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August 2017

Volume 14



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With pen (computer) in  
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As many know, Ed has many years of experience in the drilling industry as well as marketing. We feel with his knowledge and ability to sit down and talk one-on-one, listen intently to each of you as to what you feel you need to effectively market your equipment, products, and services, he may then be able to help you get there - thus increasing your profit with a minimal amount of extra effort.

We are excited about this **NEW** position and **Ed's return to WWD R**. You can reach him directly at 850-768-1259, through the main office 850-547-0102, or [ed@worldwidedrillingresource.com](mailto:ed@worldwidedrillingresource.com)

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Details of this unit and more from SEMCO on previous page 2.



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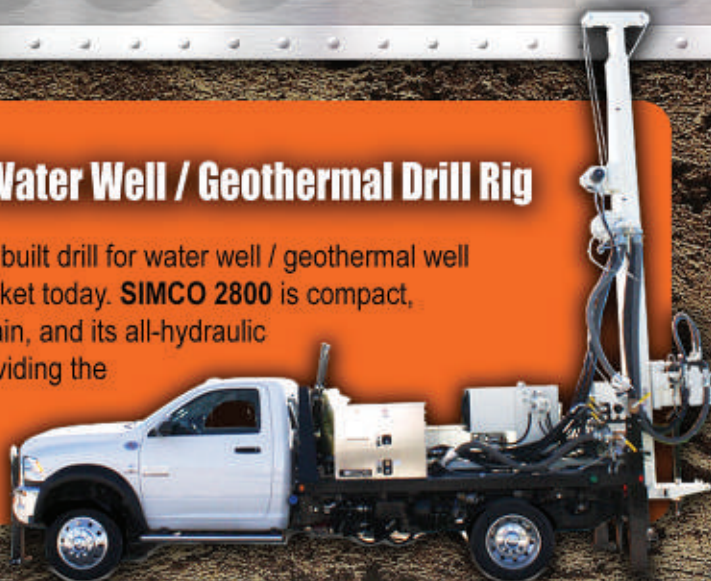


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# BREAKING NEWS



## EQT Corporation Announces Acquisition

EQT Corporation announced it will acquire Rice Energy for \$6.7 billion. Both companies use HDD (horizontal directional drilling) technology in the Appalachian area for natural gas production. This acquisition will make EQT the largest natural gas producer in the United States.

"This transaction brings together two of the top Marcellus and Utica producers to form a natural gas operating position that will be unmatched in the industry. Rice has built an outstanding company with an acreage footprint that is largely contiguous to our existing acreage, which will provide substantial synergies and make this transaction significantly accretive in the first year," said Steve Schlotterbeck, EQT's president and chief executive officer.

Daniel J. Rice IV, CEO for Rice Energy stated, "Natural gas is the key to a cleaner energy world; and the combination of Rice and EQT - two of the United States' largest, lowest-cost, and most responsible natural gas producers - creates an unparalleled leader in shale gas development that will benefit the environment and our shareholders for many decades to come."

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## WHO'S IN THE NEWS



Earlier this year, at the 2017 Shallow Exploration Drillers Clinic, Bob Henthorne (R) presented Larry Rockers with the Duane A. Eversoll Service Award.

Look for additional announcements from the National Ground Water Association and Tug Valley Mining Institute online at [worldwidedrillingresource.info/Whos8-17.pdf](http://worldwidedrillingresource.info/Whos8-17.pdf)

Send your Who's in the News to: [promotions@worldwidedrillingresource.com](mailto:promotions@worldwidedrillingresource.com)

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# Hot Off the Press

## Always Be Aware While Dumping

According to the Mine Safety and Health Administration (MSHA), in June, a truck driver was operating a Caterpillar 777F haul truck, dumping a load of gravel, when the ground at the dump point collapsed. The truck went over the edge of the dump point, overturned, and landed on its roof approximately 30 feet below. The victim was transported to the hospital where he later died of his injuries.

### Observe These Best Practices:

- ▶ Ensure seat belts are provided, maintained, and worn at all times when equipment is in operation.
- ▶ Incorporate engineering controls which require seat belts to be properly fastened before equipment can be put into motion.
- ▶ Visually inspect dumping locations prior to beginning work and as conditions change.
- ▶ While loading out stockpiles, do not excavate the toe of the slopes below dumping points and travelways.
- ▶ Utilize a bulldozer with the "dump-short, push-over" method of stockpiling material.
- ▶ Provide and maintain adequate berms on the banks of roadways and at dumping points where a drop-off exists.
- ▶ Train miners to recognize and avoid dumping point hazards and to understand the hazards associated with the work being performed.

