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Green Lands
is a quarterly publication of the
West Virginia Mining & Reclamation Association,
with offices at 1624 Kanawha Boulevard East
Charleston, West Virginia 25311
(304) 346-5318



Our Cover

Whether it's general reclamation or wetlands construction, Buffalo Coal Co. consistently achieves outstanding results. That's why Buffalo tops the 1989 Reclamation Awards list. The cover story begins on page 12.

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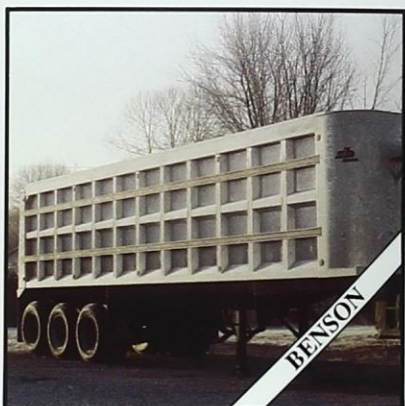
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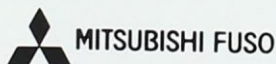
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Editorial

Every day is 'Earth Day' for West Virginia miners



Sunday, April 22, is "Earth Day - 1990," the celebration of the 20th Anniversary of the original event in 1970.

The first Earth Day was born of a confrontational period in American society. The "us against the world" mentality which led environmentalists to declare April 22, 1970 as "Earth Day" has, happily, dissipated to some extent.

Earth Day founders wanted corporate America to restructure its priorities to accommodate environmental protection, and so it has. While environmental issues are still debated hotly in media, legislative, and other arenas, American industry can point with pride to its tremendous progress in environmental protection over the past two decades.

Those who would debate such a statement might point to examples of willful violations of environmental law, or to disastrous accidents such as the Exxon oil spill in Alaska. But much more relevant to the issue is the astonishing adjustment which industry has successfully negotiated in the face of an unprecedented period of environmentally oriented legislation.

In the 1970's, America rapidly began to move away from its post World War II value system of "production first." Major legislation was enacted touching virtually every aspect of environmental protection.

In 1977, the coal mining industry was singled out for comprehensive national regulation in the form of the Surface Mining Control & Reclamation Act. Major legislation inevitably carries with it a difficult period of adjustment, and results in the demise of those who cannot or will not accommodate the change.



The very existence of a mining industry in 1990 is a tribute to those who have survived. The West Virginia Mining & Reclamation Association represents a large number of companies which have met that challenge.

West Virginians pioneered environmental protection in the coal industry, with the passage of the nation's first reclamation law in 1939.

In the decades since, the state's coal industry has continued at the forefront of technology and innovation, in a continual and highly successful effort to synchronize the aims of environment, energy and economy.

Many will claim credit for the environmental progress which America has made over

the past 20 years. But, in the coal industry, it is the coal companies and their employees who have done the work, and the accomplishment belongs to them.

So we will celebrate "Earth Day - 1990," with great pride. Coal companies across the state will open their operations to the public on Saturday, April 21, one of a great many activities planned to enhance the Earth Day celebration.

What the public will see is the result of successfully dealing with the environment on an every day basis.

This happens to be the Spring issue of *Green Lands*. That's the one in which we annually recognize the winners of the Reclamation Awards, companies which have gone beyond requirements of the law to leave the land better than they found it.

We could present no better illustration of how "Every Day is Earth Day to West Virginia Miners."

