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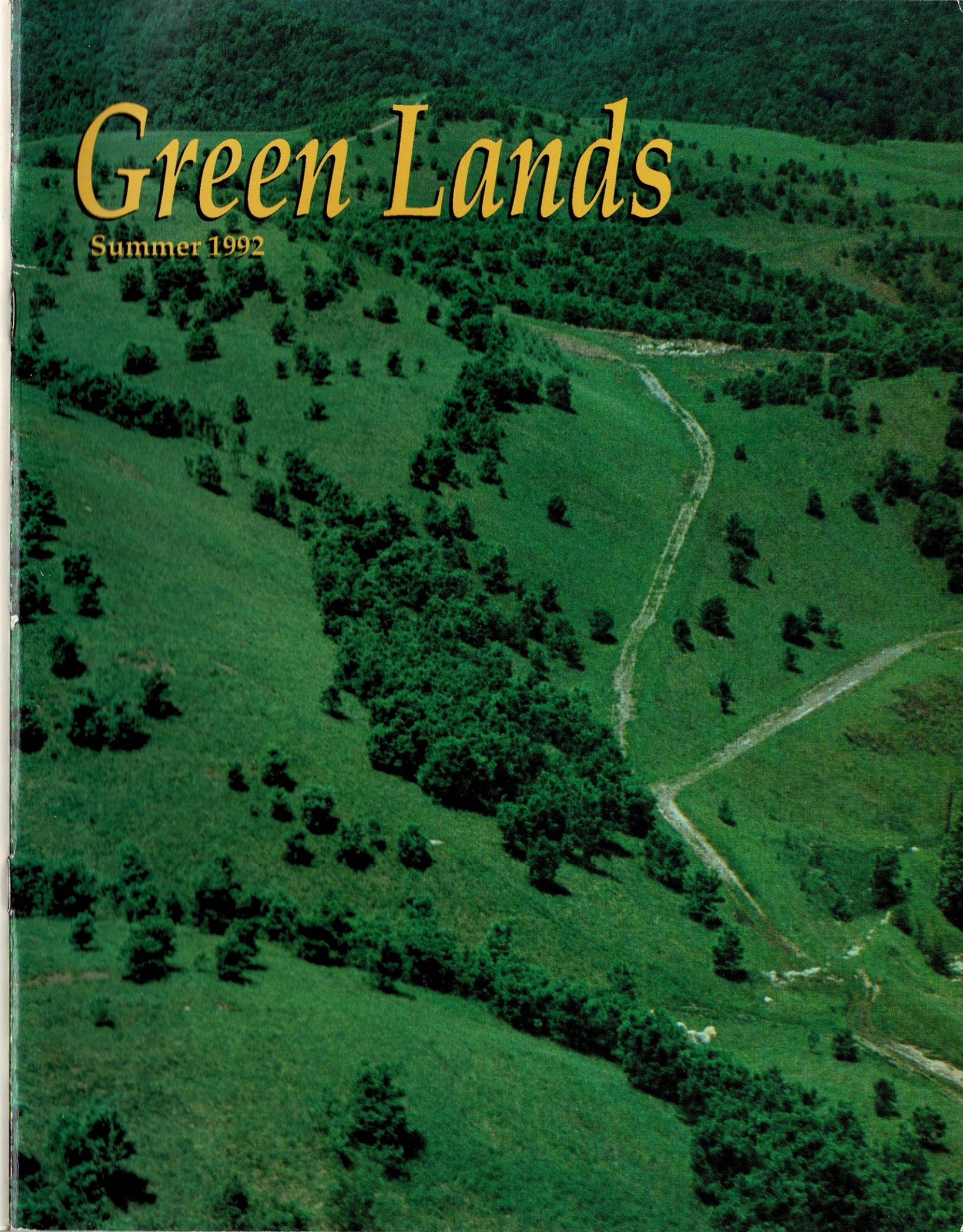
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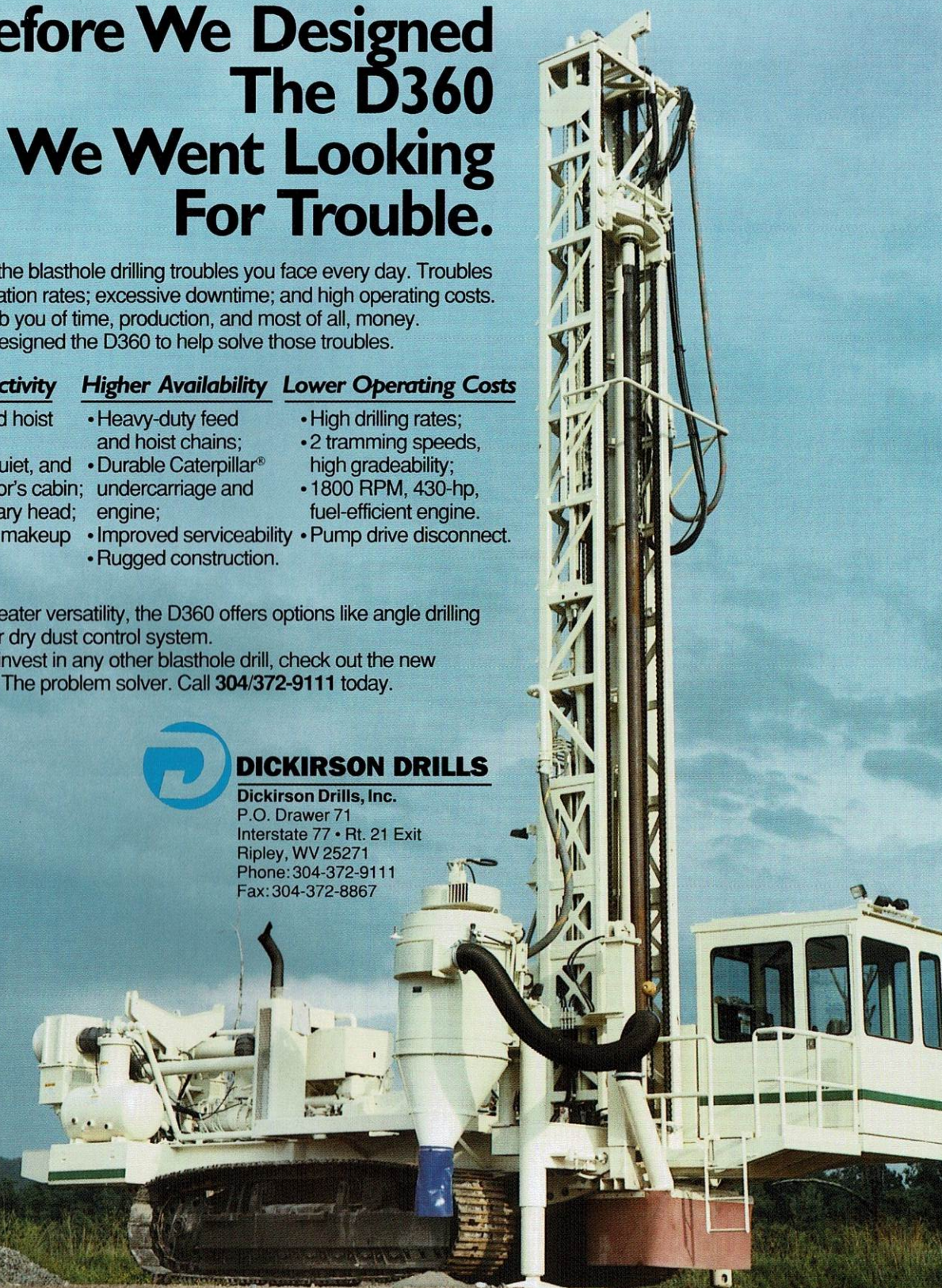
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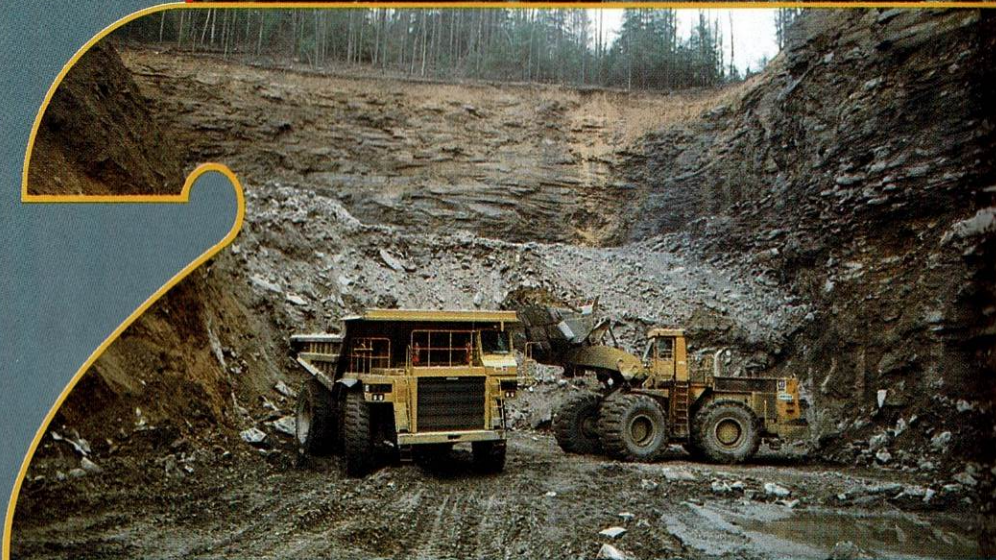


Our Cover
Hobet Mining, Inc. has long been one of
West Virginia's showcase mining operations. Now
the company is putting that reputation on the
line as it invites the public to come and see.
Cover story on page 6.

