard white rock such as chert; or black color (low Value) of the powder when the rock is cut or scraped with a knife. Dark colored clay or silty shales that are low in carbon and associated pyrites, on the other hand, are medium or light gray (Munsell color Value of 4 or higher) when powdered.

Chroma is one of the most easily recognized color attributes, and can be used to recognize many soil and rock features. It is now well established that minesoil developing in overburden from the intensely weathered zone below the original land surface is safe from pyrite sulfur (pyrite, marcasite, and chalcopyrite) and extreme acidity. This zone commonly is 20 feet deep or deeper in West Virginia, depending on lithology, degree of structural fracturing of the rock, and position of the water table. Brown and yellow rock colors (Chroma of 3 or higher on Munsell Soil Color Charts), as typified by materials from the weathered zone, provide useful clues to safe materials regardless of whether their position in the stratigraphic section is known. However, absence of high chromas in near-surface soils and rocks can result from intense leaching of iron oxides or (in soils) from impeded drainage which causes iron reduction. The low chroma imparted to the surface of highly leached materials in soils and near-surface rocks can be distinguished readily from pyritic low-chroma rocks below the depth of weathering. One difference is that lowest chromas (gray colors) caused by leaching or impeded soil drainage occur on rock or soil bed exteriors, whereas lowest chromas typify interiors of unweathered (may be pyritic) sandstones or shales. Color chroma has proven reliable as a field clue particularly with many sandstones. Freshly broken rock surfaces with chromas of 3 or higher (hand specimen or pulverized sample) indicate negligible percentages of pyritic sulfur. Chromas of 2 or less often correspond with sufficient pyrite to cause pH below 4.0 and biotoxic reactions.

Results obtained by using the field clues suggested should be verified by laboratory analyses when there is any doubt in conclusions. The usefulness of these clues has been established by correlation of these field tests with laboratory analyses of several thousand overburden rock and minesoil samples obtained from many different surface mining areas in West Virginia.

CONDENSED GUIDE TO FIELD CLUES

Tools:

Dropper bottle containing 10% HC1 (or 1:4, or 1:3).
Munsell Soil Color Charts; one page of Hue 10 YR is usually adequate.
10 X hand lens.
Pocket knift, or other tool to scrape powder from rock surface.
Hammer, to break rock fragment exposing fresh face for observation.
Porcelain Streak plate.

Observations and Interpretations:

(A) Sample fizzes when dilute hydrochloric acid is applied — material probably contains over 2% calcium carbonate; a positive test usually indicates favorable material.
(B) Pyrite crystals observable by the unaided eye, or under 10 X lens — likely to be potentially toxic, especially if carbonates are absent.
(C) Powder color Value of 3 or less — high carbon content; indicates probable high pyrite content even if not readily visible; likely to be potentially toxic if carbonates are absent.
(D) Powder color Value of 4 or higher — not a true "black shale"; probably not potentially toxic unless pyrite is visible and powder does not react with acid indicating the presence of carbonates.
(E) Rock or powder color Chroma of 2 or less — as applied to rocks deeply buried in an undisturbed section, indicates unweathered rock; pyrite is likely to be present; presence of significant amounts of carbonates may override the influence of pyrite as a potential acid former.
(F) Rock or powder color Chroma of 3 or higher — indicates significant iron oxide staining, indicative of probable absence of pyrite because of prior oxidation and weathering over geological time. Material may contain small amounts of carbonates; but most probably will require lime and fertilizer to restore nutrient content if used as spoil surface material.

Notes:

(1) Only laboratory analyses will confirm the composition of materials.
(2) The most meaningful field observations are made on the freshly exposed surface of a broken rock fragment or a fresh highwall exposure, rather than a hand sample casually picked up which may have extraneous surface contamination or changes from exposure to weathering forces.

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*Published with the approval of the Director of the West Virginia Agricultural Experiment Station as Scientific Paper No. 1303.

This work was partially supported by the Environmental Protection Agency. The ideas and conclusions are those of the authors and not necessarily those of EPA.