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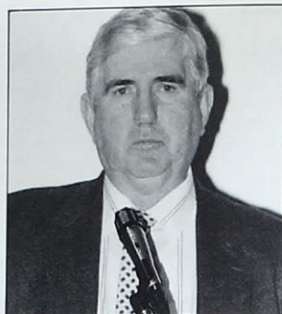
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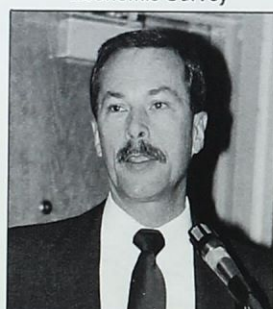
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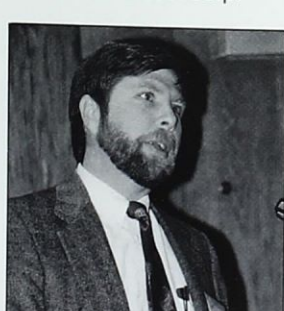
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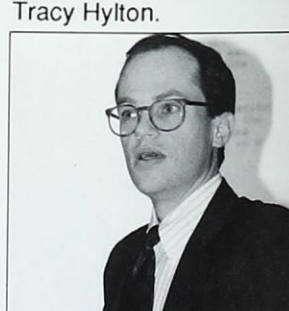
Steve Shaffer
Buffalo Coal Co.



Steve Keen
Island Creek Coal Co.



Jim Snyder
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Bob McLusky
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17th West Virginia Mining Symposium

As has become customary, the 17th edition of the West Virginia Mining Symposium featured an excellent panel of speakers and a record crowd. More than 700 individuals participated in the 48-hour program, which included the Mountaineer Guardian and the Reclamation Awards luncheons, as well as a reception for State legislators.

Panels and individual speakers covered many aspects of regulation, including air pollution control, "repealer" regs, groundwater, NPDES permitting, commercial drivers, and the settlement of last year's suit against WV-DoE.

Technical presentations dealt with equipment efficiency and maintenance, fly ash disposal, durable rock fills, block cut mining, water quality and wetlands construction.

The program also included a summary of programs of the West Virginia Geological & Economic Survey, and a legislative overview by Association member and State Senator Tracy Hylton.



Pete Pitsenbarger
WV-DoE



Bob Weser - WV Air
Pollution Control Comm.



Dennis Milik - Mountaineer
Mine Safety & Training



George Piper - WV-DoE



DoE Regional Supervisors Panel - (l-r) Ron Crites, Darcy White, Bob Grafton, Larry Alt, Burl Smith, Roger Hall, Terry Fleming, John Ailes, Jr., James Rose, Tom Matheny, Wayne Francisco, Brenda Zickefoose.



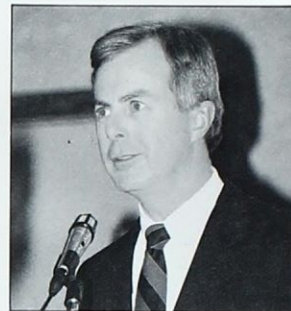
Durable Rock Fill Panel - (l-r) Bob Welsh-OSM, Jerry Workman-Island Creek Coal Co., John Lowe-Hobet Mining, Inc., George Hall-Terra Engineers, Inc., John Sefton-OSM.



Ron Sheets - WV-DoE



Ken Politan - WV-DoE



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Buffalo Coal Co. - West Virginia Department of Energy Commissioner George Dials (far right) presents the "David C. Callaghan Award" to Buffalo Coal Co. Left to right with the Commissioner are Inspector Dave Idleman, Jerry Duckett, Steve Shaffer, Denny Dolechek, Melvin Judy, Don Cussins, Buz Gosnell, all of Buffalo, former DNR Director Dave Callaghan, and John Geroski, also of Buffalo.

Buffalo Coal tops '89 Reclamation Awards

Buffalo Coal Co. of Bayard, Grant County, is the winner of the David C. Callaghan Award for 1989, highlighting the presentation of 22 Reclamation Awards to mining and reclamation companies from across the state.

West Virginia DoE Commissioner George Dials made the presentations at the closing luncheon of the 17th West Virginia Mining Symposium in January. Also in attendance was Harry M. Snyder, director of the federal Office of Surface Mining.

The awards are sponsored by WVMRA, in conjunction with the West Virginia Department of Energy. The program is the oldest and most extensive recognition of its kind in the country. It has been copied by industry and government in several other states, and served as a model for the national "Excellence in Surface Coal Mining" awards program sponsored by Snyder's federal agency.

