

DOE Regional Partnership Initiates CO2 Injection in Lignite Coal Seam

A U.S. Department of Energy/National Energy Technology Laboratory (NETL) team of regional partners has begun injecting CO2 into a deep lignite coal seam in Burke County, North Dakota, to demonstrate the economic and environmental viability of geologic CO2 storage in the U.S. Great Plains region. Ultimately, geologic carbon sequestration is expected to play an important role in mitigating greenhouse gas emissions and combating climate change.

The Lignite Field Validation Test is being conducted by the Plains CO2 Reduction (PCOR) Partnership, one of seven regional partnerships under DOE's Regional Carbon Sequestration Partnership Program. The seven partnerships form a national network that is investigating the best approaches for capturing and

permanently storing CO2. Nearly three dozen projects are underway under the validation phase of the partnerships program.

The PCOR Partnership plans to inject approximately 400 tons of CO2 into a 10-foot thick lignite seam at a depth of approximately 1,100 feet. In collaboration with Eagle Operating Inc., a five-spot well configuration was drilled in the summer of 2007 consisting of a center injection well surrounded by four monitoring wells. In addition to evaluating the lignite seam's CO2 storage potential, the enhancement to coalbed methane extraction will also be evaluated.

The results of the PCOR Partnership's Phase I characterization activities indicated that the region's low-rank coal seams have the capacity to store up to 8 billion tons of CO2.

Phase I results also suggested that more than 17 trillion cubic feet of methane could be incrementally produced from low-rank coal seams. To date, no field studies have been conducted on the ability of lignite coal seams to store CO2. The field-based investigations con-



ducted under this activity will provide previously unavailable insight regarding the sequestration of CO2 in low-rank coals. This insight can be broadly applied both within the region and more broadly, as low-rank coal seams are known to occur throughout western North America.

The Regional Carbon Sequestration Partnership Program was created in 2003 to determine which of numerous sequestration approaches are best suited for different regions of the country. The partnership program is being implemented in three phases. The characterization phase (2003-2005), which defined opportunities for carbon capture and storage, has been completed. The validation phase (2005-2009) generally involves small-scale field tests and includes the PCOR Partnership lignite test. The final phase, the development phase (2007-2017), will conduct large-volume carbon storage tests. The long-term storage of CO2 by injection in underground geologic reservoirs is expected to play a major role in addressing climate change concerns. NETL manages the partnership program

for DOE's Office of Fossil Energy.

The PCOR Partnership is managed by the University of North Dakota Energy and Environmental Research Center and includes more than 80 public and private partners in all or part of nine states (ND, SD, MN, MT, WY, NE, IA, MO, and WI) as well as four Canadian provinces (British Columbia, Alberta, Saskatchewan, and Manitoba). The Lignite Field Validation Test is one of four tests the partnership is conducting under the validation phase of the regional partnerships program. These four tests, plus two large-volume sequestration tests that the PCOR Partnership is planning as part of the development phase of the partnerships program, have created more than 400 jobs that will continue through 2017. *d*

Clean Coal Technology: What is Clean Coal?

The Coal Leader has invited Dr. Richard Wolfe, a recognized coal scientist, to write a series of articles discussing the future frontier of clean coal technologies. This article is the third in that series.

Dr. Wolfe earned his BS degree at Virginia Tech in Chemical Engineering and MS and Ph.D. degrees in Nuclear Engineering at the University of Cincinnati. He served as program manager with the U.S. Department of Energy in Washington, D.C. before joining United Coal Company in Bristol, VA in 1979 as Vice President of Research and Development. In 1988, he formed Coal Technology Corporation in Bristol, VA. He has been appointed by five different Governors of Virginia to the Virginia Coal and Energy Commission. He has served on the energy research staffs at the University of Kentucky, West Virginia University, Appalachian State University, and currently serves on the Board at



Richard Wolfe

Virginia Tech's Center for Coal and Energy Research.

Since the last article was written in September, 2008 on

Coal Liquids much has happened. A new President of the United States has been elected; President Barack H. Obama, who is dedicated to a policy of energy independence and using our own natural resources to reduce this country's dependence upon imported oil. This country's leaders have been talking energy independence for more than 30 years and today, we import more oil than any time in the history of the United States. As a result of buying our energy from aboard, particularly oil ranging in price from \$15 dollars a barrel (42 gallons) to as high as \$147 per barrel in July, 2008, we have drained tremendous wealth from Americans

and now we find this country in the worst economic depression since the Great Depression of the 1930's. It is clear that if the United States wants to remain the World's Greatest Democracy and a World Leader, we must turn this tide of dependence upon foreign sources for our energy and produce our own energy needs by using our own natural resources. The full utilization of our resources ranging from wind, solar, biomass, renewable sources, coal, oil, natural gas, and nuclear must be rapidly developed, creating jobs and economic wealth once again within these United States.

Coal Leader Legal News

Protect Yourself and Maintain the Sanctity of the Attorney-Client Privilege

By: Helena Racin Smith
Napier & Associates, P.S.C.

Several coal, oil and gas companies are busy consummating deals nowadays, buying and selling interests and properties to take advantage of the mineral industry's inherent ability to stay strong throughout America's financial turmoil.

Certain companies use attorneys' skills to negotiate deals with their adversaries and draft agreements, leases and options and others do not, but if a company chooses to benefit from an attorney's services it is of utmost importance for company representatives to remember that whether that attorney serves as in-house or outside counsel, everyone must be careful not to disclose confidential information to unrelated third parties and waive the all-important attorney-client privilege.

The attorney-client privilege protects confidential written, oral or other communications between a client and its attorney relating to the rendition of that attorney's legal services. *Lexington Public Library v. Clark*, 90 S.W.3d 53 (Ky.2002). Because I am a Kentucky practitioner, I will site to

Kentucky law. Please consult your particular state's law if you do not reside in Kentucky.

Further, the client is granted the privilege to refuse to disclose such confidential information and communications and prevent any other person from disclosing confidential information and communications with its attorney. *Sanborn v. Com.*, 892 S.W.2d 542 (Ky.1994).

Any disclosure of these confidential communications to a third party will waive the privilege as to the entire subject matter of the disclosure. Robert G. Lawson, *The Kentucky Evidence Law Handbook* § 5.05[10], at 361 (4th ed.2003). Whether a company's interests are served by a manager, a geologist, an engineer or a sales person, all executives must understand that if he or she speaks to the company's lawyer about the particulars of a deal in the presence of an unrelated third-party, even if that third party has seemingly good intentions, he or she has potentially waived the attorney-client privilege as to the subject matter of that disclosure.

For example, I recently



Helena Racin Smith

conducted a witness interview of an oil and gas executive who chose to attend the interview without her company's counsel present. The interview concerned a completely unrelated piece of litigation and the interview was certainly amicable enough, as I am not a threatening figure by any means. But during the witness interview, the company's in-house counsel called regarding an unrelated deal with a third-party. The executive answered the phone and began to speak about the intricacies and price terms of the deal in my presence. Such a conversation could have potentially waived the attorney-client privilege, so I quickly removed myself from the room.

But this incident was innocent enough, right? The executive thought nothing of my

presence. And what if it is necessary distribute the communications to a large number of the deal's participants, including financiers to facilitate the deal's execution?

I cannot stress enough that all companies, their representatives and their attorneys must take great care to recognize, consider and protect any and all communications that are subject to the attorney-client privilege. If parties do not consider the privilege issue, the resulting worst case scenario is a piece of litigation filed and filled with particulars of conversations between a corporate party and its lawyer used to substantiate a claim against it. Remember, it only takes a small instance of waiver to forfeit the privilege entirely. A seemingly innocent statement as simple as, "my lawyer told me that I didn't have to give you that information because..." could potentially waive the attorney-client privilege on that issue. And some witnesses are instructed to answer deposition questions in this manner!

Please protect yourself and your company's privilege. Written and oral

communications should not be shared with anyone other than those to whom the privilege extends. Limit the receipt of the privileged information to only senior executives of the represented party. Remember that financiers are third parties outside the scope of the privilege. Therefore, they should not be present during conversations in which privileged information is discussed.

Unfortunately, a party must assume the worst because disclosure of privileged information to third parties could destroy the privilege as to the shared information and to any other piece of information bearing the same subject matter. In this litigious society, a company must maintain the integrity of its own privilege. But the good news is that if the privilege is not waived, it lasts forever. The attorney-client privilege, always the client's privilege, survives even after the attorney-client relationship ends.

Napier & Associates, P.S.C. is a business-serving business and focuses its areas of practices on business transactions and litigation, as well as coal, oil and gas. Ms. Smith is one of its associates. cl

Editorial

"Coal must be Defended"

Dr Philip Lloyd, MD of Industrial and Petrochemical Consultants, Johannesburg, SA recently said the coal industry must be defended

as perceptions of disasters caused by burning fossil fuels had reached such a pitch that it seriously is threatening the future of coal. Dr. Lloyd went on to say the benefits that coal has brought mankind are such that a much stronger defense of its merits is needed for its survival. He didn't know how the defense should be structured but if it isn't mounted shortly the industry will reel from crisis to crisis and the world and its citizens will become poorer and poorer.

Air pollution as a cause for devastation of forests became a bandwagon cause used to introduce air pollution controls, he added. "The combustion of coal was blamed, even though at the time the evidence for the 'acid rain' was vague. "In time, it was found that the apparent devastation was not the

crisis that it had originally claimed to be."

Lloyd said there were many factors that caused local stress in forests, but the damage was local, not extensive as it would have been had the air pollution hypothesis been sustainable. "Precipitation chemistry has been used in an attempt to show that the air pollution controls that were introduced were effective. "However, analysis has shown that much, if not all, of the claimed reduction in nutrient load has an unknown, natural origin."

Lloyd warned that the "acid rain" hypothesis had become a perceived wisdom. "A generation has grown up for which 'acid rain' is a alleged truth. This encapsulated the problems facing the coal industry.

Coal is under attack around the world by a collaborative movement of organizations and individuals with the common goal of destroying the coal/energy industry's future. These groups and individuals use deceitful and dishonest tactics to scare the general public. They have made advancements by establishing community-based movements and training their fellow citizens to spread misinformation about the coal/energy industry, all the while saying it's for the common good.

A strong economy for the United States is dependent on dependable, affordable and environmentally clean energy. Inexpensive power from coal has helped make this country a world leader. cl

Coal Leader

COAL'S NATIONAL NEWSPAPER

Barbara F. Altizer.....barb@coalleader.com..... Publisher & Managing Editor
Marsha Presley.....marsha@coalleader.com..... Office Manager & Editor
Martin A. Snyder.....msnyder56@verizon.net..... Advertising Sales Manager
Robert Fields.....robertfields@coalleader.com..... Web Master
Editorial Content..... Eastern Coal Council Directors

Published Monthly by: **COAL LEADER, Inc.**
Controlled circulation postage paid at Richlands, VA

Subscription Rate.....\$28.00

The COAL LEADER (ISSN#0192-7329) is published monthly by COAL LEADER, Inc., P.O. Box 858, Richlands, VA 24641-0858, making a total of twelve issues per year. The cost for the twelve issues is \$28.00 per year.