Thirty Member Companies Attend Tour of "Pennsylvania Boxcut"

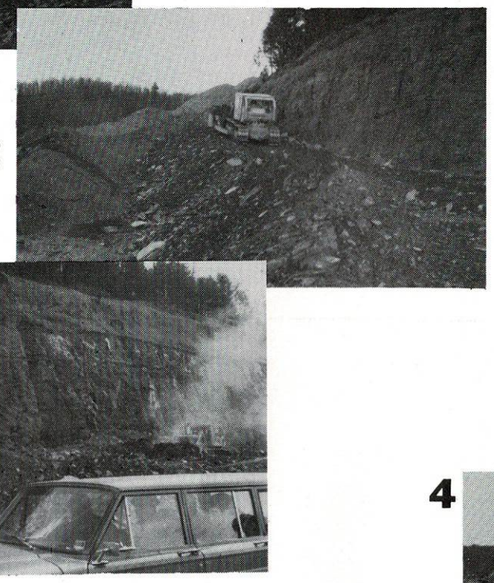
A delegation of approximately 60 people representing the surface mining industry, supporting businesses and the Department of Natural Resources recently toured several mines in western Pennsylvania boasting the much publicized "Pennsylvania Boxcut."

The group consisted of representatives from about 30 member companies and 15 staffers from the Reclamation Division of the Department of Natural Resources. Interested members of the news media were invited, but no one chose to make the trip.

Walt Heine, Associate Deputy Secretary of Mines and Land Protection for the Pennsylvania Bureau of Surface Mine Reclamation, was kind enough to arrange the one day tour, which took the group to several mining sites in Elk County, Pennsylvania.

The purpose of the tour was to give our operators a chance to talk to the Pennsylvania operators face-to-face and discuss the basics of this much publicized method of surface mining coal.

1



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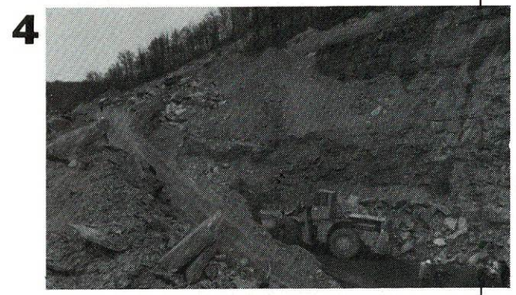

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5

6

1 The lateral movement of material in the backfill process is the same principle being used by Hobet Mining and Construction Company in Mingo County, however, in Pennsylvania they do not haul the material, but push it with bulldozers.

2 Moving the overburden in this manner is time consuming, limits the amount of augering and generally slows and reduces production. This boxcut method is suited to western Pennsylvania for three basic reasons: (1) The labor is almost strictly nonunion; (2) companies are not bound by strict, day-to-day contracts; and (3) overburden material tends to be shale rather than sandstone.

4 Because of the small size of the pit and the excessive time it takes to move overburden, production on these boxcut operations tends to be extremely low. From a technical standpoint, this job probably best exemplifies the ideas of the boxcut. This operation employs three men and produces 75 tons of steam coal per day, on an average of about 2½ to 3 weeks per month.

5 6 After grading the finished product of the Pennsylvania boxcut appears aesthetically favorable, but it is clearly unsound environmentally. The operator is required to backfill to the top of the highwall and eliminate all depressions in his final grading. Regulation does not allow for diversion above the backfilled spoil and even the haulroad, with its erosion control capabilities, must be graded smooth. Finally, Pennsylvania law does not require grassy revegetation, only that seedlings be planted. The picture of the operation above was taken in November of 1973 — seedlings will not be planted until the spring of 1974.

About the Association

Hamilton Says Surface Mine Production Can Double

A coal industry spokesman said recently "with proper assistance," surface mining production can be increased nearly 50%, helping to relieve the energy crisis, without relaxing reclamation standards."