To get more tips from MSHA, go to [www.msha.gov](http://www.msha.gov) and type "dump truck" in the search box.



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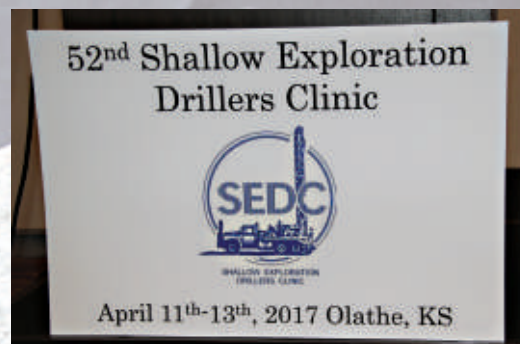
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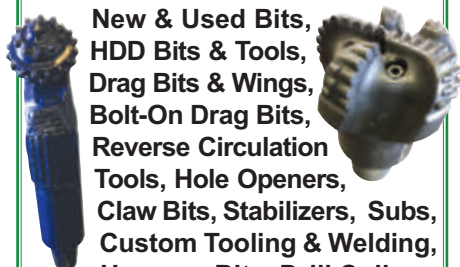
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## Australia Developing Mining and Exploration "Game Changer"

*Adapted from Information Provided by  
the Deep Exploration Technologies  
Cooperative Research Centre*



The Mineral Systems Drilling Program (MSDP) was an original collaboration between the Deep Exploration Technologies Cooperative Research Centre (DET CRC) and many of its participants and affiliates including mineral explorers, service providers, as well as government and research institutes such as: Geological Survey of South Australia; Minotaur Exploration and Kingston Resources; Boart Longyear, Imdex, Globaltech, Olympus, Epslog, and Bureau Veritas; and researchers from the Commonwealth Scientific and Industrial Research Organisation, and Adelaide and Curtin Universities.

The MSDP tested DET CRC's innovative new technologies and uncovered valuable geological information on the eastern Gawler Craton Olympic Copper-Gold Province, drilling 14 holes and delving approximately five miles into the earth. This district is widely thought of as one of South Australia's important emerging mineral provinces.

Professor Richard Hillis, CEO of DET CRC said, "DET CRC's focus was to trial its new technologies in a real-world drilling program . . . to speed their transition from the lab to commercial products. Australia's share of mineral exploration expenditure has halved from approximately one quarter to one eighth of the world's total in the last 25 years. The decline in exploration expenditure has paralleled the decline in the discovery of major new mineral deposits in Australia. Decreasing mineral exploration success and expenditure in Australia reflect the fact that relatively easy-to-find mineral deposits with a surface expression have largely been discovered. New mineral exploration provinces must be found hidden beneath barren cover rocks, such as those covering hidden deposits in the Gawler Craton."

**Australia Developing cont'd on page 20.**

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## The Key to Ending Oil Gushers

Information Courtesy of the American Oil and Gas Historical Society

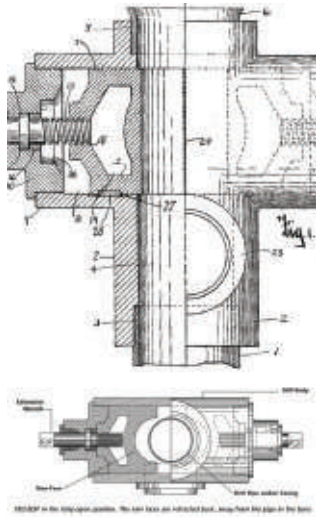
The sight of oil erupting out of the ground up into the air makes for exciting movie scenes, but in reality, oil gushers are not only wasteful, but extremely dangerous. One of the most famous gushers, or high-pressure blowouts, happened at Spindletop Hill near Beaumont, Texas, on January 10, 1901.

A three-man crew was drilling when a six-inch stream of oil and gas erupted 100 feet into the air. The local newspaper described the event as, "An Oil Geyser - Remarkable Phenomenon South of Beaumont - Gas Blows Pipe from Well and a Flow of Oil Equaled Nowhere Else on Earth." It took nine days and 500,000 barrels of oil before a shutoff valve for the well could be attached to the casing to stop the flow. Then, two men came up with an invention which would forever change the industry - James Abercrombie and Harry Cameron.