Second class postage paid at Richlands, VA 24641

Postmaster: Send address changes to Coal Leader,
Circulation Department, P.O. Box 858, Richlands, VA 24641-0858
Phone: 276-864-6363 or Fax: 276-864-6342
E-Mail: coalleader@coalleader.com WEBSITE: www.coalleader.com



A. L. LEE
CORPORATION

www.alleecorp.com

NEW

RAIL LOCOMOTIVES 15/20 TON CAPACITY

- 42" TRACK GAUGE
- DUAL 50HP ELECTRIC MOTORS, 128V
- SAMINCO CONTROLLER
- KESSLER AXLES-LIQUID COLLED BRAKES
- 5HP PUMP MOTOR
- CHEVRON SUSPENSION
- 36" FRAME HEIGHT
- AUTOMATIC FIRE SUPPRESSION
- OPERATOR CANOPY
- 1705 AMP/HR BATTERY AND CHARGER

RAIL RUNNERS 9 PERSON CAPACITY

- 42" TRACK GAUGE
- 50HP ELECTRIC MOTOR, 128V
- SAMINCO CONTROLLER
- KESSLER AXLES-LIQUID COLLED BRAKES
- 1HP PUMP MOTOR
- CHEVRON SUSPENSION
- 34" FRAME HEIGHT
- AUTOMATIC FIRE SUPPRESSION
- ADJUSTABLE CANOPY HEIGHT
- 660 AMP/HR BATTERY AND CHARGER

MINI-TRAC(FORK LIFT) BATTERY POWERED

- 30HP MOTOR, 128V, NON-PERMISSIBLE
- SAMINCO CONTROLLER
- 48" FORKS
- AUTOMATIC FIRE SUPPRESSION
- ADJUSTABLE CANOPY HEIGHT
- 550 AMP/HR BATTERY AND CHARGER

RAIL ROCKDUSTER BATTERY POWERED

- MODEL 627 HIGH PRESSURE-HIGH PERFORMANCE
- 42" TRACK GAUGE
- 36" OAH
- 84" OAW
- TWIN TANKS
- 25HP, 128V MOTOR AND COMPRESSOR
- SAMINCO CONTROLLER
- WILLISON COUPLERS
- ON-BOARD 330 AMP/HR BATTERY
- CHARGER
- ANDERSON PLUGS

A. L. LEE CORPORATION
PO BOX 99
LESTER, WV 25865
304-934-5361
304-934-5388 FAX
EMAIL wva@alleecorp.com

VISIT US ON THE WEB AT WWW.ALLEECORP.COM

New Goodyear Pipe Conveyor Belt Uses Advanced Design Technology to Maintain Shape

A new Goodyear pipe-shaped conveyor belt uses finite element analysis technology to keep material and dust in, and wind and rain out.

Goodyear Confine pipe conveyor belts, introduced today at the Society of Mining, Metallurgy and Exploration annual meeting here, are designed to stay sealed while traveling through curves and inclines built into in-plant and overland systems.

Conventional pipe conveyor belts have been used for more than 15 years but exhibit shape collapse, compromised seals, buckling and rotation or twisting, according to Dave Tersigni, marketing manager for Veyance Technologies – the world's No. 1 conveyor belt manufacturer.

"Performance issues of conventional designs create inefficient systems requiring more power to operate, while material and dust can escape from the system," he said.

Enter finite element analysis.

Veyance design engineers used advanced FEA software to model the performance of various conveyor belt designs in straight runs as well as horizontal and sloping curves. The modeling was validated by dynamic testing that simulates extreme field conditions encountered over the life of the belt.

"They designed a unique, patent-pending arrangement of steel-cable and fabric reinforcement that helps Confine maintain its



shape while navigating tight left, right and vertical bends and flexing continuously at the

beginning and end of a transport system," said Tersigni.

He added that Confine's reinforcement configuration enhances transverse stiffness which provides an excellent seal where edges overlap. It also resists rotating the overlap zone from the top to the bottom of a pipe conveyor system, regardless of its path.

Demand for pipe belt systems is increasing in North America due to environmental concerns. Tersigni stated Confine remains

completely closed so material and dust don't scatter along a belt flight. Since the belt is also

enclosed in the pipe shape for the return trip, product that possibly stuck to the belt remains trapped inside.

"Better protection from wind and rain, smaller turn ratios, minimum material spillage, reduced dust pollution and longer belt life add up to a lower cost per ton of material conveyed," said Tersigni.

Typical Confine belt widths range from 24 to 75 inches and provide pipe diameters from 6 to 20 inches. A conveyor system using Confine can include an incline that is 10 degrees steeper than an equivalent flat conveyor system using trough-configured belts.

Veyance Technologies is the exclusive manufacturer and marketer of Goodyear Engineered Products. In addition to conveyor belt products and services, it produces Goodyear-branded industrial hose, power transmission belts and rubber track. **d**

MPI

NOW MADE IN THE USA

Z^{DRILL}

MPI is now manufacturing the complete line of **Z^{DRILL}** hydraulic roofbolters at our Pennsylvania facility.



The **Z^{DRILL}** is capable of operating directly off longwall hydraulics or off the PTO's of scoops, loaders, etc.

Z^{DRILL}s are **NOW** available for worldwide sale.

www.mpiinc.info



MPI

MPI
25 Allegheny Square
Glassport, PA 15045

For more information or to schedule a demo contact info@mpiinc.info or call 1.412.664.7788 ext. 40

Arch Coal Announces Plans to Acquire Rio Tinto's Jacobs Ranch Operation

Arch Coal, Inc. (NYSE:ACI) recently announced that it has agreed to purchase Rio Tinto's Jacobs Ranch mine in the Powder River Basin of Wyoming for \$761 million. In 2008, Jacobs Ranch produced 42.1 million tons of high-quality sub-bituminous coal for sale to power generators located throughout the United States.

The transaction includes 381 million tons of low-cost coal reserves (as of Dec. 31, 2008) that are contiguous to Arch's Black Thunder mine, as well as a high-speed rail loadout; a recently added overland conveyor and near-pit crushing system; strong customer commitments; and an expansive fleet of highly efficient mining equipment.

"Once completed, we believe this transaction will create significant value for Arch Coal, its customers and its shareholders," said Steven F. Leer, Arch's chairman and chief executive officer. "Jacobs Ranch represents an excellent strategic fit with Arch's existing assets in the Powder River Basin. The integration of Jacobs Ranch into the Black Thunder mine will create one of the world's largest and most efficient mining complexes. Because Jacobs Ranch and Black Thunder share approximately six miles of property line, the combination is expected to create significant operating synergies."

Arch anticipates operating synergies from the transaction related to the optimization of the combined equipment fleet; increased utilization of an expanded coal handling system and a state-of-the-art loadout; greater flexibility in product blending and quality control; more efficient inventory man-

agement; reduced net capital expenditures; and purchasing efficiencies. Upon integration, the combined Black Thunder complex will have three loadouts (capable of loading four trains simultaneously) and 22 train landing spots - the most of any mine in the Powder River Basin - which should collectively enhance availability and efficiency for the mine and customers.

Jacobs Ranch earned pro forma EBITDA of approximately \$73 million during 2008. On a pro forma basis, assuming an acquisition closing date of Dec. 31, 2008, Arch estimates that the addition of Jacobs Ranch would result in incremental EBITDA of between \$145 million and \$165 million for the company in 2009. Roughly two-thirds of the expected incremental EBITDA contribution derives from pricing on already committed tons. Additionally, based on past experience, Arch may identify further cost reduction opportunities as the two mines are fully integrated into one operating complex.

Nearly 100 percent of Jacobs Ranch's projected production for 2009 is committed and priced under existing sales contracts. Additionally, more than 75 percent of the mine's projected 2010 production - and nearly 50 percent of its 2011 production - is committed and priced.

Arch also views the Jacobs Ranch workforce, which totals more than 600 people, as a pivotal and value-creating component of the transaction. "We believe the men and women of Jacobs Ranch will be a tremendous addition to our company," said Leer. "These highly skilled employees share our core val-



Steve Leer

ues of superior safety and environmental performance. The sharing of skills, knowledge and ideas between the two workforces represents yet another synergy that should enhance the competitive position of the combined operation."

"The acquisition of Jacobs

Ranch and the subsequent integration into Black Thunder will expand Arch's already low-cost position in the PRB - which is America's largest and fastest growing coal supply region," continued Leer. "The transaction also will enable Arch to provide more efficient and flexible service to its customers in the power generation industry."

Jacobs Ranch is served by the joint rail line in the Powder River Basin. Like Black Thunder, Jacobs Ranch can ship its output to a broad and geographically diverse customer base. Additionally, the equipment fleet at Jacobs Ranch includes a 120-cubic-yard dragline, eight large electric shovels, and more than 40 large haul trucks, all of which complement the existing equipment at Black Thunder. Jacobs Ranch also benefits from com-

petitive mining costs due to the thickness of the region's coal seam and the proximity of the seam to the surface.

On a pro forma basis, Arch's reserves in the Powder River Basin would increase to 2.1 billion tons - and its total reserve base across all regions would increase to 3.2 billion tons - assuming an acquisition closing date of Dec. 31, 2008. Jacobs Ranch's existing reserve base has an average heat content of more than 8,800 Btus per pound, and a sulfur-dioxide content of less than one pound per million Btus.

Arch currently anticipates financing this transaction with a combination of internally generated cash flow from operations, borrowings under the company's \$800 million revolving credit facility and possibly other debt instruments. ed

Why consider using IPD parts to rebuild your Cat® engines?

IPD parts for Cat® engines can help you to stretch your maintenance budget without sacrificing performance or life.



IPD is ISO9001-2000 by Lloyd's Registry

IPD is the quality low-cost alternative to using remanufactured or other brand parts that will not last. From the smallest 3114 up to 3516's, IPD has the quality engine parts for your equipment.

Contact IPD for the latest info: +1 310-602-5399 or visit our website at www.ipdparts.com and sign up for our free newsletter.



IPD, 23231 S. Normandie Ave., Torrance, CA 90501 USA
Phone: +1 310-530-1900 | Fax: +1 310-530-2708

IPD is a registered trademark of IPD Parts, Inc. All other trademarks are the property of their respective owners. © 2008 IPD Parts, Inc. All rights reserved.

NEW!

3116 3126
3406E C15 C12

Hydro-Milling Group, Inc.

POWER PLANT PRE-COMMISSIONING SPECIALISTS



www.hydomilling.com

Tom Short

U.S. Operations & Sales
Cell: 276-206-0468
Office: 732-450-2488
Fax: 732-450-2490
hydro.tshort@gmail.com
20 Thomas Avenue
Shrewsbury, NJ 07702

Bucyrus Offers Efficient Roof Bolters to Make Mining Safer and More Productive

Bucyrus offers three different roof bolter models for various mining conditions. The LRB-15AR is a single-arm bolter recommended for ranges of 32 inches and above; the dual-arm

compact and/or articulated chassis frames. They get the job done quickly and efficiently while maintaining excellent availability and minimizing operating cost per ton. Another advantage

of Bucyrus RB2 dual-arm roof bolters is that they feature articulated steering which means lower tire usage compared to models using skid steer. The LRB-15AR is a rigid-frame, single-arm skid steer machine with ATRS integrated into the boom. It has a 40-hp electric motor with a 2-stage gear pump. When equipped with 26-inch tires, it provides 6 inches of ground clearance, 32 inches of tramming height and a 76-inch ATRS reach. It complies with MSHA ATRS load certification with a capacity of 11,250 pounds, and features a 50-inch drill boom feed and 7,000 pounds of drill feed thrust. The drill pot speed is able to be operated anywhere from 0-480 rpm.