Lawson Hamilton, Jr., President of the West Virginia Surface Mining and Reclamation Association, revealed that the surface mining industry has the capability to expand production significantly on short notice, but there are certain problems that must be solved before any expansion is possible.

"Shortages of diesel fuel are crippling the industry and cutting recent production by as much as 40%," he said.

Hamilton noted that under the present fuel allocation program, coal companies are operating on only 70% of the fuel they used last year.

"This coupled with severe shortages of ammonium nitrate, equipment and parts, is causing serious production cutbacks at a time when the public is looking to the coal industry for help in relieving the energy crisis," he said.

"If we can get some help from the state and federal government in eliminating these shortages, we know we can increase production in West Virginia nearly 50%."

On the national level, Hamilton said, "Careful consideration must be given to passing any federal surface mine legislation which would eliminate or drastically curtail coal production. However, we do not believe it is necessary to abandon our environmental requirements in order to achieve this new production. In fact, we would oppose any movement to relax these requirements, because we have worked too hard to get where we are today."

He noted that the past few years have been lean ones for the surface mining industry. Since 1970, production has fallen from 27.6 million tons to a projected 18 million tons in 1973 and the number of operating companies has dropped from 219 to approximately 100.

"However, in that same period, land reclamation acreage and mining technology have steadily increased and improved. West Virginia has led all other states in reclamation each of the past five years, reclaiming a total of 97,981 acres. The nation's most extensive research program has afforded us methods and technology that far surpass anything being done in other states," he said.

"Today, the energy crisis presents a new challenge to the surface mining industry. With oil and natural gas shortages crippling our economy, the nation is looking to the coal industry for help in relieving the squeeze. President Nixon has stated that we need more surface mined coal production and we in the industry want to do everything possible to comply with these wishes in an environmentally sound manner," Hamilton concluded.

DIESEL FUEL SHORTAGE CRITICAL

Under the new fuel allocation program, the surface mining industry will not be able to fulfill its responsibility of increasing production to help ease the energy crisis, an industry spokesman said today.

West Virginia Surface Mining and Reclamation Association Executive Director Ben Lusk revealed that the diesel fuel shortage has already reached a critical level within the surface mining industry and there is not enough fuel to run the machines that produce the coal.

"We have member companies all over the state that have already been forced to cutback or even shutdown operations because they can't get enough diesel fuel," Lusk said.

"In response to the President's energy message, we will do all we can to help ease the current energy crisis; however, unless the state and federal government become more responsive to our needs, we will be unable to meet the great production demands placed upon us by the public."

Lusk explained that under the new fuel allocation program, the surface mining industry is being given 70% of last year's consumption. Unfortunately, the industry was operating at only 60% of capacity last year, and therefore, used a limited amount of fuel. Now, in order to bridge the nation's energy gap, we are expected to increase coal production to approximately 150% of last year's figures, on only 70% of last year's fuel.

"After studying the problems of each of our member companies during the past two weeks, we now know that unless we receive additional fuel to keep our machines running, it will be impossible to expand our operations enough to meet this great new demand for coal," he said.

He also noted that, under the new environmental requirements, which are utilizing advanced methods and more equipment, the surface mining industry is now using 40% of its total fuel consumption for reclamation.

"We are extremely concerned about our commitment to the environment, as well as our commitment to energy production," Lusk said. "We have made great strides in reclamation technology during the past few years, and in no way want to endanger the balance we have achieved between mining and environmental protection."

Along with the diesel fuel shortage, Lusk pointed to shortages in heavy equipment and supplies for both surface and underground mines and a serious shortage of ammonium nitrate for blasting, which are also adding to coal production problems.

"We realize that the federal government is doing everything possible to achieve equal distribution of fuel through this allocation program, but if coal is to be the answer to the energy crisis, we had better take a long look at a priority policy," Lusk concluded.

ASSOCIATION HEAD BLASTS WOULD-BE POLITICIANS

"The surface mining industry and the people of West Virginia are getting tired of would be politicians making wild allegations and taking advantage of disaster situations for their own personal gain," a mining official said today.