Having narrowly escaping a blowout himself, James Abercrombie had personally experienced the dangers associated with gushers. "With a roar like a hundred express trains racing across the countryside, the well blew out, spewing oil in all directions," notes one account. "The derrick simply evaporated. Casings wilted like lettuce out of water, as heavy machinery writhed and twisted into grotesque shapes in the blazing inferno."

Abercrombie started as a roustabout in 1908, working for the Goose Creek Production Company. By 1920, he owned several rigs in south Texas, and was a regular customer of the machine shops belonging to the Cameron-Devant Company, where he met Harry Cameron.

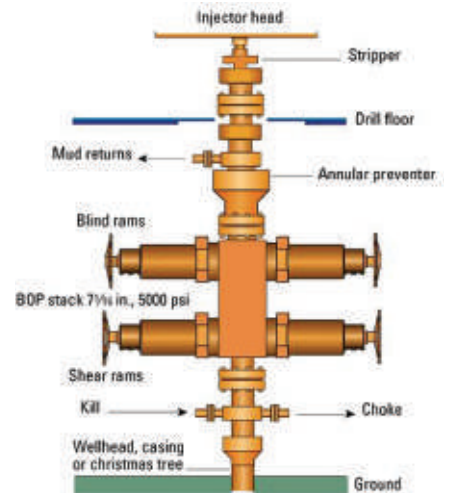
In 1920, the two friends decided to become business partners and formed Cameron Iron Works to repair drilling rigs, and offer supplies and parts to oilmen. The company employed five men with two lathes, a drill press, and hand tools. Abercrombie said, "Harry Cameron was a great machine-tool man. You could



This ram-type BOP patent was filed in 1922.

give him a piece of iron and he could make just about anything you wanted."

James Abercrombie came up with the idea for a ram-type blowout preventer (BOP) using rams (hydrostatic pistons) to close on the drill stem and form a seal against the well pressure. He sketched his idea on the sawdust floor of the machine shop. The two men worked out the details, using simple, rugged parts. Once installed on a wellhead, the rams could be closed off, allowing full control of pressure during drilling and production. In 1922, their Type MO BOP could withstand pressures up to 3000 psi.



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The American Society of Mechanical Engineers shows Abercrombie and Cameron filed a patent application for their MO BOP on April 14, 1922. The application was acknowledged and a basic patent was granted January 12, 1926 - U.S. patent number 1,569,247.

In December 1931, Abercrombie patented an improved BOP (patent No. 1,834,922, reissued in 1933). In addition to saving lives, the BOP quickly became an industry standard.

*Editor's Note: In between our print issues, the WWD Team prepares an electronic newsletter called E-News Flash. Based on readership, this was the most popular E-News Flash article of the month. Get in on the action and subscribe today at: [www.worldwidedrillingresource.com](http://www.worldwidedrillingresource.com)*



# In Memoriam . . . With deepest sympathies from *WWR*.

## *Frederick Von "Fred" Kahl (1960~2017)*

Frederick Von "Fred" Kahl, 56, of Gillette, Wyoming, formerly of the Heaton area, passed away May 31, 2017, in southern California, from injuries sustained in a work-related accident.

Throughout Fred's early years, the Kahl family spent the summer months in the Heaton area and wintered in Crane, Texas. He attended schools in Bowdon, North Dakota; and Crane, Texas. In 1977, Fred was united in marriage to Claudette King. They made their home in Odessa, Texas, where he worked as a crew leader for Midway Manufacturing, building drilling rigs. Fred moved his family to Gillette, Wyoming, in 1996. All of his adult life, Fred was a drill operator. He was involved in seismograph drilling for oil and gas exploration, coalbed methane wells in the Powder River Basin of Wyoming, water wells in the Black Hills of South Dakota, and drilling operations for geothermal energy projects throughout the United States.

He enjoyed taking his family on camping and hunting expeditions in the Bighorn Mountains and Black Hills of Wyoming. He also enjoyed summer cookouts, holidays with his family, and working on various home projects.

Fred is survived by his wife of nearly 40 years, Claudette; sons Colton and Benjamin; his mother Joan; brother Yorie; and sisters Lorna and Loreen. He was preceded in death by his father Gordon; and sisters Linda and Lonnie.