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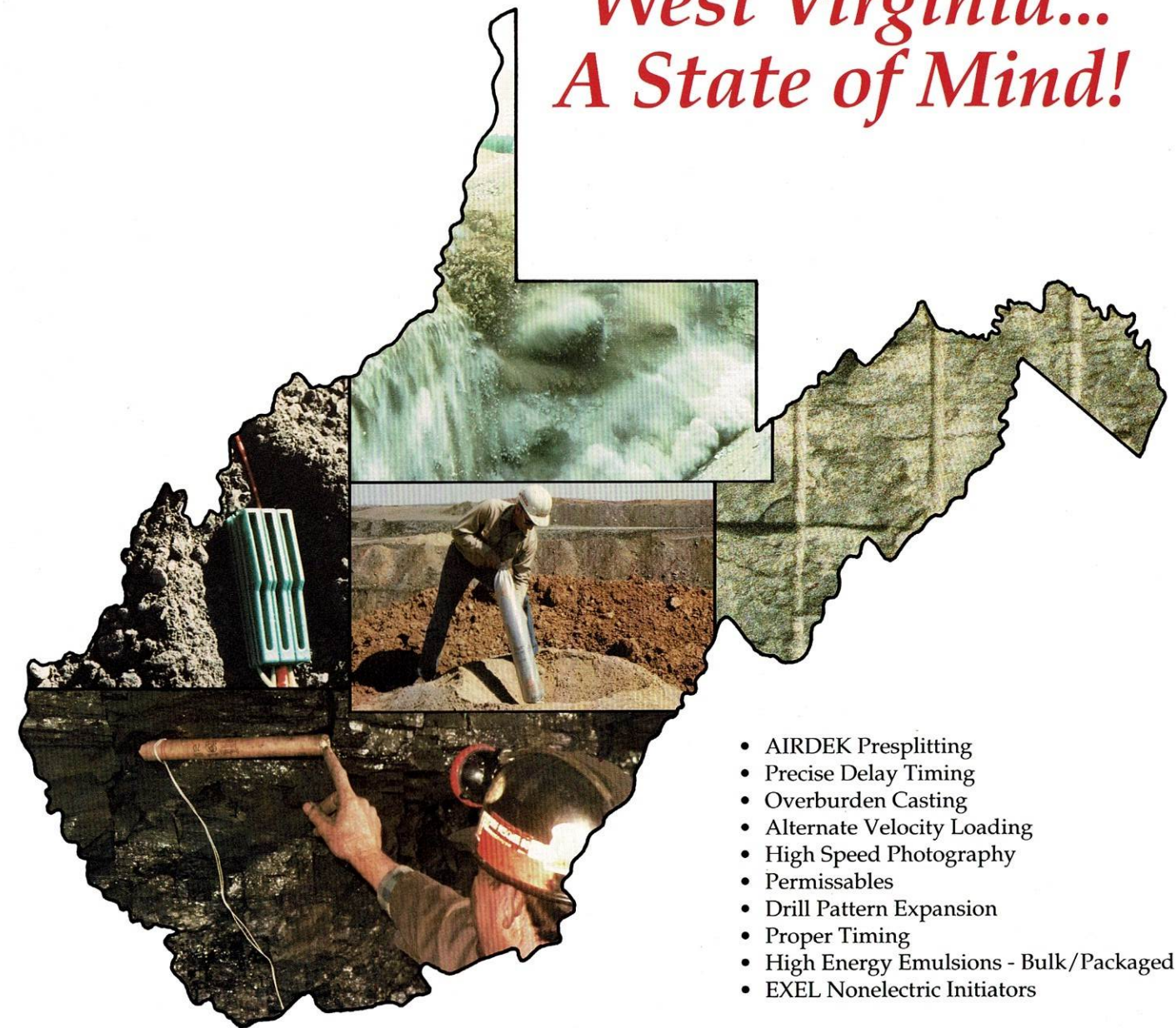


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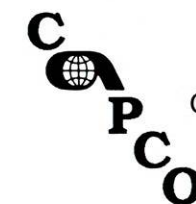


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Hobet Mining, Inc.'s award winning Madison operation is also one of the industry's leading hosts.

Hobet Opens the House

Hobet Mining is one of West Virginia's showcase mining operations and its people are not afraid to show it off. The company has invited the public in to see what modern mining is all about, and the public has taken the invitation to heart.

On one day late in May, over 300 people made their way to the Hobet 21 operation near Madison, just off Corridor G in Boone County. Two deluxe chartered busses waited at the gates to transport the tourists up the mountain via Hobet's two lane hardtop haulroad. Along the way, company personnel briefed the groups on Hobet's history and structure, described completed mining and reclamation projects on the property and pointed out the unique features of the mining operations, such as the five mile long conveyer system, which transports raw coal down to the processing plant.

The morning group included garden clubs, a veterans group, civic organizations, retirees and two bus loads of junior high students. In the afternoon, the tour was repeated for another hundred people, including a cub scout troop.

Once on the mountain top, the groups used a specially constructed viewing stand to watch from a safe distance as "Big John," the company's mammoth dragline, worked a coal seam. As a special treat, Hobet brought up its Dresser Haulpak 830E truck. Youngsters of all ages clambered up the access ladder to the cab of the truck, five stories above ground level.

Hobet Mining, Inc., now a subsidiary of Ashland Coal, Inc., was founded as an independent company by former WVMRA Chairman Fil Nutter, who named it for his brother HOMer and his wife BETty. The company currently employs about 600 people at two locations. The property where Hobet 21 operates consists of 40,000 acres under lease, with 300 million tons of coal. Hobet produces about three million tons a year.

Hobet has become well versed in the logistics of hosting civilians on an active mine site. The Hobet "tour team" entertained and informed its guests without compromising safety or missing a beat of its three shift operation.



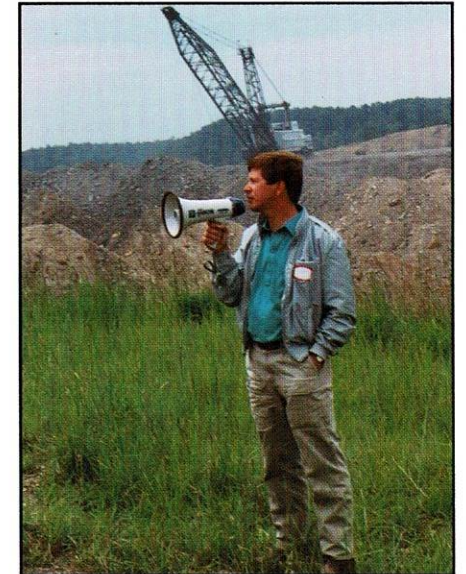
Climbing the "big truck" was definitely a highlight of the tour for youngsters of various ages.

Why go to all the trouble? Hobet President Raymond Smallwood explains, "At Hobet, all the employees work together as a team for quality reclamation. We're proud of our methods and are happy to show others we can remove the coal needed for electricity while improving the land."

This attitude produces positive results for the entire industry. And Hobet isn't finished showing off its work. More tours are planned for the fall. Interested parties should contact Ruth Sullivan and (304) 369-6780.



Visitors to Hobet 21 take advantage of an observation deck to watch the dragline operation in the distance.



Mine Manager Ken Hodak briefs the tour on Hobet's operation, with "Big John" looming in the background.

The Hobet 'Tour Team'

John Lowe	Director of Operations
Ken Hodak	Mine Manager
Phil Scott	Director of Engineering
Homer Toler	Manager of Employee Relations
Larry Emerson	Manager of Environmental Affairs
Ruth Sullivan	Manager of Public Affairs
Andy Sedlock	Safety/Labor Supervisor
Norris Dyer	Safety Specialist



A retiree's group poses for a picture with the Dresser 830E.



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And our worldwide support from your Dresser Haulpak®

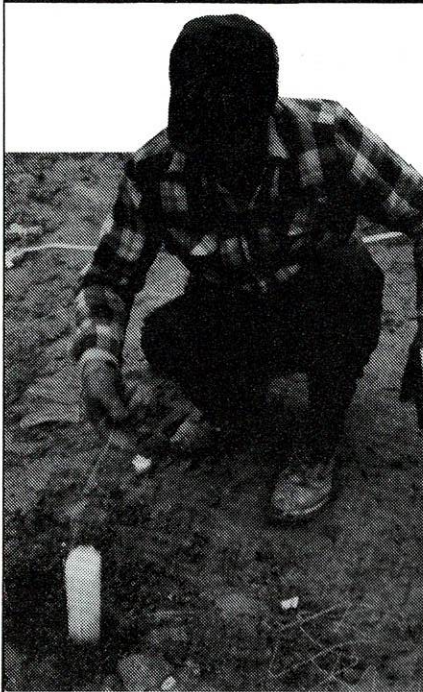
team ensures that the 830E will remain your top, low-cost

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Zatto and the Heavy Dresser

Mountain man and mountain mover, or how to turn a Bigfoot into a Flatfoot.

by Larry Griffin

The following is reprinted with permission from the July, 1992 edition of *CAR AND DRIVER* magazine.

I am prowling around in the "attic" of a truck as big as a house. More than tall, it's a Taj-Ma-Hauleverythingyagot. For a tidy \$2.2 million, it should be.

This daddy of all dump trucks is a Dresser Haulpak 830E. It's built by the American branch of Japan's Komatsu Dresser. I got onto it thanks to a letter from Len Paskus, a young Dresser engineer obviously twisted in the right

direction. Len liked our earlier trial-and-terror encounters with fighter jets, missile frigates, attack subs, forklifts, sedan chairs, and other salacious T and AA studies (Travel and Alternate Activity). To show the truck's scale, he sent along a startling snapshot of himself standing beneath the thing, looking like its utterly insignificant other. In short, the Dresser's stupefying dimensions dwarf Paskus and every other living thing with guts enough to go near it.

The 830's leviathan "floorplan" is fully the size of a house. The truck's width and length of about 24 by 44 feet cast a shadow over 1000 square feet, you could step onto it off a five-story building without spraining an ankle. To see

into the soaring gloom of its kitchen-size engine bay, you must walk beneath it and tip your head back like an astronomer. Standing there with my mouth open, I am more than a little giddy at the promise of power.