West Virginia Surface Mining and Reclamation Association President Lawson Hamilton, Jr. said that many politicians, who have absolutely no facts to back up their charges, are exploiting these disasters under the guise of environmental concern.

During last week's flooding in the Kanwaha Valley region, surface mining was again singled out as the major contributing factor, but Hamilton noted, that active surfcae mining in the area helped alleviate the severity of the flood rather than cause it.

He explained that several Department of Natural Resources personnel, trained in reclamation and water control, said that not one failure from an active surface mine drainage system had been reported and that in many cases the ponds and ditches constructed by the mining companies had helped slow the flow of water, thus lessening the flooding hazard.

"In fact, in Lincoln County, where flooding was the worst, there has been no active surface mining in over a decade," Hamilton said.

"The surface mining industry was not responsible for flooding in Lincoln or Kanawha Counties," he said.

"Of course, we've seen these tactics many times before. After a similar flooding incident in Mingo County in August of 1972, certain politicians blamed the flooding on surface mining, without one minute of professional investigation or proof. But thorough, investigative studies by both our Association and the Department of Natural Resources found that surface mining was not to blame," Hamilton said.

"In each case, the accusations were politically motivated and in each case, the industry was able to prove its innocence, but by that time the damage from the initial publicity had already been done."

"We realize the press has a responsibility to report the news, but they are also obliged to weed out the headline seekers who are interested only in their personal gain," he said.

"If we're responsible for damage to private property, we'll do everything we can to correct the situation, but we're tired of getting the blame from self-motivated politicians who would play on the sympathy of flood victims," he said.

GIL FREDERICK BECOMES PRESIDENT OF CAPITOL FUELS

A major reorganization in the corporate structure of one of the Kanawha Valley's leading coal mining firms was announced recently by company officials.

After a special meeting of the Board of Directors of Capitol Fuels, Inc., it was announced that A. J. Frederick has been elected Chairman of the Board and G. B. Frederick was elected President. The new Vice-President is R. R. Pyles and A. J. Curry was named Secretary-Treasurer.

Capitol Fuels, which is headquartered at East Bank, West Virginia, recently celebrated its 20th anniversary. During those twenty years of corporation, the firm has consistently been one of the state's leading producers of surface and underground coal. The company is a charter member of the West Virginia Surface Mining and Reclamation Association and newly elected President G. B. Frederick is a past President of the organization and is currently serving as Treasurer.

In 1969, the company received an award for "Outstanding Performance in All Phases of Surface Mine Reclamation," from the Department of Natural Resources and has continued to be a leader in the mining and reclamation field.

Industry in the News

35% of U.S. Recoverable Coal Is Strippable

Coal reserves which can be mined by surface methods constitute almost 35 per cent of the coal which industry has the ability to recover in the United States, NCA said recently.

NCA President Carl E. Bagge told a news conference that Russell Train, administrator of the Environmental Protection Agency, said in a recent interview that only 3 per cent of the nation's coal could be recovered by strip mining. Mr. Bagge called that statement a "disservice" which distorts the true picture of recoverable coal.

Mr. Train apparently derived his 3 per cent figure by comparing the 1.5 trillion tons of coal which the U.S. Geological Survey terms "mapped and explored reserves" with the 45 billion tons the U.S. Bureau of Mines listed in 1971 as "strippable reserves." His figure was widely quoted by advocates of prohibitive strip mining legislation.

"In the real world, however, that comparison is misleading," Mr. Bagge said.

NCA used this rationale for a more realistic comparison:

The 1.5 trillion tons includes coal in thinner seams and greater depths than current mining practices can recover. USGS says that the total in reach of present technology (1,000 feet in depth, in seams 28 inches thick or more for anthracite and bituminous coal, 5 feet for subbituminous and lignite) is 390 billion tons.

The Bureau of Mines figure of 45 billion tons of "strippable reserves" was the coal which had a favorable stripping ratio—the ratio between the thickness of coal and the depth of overburden was low enough that operators could afford to mine it at 1970 prices. This is an economic limit, not a technical one. The Bureau of Mines said 118 billion tons of coal lie in reach of present surface mining technology.