## *Robert William "Bob" Robelou*

Dando Drilling International sadly reported the unexpected passing of Robert William "Bob" Robelou on May 28, 2017, at his home in West Sussex, England.

Bob started his career in drilling when he was around 16 years old. He was a drill operator for the British Army prior to joining Dando in the 1970s. At Dando, he began as a fitter where he worked on the Dando 800, going on to commission the rigs. Later, he became after-sales support, dealing with numerous customers and equipment sold by Dando. With Bob's growing knowledge, he also provided training to Dando sales engineers. He was always very approachable and kind.

Bob was a dearly loved husband to Lesley, father to Chris, and brother to Margaret.



## *E. Robert "Bob" Mickelson (1930~2017)*

E. Robert "Bob" Mickelson passed away at home in the arms of his wife Andrea on June 9, 2017. Related to the Mickelson's who are members of the California Groundwater Association, Bob worked as a plumber at the Two Rock Army Base and San Quentin State Prison.

He served as Wilmar Fire Department Chief for 20 years, was a member of the Cow Mountain Hunting Club, and a Past Master of the Vitruvius Lodge. He had a great love of the outdoors, which included hunting and fishing.

Bob is survived by his wife of 31 years, Andrea; sons Mike (Carolyn), Jim (Marcia), Terry (Diane), and Gary (Stephanie); numerous grandchildren and great-grandchildren, who all live in Sonoma County.



## *Edmund John "Johnnie" Friedel*

*(1943~2017)*

Edmund John "Johnnie" Friedel, Jr. passed away April 29, 2017. He was a rancher, and owner of Friedel Drilling Co. of Yoakum, Texas, a family-owned business for over 70 years. In 2011, he received the Contractor of the Year, Owen F. Jensen Award for Outstanding Service and Contributions to the Texas Ground Water Association and Texas Water Well Industry.

Johnnie is survived by his wife Marjorie; daughter Lisa (Ray); sons Clayton (Kelly), John, and Kenneth (Margaret); nine grandchildren; and three great-grandchildren.



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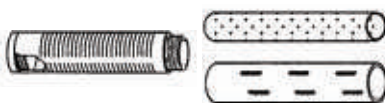
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## Drilling Into Money Not Boring

by Mark E. Battersby

### Affordable Hiring

"Uncle Sam" wants to help everyone within the drilling industry cut labor costs. The often misunderstood and little-used Work Opportunity Tax Credit or WOTC is, for example, a long-standing tax break which encourages employers to hire workers from within designated groups.

And, the WOTC isn't chicken feed. The credit is generally equal to 40% of the newly hired worker's first-year wages of up to \$6000, for a maximum credit of \$2400 per worker. For disabled veterans, the credit may be available for the first \$24,000 of wages or up to \$9600 per worker. Best of all, the tax credit, unlike a tax deduction, offsets the employer's final tax bill. Although the WOTC is a federal tax credit, it is administered at the state level.

#### Specifically, the 10 categories are:

- Qualified IV-A Temporary Assistance for Needy Families (TANF) recipients
- Unemployed veterans, including disabled veterans
- Ex-felons
- Designated community residents living in Empowerment Zones or Rural Renewal Counties
- Vocational rehabilitation referrals
- Summer youth employees living in Empowerment Zones
- Food stamp (SNAP) recipients
- Supplemental Security Income (SSI) recipients
- Long-term family assistance recipients, and
- Qualified long-term unemployment recipients

For the TANF target group only, the credit is available to employers who hire members of this group for up to a two-year period. In the first year, a drilling operation may claim a tax credit equal to 40% of the first-year wages, up to



Battersby cont'd on page 26.



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## Two Million Feet Achieved

*Adapted from a Press Release by Business Wire and Motive Drilling Technologies*

Directional drilling requires a guidance system which will keep the project moving. One of the latest tools of the trade for horizontal directional drilling uses decision-automation to keep the bit heading in the right direction. Motive Drilling Technologies company recently announced they guided over two million feet using their directional drilling Bit Guidance System.