Bucyrus dual-arm roof bolters feature hydraulically operated drill and boom functions, hydraulically driven planetary wheel motors with a free-wheeling feature, Automated Temporary Roof Support (ATRS), a 75-hp electric motor and four-stage gear pump, a vacuum blower driven dust collection system and fail-safe parking brakes. Features unique to the Bucyrus RB2 series include a 4-wheel independent planetary drive and a horizontally and vertically articulated chassis frame which

steers the machine and allows it to maneuver through vertical swells while helping to maintain traction by keeping all four tires on the ground. This feature

provides the most ground clearance of the Bucyrus roof bolters, giving a total of 9.5 inches of ground clearance, 48 inches of tramming height and



Bucyrus Roof Bolter dual-arm RB2-88A

RB2-52A for ranges of 42 inches and above; and the dual-arm RB2-88A for ranges of 54 inches and above.

Many customers prefer Bucyrus roof bolters because they have the ability to get to any space thanks to their com-

pared to models using skid steer.

The LRB-15AR is a rigid-frame, single-arm skid steer



Bucyrus Roof Bolter LRB-15AR

also allows the user to position the machine for faster crosscut bolting.

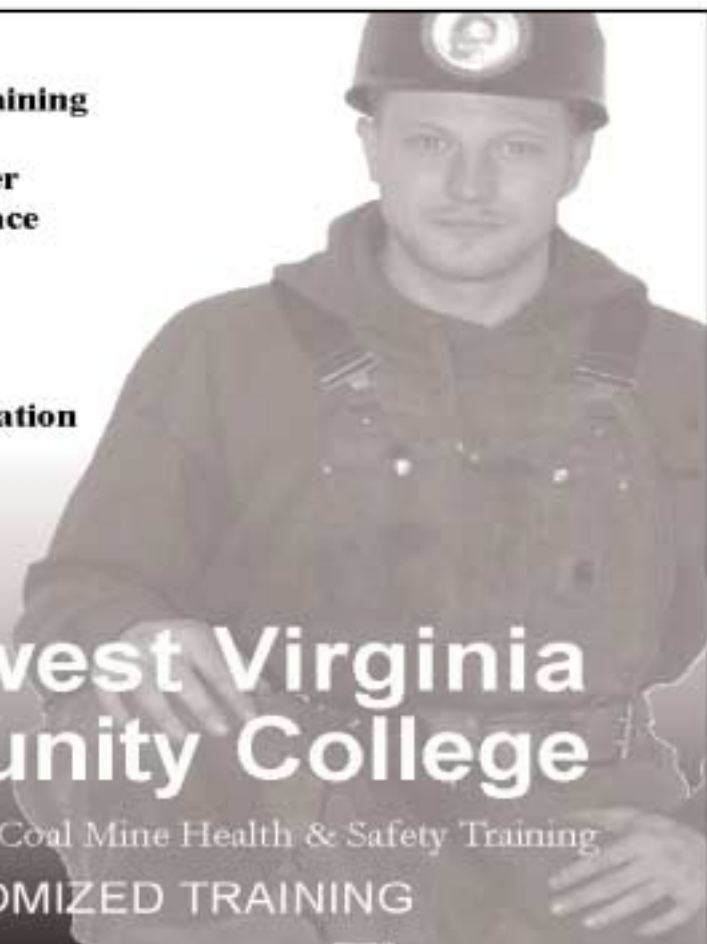
The RB2-52A meets MSHA ATRS load certification requirements, and features a 52-inch drill boom feed, 10,000 pounds of drill feed thrust and a drill pot that is able to be operated at any speed between 0 and 614 rpm. Bucyrus is a world leader in the design and manufacture of high productivity mining equipment for the surface and underground mining industries. Bucyrus' underground mining equipment is used primarily for mining coal.

The RB2-88A, when equipped with 35-inch tires,

a 120-inch ATRS reach. ATRS load certification is 33,750 pounds. This model has an 88-inch drill boom feed, 10,000 pounds of drill feed thrust and a drill pot that is able to be operated at any speed between 0 and 614 rpm.

Bucyrus is a world leader in the design and manufacture of high productivity mining equipment for the surface and underground mining industries. Bucyrus' underground mining equipment is used primarily for mining coal.

- **Underground and Surface New Miner Training**
- **8 hour Annual Refresher Underground and Surface**
- **8 hour Electrical Recertification**
- **4 hour Diesel Recertification**
- **Mine Foreman and Electrical Repairman State Certifications**



Southwest Virginia Community College

A Leading Name in Coal Mine Health & Safety Training

CUSTOMIZED TRAINING

P.O. Box SVCC Richlands, VA 24641-1101 • 276-964-2555 • V/TDD 276-964-7235 • www.svcc.edu • BOE/AA

Tunnel Radio to Base Eastern Operations in Hazard, Kentucky

Tunnel Radio of America, Inc. announces the opening of their new Eastern Regional Office, located in Hazard, KY. From this office, Tunnel Radio will position themselves in closer proximity to these vital southeastern coal regions, and will therefore be more accessible to the mines in terms of sales, service, and technical support. While Tunnel Radio has always been a leader in Underground Wireless Communications, the introduction of the new MSHA Approved MineAx "Bird-Dog" Tracking System puts them solidly in front with an integrated system that provides both excellent voice communications and "state-of-the-art" tracking.

The office, which opened on February 10, 2009, will be staffed by Scott Rose, Branch Manager; Kelly Massey, Sales Engineer; and Kolston Green, Computer Engineer. We're particularly excited about the addition of Green, a native of the Hazard area, to the Tunnel

Radio team. Green brings numerous certifications in the computing field, and he has, most recently, been working in underground mining and therefore also has several industrial mining certifications. His knowledge and expertise in both computers and underground mining will be invaluable as his focus will primarily be on the installation and integration of the MineAx tracking systems in the underground environment.

Tunnel Radio of America's headquarters and manufacturing facility is located in Corvallis, Oregon. Formed in 1988, the company has regional dealerships in AK, UT, WV and Australia. With over 50 systems installed in mines across the country, their first installation (Greens Creek) is still in full use today. Company President, Mark Rose, has been working in the industry for over 35 years and their employees have nearly 150 years of combined RF experience.

Your Crossroad for Contacts in The Coal Processing Industry



Coal  **Prep**
*Annual Coal Processing
Exhibition and Conference* **2009**

Conference: April 27 – 30

Exhibits: April 28 – 30

—vi Z Xe` _ 4V_eVc † =vi Z Xe` _ L<J FD2

www.coalprepshow.com

† #&!]VRUZ_Xdf aa]Z/cdUZa]Rj Z_XeYV]ReVc ac` Uf Ted , eVTY_ `]` XZ/d
 † :_Wc^ ReZVT _WcV_TV acVdV_eReZ_d
 † 4` R] ac` TVddZ_Xac` WddZ_R]dW^ R]] `gVc eYVh `c]U



"We have five coal processing plants, ranging from 1500 down to 300 tons tons per hour. I've been coming to Coal Prep for many years, during which I've made a lot of contacts and found suppliers that have been helpful. Being at Coal Prep is like a homecoming to me."

*Gary Trump, Director of Coal Preparation
Murray Energy Corp. Beallsville, OH*



"After working in the mines for more than 30 years, now I'm in processing, so my company sent me to Coal Prep. I'm trying to get a feel for everything that's going on and both the seminars and the vendors have provided information that I can use right away."

*Allan Pollastrini, Maintenance Supervisor
Eastern Associated Coal, Fairview, WV*

GZLh h h ZT R]acVadY h ZT ^ e` cVXZ eVc `cWc UVerZ]MUdY` h Z_Wc^ ReZ_

:_Wc^ ReZ_ ` _ Vi YSZZ_X+4` _eRTeda` dR1 T R]acVadY` h ZT ^ `c TR]]) !! }&#&!*" &%

Clean Coal..... Cont from Page 1

The development of our energy independence must be achieved in a manner to maintain, improve, and preserve our environment. This challenge and balance between both energy development and environment preservation can be achieved by working together and recognizing the importance of both. We are at a great cross-roads in American history. The establishment of a comprehensive energy and environmental plan is bigger than a single Administration and must be met by a by-partisan leadership working together for the benefit of the Country, not just one political party. This is the time for America to show the world the fabric of what Americans are made of and of our dedication to maintaining our destiny and our Democracy.

Fossil Fuels- What are they and where did they come from?

To understand the importance of fossil fuels, we must first understand this planet Earth and where we came from. First of all, Planet Earth contains an atmosphere of 21 percent oxygen, 78 percent nitrogen, 0.9 percent argon, and the remaining 0.1 percent made up of Carbon Dioxide and methane. This is the atmosphere that provides life to us humans and all other life forms on this planet. In addition all living creatures are sustained by organic matter. The compounds of carbon are called organic because the first known members were natural products synthesized by plant or animal organisms. The plant life that we eat and that lives in our environment helps remove carbon dioxide from the atmosphere and converts it into oxygen that helps sustain life on earth. As far as it is known, planet Earth is the only planet with life forms that are carbon based.

The earth age has been scientifically shown to be several billion years old. The first coal age began nearly 250 million years ago along with age of the dinosaurs. Fossil plants and fossil animals are found in many forms in various coal seams today that prove their coexistence. Human life as we know it has been determined by the discovery of various fossils to be on the order of 1.5 million

years old.

The point in making this analysis in the development of planet Earth is that the fossil fuels of oil, coal, and natural gas came from millions of years ago. The coal and oil age was a time of warm, moist climate. Much of the land was lowland swampy. From it rose dense forests of strange-looking trees,



Dr. Dick Wolfe Conducting Experiments to Produce a New Super Clean Carbon Product "Carbonite"

ferns and other plant and animal life. We know what these plants looked like because they left fossil imprints in the coal. As the plant life died it fell beneath the swamp water. Great layers of mud, sand, and marine deposits gradually formed over the plant matter and helped it turn into coal of various forms ranging from peat to lignite to sub-bituminous, to bituminous, to anthracite. As a result, this coal which is made up mostly of carbon and hydrogen also inherently contained various minerals of sulfur, iron, mercury and other trace elements that occurred naturally from the plant life and minerals in the soil that existed naturally in those early swamps.

When we today use these fossil fuels either in the making of electricity or transportation fuels, a carbon dioxide gas is released along with various amounts of sulfur dioxide, nitrogen oxide, mercury and other impurities. In order, to preserve our environment and reduce the amount of these impurities which are affecting our very existence on planet earth, we must find better technologies to reduce and contain these emissions.

Cleaning Coal of its Impurities

Now that we know what fossil fuels are and where they came from, now the question arises can you clean the impurities from coal, reduce their emissions and by what means. The answer is a positive Yes We Can, but with the development of newer technologies, we

can do more in the future.

Power plants being built today emit 90 percent less pollutants (SO₂, NO_x, particulates and mercury) than the plants they replaced from the 1970s while coal use has tripled.

Examples of technologies that are deployed today and continue to be improved upon include: Fluidized-bed combustion, Integrated Gasification Combined Cycle (IGCC), Flue Gas Desulfurization, Low Nitrogen Oxide Burners, Electrostatic Precipitators, just to mention a few. Technologies now being developed include High-efficiency fuel cells, advanced high-efficiency combustion, Hydrogen production, Carbonite, coal to liquids, and carbon capture and storage.

Coal is found in every continent, but more than a third of the world's supply is in the United States. Thirty-six of the 48 states have some coal, and it is plentiful in 28 states. Coal exist in many different forms and in many different seams below the earth.