Final Petroleum Allocation Regulations Released

The Federal Energy Office has published its final regulations governing the allocation of crude oil, residual fuel oil and refined petroleum products.

Under the allocation rules for middle distillate fuels and propane, energy production activities are accorded 100 percent of current requirements. Industrial and manufacturing operations, which include the mining, processing and production of metal and minerals (excluding energy fuels), will receive 110 percent of their 1972 middle distillate and propane requirements.

Energy production activities include "The exploration, drilling, mining, refining, processing, production and distribution of coal, natural gas, geothermal energy, petroleum or petroleum products, shale oil, nuclear fuels, and electrical energy by hydro electric and nuclear means."

1974 COAL CALENDAR OF EVENTS

FEBRUARY

3-7 **American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE)** Semiannual Meeting and Exposition, Los Angeles-Hilton Hotel and Convention Center, Los Angeles, Calif.
5 **West Virginia Coal Association,** Board of Directors Meeting, Daniel Boone Hotel, Charleston, W. Va.
6-7 **Independent Petroleum Association of America,** Executive Committee Meeting, Mayflower Hotel, Washington, D. C.
6-9 **West Virginia Surface Mining and Reclamation Association,** Semiannual Meeting, Doral Country Club and Hotel, Miami, Fla.
7-9 **The Colorado Mining Association,** National Western Mining Conference and Exhibition, Denver Hilton Hotel, Denver, Colo.
12 **Logan Coal Operators Association,** Annual Meeting, 501 White & Browning Building, Logan, W. Va.
20-22 **National Coal Association,** Board Meeting, Boca Raton Hotel and Club, Boca Raton, Fla.
23-28 **American Institute of Mining Engineers,** 103rd Annual Meeting, Statler Hilton Hotel, Dallas, Tex.
21-22 **Section of Natural Resources Law, American Bar Association,** Institute on Energy Problems, Hyatt Regency Hotel, Houston, Tex.

MARCH

3-8 **Water Resources Congress,** Meeting, (Location and exact dates to be announced), Washington, D. C.
15 **Alabama Surface Mining-Reclamation Council,** Annual Meeting, Kahler Plaza Hotel, Birmingham, Ala.
29-30 **Indiana Coal Mining Institute,** Annual Meeting, Executive Inn, Evansville, Ind.

APRIL

13 **The North Carolina Coal Institute, Inc.,** Spring Meeting and Golf Outing, Whispering Pines Country Club Villa, Whispering Pines, N.C.
18-19 **SME of AIME,** Coal Division Annual Spring Meeting, Stouffer's River Front Inn, St. Louis, Mo.
24-25 **Kentucky Industrial Coal Conference,** Carnahan House-Conference Center, University of Kentucky, Lexington, Ky.
26-27 **National Independent Coal Operators' Association,** Annual Meeting, Holiday Inn North, Lexington, Ky.
29-May 1 **American Power Conference,** Palmer House, Chicago, Ill.

MAY

5-7 **Independent Petroleum Association of America,** Midyear Meeting, Denver Hilton Hotel, Denver, Colo.
5-8 **American Mining Congress,** Coal Convention, Pittsburgh Hilton and William Penn Hotels, Pittsburgh, Pa.
10-15 **American Coke and Coal Chemicals Institute,** Spring Meeting, Grand Hotel, Point Clear, Ala.
20 **ASTM Committee D-5 on Coal and Coke,** Seminar on Mechanical Coal Sampling Systems, Ramada Inn, 615 Atlantic Ave., Virginia Beach, Va.