Based in the heart of the Barnett Shale Formation in Dallas, Texas, Motive Drilling Technologies uses automated decision-making in its algorithms so the machine can make decisions faster and more reliably than humans. Automated decision-making has been used for making medical decisions, playing games (such as chess or poker), piloting cars and planes, manufacturing, shipping, and much more. Motive has applied the automated decision-making thinking to the guidance system's development, and subsequently to the drilling of over two million feet of horizontal and extended reach wells for over a dozen oil and gas companies across North America.

"Truthfully, there was doubt on the part of some of our technical team during our early relationship with the Motive team," stated Ken Topolinsky, senior vice president, engineering & applied technology for Hunt Oil Company. "Over a short time though, that skepticism gave way to confidence that the platform truly does improve the directional drilling process by navigating the optimal path and is therefore an important contributor to our improved performance. The graphical drillers' panel interface conveys the state of operations and directional control in a way that speaks clearly to our team of drilling engineers, rig-site personnel, and geoscientists to improve confidence that lateral sections are being steered within planned windows. We are pleased to have partnered with the Motive team in the early development of the product and have now adopted it as an integral part of our DD kit," he continued.

The algorithms leverage data analytics, real-time drilling dynamics, and economic modeling, delivering turn-by-turn downhole bit navigation guidance, continuously balancing drilling costs with production impact. At each survey station, the system automatically analyzes millions of possible options for adjusting the well path to plan. Each path is evaluated according to three primary costs: predicting drilling time, added risk due to predicted turns, and possible reduction in the production.



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WWD photo taken at the 2015 ICUEE event.

## Register for ICUEE Today

*Adapted from a News Release by the Association of Equipment Manufacturers*

The International Construction and Utility Equipment Exposition (ICUEE) eagerly announced new education opportunities, streamlined registration, and enhanced peer networking events for the 2017 expo.

ICUEE 2017 will run from October 3-5, at the Kentucky Exposition Center in Louisville, Kentucky. This is the largest event for utility professionals and construction contractors seeking comprehensive insight into the latest technologies, innovations, and industry trends.

### Get set in three steps:

1. **Register in advance to save time and money.** Save 50% off the on-site badge fee if you register by August 25 (you can even register with your mobile device). Save time by picking up your badge at the show's new airport registration kiosk before heading to the convention center.

2. **Sign up for show education.** New ICUEE walking "field classrooms" will bring education to the show floor providing an overview on topics geared for those new to the industry. The iP Utility Safety Conference and Utility Fleet Conference will bring their comprehensive learning sessions to ICUEE.

3. **Join in show networking events.** The ICUEE benefit auction will return on October 5, with all proceeds going to the Call of Duty™ Endowment, which helps military veterans secure high-quality jobs and raise awareness of the value vets bring to the workplace. Online bidding will be available to anyone who is unable to attend. Exhibitors are encouraged to donate items for bidding by contacting Shannon with J.J. Kane Auctioneers at 856-764-7163. You won't want to miss the expanded Bourbon, Beer, & Bites event, featuring complimentary tastings of the foods and beverages of Louisville. Enjoy the local area with nearly 100 *Show Your Badge* discounts from participating area attractions, restaurants, and retail outlets.

ICUEE covers more than 25 acres of indoor and outdoor exhibits of the latest utility and construction equipment, products, and innovations to explore, with specialized exhibit pavilions for fleet management, safety, and green utility. Known as The Demo Expo, hands-on equipment test drives and interactive product demonstrations include a two-mile Test Drive Zone for on-road equipment and technologies, as well as the Indoor Demo Stage for more product demonstrations and best practices in action.



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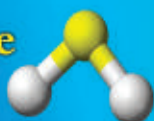
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Australia Developing cont'd from page 12.

The developments by DET CRC were tested during the MSDP and deliver real-time information during drilling programs, which enables quick decision making as a result. The technologies assessed included the following:

- **Wireless Sub** - monitors drilling parameters, such as the downward force on the drill bit, which enables them to be analyzed at the site, as well as remotely, to optimize performance and increase productivity.
- **Fluid Management System** - provides real-time information on the chemical composition of the drilling fluids, and facilitates keeping these fluids in optimal condition, making drilling more efficient.
- **AutoSonde with gamma sensor** - provides geophysical wireline log-type data on the nature of the rocks intersected in drill holes without separate mobilization of a wireline logging crew or additional time requirements at the drill site. It is deployed into the hole by the operator and analyzes the rocks intersected as the drill rods are pulled out of the hole.
- **AutoShuttle** - deployed downhole by

the drill operator in a similar way to the AutoSonde and acquires data while drilling is progressing. It is 'shuttled' to and from the surface (with its recorded data) every time the core barrel is retrieved, usually about every ten feet.