Different mining techniques must be used ranging from deep mining to mining the coal from the surface. Each mining technique has its own special

challenges ranging from the personal hazards of deep mining techniques using shafts, slopes, and massive air ventilation methods to the environmental impacts of surface mining. Over the past 25 years, great improvements have been made in deep mine safety and reclamation of the hills and mountains after the coal has been extracted from the surface. Is there still more to be done and the answer again is a positive Yes There Is. Many miners over the past have died from breathing in coal dust during deep mining, including my own Father, but today through improved ventilation, mining machinery, and air filtration, black lung disease has been greatly reduced. However, deep mining still remains one of the most hazardous jobs in industry.

Once the coal is removed from the mines, either deep mines or surface mines, it is the processed through modern multi-million dollar coal cleaning facilities, a majority of the sulfur and other attached minerals are physically removed during this process by mechanical and chemical technique.

Over the years, great improvements have been made to physically clean coal and there still is room for further improvements in efficiency and the quantity of coal recovered. However, to go deeper into the coal's structure to remove further the sulfur, ash, and mercury, newer technologies are now being developed to thermally treat the coal and convert the coal into new carbon products and the recovery of the coal liquids, which will introduce in the future the term of "Coal Refineries" which will operate very much like the oil refineries of today. Then one can say, "We are getting the squeal out of the pig".

For example, a new technology has recently been developed and proven in 2008 with patents pending by "Yours Truly" called the "Carbonite Process" that thermally takes coal apart, removes 100 percent of the mercury and produces a new super clean carbon product called "Carbonite". The US Patent Office on February 17, 2009 registered a Trademark for "Carbonite" as a new carbon based energy fuel.

The process also yields at least one barrel (42 gallon) of coal oil has a by-product depending upon the quality and type of coal processed. Photograph shows Dr. Wolfe in the laboratory producing the first quantities of super clean Carbonite and Coal Oil. The Carbonite has a higher heat value than the initial coal thus reducing the amount of Carbonite needed to produce a mega watt of electrical energy, thus reducing the amount of carbon dioxide emitted to the atmosphere by as much as 25 percent depending upon the coal type.

The coal oil has a yield of about 42 gallons per ton of coal processed into Carbonite. The coal oil has many applications in the petrochemical industry including refining into gasoline and diesel fuels.

The significant of this new clean coal technology breakthrough is that it is just the beginning of understanding how coal can be transformed into new super clean carbon products that reduce the environmental emissions while using coal for producing electricity and transportation fuels. The United States used about one (1) billion tons of coal during 2008, this means that if all the coal was processed first through the Carbonite process before combustion, then about one (1) billion barrels of coal oil could be recovered as a by-product at very low cost and then refined into transportation fuel as a means of reducing our dependence upon foreign oil. Coal has this potential for being used in both the utility market and the transportation market.

The Carbonite Process is just one example of new clean coal technologies being developed that allows coal to be used more cleanly than ever before. Other technologies are also on the horizon that will be developed as new leadership is provided for using one our most abundant natural resources to meet our energy and environmental requirements.

FutureGen- Is this a Clean Coal Technology?

The idea for developing a super clean coal technology called FutureGen was established several years ago by the Bush Administration. A small

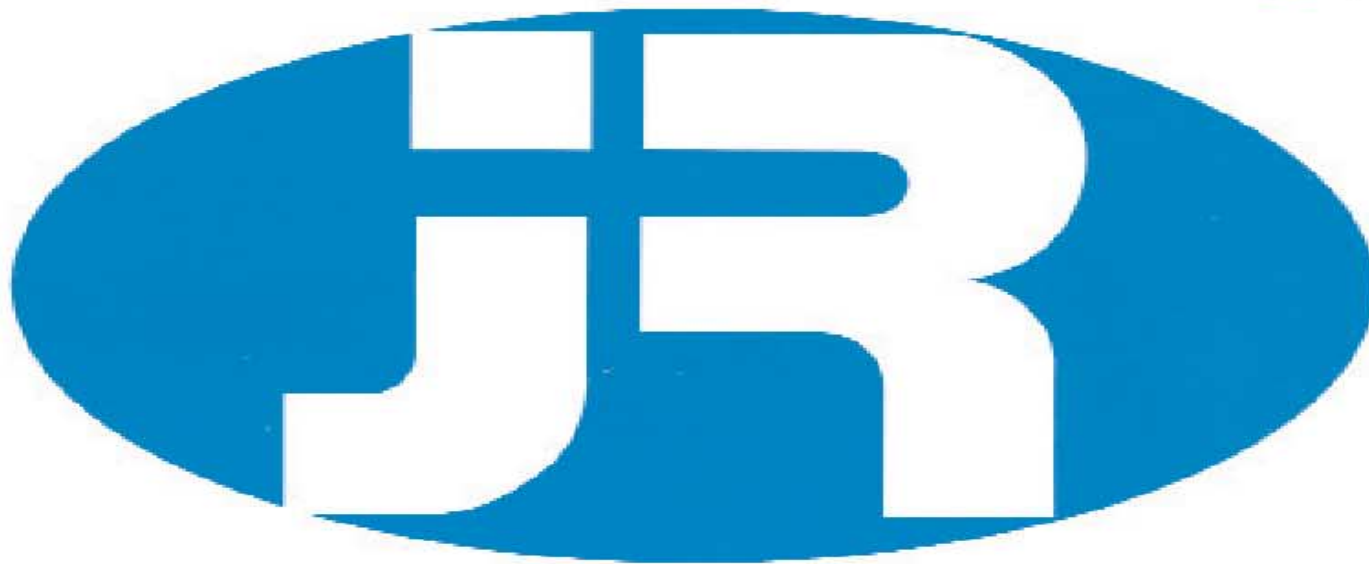


WE MINE THE COAL THAT POWERS THE NATION.

Work with us and you'll help provide the coal that generates over half the nation's electricity.
Come visit us at www.consolcareers.com. An equal opportunity employer.

 **CONSOL ENERGY.**
America's On Switch..

J & R Manufacturing, Inc



"Connect with the BEST"

Serving the Mining Industry over a Quarter of a Century



J & R Manufacturing, Inc.

351 Industrial Park Road • Bluefield, VA 24605 •

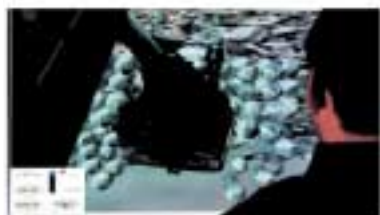
PHONE: 276-322-5431 • FAX: 276-322-5433

WEBSITE ADDRESS: www.jandrmfginc.com

Coal Leader Product News

NEW Bucyrus VAST™ Shovel Simulator Delivers Cost Effective Operator Training!

Bucyrus International, Inc. announced the introduction of the new VAST™ System (Value Added Simulation Training) specifically for Bucyrus electric mining shovels. VAST™ is designed to reduce training costs, increase productivity, and improve training effectiveness. Studies have shown that new operators who receive training with VAST™ prior to field training consistently maintain a higher level of productivity than those who do not receive simulator training. The VAST system has a low cost to purchase and operate; all that is



needed is the VAST software, an updated Windows based PC, a monitor, and two joysticks.

VAST™ gives an introduction to the basics of safe, productive shovel operation and also serves as refresher training for more seasoned operators. Simulator users are placed at the controls of a Bucyrus shovel in a virtual mine and interact with a simulated haul truck. The VAST™ system contains a total of 8 different training modules including: Control Familiarization, Shovel Positioning, Following Grade, Cab-side Dumping, Blind-side Dumping, Single-pass Digging, Cab-side loading, and Blind-side Loading. Simulator results can be saved in a database and reviewed by the user and training instructor only.

AMR's Tagging & Tracking Approved

AMR's Tagging and Tracking System has been approved under the State of WV Legislative Rule Title 56, Series 4.

The Tagging and Tracking System allows mine operators

to track the movement of individuals and equipment in the mine continuously and receive messages from underground.

The system design consists of an active tag attached to the miner's helmet or mine equipment and readers placed in selected zones throughout the mine. The miner can send coded messages to the surface through the smart tag.



The Two-Way Text Messaging Device will meet the 2009 requirements by allowing the miner to compose, send, receive, and save messages through a handheld RF device. Not only will this device provide two way communications but it will also provide memory for safety measures, mine directions, and contacts.

Both systems will work in conjunction with our existing atmospheric monitoring system or as a stand-alone system. We hope that our systems will provide a step forward in enhancing mine rescue efforts as well as become an essential in taking the safety of your miners to the next level.

For more information or to schedule a demonstration at your location, contact Amanda Ruble 276-928-1712 ext. 221 aruble@americanmineresearch.com or visit www.americanmineresearch.com.

FLEXCO INTRODUCES THE ELECTRIC BELT CUTTER

Flexco is pleased to announce the introduction of its Electric Belt Cutter. It has been engineered to provide quick and easy cuts on all types of belting from the softest of natural rubbers to the hardest constructed solid woven PVC and fabric plied belts.

The Electric Belt Cutter is available in two sizes and specifically designed to allow the end user to cut belts quickly and safely resulting in less con-

veyor downtime, and overall increased productivity. The EBC1 Electric Belt Cutter is capable of cutting a rubber belt up to 1" (25 mm) and up to a maximum 360 P.I.W. (630 N/m) on PVC belts while the EBC2 cuts rubber belts up to 2" (50 mm) and up to a maximum 1140 P.I.W. (2000 N/m) on PVC belts.

Not only is the Electric Belt Cutter much easier and faster than conventional cutters, but it also allows for longitudinal cuts as well as angled cuts.

The high speed, steel blade is dual angled for a smooth, accurate cut and is protected by a spring loaded blade guard for enhanced worker safety.

The sealed ball bearings that support the belt during cutting provide nearly friction free feeding of the cutter on the cutting surface requiring minimal effort by the operator. Its heavy duty stainless steel construction is strong, durable, and corrosion free and the permanently sealed gearbox provides for



long lasting, maintenance free operation. The Electric Belt Cutter can also be easily adapted for either right or left hand operation.

For more information, visit Flexco's website at www.flexco.com, or contact the Customer Service Department, Flexco, 2525 Wisconsin Ave., Downers Grove, Illinois, 60515-4200, USA. Phone (630) 971-0150; fax (630) 971-1180.

Suspended Belt Magnets

Suspended Belt Magnets are constructed with an oversized Plate Magnet. They are designed for suspension above a belt conveyor and are engineered to remove ferrous contaminants from high volume

deep burdens. As product passes under the magnet, metal contaminants are drawn out of the material to the face of the magnet. This style of magnet should be installed at the discharge of the head pulley if possible.

Material will be flowing more freely and can be thrown into the face of the magnet increasing the separation results over an installation that has the magnet suspended over a troughed belt. This can be supplied with a wiper arm or stripper plate to simplify cleaning.



For automated continuous cleaning, a POWER CLEAN option can be selected which incorporates a set of pulleys, belt, motor, and reducer that travels around the Suspended Belt Magnet discharging metal contaminants automatically.

Suspended Belt Magnets can be installed in an in-line or cross belt configuration. Used in such industries as: feed & grain, concrete recycling, mining operations, municipal recycling, scrap yards, and other recycling and bulk processing industries. For more information contact: Andrea Ezyk, Puritan Magnetics, Inc., 465 S. Glaspie St., Unit B, Oxford, MI 48371 Phone: 248-628-3808; Fax: 248-628-3844 Email: andrea@puritanmagnetics.com or visit website: www.puritanmagnetics.com

Jenmar Offers Advanced Ground Control Engineering

Keystone Mining Services is the engineering affiliate company of Jenmar Corporation that oversees research and development. KMS conducts extensive ground control engineering for Jenmar. KMS has made improvements to its computer modeling packages, including primary and supplemental bolting, pillar design, optimum long-wall orientation and mining sequence, and seam interaction stresses.