Buffalo won the Callaghan, which goes annually to the outstanding operation in the state, for its combination of "the highest ideals of community involvement with innovative reclamation techniques to achieve results which permanently benefit the State of West Virginia."

WVMRA President Ben Greene was well pleased with the selection of Buffalo Coal for the top award. "You

couldn't find a better advertisement for the coal industry than Buffalo Coal and its people," he commented. "The Callaghan award is very special because it recognizes companies which go far beyond the call of duty in terms of reclamation, financial commitment, and community involvement. Buffalo Coal personifies these characteristics. We are quite proud of them and happy that they have been recognized in this manner."

The award winners were selected from among 45 companies nominated for the honor by local DoE inspectors.

Other special presentations included the Governor's Award to the Martinka Division of Southern Ohio Coal Co., which becomes one of the State's official nominees for the "Excellence in Surface Coal Mining" awards.

Two companies, Green Mountain Co. and Garcie R. Marker & Sons, were recognized for outstanding efforts in Abandoned Mine Lands (AML) reclamation. AML is a coal industry-funded, state-run program which brings abandoned mine lands up to modern reclamation standards.

West Virginia coal companies have contributed more than \$300 million to this fund since the program was started 12 years ago.



David C. Callaghan Award

Buffalo Coal Company

In Tucker and Grant Counties, for overall excellence in all phases of mining and reclamation. The company's Tucker County operations combine the highest ideals of community involvement with innovative reclamation techniques to achieve results which permanently benefit the State of West Virginia. In Tucker County alone, Buffalo Coal expanded the acreage of a local cemetery, provided equipment and manpower for ballfield construction, successfully rebuilt and improved a valuable wetland area, relocated a stream bed, and substantially improved the quality of a major water source for Blackwater Falls State Park. Buffalo Coal's Grant County operations were successfully carried out in environmentally sensitive areas near the headwaters of Stony River and Difficult Creek. Buffalo's block cut technology maximized mineral recovery while minimizing disturbed acreage, an achievement which reflects the highest standards of modern reclamation technology, and which demonstrates the almost unlimited capability of responsible mining practices in preserving and enhancing the environmental integrity of disturbed areas. Buffalo Coal Company's long-standing record of responsible mining, successful reclamation, and outstanding commitment to the community serves as a shining example for the entire coal industry and for the State of West Virginia.

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Southern Ohio Coal Co./Martinka Division



Southern Ohio Coal Co./Martinka Division - West Virginia
DoE Commissioner Dials (I) presents the Governor's Award to Mike Miano.

The Governor's Award is presented to Southern Ohio Coal Co./Martinka Division for the successful use of innovative mining and reclamation techniques, especially directed at controlling subsidence problems. This award carries with it automatic entry into the national "Excellence in Surface Mining" awards program, sponsored by the federal Office of Surface Mining.



Hobet Mining, Inc.

In Boone County, for consistently outstanding results in achieving exemplary reclamation through the construction of innovative drainage and sediment control systems, the establishment of diverse vegetation, and the successful implementation of a wildlife stocking program.



Hobet Mining, Inc. - (l-r) Inspector Mike Mace, Phil Scott, Chuck Bigley, Ken Hodak, Commissioner Dials.



Stanley Industries, Inc.



Stanley Industries, Inc. - (l-r) Junior Stanley, Inspector Brad Moore, Commissioner Dials, Wayne Stanley.

In Barbour County, for consistently outstanding work on all phases of several permits in the county, most particularly for innovative techniques in pond construction, backfilling, grading, topsoiling, and revegetation, all resulting in improved land use.



P & C "Bituminous Coal", Inc.

In Wayne County, for outstanding use of grading and backfilling techniques, complete highwall elimination, and timely revegetation, to blend disturbed areas into existing terrain, and reclamation of the site to a model wildlife habitat.



P & C "Bituminous Coal", Inc. - (l-r) J. D. Howard, Chester Harris, Randy Maggard, Jim Cook, Commissioner Dials, Inspector L. T. Pack.



Phoenix Resources, Inc.



Phoenix Resources, Inc. - (l-r) Randy Smith, Inspector
Larry Guthrie, Joe Ross, Commissioner Dials.