Climbing far up into the cab makes me feel like a kid again. Stamped and welded of steel, same as the truck's full-length frame -- which contains an immense collar, a sort of donut in the middle of the mass that creates strength instead of fat -- the cab perches on the forward corner of a superstructure as high as the attic of a Victorian house. A superstructure designed on a sophisticated CAD (computer-aided design) system and tested by a huge twist-and-shake machine that flexes the whole assembly to find potential weak spots. Up top, the view out reminds me of the perspective from the attic windows atop the big old house where my grandparents raised my mother and her eight brothers and sisters. When I was little and she was at work, I'd run up to the attic, slip past its steamer trunks and World War I tunics, swing open a dormer window, and duckwalk out on the roof for "high" adventure. Yet I always glanced over the edge once, as a reminder that a fall from mom's good graces would take less time than hitting the ground. Four decades later, rumbling around the elevations of a rugged mine site in the giant Dresser, I can see that a slip at its wheel could send it tumbling to a landing that would leave an infinitely deeper impression.

Empty of cargo but topped up with 1000 gallons of fuel, the 830E weighs on the high side of a *third of a million pounds* -- more precisely, 334,700 pounds. Loaded to its allowable gross vehicle weight, it can carry another half a million pounds of payload -- the rough equivalent of 40 "monster" trucks, or about 250 Honda CRXs.

Looking out on a suddenly puny world, I feel a near-uncontrollable itch

to run the Dresser over all the so-called monster trucks, those overblown pickups that lurch around like cartoon Americana, pounding cars flat in sheetmetal freak shows. I long to return the favor by making off with the Dresser (who's going to stop me?) finding every Bigfoot, and squishing it into a Flatfoot.

Hobet 21 may sound like a wager blurted out in a Vegas casino, but it's where I've come to find the giants lurking in the woods of West Virginia. The woods, to heist a phrase from Robert Frost, are lovely, dark, and deep, but as I head into the forested hollows southwest of Charleston, trees are not what I've come to ogle. Not on your knobbies. The Mountain State, thanks to its burly terrain and the basic independence of its denizens, cultivates more trucks per acre than a pickup factory. Thanks to coal -- one of Mother Nature's hidden geological heirlooms -- Hobet 21 is where the biggest trucks east of the Mississippi make the earth move. Hobet Number 21 is what used to be called a strip mine, but the mining companies have cleaned up their strip mines and renamed them surface mines. The Hobet operation, owned by the coal-digger division of Ashland Oil and barely visible from the highway, turns out to be a looker as mines go. Handsomely outfitted with the latest equipment, it's digging midway through a 30-year program on this site, surrounded by the results of its award-winning land reclamation program. Regardless of what you think of coal as an energy source and the landscape left in its wake, you'd have to agree that Hobet leaves a velvety scene reminiscent of California's mounded coastal foothills, tucked amid an expanse of mountainous woodlands that dwarf even a wheeled giant.

Hobet pays its drivers about \$40,000 per year to go booming

around having all the fun every father's son-in-a-sandbox dreams of (make that son or daughter, as ten drivers at Number 21 are women). Every all-singing, all-dancing Dresser thunders around hard enough to spin its four rear tires and drift through rubble strewn corners like a race car. If you're out to scoop iron ore, copper, or coal out of Mother Earth, or to relocate her outer cloak of dirt and rock -- called overburden -- to get to, say, coal, as Hobet does, Dresser can build Haulpaks to haul the type and size of loads you need to pack. The mining begins with blasting to loosen aggregate that's scooped by a huge shovel and moved out of the way, three scoops per run, by the jumbo trucks. The primary digging is then done by a "dragline" shovel -- a truly immense scooper Hobet's miners named "Big John." Its boom swings out more than 100 yards, and its cables swing a scoop the size of an everyday dump truck. Quicker than you can say "bituminous energy source," this ladle cuts to the quick of coal seams that lie an average of 100 feet down, beyond earlier methods of surface mining.

The 830E's power begins with a diesel from Roger Penske's Detroit Diesel. The engine is mounted up front, behind a radiator fan as big as a card table, and it powers the rear wheels by, of all things, generating electricity. The Dresser's engine is a twin-turbocharged, supercharged, intercooled, two-stroke V-16 diesel. It sports double overhead cams and four exhaust valves per cylinder, develops 32.8 psi maximum boost, displaces a tidy 39.2 liters, and produces 2200 horsepower at 1900 rpm -- almost three times the output at about one-sixth the revs that Penske sees from his winning Indy engines. (Two mining companies have put into service 830Es propelled by a new twenty-cylinder version of the engine: it makes another 300 horsepower, but when

Dresser told them we'd like a drive, they wouldn't let us in.)

The standard engine also twists out 6638 pound-feet of torque at 1350 rpm -- enough to twirl a house like a pig on a spit. As for its vital fluids, the rowdy diesel slurps up 160 quarts of oil at every change, plus 187 quarts of refreshing coolant.

To the everlasting gratitude of oil producers around the world, the Dresser, on a really busy day at the mine, swills its diesel diet at a rate of two-fifths of a mile per gallon, or 2.5 gallons per mile, which adds up to an average of 50 gallons per hour.

Dresser senior field engineer Ron Crawford describes the additional basics of the 830E powertrain and its related braking system: The diesel engine drives a giant General Electric GTA-26 alternator, eliminating the need for a conventional transmission. The alternator, passing current through a half-dozen cables as thick as your arms, powers two GE 787 direct-current wheel motors located inside the rear wheel hubs. Each motor applies torque directly to its wheel through a 39.9:1 planetary-gear reduction.

For braking, vented front discs that

are 46 inches (two inches short of four feet) in diameter and fitted with three calipers apiece, plus smaller vented single-caliper dual discs on each side in back, are independently assisted by electric engine braking that develops a force equal to 4000 hp in reverse. At the Dresser's top speed of 33 miles per hour, or a speed preset by the driver, or the instant push of a pedal between the distinctly car-like throttle and brake pedals, the wheel motors become generators that convert the forward energy into heat and radiate it out of a fat grid box high on the deck of the truck (well away from the cab -- ahem -- keeping the driver from getting crinkly around the edges). "Essentially," says Crawford, "it's a great big toaster, and we dissipate all that energy through the grid." The motors make a roar and whoa your dcwn like the added braking you feel when a pilot reverses a jet plane's engines on landing.

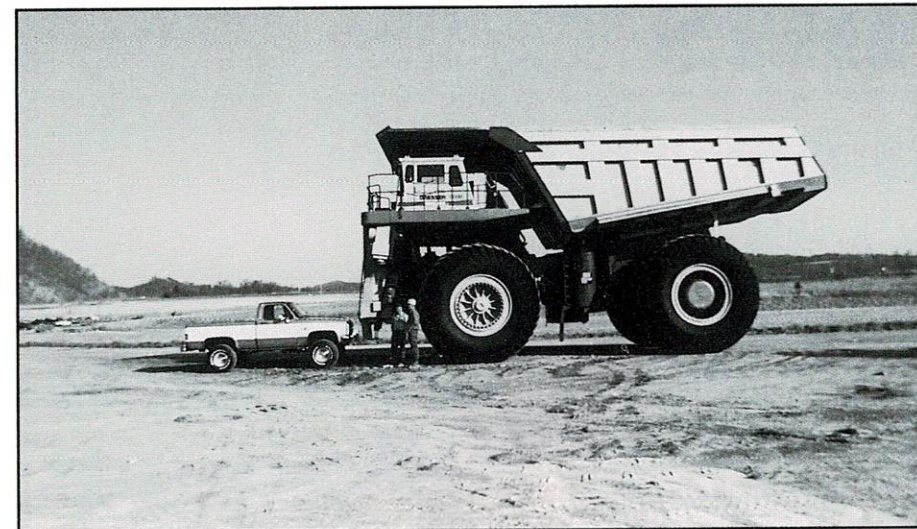
The steering and the front and rear suspensions are all pressurized by a single 230-gallon oil system that also pumps up the massive bed's three-stage hoist cylinders. Dual hydraulic steering arms assist in producing 4.1

turns of the wheel from lock-to-lock and a turning circle of 93 feet pretty much no matter what's in the way. Each front wheel attaches to a massive hydraulic-pneumatic strut, forming a rudimentary independent suspension that allows only vertical and steering motions. The rear wheels bolt to a huge, hollow axle that is located by a central integral trailing arm and a Panhard rod. Another pair of hydraulic-pneumatic cylinders serve as the springs and shock absorbers. So the big Dresser handles with surprising aplomb.

The Dresser's perversely outsize tires are 40 inches wide and sell for as much as \$15,000 apiece. Made by Bridgestone, Goodyear, Firestone, or Michelin, they are shipped directly to each customer. The tires require wheels that are 57 inches in diameter -- almost five feet high. The rims alone roll out taller than almost any car you can name, and the tires to fit them stand as high as many garages.

Amazingly, Dresser's engineers suggest that perhaps the only thing keeping their trucks from getting bigger is the tires -- they're already so big that any increase in size would make them unshippable due to the regulations limiting oversize freight in railroading and trucking. Then there's the problem of transporting them to where the trucks are, often well beyond the last stop on normal freight lines.

Dresser has 1100 employees in Illinois, and they design, engineer, build, sell, and service its monster trucks or railroad flatcars for assembly at the mine of choice. If the customer is located overseas, a company tester drives a fully assembled 830E out of the factory, through a shakedown on Dresser's test track, and straight on to an Illinois River barge for a float trip to St. Louis,



A Chevy full-size pickup demonstrates the scale of the 830E.

down the Mississippi, past New Orleans, into the Gulf of Mexico, and on to "digs" that could be anywhere from Chile to China.

The heavy Dresser, despite its great weight even when it's empty, grapples for traction and slews through bends, rolling and tucking its tires under despite their 102-psi inflation pressure. When rain compounds the problem, they slither and flex on the goo as if bounding in high seas.