The ultimate goal of Keystone Mining Services and



Jenmar is to utilize existing and new products and advanced ground control engineering to improve mine safety and productivity.

Cat 854K Wheel Dozer Features Offers New Features

The Caterpillar 854K wheel dozer incorporates innovations to lower engine emissions and boost fuel efficiency, improve reliability and serviceability, and optimize operator efficiency and comfort. Specifically, the 854K uses a highly efficient Cat C32 engine and a new radiator with improved heat transfer capabili-



ties. A variable speed demand fan aids efficiency. For the operator, a new, larger cab includes a trainer's seat, and a new low-effort joystick controls all blade functions.

The 854K replaces the 854G and retains the best features, including the impeller clutch torque converter for superior operator control and optimum power to the ground, lockup clutch for direct drive efficiency, and STIC™ control system for reduced steering and transmission control effort.

The 854K is the largest wheel dozer in the Caterpillar line and is engineered for demanding work in large dozing applications, such as mining and bulk materials handling, where mobility increases productivity.

The Cat C32 engine, rated at 800 net horsepower (597 kW) features ACERT Technology, an exclusive Cat emissions reduction solution. The 12-cylinder engine is a V configuration with displacement of 1,960 cubic inches (32.1 liters).

The 854K drive train features the proven impeller clutch torque converter (ICTC). **d**

Flex-Mat® 3: Increases Throughput & Durability In Coal Operations

Flex-Mat® 3 High-Performance, Self-Cleaning Screen Media from Montreal-based Major Wire Industries Limited helps solve rapid screen wear and blinding challenges in coal processing. Flex-Mat 3's independently vibrating wires increase product throughput by up to 40 percent over traditional woven wire or polyurethane panels by eliminating blinding, pegging and clogging. In addition, it has up to 30 percent more open area than woven wire for up to 30 percent more material throughput. Properly sized for the application and correctly installed, Flex-Mat 3 greatly increases screening efficiency, resulting in more spec product on the ground for less cost. To date, Flex-Mat 3 is operating in more than 15,000 applications worldwide.

Wear life exceeds that of woven wire up to three times because there are no cross wires with high wear spots as there is with woven wire. Producers put more spec product on the ground due to less

downtime for cleaning or replacing screens, providing a greater return on investment without the need to make major screen box changes. Major Wire's Flex-Mat 3 saves coal operators thousands of dollars per screen retrofit, when compared to shifting to polyurethane systems or installing new screen boxes.

Clay content within coal can cause severe blinding problems for both woven wire and polyurethane, resulting in significant lost screen capacity and hours of downtime to clean the screens. Coal is also very corrosive and quickly wears out woven wire screens. Some producers increase the size of their woven wire screen boxes to increase capacity, but at great expense. Others shift to



polyurethane panels for longer wear life; however, capacity is often greatly reduced in exchange for the added wear life.

Flex-Mat 3's signature lime green polyurethane strips symbolize innovation, quality and increased efficiency. These strips align to the screen box's crown bars and hold individual wires in place as they run from hook to hook. The wires vibrate independently to better separate material, virtually eliminating blinding in coal applications.

Because of coal's corrosive properties, many coal producers opt for Flex-Mat 3 stainless steel wire for its tough wear characteristics. Depending on the spec product desired and the size of the original

material, some producers choose either Flex-Mat "D" or "T" (heavy-duty) configurations. Flex-Mat "D" consistently produces accurate material separation, while "T" (heavy-duty) is used in applications with high material impact on screens. Flex-Mat "T" for fine screening reduces blinding of very fine material.

Pioneered by Major Wire in 1996, Flex-Mat technology provides the industry with a significant advancement in screening

performance: a non-woven, self-cleaning wire screen media that can significantly increase coal production while it reduces downtime to free blinded or clogged screens.

Founded in 1884, Major Wire Industries Limited designs, manufactures and markets screening solutions, including Flex-Mat® 3 High-Performance, Self-Cleaning Screen Media; Flex-Thane® Flex-Mat solution for flat-deck screens; OptimumWire woven tempered and stainless steel wire cloth and polyurethane panels for the quarry, mining, recycling, road building, green waste, top soil and industrial markets. Major Wire is ISO 9001:2000 registered. For more information, contact Major Wire Industries Limited, 225 North Montcalm Blvd., Candiac, Québec, Canada J5R 3L6; telephone: 450.659.7681; fax: 450.659.5570; e-mail: major@majorwire.cc or visit its Web site at www.majorwire.cc.

UtahAmerican Energy Attempts To Better Ensure Miners Safety & Jobs

UtahAmerican Energy, Inc. (UEI) and its subsidiary, Andalex Resources, Inc., a co-owner of the West Ridge Mine with Intermountain Power Agency, announced recently the company argued its case for the mining plan that it believes best ensures miners' safety before an administrative law judge hearing. The company and the Mine Safety Health Administration (MSHA) have been at odds for weeks over numerous mining plan issues related to deep cover mining. The company and its experts believe MSHA's recommended mining practice would not only compromise miners' well-being, but will result in continued, more unpredictable bounces throughout the mine.

Additionally, the company believes a statement recently released by MSHA is regrettable in that it implies only

MSHA has the miners' best interests at heart. Moreover, MSHA inaccurately reported that the West Ridge mining complex does not currently utilize barriers – in fact it does.

UEI continues to rely upon its engineers and geotechnical specialists, who have deep cover mining experience, which MSHA's specialists lack. Also, contrary to recent reports, bounces at the West Ridge mine have not become greater in size and frequency. The current mining plan has proven to isolate bounces to only one area of the longwall face creating more predictability, manageability and safety.

The company previously attempted panel-barrier mining, the method insisted upon by MSHA, at the now closed Tower mining complex. As result of this mining practice, the complex experienced bounces that

“Longwall Panel Mining Better Ensures Miners’ Well-Being and Ability to Isolate Bounces”

tended to be less predictable. According to company officials, MSHA inspectors appear to believe they can “stop” bounces at West Ridge with similar practices used to “stop” bounces in a mine in Virginia. The company and its experts, however, understand that eastern mining conditions are nowhere near comparable to deep cover western mining.

“Per the assessment of

extensive internal studies, management and workforce, and consultation of world renowned geotechnical specialists, the company has concluded the current mine plan is safe and suitable for miners,” said Kevin Anderson, an attorney for the company. “Stopping at the current location and pulling the longwall out in deep cover conditions – where large chunks of coal are more likely to fall from the roof because we’re required to sit idle – would add substantial risk for injury or worse. Instead of basing their suggested mining methodology on proven studies or relevant experience, MSHA has decided to roll the dice without making a thorough evaluation.”

In terms of safety, the company has implemented state of the art safety measures, including remote mining in the most bounce-prone areas. The plan

has exceeded all expectations. It has the added benefit of serving as an extremely educational, productive experience for UEI and MSHA. Furthermore, the company knows of no other coal mine in North America operating a remote longwall or utilizing the extensive safety features now in place at West Ridge.

According to Anderson, “MSHA’s most recent claim stating that West Ridge has ‘no barrier pillars in place’ is completely false. As displayed in the mining plan, a significant barrier is located between the panel being currently mined and the next panel the company would like to mine. As evident by MSHA’s mischaracterizations, this opens up questions about department’s true motives regarding West Ridge and beyond.”

Tom Fanning COO Southern Company Details Greenhouse Gas Reduction Initiatives

Southern Company Chief Operating Officer Tom Fanning recently offered a glimpse of the broad range of initiatives currently under way across Southern Company and its subsidiaries to develop and deploy the technologies needed to reduce greenhouse gas emissions while continuing to provide reliable, affordable electricity to the company's 4.4 million customers across the Southeast.

In remarks delivered to the Southern States Energy Board's Southeast Regional Carbon Sequestration Partnership's 4th Annual Stakeholders' Briefing, Fanning noted that technology solutions to reduce carbon dioxide (CO₂) emissions will vary depending on geographic region.

"Southern Company believes that a diverse portfolio of solutions will be necessary to

reduce CO₂ emissions from power generation." Fanning continued, "As there is no single answer, we are pursuing a number of CO₂ reduction strategies including increasing energy efficiency and conservation, bringing more renewables online, and deploying new nuclear and clean coal technologies."

Southern Company subsidiaries Georgia Power and Alabama Power are currently conducting pilot-scale, solar photovoltaic (PV) system demonstration projects to help determine the most promising PV technology for the hot, humid southeastern United States.

Fanning also noted that Georgia Power recently submitted an application to the Georgia Public Service Commission to convert

"Broad Range of Initiatives Currently Under Way Across Southern Company"

the company's Plant Mitchell, near Albany, Ga., from coal to 100 percent biomass. A decision is expected March 17. If

approved, the retrooled plant would have 96 megawatts of capacity and be the largest biomass facility in the United States.

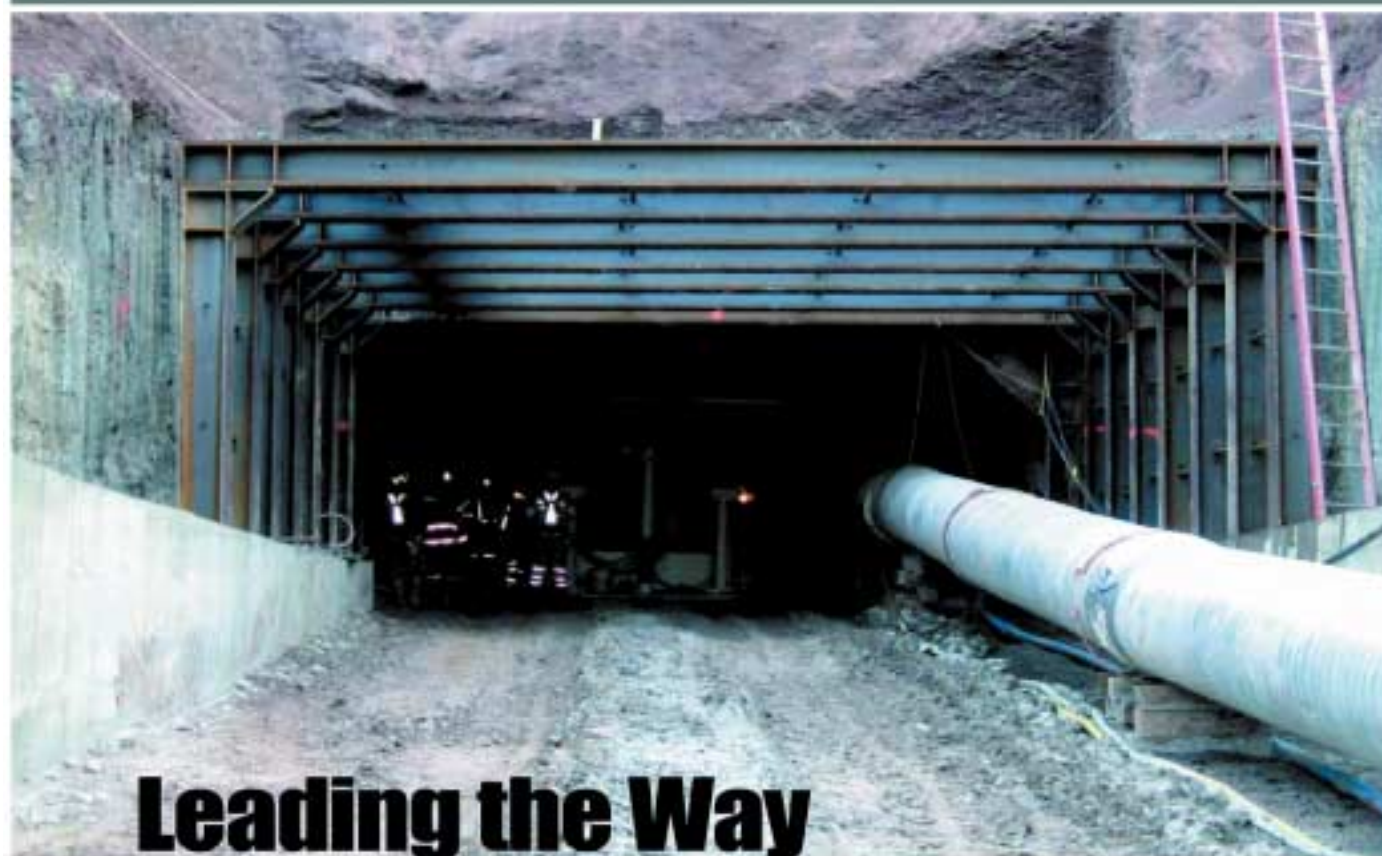
In addition, Fanning detailed Mississippi Power's request currently before that state's public service commission to build a state-of-the-art integrated gasification combined cycle power plant that would use technology developed by Southern Company in a joint effort with the U.S. Department of Energy. By providing carbon capture and sequestration, the facility will lead the way to lower-carbon electricity production.