In Randolph County, for exceptional care in reclaiming a previously mined area. By installing mine seals, a completely new drainage system, and generally thorough reclamation techniques, water quality on and near the operation was greatly improved, old high-walls were eliminated, and the overall environmental integrity of the site was restored.



ED-E Development Company, Inc.

In Monongalia County, for the progressive and successful cleanup of existing spoil piles, trash dumps, and acid producing overburden. Particular attention is directed to the outstanding drainage system, and to the backfilling and revegetation effort, which has restored the area to a productive status.



ED-E Development Co., Inc. - (l-r) Commissioner Dials, Phil Kirk of Mon Valley-Rosedale, DoE Supervisor Terry Fleming.



Amerikohl Mining, Inc.



Amerikohl Mining, Inc. - (l-r) Inspector Ed Deem, Commissioner George Dials, Dave Maxwell.

In Harrison County, for the successful backfilling, regrading, and revegetation of its surface operation, in the face of tremendously adverse weather and pre-mining environmental conditions. The company's persistence and tenacity resulted in a usable and productive site.



Elk Run Coal Company

In Boone County, for effective reclamation on a major surface operation through innovative design and construction of valley fills and timely grading, topsoiling and seeding, resulting in the contemporaneous and complete reclamation of the area.



Elk Run Coal Co. - (l-r) Inspector Bill Simmons, Doug Wilcox, Commissioner Dials, Mike Vira, Durwin Dyer.



Cyprus Kanawha Corporation



Cyprus Kanawha Corp. - (l-r) Commissioner Dials, Lonnie Mills, John Lambdin.

In Fayette County, for upgrading environmental conditions through a re-mining operation, which sealed old mine openings, reclaimed old refuse piles and constructed an effective drainage control system to control runoff, all of which resulted in a completed site which was far superior to its pre-mining condition.



Marrowbone Development Company dba Triad Mining Company

In Mingo County, for demonstrating outstanding concern and commitment to cultural values. In addition to its usual excellence in mining and reclamation, the company went far beyond the requirements of law in providing funds, equipment, and manpower to preserve, in the pre-mining phase, sandstone markings of potentially great historical and archaeological significance. These "petroglyphs" were moved to the Laurel Lake Park office for continued study and eventual viewing by the public.



Marrowbone Development Co. dba Triad Mining Co. - (l-r)
Carl Hazelett, Doug McKenzie, Commissioner Dials, Walter Akers, Inspector L. T. Pack.

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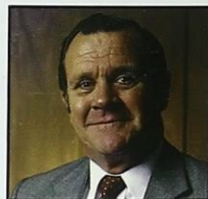
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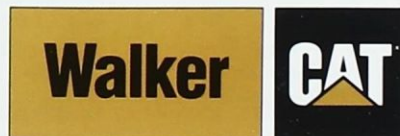


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Peabody Coal Company/Robin Hood #9, Hopkins Fork Portal



Peabody Coal Co./Robin Hood #9, Hopkins Fork Portal - (l-r)
Sam Gray, John Ayers, Ed Laughley, Inspector Bill Simmons,
Commissioner Dials.

In Boone County, for outstanding construction of a new underground portal area, including paved roadways, lighted parking areas, an effective, aesthetically pleasing drainage system, and the complete vegetative stabilization of the disturbed area.



B. & B. Coal Company, Inc.

In Upshur County, for the diligent and conscientious effort to minimize disturbance to adjacent acreage, including a nearby stream. A carefully planned and well maintained drainage system, as well as concurrent backfilling and regrading, resulted in a totally successful reclamation effort.



B. & B. Coal Co., Inc. - (l-r) Commissioner Dials, Inspector Gary Meade, Albert Barnosky, Louie Barnosky.



National Mines Corporation



National Mines Corp. - (l-r) Inspector Keith Porterfield, Dave Dancy, Commissioner Dials.