Zatto

That's when I'm glad -- *ha!* overjoyed -- that somebody else has the helm. Well, sort of has it: a local mountain man by the name of Zatto Hager has the wheel of the mountains mover. He pronounces his name "ZAT-toe" and he's got more than a great name -- he's got the gift; the man can drive a Dresser. Running empty on a rainy night, starting ever so gently down a steep pitch with a horseshoe bend at the bottom that's bordered by a joke of a berm and the threat of a dive into the blackness beyond (just the time for Driver's Ed for your old Uncle Larry), the Dresser giantess slews eerily. Without a load to mash her tires fully into the slime, she gets

headstrong and hooks sideways, losing her iffy grip. Zatto counters with quick, knowing dabs of brakes, throttle, and opposite lock-steering, but he doesn't laugh -- and I don't breathe -- until he gathers her up again. Overcoming the nose's truculence about turning and the pendulum swings of the tail that follow has taken the worst part of thirty seconds.

That's longer than it takes Zatto to tell how he got his name. He speaks in an Appalachian twang -- sharp, eager, and shot through with equal parts wisdom and wonder. Pleased to wear a name that makes for conversation, he takes no offense when I ask what breed of a name Zatto might be.

"I couldn't tell you," he says. "I don't know, but the guy that I was named after come out of Kentucky, if that tells your anything. And to beat it all, his neighbor back in them days shot him off his horse and killed him -- went to the pen eighteen years before he come back."

Zatto always presents himself for work in pressed denims and owns what he describes as a nice home -- you wouldn't doubt it for an instant -- plus a getaway cabin up around Elkins. Three times divorced but ever a sport

at 56, he still pulls in the traces of hard work like a mountain mule. Zatto's driving shift runs from four to midnight, one of three shifts that keep Hobet 21 going 24 hours every day of the year but Christmas. Zatto dotes on the truck he shares with two other drivers. Each wipes its cab spotless and covers its floorboards with clean shop rags at every shift change.

"Some of the trucks," he says of the dirt left behind by less fastidious drivers, "some guys could grow a garden in 'em." He fills his time away from the mine by running his own backhoe and bulldozer. (His best year on construction, he says, made him \$91,000.) Hager is from "way far back in the hollers" -- as Chuck Yeager says, "So far back they have to pipe in daylight." Like Yeager the pilot, Hager the driver is one of those backwater guys who form the backbone of straightforward places such as West Virginia.

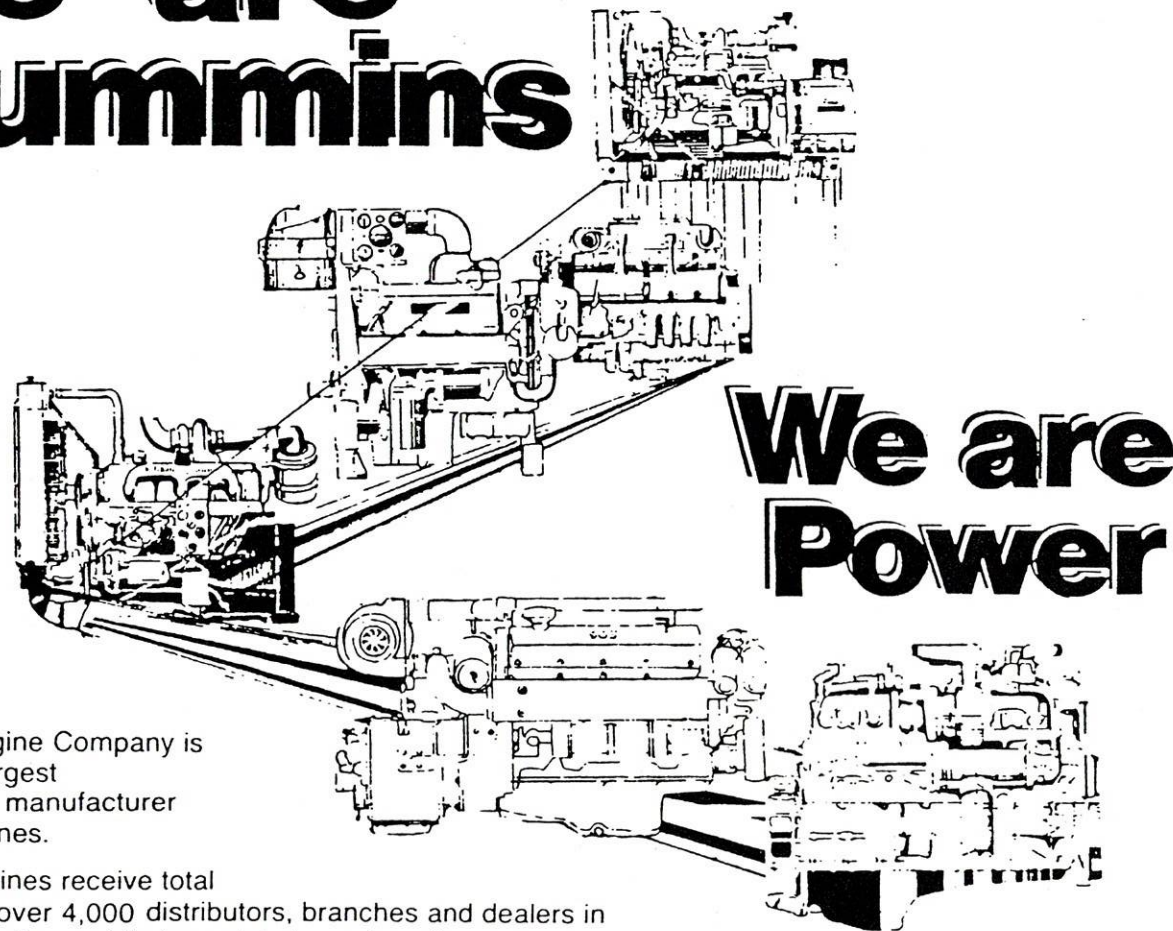
Like Yeager, Hager knows where he fits in the scheme of things. Zatto's opinion of several of his fellow drivers wavers low: "Ninety-eight percent of the time, I'm the only one backs in there next to the shovels on the blind side," Says he did that on his second run after he moved up from a model two-thirds as big -- just backed Dresser's big one in there, lining up with his blind-side mirrors. The foreman, he implies deadpan, fainted dead away. "Like that right front wheel," Zatto says -- from where he sits it's almost 30 feet over and down to that wheel -- "I can pick out a little rock laying out ahead in the road and run that wheel right over it. You can feel it in your system, like you're part of the stirrin' wheel itself."

Since the late 1980's, Dresser has sold 160 of its Haulpak 830Es, and one lucky one gets driven by Zatto Hager. It takes a guy like him to make the most of an attic view from a house that hauls.



The Dresser 830E in action at Hobet 21 in Boone County.

We are Cummins



We are Power

- Cummins Engine Company is the world's largest independent manufacturer of diesel engines.
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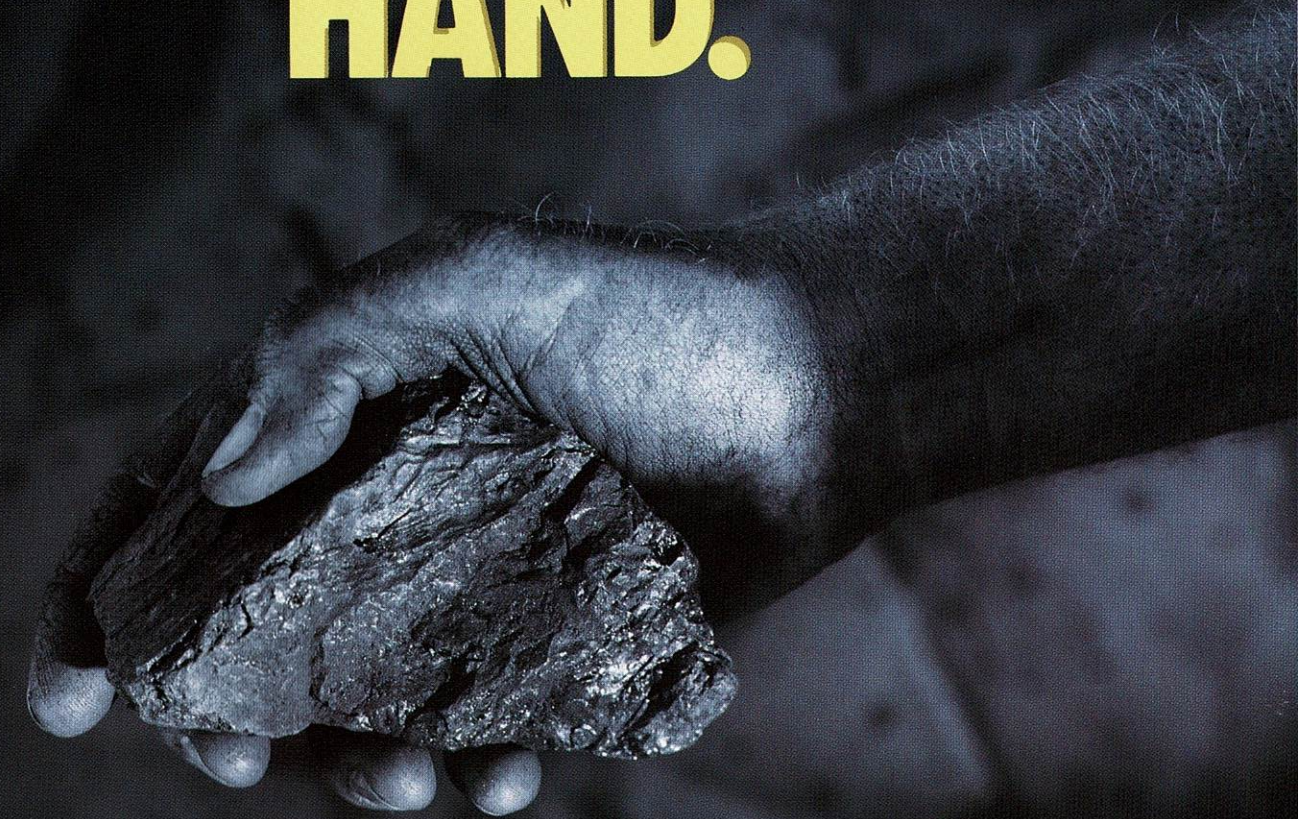
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Buck Harless, with family and friends on a 1989 coal convention trip to Maui, HI.