Fanning noted that clean coal, including carbon capture and storage (CCS), increasingly appears to show promise for the future. "The Southeast has large

capacity and very secure geologic sequestration potential," he said. "That's one of the reasons Southern Company employs such a robust research and development program related to CCS, including a CO₂ pilot injection program at Mississippi Power's Plant Daniel."

Fanning emphasized, however, that existing barriers to commercial-scale operation of CCS such as uncertainty about the cost of carbon capture technology and outstanding regulatory and long-term storage liability issues have yet to be resolved fully. "If we are to continue to take the steps to widely deploy CCS, it is imperative that regulatory frameworks be consistent and fair to all industries."

d



**Leading the Way
In Global Ground Control Technology**

Contact us about our newest products: Square Sets & Mine Arches



CORPORATE HEADQUARTERS
258 KAPPA DRIVE
PITTSBURGH, PA 15238
TEL: 412-963-9071
FAX: 412-963-9767

CORPORATE OFFICES

AUSTRALIA 40-44 Anzac Ave. Smeaton Grange Narrabri, NSW 2567 Australia TEL: 612-4648-7500 FAX: 612-4648-7555	CHINA Jenmar (Jin)ng Mine Roof Support Products Co., LTD Jenmar Industry Park Gaoding District Jining City, Shandong Province, China 272023 TEL: 011-86-5372196266 FAX: 011-86-5372480338
---	--

MANUFACTURING FACILITIES

CRESSON BOLT PLANT, CRESSON, PA • J-LOK RESIN PLANT, CRESSON, PA • WEST VIRGINIA PLANT, REEDSVILLE, WV • KENTUCKY PLANT, WINCHESTER, KY • KENTUCKY REBUILD & MACHINE CENTER, WINCHESTER, KY • WEST KENTUCKY PLANT, EARLINGTON, KY • WEST KENTUCKY J-LOK RESIN PLANT, EARLINGTON, KY • UTAH PLANT, CLEARFIELD, UT • VIRGINIA PLANT, CEDAR BLUFF, VA • EAST VIRGINIA PLANT, RICH CREEK, VIRGINIA • JENNMAR SPECIALTY PRODUCTS, CEDAR BLUFF, VA • JM STEEL CORPORATION, WUGER, SC • JENNMAR AUSTRALIA, SMEATON GRANGE, NARRABRI, NSW • OLD SALES & PLANT, PAGET MACKAY, QLD • J-LOK RESINS AUSTRALIA PTY LTD • JENNMAR (JIN)NG MINE ROOF SUPPORT PRODUCTS CO., LTD, JINING CITY, SHANDONG PROVINCE, CHINA • JENNMAR CANADA, STURGEON FALLS, ON

Certified to ISO 9001:2000,
with design

© 2008 JENNMAR. ALL RIGHTS RESERVED

www.jenmar.com

Carbon Sequestration Research Passes Milestone in Mississippi

By: Marc Rice & Richard Esposito
Southern Company

To the uninitiated observer, it appears to be, well, just a hole in the ground. Rising from it, to about seven feet above the surface, is a plain series of valves, connected by a narrow pipe leading to a heating mechanism and then on to a pair of tanker trucks. The look of the whole setup, on the site of Mississippi Power's Plant Daniel, doesn't quite bring to mind visions of futuristic energy technology. But looks can be deceiving.

This modest scene actually represents a key front in the

partners. It is part of an effort by industry and government to learn more about the feasibility of carbon capture and sequestration (CCS).

CCS is one of the leading technologies being considered to reduce emissions of carbon dioxide (CO₂) from coal-fired generation. With CCS, CO₂ released during the combustion of coal would be separated from the flue gas, pressurized into a liquid form, then permanently sequestered, or stored deep underground.

The Daniel project is one of several initiatives across the



Marc Rice

storage capacity, excellent seals or cap rocks, and stable seismic conditions.

"This is a great platform for increasing our knowledge of carbon sequestration," said Richard Esposito, the Southern Company research geologist leading the Daniel project. "This is one of the first pilot injections of CO₂ at a coal-fired power plant in the world."

The injection will be followed by a year and a half of monitoring and evaluating what happens to the CO₂ now that it is in the ground. Understanding movement of CO₂ in the

ground and under multiple geological seals is critical.

"Monitoring and verification is a key aspect of the demonstration," Esposito said. "So far, everything has been going exactly the way we thought it would. Based on the results so far, we are right on target with assumptions from the extensive geologic characterization studies and computer models created prior to the drilling and the injection."

During the injection phase, about 150 tons of liquefied CO₂ a day was trucked to the site, where it was transferred into two tankers, then heated and pumped into the injection well. Plant Daniel is not equipped to capture CO₂ for injection, so the CO₂ came from Denbury Resources Inc., an oil and gas producer with large natural CO₂ reserves

voluntarily conducted outreach and educational activities for public acceptance.

Although the Daniel project involves a relatively small amount of CO₂, it is an important step toward developing, safe, reliable and cost-effective carbon sequestration. However, many issues must still be resolved.

"At Southern Company we view CCS as a promising clean coal technology. We are enthusiastic about its prospects but also aware that barriers to commercial-scale deployment exist," Ed Holland, executive



Richard Esposito

quest to develop advanced technological solutions to ensure the continued viability of coal, the abundant fuel responsible for more than 50 percent of America's and 70 percent of Southern Company's production of electricity.

Plant Daniel is site of a U.S. Department of Energy demonstration project of carbon sequestration conducted by Southern Company and its

country studying CCS. The project passed a key milestone in October when 3,000 tons of CO₂ were injected into a deep saline rock formation 8,500 feet below ground. Researchers had drilled the injection well in the spring, along with a nearby observation well.

Plant Daniel was selected for the test after extensive study identified the Gulf Coast as a good geological site with large



being used for enhanced oil recovery.

The project has received a first-of-its-kind CO₂ injection permit. Mississippi Power has

vice president of external affairs and general counsel, said.

"These barriers include the lack of a commercially viable capture technology and experience with storing large volumes of CO₂, the high costs of current CCS technology, the absence of a regulatory framework and the challenges of gaining public acceptance." However, Holland noted there is a high degree of cooperation within the industry to address these issues. *d*

JADCO Expands Manufacturing Space & Purchases New Equipment

Zelienople, PA- JADCO, a leading provider of engineered solutions for impact and abrasion problems in a variety of heavy industries, has added 15,000 square feet to its manufacturing facilities. Occupying part of that space is a new 1,000-ton press brake with plate rolls, along with a state-of-the-art HD plasma cutter. JADCO wear steel (QT-PLUS®) and chromium carbide overlay steel (ChromeWeld 600™)

are used in manufacturing a wide variety of products, including breaker plates, truck bed and bin liners, chipper and scarfer hoods, and skirt boards and haulage systems, as well as in custom fabrication such as hard facing, rolled and welded parts, burnouts, UHMW and urethane, and fabricated kits.

"Increasing our manufacturing capacity and investing in the most technologically advanced equipment is helping us remain

competitive in a challenging business environment," says Sam Anderson, JADCO's presi-



dent. "Despite what's in the news, there are still plenty of opportunities available, and these capital improvements are

the key to meeting the needs of our worldwide customer base."

JADCO manufactures proprietary wear plate to solve impact and abrasion resistance problems in a wide range of industries, including aggregates, cement, chemicals, coal, dredging, materials handling, mining, OEM, power generation, pulp & paper, recycling and steel production. JADCO wear plate has 10 times the wear life of conventional mild

steel, and the company's chromium carbide overlay steel outlasts most materials. JADCO was established 30 years ago and is headquartered in Zelienople, PA, near Pittsburgh.

For more information, contact Mitzi Scarnati at 724-453-5252, e-mail mscarnati@jadcomfg.com or visit www.jadcomfg.com *d*



Alpha Natural Resources

Running right.

One Alpha Place
P.O. Box 2345
Abingdon, Virginia 24212
276-619-4410
alphanr.com



Joy Mining Machinery Ships 500th OPTIDRIVE Shuttle Car

Joy Mining Machinery marked a milestone in the history of their most successful underground haulage machine with the shipment in February of the 500th JOY OPTIDRIVE shuttle car to Massey Energy's, Martin County Coal Corporation, Voyager Mine in Inez, KY.

The shuttle car was invented and first produced in 1938 by Joy Mining Machinery, and over the past seven decades more than 16,000 JOY shuttle cars have been sold around the world, according to Doug Anderson, Engineering Technologist. "Today, there are more than 3,000 JOY shuttle cars currently operating in underground mines globally," he said, "about half of them in North and South America. I would venture to say that shuttle cars account for nearly 80% of all haulage machines now being employed in the world today."

"In celebrating the most recent auspicious occasion," Anderson said, "it should be noted that, when introduced to its shuttle car line in 2003, OPTIDRIVE was a major breakthrough in applying AC variable frequency drive technology, one that has resulted in significant increases in power, speed, and productivity."

the shuttle car was a battery-powered, two-wheel drive and two-wheel steering machine. Both drive wheels on opposing sides of the shuttle car each were powered by a DC motor, as were the discharge conveyor and the machine's hydraulics. Because of the limited power capacity of batteries, and its short life when mining conditions included muddy bottom and steep grades, Joy soon switched to direct DC power feed utilizing DC trailing cables and cable reels.

The DC shuttle car's low operating voltage (250v) required proportionally higher currents to given work loads, and those higher currents required increasingly larger sized switching components, cabling, and trailing cables. Because of this, by 1980 much of the old onboard, high current, high maintenance DC switchgear had been replaced with solid-state transistors. DC motors had other disadvantages. Increased machine loads and operating on grades tended to decrease DC tram speeds while increasing heat in cables and motors. Additionally, DC tram systems offered little speed control while descending grades, necessitating the use of mechanical braking systems. And further, DC motors by their



Doug Anderson

and low maintenance, and a traction system using two-speed AC motors. "These motors provided the increased power and torque with which to negotiate adverse bottom conditions and steep grades," he said, "while neither losing nor gaining any noteworthy speed as long as the tram was engaged, thus reducing the dependence on mechanical braking systems."