In Wyoming County, for exercising particular care in the permitting, construction, and operational phases of its underground mine near Wolfpen. The company effectively utilized diversion ditches, sumps, and sediment ponds to ensure continued water quality through the installation and maintenance of an environmentally sound underground mining facility.



California Fuel Company, Inc

In Nicholas County, for the permanent improvement of wildlife habitat through a conscientious and successful effort to establish a variety of groundcover, and the construction of several sediment ponds, which have been stocked with trout at the company's expense.



California Fuel Co., Inc. - (l-r) Inspector Bill Little, Commissioner Dials, H. E. Sundstrom.



New Land Leasing Company, Inc.



New Land Leasing Co., Inc. - (l-r) Inspector Virgil Groves, Phillip Grisby, Commissioner Dials, Warren Hylton.

In Nicholas County, for excellent drainage control, valley fill construction, and revegetation, which combined to produce an outstanding example of surface mine reclamation, with increased land utility in the post-mining phase.



West Virginia Energy, Inc.

In Brooke County, for outstanding results in creating post-mining agricultural land on its surface operation. Excellence and care in the final grading removed existing small ravines, and surface rocks were carefully removed, resulting in a smoothly contoured, thickly vegetated site, which blends well with surrounding acreage.



West Virginia Energy, Inc. - (l-r) Fernando Schiappa, Commissioner Dials, Richard Delatore, Inspector Jim Dailer.



NuEast Mining Corporation



NuEast Mining Corp. - (l-r) Inspector Jim Miller, Commissioner Dials, Bruce Tilley, Ray DuBois.

In Boone County, for successfully controlling acid overburden problems, steep slope conditions, and a general scarcity of topsoil, in achieving effective post-mining restoration of a combination mountaintop removal-contour-auger operation.



Meridan of Virginia, Inc. VACO Enterprises, Inc. - Contractor

In McDowell County, for outstanding cooperation with the local community in all phases of its mountaintop removal operation, most specifically the permanent improvement and maintenance of access roads and parking areas to local cemeteries.



Meridan of Virginia, Inc./VACO Enterprises, Inc. - (l-r)
Inspector Arnold Fortner, Commissioner Dials, James Rogers
of Meridan, Phil Edwards of VACO.



Bedcor, Inc.



Bedcor, Inc. - (l-r) Ken McNulty, Inspector Walt Hudnall, Bill Harper, Commissioner Dials, Jim Corsaro.

In Boone County, for outstanding surface mine reclamation, with particular attention to twin valley fill construction, and the achievement of effective steep slope drainage control.



Garcie Marker & Sons

In McDowell County, for outstanding cooperation with adjacent property owners and overall success in the completion of the *Rolfe Refuse Project* under the Abandoned Mine Lands program. The company utilized outstanding revegetation to overcome a serious erosion and sedimentation problem, and completely restore the abandoned site.



Garcie Marker & Sons - (l-r) Garcie Marker, Commissioner Dials, Allen Marker, Inspector Mark Chandler.



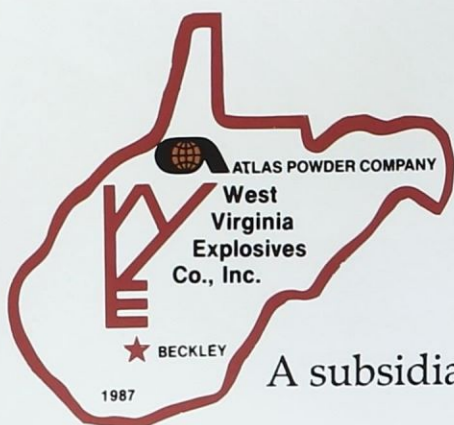
Green Mountain Company



Green Mountain Co. - (l-r) Inspector Dave Smith, Rod Clay, Mike Kelly, Commissioner Dials, AML Northern Supervisor Dave Broschart.

In Preston County, for the timely and efficient completion of the *Webster Refuse Project* under the Abandoned Mine Lands program. Combining standard reclamation techniques with the innovative construction of a limestone leaching bed, the company achieved a dramatic improvement in drainage water quality, while restoring the site to an environmentally stable condition.