JUNE

4 **West Virginia Coal Association,** Annual Business Meeting, Daniel Boone Hotel, Charleston, W. Va. (date tentative).
9-13 **Air Pollution Control Association,** 67th Annual Meeting, Denver Convention Center, Denver, Colo.
10-13 **American Society of Mechanical Engineers,** Summer Annual Meeting (no technical sessions), Marriott Motor Hotel, New Orleans, La.
13-16 **West Virginia Surface Mining and Reclamation Association,** Annual Meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.
16-18 **Wyoming Mining Association,** Annual Meeting, Jackson Lake Lodge, Moran, Wyo.
16-19 **Mine Inspectors Institute of America,** Annual Meeting (location to be announced), Springfield, Ill.
16-18 **National Coal Association,** 57th Annual Convention, Statler Hilton Hotel, Washington, D.C.
17 **National Coal Association,** Board of Directors Meeting, Statler Hilton Hotel, Washington, D.C.
18 **Coal Exporters Association of the U.S., Inc.,** 29th Annual Meeting, Statler Hilton Hotel, Washington, D.C.
23-27 **ASHRAE,** Annual Meeting, Queen Elizabeth Hotel, Montreal, Canada.
30-July 2 **The North Carolina Coal Institute, Inc.,** Summer Trade Seminar, Blockade Runner Motel, Wrightsville Beach, N.C.

JULY

June 30-2 **The North Carolina Coal Institute, Inc.,** Summer Trade Seminar, Blockade Runner Motel, Wrightsville Beach, N.C.
11-13 **20th Annual Rocky Mountain Mineral Law Institute,** Mark Hopkins Hotel, San Francisco, Calif.

AUGUST

12-16 **American Bar Association,** Annual Meeting (location to be announced), Honolulu.

SEPTEMBER

11 **Kentucky Reclamation Association, Inc.,** Annual Stockholders and Members Meeting (location to be announced) Madisonville, Ky.
15-18 **American Society of Mechanical Engineers,** Joint Power Generation Conference, Deauville Hotel, Miami Beach, Fla.
20-21 **Coal Lawyers Conference,** Pheasant Run Lodge, St. Charles, Ill.
20-21 **West Virginia Coal Association,** Fall Membership Meeting, Holiday Inn, Morgantown, W. Va.
22-27 **Ninth World Energy Conference,** Cobo Hall, Detroit, Mich.
26-27 **The Central Pennsylvania Coal Producers' Association and Eastern Bituminous Coal Association,** Annual Meeting, Seven Springs Resort, Champion, Pa.

OCTOBER

1 **Alabama Mining Institute,** Annual Membership Meeting, 1703 John A. Hand Building, Birmingham, Ala.
2-3 **Purdue Industrial Fuel Conference,** Stewart Center, Purdue University, West Lafayette, Ind.
3-4 **Illinois Mining Institute,** Annual Meeting, Holiday Inn East, Springfield, Ill.
7-10 **American Mining Congress,** Mining Show, Las Vegas Convention Center, Las Vegas, Nev.
8 **Alabama Mining Institute,** Annual Board of Governors Meeting, Birmingham, Ala.
19-22 **American Coke and Coal Chemicals Institute,** Annual Meeting, The Greenbrier, White Sulphur Springs, W. Va.
20-23 **American Gas Association,** Annual Convention, Sheraton Park Hotel, Washington, D.C.
22-24 **National Coal Association,** Coal and the Environment Exposition, Kentucky Fair and Exposition Center, Louisville, Ky.
27-29 **Independent Petroleum Association of America,** Annual Meeting, Statler Hilton Hotel, Dallas, Tex.

NOVEMBER

4 **Utah Mining Association,** Annual Meeting, University Club (probable), Salt Lake City, Utah.

DECEMBER

Coal Mine Institute of America, Annual Meeting, William Penn Hotel (dates to be announced).

High Court Bans Mine Strikes for Safety Threat

The Supreme Court in an 8-to-1 decision this week denied the right of coal miners to strike over potentially unsafe conditions in the mines and ruled they must submit to arbitration in such disputes, as required by the contract between the United Mine Workers and coal operators.

The court reversed an appeals court ruling that miners at a Gateway Coal Co. mine in Pennsylvania could strike over the return to work of three foremen who had been suspended after state mine inspectors charged them with a safety violation.