"However, this AC characteristic to control speed that solved the problem of gaining speed on the downgrade experienced with DC motors, created the problem of difficulty in steering around corners. While under power, the wheels on the inside of the turn radius and those on the outside turn radius would try to turn at the same speed, causing the AC drive shuttle car to "plow" through a corner, with resultant roadway wear and reduced control."

According to Anderson, in solving this problem in the mid 1970s, Joy combined the better of both worlds by developing its patented AC/DC tram system that allowed the shuttle car to be powered by the higher voltage AC trailing cable (typically 440v to 550v) and, by means of an onboard transformer and diode, bridge to DC tram motors. "This arrangement allowed the use of AC pump and conveyor motors and lower currents," he said, "as well as using lower-maintenance AC switchgear, and it offered the smooth acceleration, control, and turning capability of DC tram motors."

"This AC/DC tram design became the standard of the

industry, today it still accounts for nearly 80% of the currently active shuttle cars, and remained so until 2003 when Joy first adapted its proven OPTIDRIVE AC VFD (variable frequency drive) system to shuttle cars and brought the smoothness of DC tram drive to AC motors, taking the better of the two and making the best out of both," Anderson said.

Joy first introduced a 575v AC VFD in 1998 on both the JOY longwall shearer and JOY continuous miner. Further developments and technological advances led to the next generation 950v OPTIDRIVE

largest to those designed for the lower seams, has but two motors covering the full range of voltages.

The OPTIDRIVE system provides smooth acceleration and turning characteristics as the system adjusts and controls individual wheel speed while, at the same time, providing increased tram speeds. OPTIDRIVE also provides the advantage of regenerative braking for downgrade speed control for increased ease of operation, improved safety and lower brake maintenance and replacement.

Anderson noted that all this



The shipment of the 500th JOY OPTIDRIVE shuttle car is delivered to Massey Energy. (left to right) Mark Stowers, Joy's Account Manager; Keith Hainer, Massey Energy's VP Underground Maintenance; Chris Adkins, COO Massey Energy; Chuck Harris, Joy's Service Engineer; Hiram Mahon, President Martin County Coal; and Lynn Johnson, Joy's Sales Engineer.

AC VFD being applied to the JOY Flexible Conveyor Train in 2002 and then to the JOY model 10SC32B shuttle car in 2003, followed by a low voltage (440/550v) OPTIDRIVE AC VFD 10SC32AA shuttle car later that year.

A major operator advantage with the OPTIDRIVE AC VFD is its interchangeability, negating the need to inventory multi-system replacement parts. The 1000v OPTIDRIVE hardware is common to the 950v and 1050v continuous miner, FCT, and the shuttle car, while a 440/550v OPTIDRIVE version currently is used for low voltage shuttle cars. In either design, the OPTIDRIVE AC VFD tram system provides the power and speed control that enables the JOY shuttle car to easily climb and descend grades and to traverse soft bottoms. Through this combination of variable frequency drive and AC motor design, the entire line of JOY shuttle cars, from the worlds

is accomplished without the aid of an onboard power transformer, as the AC motors for each set of drive wheels operates on the 3-phase provided to the VFD drives from the AC trailing cable. The incoming AC to the OPTIDRIVE is rectified internally to DC voltage and internal solid-state devices convert DC voltage back into AC waveform output as the operator depresses or releases the footswitch, operating the foot pedal much like the gas pedal in an automobile.

"Changes to tram direction are accomplished within the OPTIDRIVE unit, there are no reversing contactors, and the VFD units also provide motor overload protection. Joy reports very significant gains in traction motor life since introduction of the OPTIDRIVE AC VFD system due to this protection and also to the inherent reliability of brushless AC motors compared to DC.



The 500th JOY OPTIDRIVE shuttle car at Joy's Lebanon, Kentucky facility.

According to Anderson, with OPTIDRIVE, the shuttle car's top speed had been increased a full 50%, from approximately 4 mph to 6 mph, the top speed allowed by international standards. "This half-again increase in speed can be translated into a 10% gain in mine production which, to the mine operator, typically can mean five additional loads per shuttle car, per shift," he said.

In its earliest configuration,

nature require periodic cleaning and brush replacement, as well as rebuild as the commutators wore.

As AC power systems for the higher horsepower equipment became more common in underground mines, Anderson said Joy developed an AC system for shuttle cars that provided AC hydraulic and conveyor discharge motors, which, he said, has the advantages of high power, constant speed,

Coal Leader Coal Industry News

AEP Signs on as Corporate Sponsor of Pickens' Energy Plan

Electric Power (NYSE: AEP) has signed on as a corporate sponsor of The Pickens Plan, the energy independence plan proposed by oil and gas industry veteran T. Boone Pickens.

The Pickens Plan calls for reducing dependence on foreign oil, expanded use of renewable energy, a new 21st-century power grid, increased conservation and efficiency initiatives, and a program to shift heavy-duty fleet vehicles to domestic fuels to offset foreign oil, diesel and gasoline use.

The Pickens Plan proposes to generate up to 22 percent of the nation's electricity from wind and supports development of an extra-high voltage transmission system to facilitate that expanded use of renewable electricity generation. Extra-high voltage transmission is necessary to transport renewable energy from where it is most viable to the nation's population centers.

"For years, AEP has been the most vocal advocate for development of an extra-high voltage transmission super-highway that will efficiently transport electricity to support economic development and energy security, and The Pickens Plan clearly supports that vision," said Michael G. Morris, AEP chairman, president and chief executive officer. "We can't significantly develop renewable energy resources, reduce greenhouse gas emissions and introduce competition for liquid transportation fuels without a well-designed, reliable national transmission grid."

"I am thrilled that AEP is supporting the Pickens Plan. AEP has always been a leader in the electric power industry, and their involvement in our campaign underscores a commitment to energy independence and the transformation of our grid into a state-of-the-art network that can truly manage our renewable resources into the future," Pickens said. "AEP is one of the growing number of for-profit and non-profit organizations that have embraced our plan. With the support of com-

panies like AEP and our Army of 1.5 million members, we can move forward on our plan to bring natural gas into the transportation cycle for heavy duty trucks, which will significantly reduce our economically devastating dependence on foreign oil. Natural gas is the bridge fuel we can use until sophisticated electric vehicles are ready for consumer use," he said.

In 2006, AEP first proposed development of a national extra-high voltage transmission system, modeled after the interstate highway system, to more efficiently transport electricity, support development of renewable energy resources and enhance energy independence and national security. The company has proposed more than 2,600 miles of 765-kilovolt extra-high voltage transmission projects to enhance the transmission grid, including a 1,000-mile transmission project that would link the wind-rich Upper Midwest with the population-rich East Coast.

Arch Coal's West Elk Mine Earns Two Colorado Awards for Pollution Prevention and Monument Dam Projects

Arch Coal, Inc. (NYSE:ACI) announced that Mountain Coal Company's West Elk mine employees were honored recently with two Colorado state environmental awards at the 111th National Western Mining Conference and Exhibition in Denver.

The Colorado Division of Reclamation Mining and Safety recognized West Elk mine for the proactive reconstruction of Monument Dam. The Colorado Department of Public Health and Environment in cooperation with the Colorado Mining Association presented West Elk with Colorado's Pollution Prevention Award for its proactive conservation and recycling measures.

According to the Colorado Division of Reclamation Mining and Safety, Mountain Coal funded the entire Monument Dam project to ensure the highest degree of protection for the

dam and the area residents. "They were instrumental in providing the permitting, engineering design and project management for the entire Monument Dam project. The employees of Mountain Coal are to be commended for their extraordinary efforts."

West Elk's preventative measures included stabilizing the landslide on the south abutment; buttressing the downstream face of the dam; installing a primary spillway valve and piping; installing trench drains, gravel filter, clay liner, piezometers and inclinometers; and rip-rapping the upstream face and emergency spillway. Also associated with the project was the installation of a remote survey station and five accelerometers for monitoring the dam.

The Minnesota Reservoir Company's Monument Dam, located near West Elk mine, was constructed in 1891 and the last enlargement to the dam was completed in 1936.

Mountain Coal Company's West Elk mine is located in Somerset, Colo. Nearly 450 people are employed at West Elk. West Elk has operated for more than nine years without a state SMCRA environmental violation.

Peabody Energy Elects M. Frances Keeth to Board of Directors

Peabody Energy (NYSE: BTU) recently announced that M. Frances Keeth has been appointed as a member of the company's Board of Directors.

"Mrs. Keeth brings a wealth of international energy and business experience to our board," said Chairman and Chief Executive Officer Gregory H. Boyce. "As a former senior executive of one of the world's largest energy companies, she will offer valuable additional insight across the entire range of Peabody's business opportunities."

Mrs. Keeth was formerly Executive Vice President of Royal Dutch Shell, plc, and Chief Executive Officer and President of Shell Chemicals Limited, a services company responsible for Royal Dutch

Shell's global petrochemical businesses. She also served as Executive Vice President of Customer Fulfillment and Product Business Units for Shell Chemicals Limited and was President and Chief Executive Officer of Shell Chemical LP, a U.S. petrochemical member of the Royal Dutch/Shell Group. She currently serves as a director on the boards of Verizon Communications Inc. and Arrow Electronics Inc.

With the addition of Mrs. Keeth, Peabody's board will number 11. Mrs. Keeth will stand for re-election at the company's 2009 Annual Meeting of Shareholders.

Peabody Energy (NYSE: BTU) is the world's largest private-sector coal company, with 2008 sales of 256 million tons and \$6.6 billion in revenues. Its coal products fuel 10 percent of all U.S. electricity generation and 2 percent of worldwide electricity.

Duke Energy Named to List of Best Corporate Citizens

Duke Energy has been named one of Corporate Responsibility Officer (CRO) magazine's 100 Best Corporate Citizens.

The company earned this distinction based on CRO's independent assessment of Duke Energy's performance in seven key areas: environment, climate change, human rights, philanthropy, employee relations, financial and governance.

"Becoming a more sustainable business is a journey, not a destination. We're pleased that our efforts earned us a spot on the list and to find ourselves in the company of other leading corporations," said Roberta Bowman, Duke Energy senior vice president and chief sustainability officer. "Doing business in a way that's good for people, the planet and profits is becoming increasingly important — especially during these turbulent times."

CRO's 100 Best Corporate Citizens list assesses companies on the Russell 1000® and is the only such list based solely on publicly available information. This is the first time Duke

Energy has been included on the list.

Progress Energy Florida announces successful biofuel test burn

As part of Progress Energy Florida's continuing commitment to developing alternative and renewable energy resources, the company recently conducted a successful test burn of New Generation Biofuels' proprietary biofuel at the Bartow plant, in St. Petersburg. Biofuel is fuel derived from carbon sources such as wood waste, canes, palm oil, soybeans, algae, animal waste, food byproducts or agricultural waste. The trial involved burning the biofuel to evaluate its technical and environmental performance in a utility boiler. Preliminary results from the trial were positive. This testing is important to determine the fuel's potential for use as part of Progress Energy's renewable energy portfolio.