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A short history of the American Society for Surface Mining & Reclamation

by Bill Plass & Jeff Skousen

Introduction and Objectives

The American society for Surface Mining and Reclamation (ASSMR) is a professional Society composed of approximately 500 people. Members include representatives of mining companies, corporate offices, and consulting services (45%); employees of academic institutions (20%); employees of federal and state regulatory and research agencies (20%); and undergraduate and graduate students (15%). A majority of the members are directly or indirectly involved in activities associated with coal mining and the reclamation of disturbed areas. Membership is increasing for individuals concerned with the extraction of other minerals.

The objectives of the society are:

- A. To encourage communication among research scientists, the mining industry, regulatory agencies, and landowners with respect to mining and reclamation research and practices.
- B. To promote and support research relating to land reclamation.
- C. To provide technical expertise to those agencies, organizations, or others who seek assistance in the development and execution of research, demonstration projects, or reclamation plans.
- D. To promote and support educational programs relating to reclamation of lands disturbed by mineral extraction.

Original Organization

The Society developed from smaller organizations which were initially established in West Virginia. Several foresighted individuals in the late 1960's recognized the importance that research could play in the development of mining and reclamation practices and policies, and in the mitigation of environmental impacts from mining.

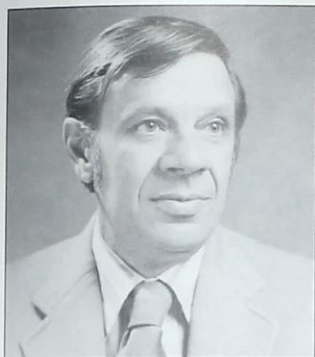
In 1968, a tripartite agreement was reached among the West Virginia Department of Natural Resources, Division of Reclamation (Ben Greene, chief), the West Virginia Surface Mining & Reclamation Association (Dick Vande Linde, executive director), and the U.S. Forest Service (Bill Plass, reclamation researcher). These three parties agreed to

form an advisory board to participate in discussions on reclamation research. The Forest Service established an office in West Virginia devoted to mine land reclamation research. Bill Plass was assigned by the Forest Service to develop this research program from an office at the Forestry Sciences Laboratory in Princeton, West Virginia. The three organizations requested assistance from the Soil Conservation Service (represented by Frank Glover) and West Virginia University (represented by Richard M. Smith). These five individuals comprised the "Steering Committee for Surface Mine Research in West Virginia."

Organizational Growth

The semi-annual meetings of the Steering Committee were publicized and soon became a popular forum for discussion of reclamation research. After two years, the number of participants increased, and representatives from surrounding states attended the meetings. It became apparent that such meetings were needed to disseminate research results, discuss mutual problems, and coordinate research programs. Since the concept proved successful in West Virginia, the Committee determined that a regional organization with similar objectives could succeed.

Individuals interested in forming a regional organization were invited to attend a meeting in Charleston, West Virginia on May 16, 1973. Ben Greene, chief of WV-DNR's Reclamation Division, invited representatives from WVSMRA (Ben Lusk, president), WVU, SCS, the U.S. Forest Service, the Tennessee Valley Authority, the Ohio Reclamation Association, and the Interstate Mining Compact Commission. A decision was made to form the "Council for Surface Mining & Reclamation in Appalachia." The basic objectives were the same: 1) to discuss current research; 2) to identify research priorities; and 3) to create opportunities for dissemination of reclamation technology. The Council continued to meet semi-annually within the Appalachian region, with meetings in West Virginia, Maryland, Pennsylvania, and Tennessee. Interest in the meetings continued to expand, with the number of participants from outside the region increasing.



Bill Plass
U. S. Forest Service



Dick Vande Linde
WVSMRA



Ben Greene
WV-DNR

ASSMR Pioneers

The men shown at left were representatives of the organizations which signed a tripartite agreement in 1968, the forerunner of the modern ASSMR.