WVU Foundation Honors Buck Harless

by Dan Miller

In April, West Virginia University came to Gilbert, West Virginia for a well deserved tribute to that town's most prominent native, namely James H. "Buck" Harless.

Buck was honored by WVU for his long-standing support of the University, the town of Gilbert, and the youth of southern West Virginia. The evening was highlighted by the presentation of "Buck: A life sketch of James H. Harless," a biography co-authored by former WVU professors Ruel E. Foster and Robert B. Conner and published by the WVU Press.

The authors had some good material to work with. In coal-intensive, individual-minded West Virginia, Buck Harless and his biography could serve as a "how to" guide for success and satisfaction.

Buck got his start with what he described as "\$500 and a one-horse sawmill." He actually began his mining career in 1940 as a member of the "Bull Gang," at Red Jacket in Mingo County. By 1947, however, his interest turned to the timber business as he acquired part interest in a sawmill. Within a few years, he was the sole owner of the Gilbert Lumber Company and on his way to a great American success story.

With Gilbert Lumber, he developed timber and milling operations in West Virginia, Kentucky, Virginia, North Carolina, Tennessee and Alabama, as well as Ecuador, Guatemala, Honduras and Brazil.

In 1965, he sold the company to Georgia-Pacific Corp. and returned to the coal business, "just as a hobby -- something to keep me busy." With partners John Davis, Frank Allara and Fred Shewey, Buck formed Dash Mining -- Davis, Allara, Shewey, Harless. The "hobby" turned lucrative when oil prices quadrupled in the early 1970's. From the initial investment of \$3000 per partner, Dash grew into a \$40 million a year operation. Almost overnight, Buck Harless became one of West Virginia's most prominent coal figures. By 1973, he was producing over 1 million tons of West Virginia coal a year and, through Gilbert Imported Hardwoods, shipping over 18,000 board feet of lumber annually. His coal business eventually grew to include Lynn Land Co., Hampden Coal Co. and Daniels Branch Coal Co. Through it all, he has remained a citizen of Gilbert. "It has never entered my mind to leave Gilbert," he once told a reporter. "It's a unique community -- very close. People here don't see me as different from anybody else. I like that."

Naturally enough, Buck has figured prominently in the history of WVMRA. He's been an association member for more than 20 years, with 18 years service on the Board of Directors, including a term as Chairman. At the end of his term, he was presented with a bust of himself, made appropriately from coal. He installed it in his one story Gilbert office, along with a wall full of other honors.



WVMRA Chairman, 1977-78.

In 1976, he was West Virginia's "Coal Man of the Year." The City of Hope named him its "Spirit of Life" Award in 1984. He was proclaimed by the *Charleston Gazette* as the 1983 "West Virginian of the Year."

Though such things are difficult to measure, Buck may have achieved even greater fame as a philanthropist than as a businessman. He embraces a "stewardship" philosophy -- "Everything we have, or ever will have, we are only the stewards of those things. It is to be handled for the benefit of the most people possible."

In addition to his tremendous support of West Virginia University over the years, Buck has also been a major contributor to foundations and to individual students at Marshall University, to predominantly black Stillman College in Alabama, and to tiny Berea College in Kentucky.

The list of contributions he has made to local church groups, youth activities, civic organizations, schools and outright charities -- well, there really isn't a complete list. But one episode forever recorded in Gilbert annals serves to illustrate what Buck Harless is all about.

In 1981, the people of Gilbert wanted a combination gymnasium/auditorium for their new high school. Construction cost overruns left them \$300,000 short.



Buck with U. S. Senator Robert C. Byrd (r) and the late J. D. Higginbotham, on a visit to Washington.



Celebrating a birthday at the Lakeview meeting with WVU football Coach Don Nehlen (c) and longtime coal colleague Lawson Hamilton.

The needed funds were part of a county wide levy which passed due to extremely high support in the Gilbert area. The county school board, however, changed its mind and canceled the gym facility. Outraged Gilbert parents took their children out on "strike" from school.

The town's favorite son resolved the impasse as only he could do. The children of Gilbert returned to school and in the fall of 1982, the high school's new gymnasium/auditorium opened for business.

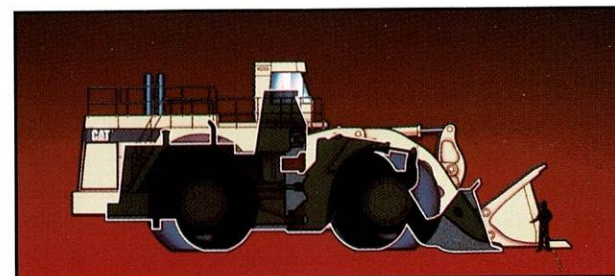
That's Buck Harless.

Copies of "Buck: A life sketch of James H. Harless," may be ordered from the West Virginia University Press at P. O. Box 6069, Morgantown 26506, (304) 293-5040. The price is \$25 per copy.

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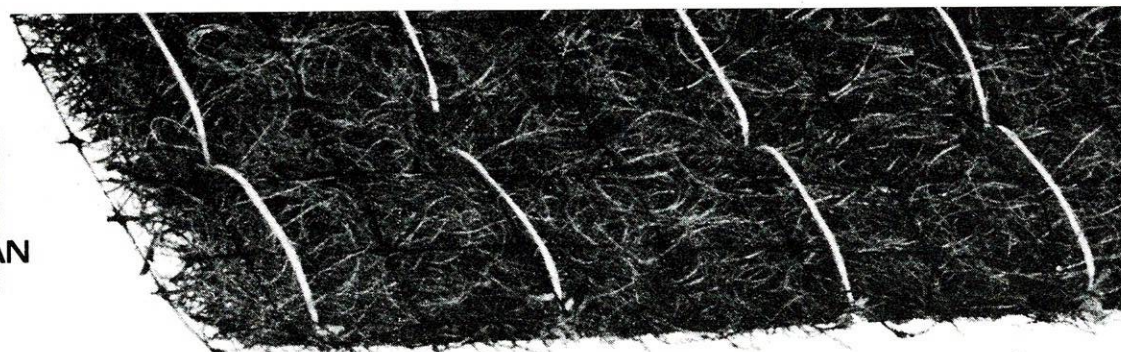
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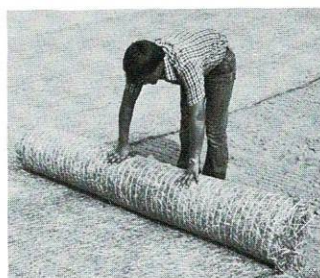


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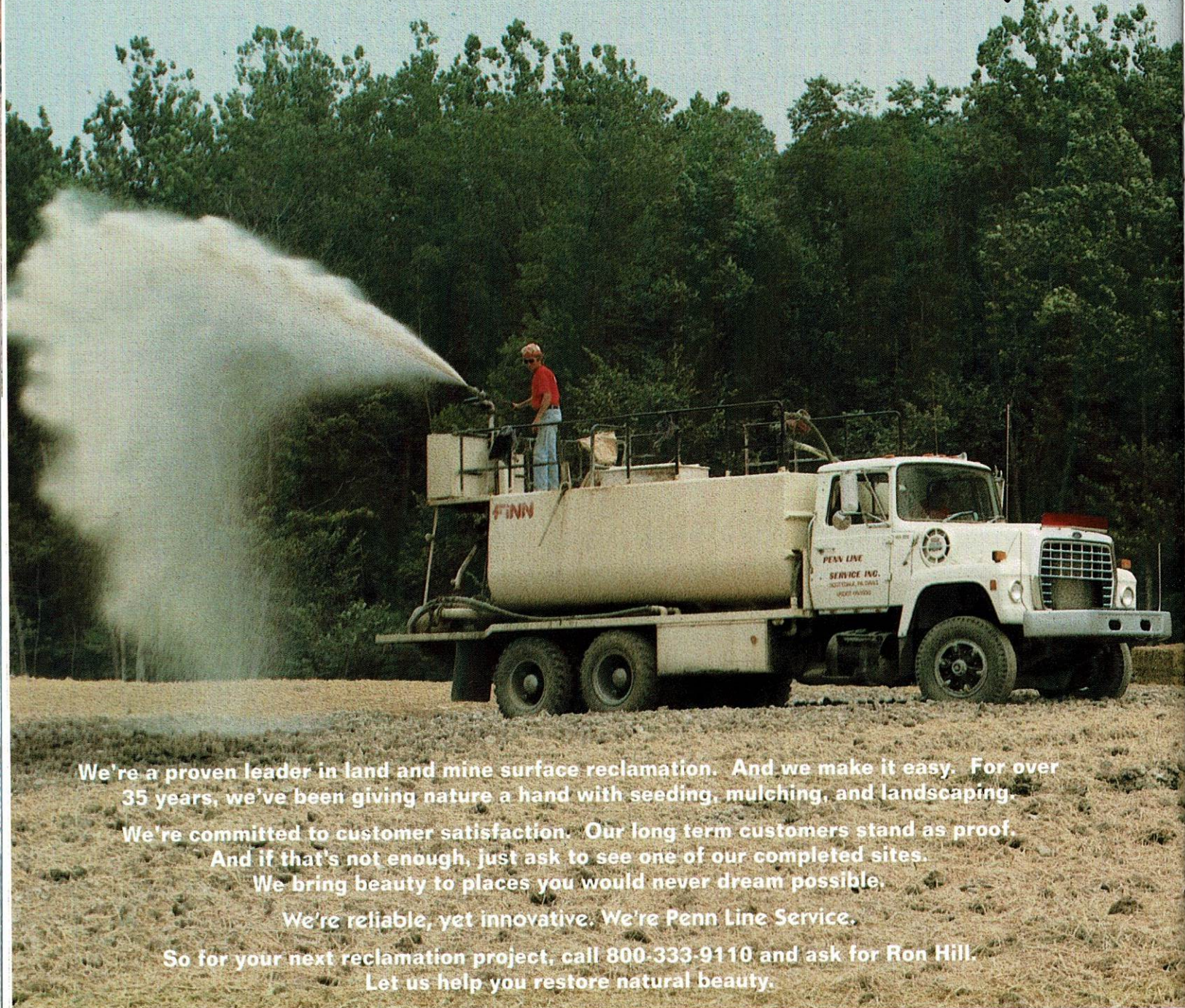
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Benefits Bailout May Happen This Time