"Progress Energy is committed to providing our customers clean, affordable and reliable power, both now and in the future," said Rob Caldwell, vice president of Efficiency and Innovative Technology for Progress Energy. "Renewable energy — such as that produced by biofuels — is an important part of our balanced solution to meet our customers' energy needs while reducing our dependency on fossil fuels and cutting greenhouse gas emissions."

"We are pleased to be working with Progress Energy as we demonstrate our second generation biofuel in boiler applications," said New Generation Biofuels' President and CEO David A. Gillespie. "Progress Energy is taking a leadership role and we look forward to continuing to develop our relationship, bringing low-cost, environmentally friendly renewable energy to the state of Florida." The trial was led by Progress Energy's Strategic Engineering section and included representatives from New Generation Biofuels and the University of Florida's Integrated Product and Process Design (IPPD) program.

DOE Supported Project Demonstrates Benefits of Constructed Wetlands to Treat Non-Traditional Water Sources

In a pilot-scale test supported by the U.S. Department of Energy (DOE) Office of Fossil Energy, Clemson University researchers have shown that manmade or "constructed" wetlands can be used to treat non-traditional water sources which could then be used in power plants or for other purposes. The successful test, which was managed by DOE's National Energy Technology Laboratory (NETL), could help power plants economically meet criteria for water reuse or discharge established by the National Pollution Discharge Elimination System and the Clean Water Act.

Power plants need large quantities of water to operate efficiently. An economical treatment method that allows the use of non-traditional water, water that is not drawn from a traditional freshwater source, such as a lake, river, or municipal water supply, could decrease the impact of electric-

ity generation on the Nation's limited freshwater supplies.

Four kinds of non-traditional water sources were treated during the test: ash basin water, simulated cooling water, flue gas desulfurization water, and produced water (water that is extracted from the ground along with oil and natural gas). All of the water sources contained contaminants such as salts, heavy metals, and hydrocarbons. In addition, all were capable of causing bio-fouling or corrosion because of their pH, ionic strength, or nutrient content. Specific contaminants of concern included the following:

- Ash basin water—arsenic, chromium, copper, mercury, selenium, and zinc.
- Cooling water—bromine, chlorine, copper, lead, peroxides, and zinc.
- Flue gas desulfurization water—arsenic, boron, chlorides, mercury, selenium, and zinc.

Produced waters—arsenic, benzene, cadmium, chlorides, chromium, copper, lead, mercury, nickel, sulfide, toluene, zinc, and oil and grease.

"New technology shows wetlands can be used to treat non-traditional water sources which could then be used in power plants or for other purposes"

Recognizing the differences in each water source, unique wetland treatment systems were designed and constructed for each type of water. The artificial wetlands were created in large (70- to 250-gallon) vats containing vegetation that would be found in natural wet-

lands, such as California bulrush and narrow leaf cattail. Each type of water was gravity fed through its own series of vats, residing for about 24 hours in each.

Before and after treatment, researchers measured pH, temperature, dissolved oxygen, hardness, alkalinity, and conductivity, along with the levels of contaminants. Treatment goals were determined by:

- National Pollution Discharge Elimination System permit limits.
- Water quality criteria established by the U.S. Environmental Protection Agency.
- Irrigation standards established by the U.S. Department of Agriculture.
- Toxicity to the water flea *Ceriodaphnia dubia*.
- Reuse standards focused on minimizing damage to the power plant by treated waters.

Test results showed that, while limited to chloride con-

centrations of less than 4,000 milligrams per liter, constructed wetland treatment systems could remediate all four non-traditional water sources for reuse or discharge. Since constructed wetland treatment systems cost 10–50 percent less than conventional treatment systems, they could provide an economical alternative to conventional water-treatment approaches, which are comparatively costly and are often unable to achieve new, rigorous water-quality standards.

The link between water and energy is one of several research areas in NETL's Innovations for Existing Plants program. The program aims to sustain the use of coal in the Nation's energy mix by developing technologies that will enable the current fleet of coal-fired power plants to comply with existing and emerging environmental regulations. *ed*

Clean Coal - Cont from Page 8

town located near the massive coal seams in the town of Mattoon, Illinois was selected in a nationwide competition. FutureGen was promoted across the world as an environmentally sound way to produce power from coal. Then what happen to stop or redirect the project? The age old story, Washington politics got in the way and the Bush Administration essentially killed the project. Very much like what happen to President Carter's efforts in 1978 to develop synthetic fuels from coal like is now being achieved daily in South Africa and China. In my opinion, this country's leaders, on both sides of the aisle, must start putting what is good for this country First Above Politics. If our leaders continue to play politics as usual, we just may lose this great Democracy that our forefathers fought so hard to establish.

Now, under President Obama's new leadership, FutureGen is again being raised much like the Phoenix and is now back on the table with funding from the new

Stimulus Package. Is it needed, again a positive Yes It is and this project will demonstrate to the world that coal can be used cleanly without major emissions of carbon dioxide (the green house gas).

If FutureGen lives up to its promise, it would revolutionize the use of coal. On what is now 400 acres of cornfields in Mattoon, Illinois, a commercial-size power plant will be built to produce 275 megawatts of electricity, enough to power 150,000 homes. Instead of releasing the resulting carbon dioxide emissions into the air as pollution, the plant would pump these gases into deep geologic formations thousands of feet below the Earth's surface. The project's goal is to test and develop affordable technology, on a commercial scale, that can remove 90 percent of the emissions produced by coal plants.

Now, if one can couple the Carbonite Process with the FutureGen Project, which is certainly possible, coal oil can be recovered as a by-product and used in the transportation sector.

Sequestration of Carbon Dioxide

While the FutureGen project is getting back on its feet, a major project is already underway to develop and demonstrate sequestration of carbon dioxide in underground non-minable coal seams in Southwestern Virginia. The Department of Energy along with several industrial companies like Dominion Power Company are cost sharing a field demonstration project to prove the feasibility of sequestration of carbon dioxide. This project is referred to as the Southeast Regional Carbon Sequestration Partnership (SECARB) and headed-up by Dr. Michael Karmis, Director of the Virginia Center for Coal and Energy Research at Virginia Tech.

Allow me to reference one more clean coal technology that is well under way and that is Clean Coal Biotechnology where microbes taken from termites eat coal and produce clean methane gas. The residue by-product of this process is humic acid that is the basis for fertilizers. By using

the fertilizer to enhance plant growth, more carbon dioxide can be removed naturally from the atmosphere. This technology development was the subject of my first article published in this paper in May, 2008 and this technology has picked up momentum by the recent appointment of Dr. Steven Chu, a Nobel prize winning Scientist, as the new Secretary of the U.S. Department of Energy.

While Dr. Chu was Director of the Lawrence Berkeley National Laboratory, he directed his staff of scientist to begin work on using renewable biomass cellulosic plant materials coupled with microorganisms, tiny microbes, that are genetically engineered to convert cellulose into an ethanol-like fuel. The combination of both coal and cellulose renewable materials can certainly enhance the further development of Biotechnology as a new clean coal method for producing clean energy in both the utility and transportation sector.

Now- Is There Such a Thing as Clean Coal?

It has been my attempt in this article to show from a scientific

point of view that coal mining and its use are cleaner from an environmental standpoint than ever before and will become even cleaner in the future as we as a Nation fully use our most abundant natural resource. Yes there is Clean Coal and it is getting cleaner and greener all the time.

It is time we put to bed this national controversy between the environmental groups and the energy producers and once again unity to put our Nation first in these most difficult of economic times. By working together, we can produce the energy we need to be less dependent upon foreign sources, create jobs in both the energy and environmental sectors, and provide economic stability in our Country. To quote Dr. Martin Luther King's famous speech, "NOW IS THE TIME". Now is the time to set this country on a path of energy independence and environmental protection with no turning back while, also, rebuilding the industrial and economic strength back in America.

"NOW IS THE TIME" *ed*



Rick Boucher
U. S. House of Representatives



Michael Karmis
VA Tech/SECARD



Kenneth Nemeth
SSEB

Ned Leonard
ACCCE

Tim Carr
NATCARB



Kevin Crutchfield
Alpha Natural Resources



Robert Wright
DOE



Gerald Hill
SSEB/SECARB

**Eastern Coal Council
U. S. Congressman Rick Boucher
Southern States Energy Board
National Research Center for Coal & Energy
Virginia Center for Coal & Energy Research
Kentucky Coal Academy
Virginia Mining Association**

**&
Coal Leader
Present**

**30th Annual Conference - Expo - Golf Outing
"Coal: America's Path to Energy Security"**

May 11 and 12, 2009

**Meadowview Conference Center
Kingsport, TN**

NAME: _____
 POSITION: _____
 COMPANY: _____
 ADDRESS: _____
 CITY: _____ STATE: _____ ZIP: _____
 PHONE: _____ FAX: _____ CELL: _____
 Email: _____

Tour of Eastman Coal Facility for Conference Attendees will be May 11 (Monday) beginning at 11:45 a.m. Tour approximately one hour. Yes () No ()

CONFERENCE REGISTRATION FEES: (Before April 30, 2009)

Conference Registration includes Reception, Breakfast, Luncheon, Breaks, Conference Materials, and tour of Eastman's Coal Facility. Check the appropriate boxes:

_____ Have a Golf Foursome for only	\$400.00	_____ Golf Tournament at Cattails at MeadowView	
_____ (Golf handicap _____)	\$125.00		
_____ ECC Member	\$350.00	_____ Non-Member	\$475.00
		CONFERENCE REGISTRATION FEES: (After April 30, 2009)	
_____ Golf Tournament at Cattails at MeadowView			
_____ (Golf handicap _____)	\$125.00		
_____ ECC Member	\$425.00	_____ Non-Member	\$600.00

SHOWCASE YOUR COMPANY- Exhibit Space Available

Company Name: _____
 Address: _____ City: _____ State: _____ Zip Code: _____
 Name and Position of Person Signing: _____
 Signature: _____
 Telephone: _____ Fax: _____ Cell: _____
 E-Mail Address: _____
 No. Booths (6' x 10') \$500.00 each: _____
****IMPORTANT**** List Equipment - Product Service to be Exhibited: _____

Electricity Needed for Booth? Yes () No ()

All exhibits and exhibitors are subject to the regulations and rules established by the Eastern Coal Council (sponsor). Exhibit shall be arranged so not to obstruct the general view or hide another exhibitor. Any pre-built booth MUST be approved by the Eastern Coal Council Expo Committee. The sponsor will not be liable for loss or damage to the property of the exhibitor or his representatives or employees from theft, fire, accident, or other cause. However, exhibit area will be locked when not in use. The Sponsor will not be liable for injury to exhibitors, their employees, or third persons, which claims for damages, injuries, etc., may be incident to or arise from, or be in any way connected with their use of occupation of display space. The exhibitor shall indemnify the sponsor for any costs or expense, exclusive of counsel fees, arising from any such claim. Exhibitors shall at no cost to the sponsor, obtain adequate and reasonable liability and property damage insurance from responsible insurance companies. The exhibitor assumes all responsibility for compliance with local, state, and federal ordinances, laws and regulations covering fire, safety and health, and all rules and regulations of the Meadowview Conference Resort & Convention Center. PAYMENT IN FULL for all booths must be made by May 1, 2009. For additional information contact Eastern Coal Council.

Mailing Address:
P.O. Box 858
Richlands, VA 24641

PHONE: 276-964-6363
 FAX: 276-964-6342
 E-MAIL: ecc@easterncoalcouncil.net

Shipping Address:
222 Sunny Hills Drive
Cedar Bluff, VA 24609