Expansion Again

In November of 1978, at Oak Ridge, Tennessee, the decision was made to extend the geographical base of the organization to the 100th meridian. The name was changed to the "American Council for Reclamation Research." Semi-annual meetings were held at locations in the Midwest and Appalachian regions. Western reclamationists became interested, and their involvement in Council activities increased during subsequent years.

National Organization

Support and interest in this reclamation council was now national, and in 1982, the Council once again changed its name to reflect the widening scope of its activities. The "American Society for Surface Mining & Reclamation" (ASSMR) was established with Eastern and Western Divisions within the Society. The first annual meeting of ASSMR was held in July, 1984, in Owensboro, Kentucky.

Subsequent annual meetings of the Society were held in Denver, Colorado - October, 1985; Jackson, Mississippi - March, 1986; Billings, Montana - March, 1987; Pittsburgh, Pennsylvania - April 1988; and Calgary, Alberta, Canada - August, 1989.

Return to West Virginia

The 1990 national meeting of ASSMR will be held in Charleston, West Virginia on April 24-26, 1990. After 17 years of consistent growth, the Society is returning to the state in which the basic concepts for the organization originated. It is anticipated that more than 1,000 people will attend the conference, representing the mining industry, academic and research institutions, and regulatory agencies. Participants will come from many coal mining states, and from countries such as Canada, Mexico, England, Australia, and South Africa.

1990 Conference and Exhibition

The 1990 Conference and Exhibition includes the Seventh Annual Meeting of ASSMR, the Tenth Annual Symposium of the Surface Mine Drainage Task Force (a regional

group with expertise in acid mine drainage control and treatment), and the Appalachian Surface Mining & Reclamation Exhibition.

Approximately 140 presentations (including formal presentations and posters) will be made at the conference, divided into 25 mining and reclamation subject areas. An exhibit area is also being provided, and about 60 organizations and companies which serve the mining and reclamation industries will exhibit at the conference.

The plenary session of the conference will emphasize research as a key to advancing reclamation technology. The numerous presentations will document the scope of current mining and reclamation research and technological advances.

Future Directions

International participation in the Society is increasing. Canadian involvement reached a high level in 1989 with the ASSMR annual meeting in Calgary. Australian interest and support are growing.

Reclamation of mined land or other disturbance requires multidisciplinary expertise. The Society must be responsive to diverse interests, and be supportive of reclamation initiatives that contribute to a better understanding of current problems. Improvements in technology that permit achievement of environmental goals are equally important. The Society endeavors to prepare and react so its programs are consistent with current trends and future opportunities in reclamation.

Authors

Bill Plass, retired from the U.S. Forest Service, has served as the executive secretary of ASSMR for the past eight years. He has been a dominant force in the organization of ASSMR, and its expansion throughout the country.

Jeff Skousen is an assistant professor of Agronomy at West Virginia University, and is the extension reclamation specialist. He is also the chairman of the Eastern Division for ASSMR in 1990-91, and the co-chairman for the 1990 Mining & Reclamation Conference and Exhibition.

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Leckie Smokeless President Joseph C. Turley, III explains the project to local media.



Representatives of the major project participants (l-r) - Mike Gwynn of Texasgulf; Roger Hall, WV-DoE; Leckie President Joseph C. Turley, III; Paul Ziemkiewicz of WVU's National Mine Land Reclamation Center; and Ron Lilly of Analabs, Inc.

Leckie looks for 'a major breakthrough'

The industrial, governmental, and educational communities in West Virginia are joining forces in an experimental project designed to combat the age old problem of acid mine drainage.

Leckie Smokeless Coal Co. will implement an acid treatment program, in cooperation with the West Virginia Department of Energy and the National Mine Land Reclamation Center at West Virginia University. The five year research project will involve the use of rock phosphates on one of two coal refuse piles maintained by Leckie.

According to WV-DoE Commissioner George Dials, an estimated 832 streams in West Virginia, 9.3% of the state's waterways, are acidic. Another 73% are sensitive to chronic acidification.

"West Virginia has long been a recognized leader in acid mine drainage abatement technology," Dials commented. "This project is the culmination of over six years of research in the utilization of rock phosphates as an abatement technology. If this project achieves the same level of success that has been witnessed in laboratory studies," said Dials, "the result will be a major scientific breakthrough."