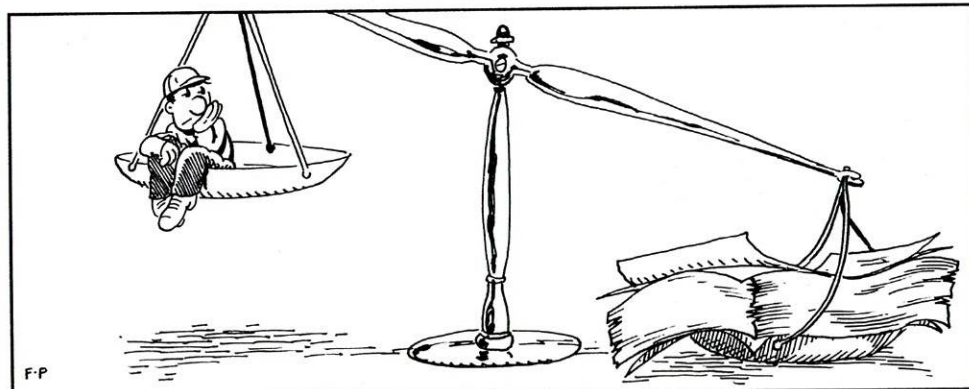
Could become law with signing of the 'energy bill

U. S. Senator Jay Rockefeller (D-WV) has his UMWA-BCOA "bailout bill" on the fast track again, following the George Bush veto of a similar measure in March.

Rockefeller figures the president will sign this time around, but that would have nothing more to do with Bush's feel for the issue than did his earlier veto. When the bill first cleared Congress, it was attached to the budget bill, which by itself was doomed to get thumbs down from the President.

This time, the proposal is part of the Energy Bill, which Bush purportedly likes, and which has already passed the House of Representatives. This measure, identical to the earlier effort, transfers money from overfunded union pension plans to the health funds, which are currently \$130 million in debt. Some 120,000 miners and dependents are considered to be at risk, about 35,000 of whom live in West Virginia.

Coal producers, union and non-union, BCOA members and non-members, would endure a new tax to cover future costs. The numbers, worked out entirely by negotiations among Senator Rockefeller and the colleagues whose votes he needed look like this. Eastern companies would pay 99¢ per manhour, western companies 15¢. The tax does not apply to sub-bituminous coal, to any Montana produced coal, or to any Texas coal.



UMW President Richard Trumka is apparently optimistic. When the Senate Finance Committee attached the proposal to the energy bill, he issued a statement to the effect that the action offered "hope to families throughout the coalfields that the threat to their health care may soon be over."

Despite the dire financial straits of the health care funds, retired miners and their families are in no immediate danger of having benefits cut off. A federal court in Virginia specifically prohibited such action and ordered an immediate increase in payments to the funds by BCOA members.

Of more realistic concern is the fate of UMWA-BCOA contract negotiations, which could get underway this fall. The current contract expires February 1, 1993 and Trumka has repeatedly threatened nationwide strikes if any benefits are curtailed or terminated.

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Coal Calendar

July

10-12 Annual Meeting, Contractors Association of West Virginia, The Greenbrier, White Sulphur Springs, contact CAWV, 2114 Kanawha Blvd. E, Charleston 25311, (304) 342-1166.

August

6-9 Annual Meeting, West Virginia Mining & Reclamation Association, The Greenbrier, White Sulphur Springs, contact Patty Bruce, WVMRA, 1624 Kanawha Blvd. E., Charleston 25311, (304) 346-5318, FAX 346-5310.

17-20 Elements of Mine Electrical Systems, University Park, PA, contact Robert L. Frantz, Penn State University, 126 Mineral Sciences Bldg., University Park, PA 16802, (814) 865-7472.

18-20 Pikeville Area Coal Expo '92, Pikeville College Gym, Pikeville, KY, contact Jenny Powell, Pike County Chamber of Commerce, 225 College St., Suite 2, Pikeville, KY 41501, (606) 432-5504.

19-20 Pennsylvania Coal Association Annual Membership Outing, Seven Springs Resort, contact PCA, 212 N. 3rd St., Suite 102, Harrisburg, PA 17101, (717) 233-7909, FAX 231-7610.

24-26 1992 Training Resources Applied to Mining (TRAM), Conference, Wilson Lodge, Oglebay Park, Wheeling, contact the WVU Mining Extension Service, P. O. Box 6070, Morgantown 26506, (304) 293-4211, FAX 293-5708.

September

16-17 Richlands Coal Show, National Guard Armory, Richlands, VA, contact Barbara Altizer, 1901 Front St., Mullins Professional Bldg., Richlands, VA 24641, (703) 962-2366.

October

18-22 MINExpo International '92, Las Vegas, NV, contact American Mining Congress, 1920 N St. NW, Suite 300, Washington, D.C. 20036, (202) 861-2800, FAX 861-2821.

22-24 Anneting, Kentucky Coal Association, Marriott Griffin Gate Resort, Lexington, KY, contact KCA, 340 S. Broadway, Lexington, KY 40508, (606) 233-4743, FAX 233-4745.

23-24 Fall Board of Directors Meeting, West Virginia Mining & Reclamation Association, Lakeview Resort & Conference Center, Morgantown, contact Patty Bruce, WVMRA, 1624 Kanawha Blvd. E., Charleston 25311, (304) 346-5318, FAX 346-5310.

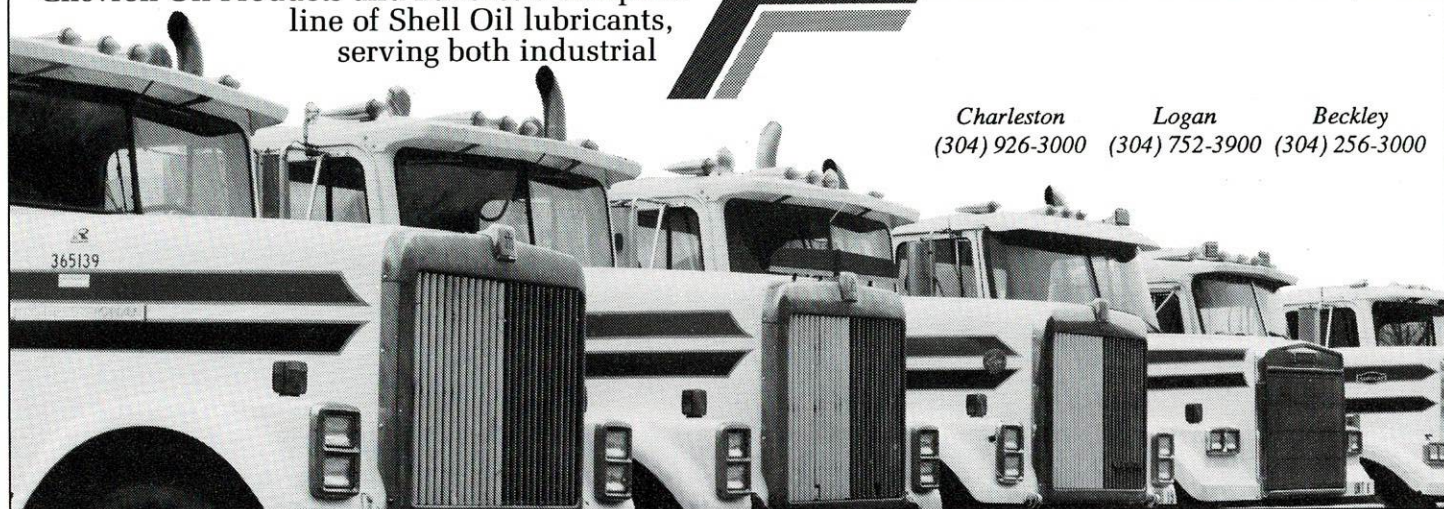
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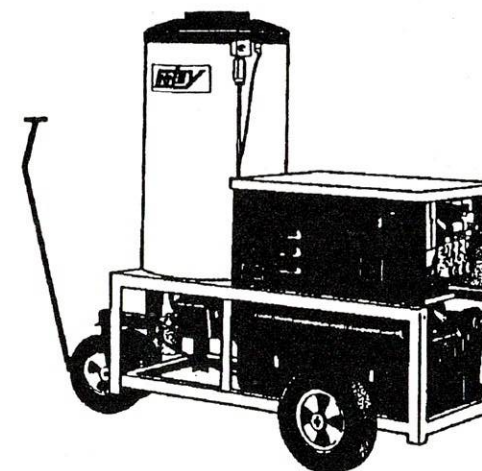
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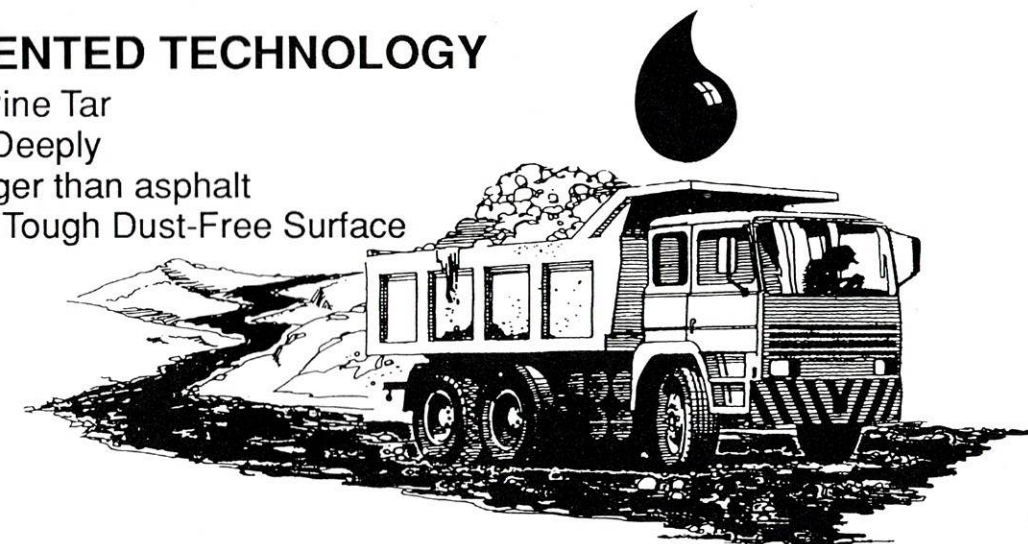
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A Field Example

by Jeff Skousen, West Virginia University
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Site Description and Mining Techniques

Bakerstown Job - In 1986, Coaltrain received a permit to mine 70 acres of land underlain by the Bakerstown coal seam on Snake Hill Road, approximately one mile northwest of Masontown, Preston County, West Virginia. Contour haulback mining methods were used on the site. The premining land use was pasture, and the surrounding land use was predominately pasture for cattle enterprises. The overburden was characterized by 30 feet of gray shale, 25 feet of alkaline red shale and limestone, and 15 feet of fractured sandstone (Figure 1). There has been no history of acid mine drainage (AMD) problems with mining of Bakerstown coal in this area due to the presence of the red shale and limestone in the overburden. In fact, disturbance of this overburden material has often raised the water pH of surrounding streams.