Justice Lewis F. Powell, Jr., said in the majority opinion that the miners' claim in the Gateway dispute "concerns not some identifiable, presently existing threat to the employes' safety but rather a generalized doubt in the competence and integrity of supervisors." The court suggested that coal miners must present hard evidence of unsafe conditions to justify a strike.

Chessie System Gears Up for Increased Coal Traffic

Chessie System, Inc., said recently that its own railroads in 1973 moved 81 million tons of coal, 14 per cent of national production, and that the system is preparing for an increased demand for coal to replace oil and gas this year. Total coal movements over the system, including shipments from connecting railroads, were 101 million tons, Chessie said.

The company said it would build 2,000 new coal hopper cars at a cost of more than $33 million, most of them as replacements, in addition to its actions last year of recalling coal cars and locomotives on temporary lease to Western lines and of starting back into service several thousand other units from its fleet of 70,000 coal cars that had been laid up for lack of loadings.

FEO Announces Utility Switches From Oil to Coal

William E. Simon, administrator of the Federal Energy Office, announced recently that two major East Coast electric utilities have converted five generating plants from oil to coal, saving a total of 24,000 barrels of residual fuel oil per day.

The converted plants are Atlantic City Electric Co.'s facilities at England and Deepwater, and Public Service Electric and Gas Co.'s facilities at Bergen, Burlington and Seawaren, all in New Jersey.

Mr. Simon said that other utilities are expected to follow suit as they identify coal supplies and complete other arrangements for conversion. "More conversions are possible," he said, "and we are urging the utilities to convert as soon as possible."

FEO is analyzing responses from 40 additional utilities throughout the country that the agency contacted on their ability to convert some 60 generating plants from oil to coal, Mr. Simon said. In addition, he said, FEO has sent telegrams to 56 more utilities asking them to report their potential reduction in oil consumption by converting to coal or gas, if that is feasible.

UMWA Asks Early Start on Bargaining

President Arnold Miller of the United Mine Workers of America proposed this week that the industry make an early start this year on bargaining for a new labor contract. The existing contract runs to Nov. 12.

He proposed a written exchange of views and comments on the union's contract proposals and the state of the industry, followed by discussions about Feb. 1 on the structure and timing of negotiations.

Mr. Miller, in a memo to companies which signed the present contract, said UMWA and management have a responsibility to exchange views throughout the year "instead of waiting until the eleventh hour to come to the bargaining table," particularly since the recent UMWA convention directed that the next contract be ratified by a rank-and-file vote.

Mollohan Says Full OCR Funding Assured

Rep. Robert H. Mollohan (D-W. Va.) said recently that the entire $94.3 million fiscal 1974 Congressional appropriation to finance operations of the Office of Coal Research will be spent. He said the Office of Management and Budget released $71.7 million of the appropriation in the first half of the fiscal year and that it will authorize the spending of $14.3 million in the third quarter and another $9.5 million in the fourth quarter.

"In all, more than $95 million will be spent for coal research this fiscal year because there was $1 million in available funds left over from last year," Rep. Mollohan said. He added that an additional $29.1 million supplementary appropriation for OCR has been approved, but "whether these funds will be released by OMB remains to be seen."

Switching To Coal Raises Perplexing Questions For Utilities

How much coal is really available? How many utilities must actually switch to coal? Will the transportation system support the added burden? While complete answers are not available, here are a few tidbits of information garnered so far: Some coal executives say there's no spare production capacity—but NCA is taking a survey of producers, which could help give a definitive answer. EPA's head, Russell Train, has stated that 41 power plants could convert to coal from oil "in a matter of weeks." Presumably, Russell Train's list of 41 plants will be trimmed considerably for lack of coal and for other reasons. Among the railroads, Penn Central thinks it has enough cars for added coal movements east, partly because ore haulage in the northern iron ranges has been stopped for the winter and open hopper cars can be moved south for coal haulage—an argument that makes sense until the iron mines need them again in about four months. After that, Penn Central must have more cars ready than are now on the system, to prevent a seemingly inevitable car shortage.