"From a regulatory standpoint, the Department wants to use every resource available to protect and enhance the quality of water in the state's streams. For the coal industry, it makes possible its continued ability to develop some of its most valuable coal reserves in a manner which is compatible with its stewardship obligations to the integrity of the environment. West Virginia, as a whole, will benefit through continued economic growth in an environment which assures the health and well-being of all its citizens."

One of the principal participants in the project is West Virginia University's National Mine Land Reclamation Center, which was established a year ago in Morgantown.

The phosphate application technology, developed largely through research at WVU, represents a natural preventive measure that does not allow pyrite present in coal refuse to form acidity. Laboratory and small field scale studies have demonstrated the effectiveness of the phosphate material in arresting the chemical oxidizing reaction which forms as acid mine drainage.

According to Roger T. Hall, DoE's director of Research, Special Projects and Regulatory Affairs, "This project will be a full-scale field model and will test both the success of the abatement techniques and the ability to predict the likelihood of acid formation."

Other participants in the experiment are Texasgulf of Aurora, NC, which will provide the rock phosphate, and Analabs, Inc., of Beckley.

Leckie President Joseph C. Turley, III says his company is an enthusiastic participant. "We firmly believe that coal mining and the environment may both be enhanced through such projects, and we are proud to contribute to this endeavor."

Leckie Smokeless Coal Co. is one of West Virginia's oldest companies, but one of its most modern. Headquartered at Anjean, Greenbrier County, Leckie began operations in 1919. It presently holds 118,000,000 tons of mineable reserves on 30,000 acres with one-third of the property yet to be explored.

Leckie has received numerous awards for successful reclamation practices, as well as for its outstanding safety record.

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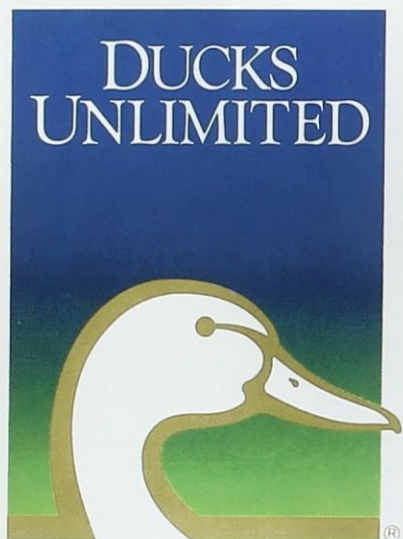
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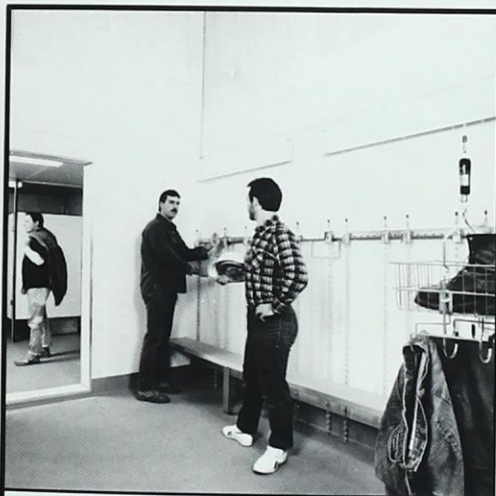
WVMRA/DU sign historic agreement



Representatives of all concerned parties gathered on the happy occasion of the Memorandum of Understanding between the Association and Ducks Unlimited. From left to right are WV Delegate Joe Martin, WV DoE Commissioner George Dials, DU Director of Federal Liaison John Smolko, OSM Director Harry Snyder, WVMRA President Ben Greene, WVMRA Chairman Paul Hutchins, DU Regional Vice President Larry Leese, WV-DNR Director Ed Hamrick, and WV Delegate Sam Love.



The Memorandum of Understanding between WVMRA and Ducks Unlimited will mean the construction of more wetlands in West Virginia, like the one pictured here, by Buffalo Coal Co.



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