The overburden required blasting and, due to the high water content of the overburden, an emulsion explosive was used. A Clark 475C loader (12 cubic yard bucket) was employed for overburden removal into two International 350 Pay Haulers, which carried approximately 50 tons of rock. A Fiat Allis HD 31 bulldozer was used for regrading and backfilling the site. The Bakerstown coal seam was mined using one 7-yard loader and hauled to Reedsville to a coal stockpile facility where it was mixed with other seams of coal. Annual production at the site between 1988 and 1991 averaged 60,000 tons per year. No water quality problems were experienced during the mining of this site. Approximately one-fourth of the alkaline red shale material in the overburden was separately loaded and hauled to a nearby Upper Freeport job (Figure 2).

Upper Freeport Job - The Upper Freeport job was located about one mile northwest of the Bakerstown site. The site was contour mined and daylighted some deep mines which were mined in the 1950's. Little topsoil was available on the site, but that small amount was saved and stockpiled. The overburden was characteristic of the Upper Freeport coal seam with respect to rock type: approximately 60 feet of massive and some fractured sandstones, and 10 feet of gray shale were present. According to the Acid-Base Account, the overburden on this site had more NP than many other Upper Freeport overburdens. However, AMD from old deep mines found on the site had degraded Mountain Run (the receiving stream) for many years and verified the potential for generating AMD upon mining the site. Knowing of the extreme alkaline material nearby on the Bakerstown job, it was decided to remove the old stumps of Upper Freeport coal by remining and prevent the acid from being formed by importing alkaline material from the Bakerstown job to this site.

Selective handling and placement of acid-producing materials along with importation and placement of alkaline material on the pavement was deemed an essential element to the mining and reclamation plan. By compacting the acid-producing material, thereby reducing water infiltration and oxygen diffusion and also covering the acid material with alkaline material, it was felt that the resulting water pH would be high and the dissolved oxygen content would be low. Under these conditions, the production of AMD should be reduced or eliminated. With proper identification, handling and placement, it was expected that AMD would not be a problem on the active part of the job and the old deep mine discharges could be eliminated.

The permit was received in March, 1990. One overburden cut averaging 150 feet back into the deep mines was taken. Slope at the site was steep (40%) and therefore only one cut was taken before the overburden became more than 70 feet thick. The overburden was blasted on 16-18 foot centers with Anfo. Blasting was conducted to fracture the rock and shale to facilitate removal with dozers and loaders. However, blasting was controlled so that the potentially-acid material was not pulverized. This process was important because large chunks of acid material expose less surface area for weathering and acid generation. The large chunks of acid material also required less alkaline material for neutralization. The alkaline material was a



Figure 1. Bakerstown coal overburden. The shale material near the center of the overburden was highly alkaline. It was handled separately and stockpiled for use as an alkaline amendment on a nearby, acid-producing site.



Figure 2. Alkaline red shale from the Bakerstown coal surface mine was loaded into coal trucks and hauled to the Upper Freeport job.



Figure 3. The alkaline material was placed on the pit floor after the Upper Freeport coal was removed. The pH of the water in the pit was maintained above 7.0.

friable shale material that weathered very rapidly and, as such, reacted quickly releasing nearly all of its neutralizing capability.

Several pieces of equipment were used for overburden removal and included one International 400 loader and two International trucks (50 tons). This site was located at the top of a narrow hollow limiting the space for equipment movement. The distance of rock haulage was 500 feet or less on this job. The acid material was compacted and covered within a day or two of its excavation to prevent oxidation and leaching.

The coal was mined by a 7-yard loader into trucks which hauled the coal to a coal stockpile in Reedsville. A black shale binder of 3-6 inches occurred in the seam and was removed and handled separately. Once the bottom coal was loaded from the Upper Freeport job, about 2-4 feet of the alkaline red shale from the Bakerstown job was placed on the Upper Freeport pavement and covered with overburden (Figure 3). As trucks hauled out coal, they backhauled alkaline shale. The pit floor was covered with alkaline shale the same day coal was removed. As a result, any water that accumulated in the pit had a pH of 6.5 to 7.0, thereby further reducing the possibility of acid production.

The black shale binder between the breast and bottom coal in the Upper Freeport seam was placed about 20 feet above the pavement and compacted. This material was

covered with one foot of alkaline red shale from the Bakerstown job. These layers were then compacted by bulldozers and trucks. Backfilling continued until approximate original contour was reached and topsoil was replaced on the surface. About 6 inches of the alkaline shale were also spread on the surface and mixed with the topsoil. As mentioned, pH of the water on the site ranged from 7.0 to 8.0 and no chemical treatment of the water has occurred (Figure 4).

Amounts and Costs of Moving Overburden Between Jobs

The amount of alkaline material imported to the Upper Freeport job from the Bakerstown job was about 6600 tons per acre. This amount represented about three feet of alkaline material if that amount of material was spread evenly over one acre of mined area. Using the numbers from the Acid-Base Account, the alkaline material from the Bakerstown job had NP values in excess of 300 tons CaCO_3 equivalent per 1000 tons. The shale binder in the coal seam at the Upper Freeport job showed a deficiency (or Max Needed) of about 60 tons CaCO_3 equivalent per 1000 tons to neutralize the acid created from sulfur oxidation. So, theoretically one foot of Bakerstown alkaline material (300 Excess) should neutralize or balance the acidity



Figure 4. With the addition of alkaline material on the pavement and to the soil surface after grading, water quality on the site has been greatly enhanced. The surface reining operation daylighted old deep mines and eliminated AMD discharging from the portals.

generated from five feet of Upper Freeport toxic material (60 Deficiency) if the particle size of the two materials was the same.

In reality, the Upper Freeport overburden contained 6 inches of toxic material (60 tons/1000 tons Deficiency) and 20 feet of potentially acid-producing material (ranging from 6 tons Deficiency to 5 tons Excess). Based on the blasting technique, the particle size of the materials favored the alkaline material. When considered all together, a large safety factor was built in by importing three to four feet of alkaline material from the Bakerstown job, when only about one foot was theoretically needed.

The quantity of alkaline material transported to the Freeport job represented a cost of about 50¢ per ton of coal removed. An average of about 8000 tons/acre of coal was removed, making the cost of hauling the alkaline material to the site about \$4000/acre. This cost only included hauling the material from the Bakerstown job to the Freeport job. Handling and compacting costs were integrated into the method of mining and done in concurrence with normal mining. Therefore, with a little advance planning and coordination, these costs were minimal.

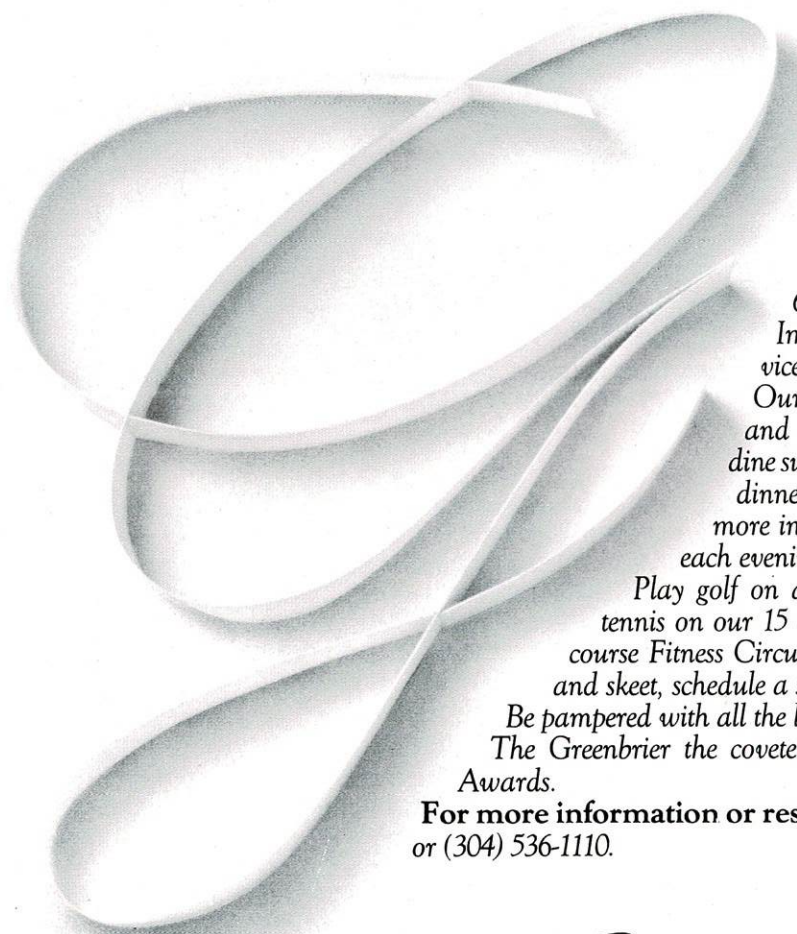
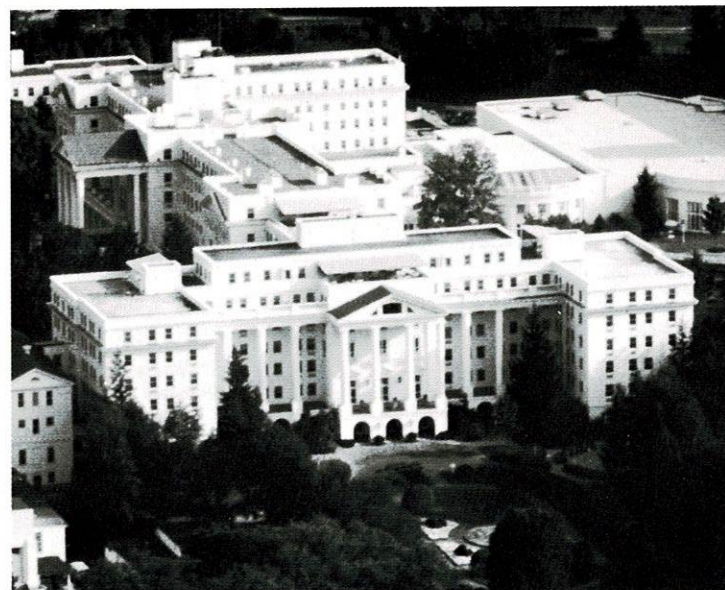
Based on premining water samples from deep mines on this site, AMD discharged at about 15 gpm with a pH of 3.7 and acidity of 60 mg/l. Using an average of 15 gpm with 60 mg/l acidity, the chemical cost for treating this water

was estimated at \$200 per year for ammonia or \$800 per year with caustic. Without eliminating the potential for AMD production, the annual cost of treatment (without considering additional water or higher acidity values, increases in chemical maintenance costs, inflation, etc.) would range from \$4000 to \$16,000 over 20 years.

Conclusion

While the conditions and scale of this Upper Freeport job were not as severe as often encountered on a Preston County Upper Freeport surface mine, the methods used on this site may be applicable to other situations. Since there were many variables to consider, this site was carefully evaluated and a site specific prevention plan was formulated. The careful execution of the mining and reclamation plan was about as important as the plan itself.

In this day with so much controversy concerning mining, reclamation and AMD, it was essential, prudent and wise to consider the up-front costs of preventing AMD during the mining and reclamation process. On this site, water quality was addressed before mining and an AMD prevention plan was executed during mining and reclamation so that water quality did not become a problem. For the economic well being of a mining company and in order to obtain future mining permits, AMD was prevented.



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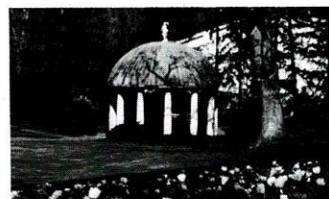
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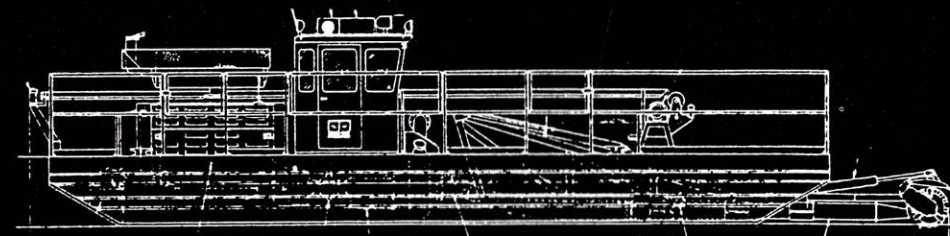
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Association Notebook

Bill Raney moves to WVCA

WVMRA's Vice President Bill Raney has left that post to become the new president of the West Virginia Coal Association, replacing Gary White. White left WVCA in March to become president of Buck Harless' International Industries, Inc.

Bill had been the association's vice president for the past 15 years. The 44-year-old Princeton native graduated from WVU with a bachelor's degree in biology and a master's in public administration. He worked for the West Virginia Department of Natural Resources for seven years before joining WVMRA and its newly named president, Ben Greene.

In connection with his Association duties, Bill serves on the Board of Miner Training, Education and Certification, and is chairman of the West Virginia Business and Industry Council. He is also commander of the West Virginia National Guard's 1092nd Engineering Battalion in Parkersburg, founder of the Don Nehlen Fan Club, and is active in many other community affairs.



West Virginia Coal Association
President Bill Raney

At WVMRA, he built a reputation as an effective lobbyist and negotiator, as well as innovating such programs as the Mountaineer Guardian Awards, which recognized mining operations for fatality-free coal production. As WVCA president, he will remain involved in many of the same projects.

In moving to a crosstown office, Bill expressed his mixed feelings. "This is a great challenge and a great opportunity for me, but it is extremely difficult to leave an organization which has presented me with so many opportunities over the last 15 years. One big consolation is that I will continue to be able to work with some of the same wonderful people who have been so kind to me during my years with the Association. I plan to see quite a bit of everybody in the months and years ahead."

Ben Greene expressed similar sentiments. "Certainly, we are sorry to see Bill leave our staff, but at the same time, we are all very appreciative of his outstanding efforts on behalf of this Association over the years. The good news is that Bill isn't going very far away, and as he works into his new position, we fully expect that what has been an excellent working relationship with our sister coal association will be strengthened. I'm sure the full membership joins me in extending our best wishes to Bill and his family."

Peabody acquires Martinka Mine

Peabody Holding Co., Inc. has acquired the assets of the Martinka Mine and its coal reserves from Southern Ohio Coal Co. Martinka, located near Fairmont, will operate as Martinka Coal Co., a subsidiary of Peabody Holding. Simultaneously, Peabody Development Co reached a 20 year coal supply contract agreement with Ohio Power Co., a subsidiary of American Electric Power Co. (AEP).

The Martinka acquisition includes an underground mine, a coal preparation plant, more than 60 million tons of Kittanning seam coal reserves and related equipment and facilities.

Eastern Associated Coal Corp., another subsidiary of Peabody Holding, will manage the Martinka Mine and related properties, which currently employ 400 workers. Shipments in 1991 totaled 2.6 million tons. Coal from Martinka will meet the Phase I requirements of the Clean Air Act Amendments passed by Congress in 1990.

Southern Ohio Coal Co. is a wholly owned subsidiary of Ohio Power, which is one of seven electric utilities owned by AEP. Those utilities serve 2.7 million customers in seven east-central states. Peabody Coal Co. is the nation's largest coal producer and its West Virginia subsidiaries comprise the second largest production total in the state.



New Members

WVMRA has acquired 18 new members since the last Annual Meeting, for a total of 39 in the last 12 months. The latest additions are:

General Division

Cheyenne Sales Co., Inc. - Clarksburg, represented by Virgil B. LaRosa;

Madison Branch Management, Inc. - Wise, VA, represented by Brian K. Ison;

Relgis, Inc. - Summersville, represented by Harold A. Sigler;

Associate Division

Acquire, Inc. - Pikeville, KY, represented by Georgia L. Johnson;

Advance Surveying & Mapping - Mt. Gay, represented by Gary L. Corns;

Almes & Associates, Inc. - Beaver, represented by Richard G. Almes;

Byron Construction Co., Inc. - Clarksburg, represented by Antonio Petitto, Jr.;

Central Testing, Inc. - Summersville, represented by Janis R. Hoffman;

Dawson & Pack, CPAs - Charleston, represented by Lawrence A. Pack;

Foster Supply, Inc. - Scott Depot, represented by Joe Pingley;

Gary A. Covey, PE, PLS - Sutton, represented by Gary A. Covey;

Helicopter Flite Service - Charleston, represented by Woody Mitchell;

Killam Associates, DLA Division - Somerset, PA, represented by Sean C. Isgan, P.E.;

Mannesmann-Demag Construction Equipment Division - Nitro, represented by Kenneth W. Banks;

REIC Laboratory - Cool Ridge, represented by James L. Hern, Ph.D.;

Stowers & Sons Trucking, Inc. - Hamlin, represented by Greg Stowers;

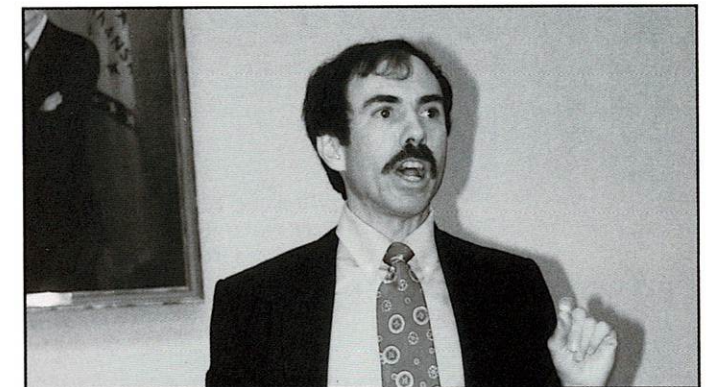
Sunrise Trucking, Inc. - Nutter Fort, represented by Michael Queen;

Van-American Insurance Co. - Lexington, KY, represented by James H. Godfrey, Jr.

Association Notebook



The Association's Board of Directors held its spring meeting in Washington, D.C., in conjunction with a visit to the state's congressional delegation. Above, Senator Jay Rockefeller listens intently to concerns over his UMWA-BCOA "bailout bill." Below, Representative Bob Wise briefs the group on energy legislation now pending in Congress.



Association Datebook

August 6-9 - Annual Meeting, The Greenbrier Hotel, White Sulphur Springs.

October 23-24 - Fall Board of Directors' Meeting & WVU-Penn State football game, Lakeview Resort & Conference Center, Morgantown.

January 10-12 - 20th Annual West Virginia Mining Symposium, Holiday Inn - Charleston House, Charleston.

January 28-31 - Semi-Annual Meeting, Turnberry Isle Resort & Club, Aventura, FL.



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