- **Lab-at-Rig®** - provides near real-time X-ray fluorescence geochemistry and X-ray diffraction mineralogy on drill cuttings, allowing greater confidence in assessing the prospectivity of the drill core.

All results are able to be monitored remotely, and also permit ongoing analysis of the drilling operation.

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## Through the Back Door!

by Jim Kuebelbeck

I have read of the concern of the “imminent” depletion of our nation’s groundwater resources. I disagree with the contention our nation would suffer widespread water shortages.

From my years of experience within the water well drilling industry, I take issue with, and disagree with the many prophets of doom who eagerly attempt to instill fear into the public domain that the earth (and Minnesota) is rushing headlong into severe water shortages. In my work as an underground water locator (water dowser) I am now convinced the good Lord created the earth

in such a way, mankind alone could not destroy or deplete our precious water resources. Granted, abuses do exist in some areas, and measures can be taken in some situations to alleviate existing water problems, but in my opinion, based upon years of research, the depletion of our nation’s water resources is not as imminent as some would say.

I have been locating satisfactory groundwater sources by the dowsing method for over 40 years. To date, my wife and I have located over 3000 documented satisfactory well sites. We work for well drilling contractors, landowners, ranchers, farmers, home builders, building contractors and others, within both the public and private sector.

We are able to locate what we call “live-water flows”. Other researchers around the world refer to these groundwater sources as “primary water”. These flows never dry up or diminish in volume (even in periods of extreme drought). I believe these unique water sources exist throughout our planet, and the acquisition of satisfactory groundwater supplies can be easily obtained by tapping into these unique groundwater sources.

I could write volumes about some of my work as a water dowser and the discoveries I have made over the years in this regard.

*The statements and comments in this article are based on information and references believed to be true and factual. If you have any questions or comments, please forward them to me in care of **WWD R**.*

*Jim*

Jim Kuebelbeck may be contacted via e-mail to [michele@worldwidedrillingresource.com](mailto:michele@worldwidedrillingresource.com)

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## In Memoriam

*Jean Ann Bader (1950~2017)*

Taken too soon, the **WWD R** Team was very saddened to hear of the June 14, 2017, passing of Jean Ann Bader, co-owner and secretary of Getec, Inc. in Ferndale, New York.

Daughter of the late James and Margaret Harding Fowler, Jean was born December 18, 1950, in Suffern, New York.

She was a member of the National Rifle Association, enjoyed driving her Mustang and Corvette sports cars, liked to travel, and loved her cat and working for Getec.

Married over 47 years, Jean leaves behind husband Hans, daughter Christa, son “Hansie”, and sister Janet.

*Lest we forget...*



**WWD R** photo of Jean, Christa, and Hans at the 2016 JUBILEE.





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## The "Idiots" Corner

by "Billy Bob Smith"

### The Good Ol' Days

When I think about the good ol' days, I remember a conversation I had years ago with a nine-year-old kid. He said, "I wish we could go back to the good old days."

So I asked him, "What were the good ol' days?"

His response, "Well, when I didn't have homework, didn't have to get up every morning at 6 a.m., and could eat what and when I wanted." Wow, words of wisdom?

So, let me ask you - what are your good ol' days? Fax machines? No cell phones? No waiting in traffic jams? Gas that was 25¢ a gallon?

Snickers bars that were 5¢? Should I go back even further? How about a few years forward! Computers which didn't tell me what to do. Devices that didn't tell me how to drive. Politicians who didn't tell me how to live.

So, what really are the good ol' days for you? Yesterday? Last year? Ten years ago? Fifty years ago? First, it depends on how old you are, then it can get a bit complicated with things like regrets, expectations, dreams, failures, mistakes, achievements, memories, etc. In the end, the good ol' days are nothing but good or bad memories; and these, my friends, can vary depending on whether you are an idiot or have a certain degree of wisdom.



*"I said there was but one solitary thing about the past worth remembering, and that was the fact that it is past - can't be restored."*

*~Mark Twain*

Here are a few examples:

➤ Did you know there actually is a magazine called *Good Old Days*? (6 issues for 20 bucks) (<http://magazine-subscription.com-sub.info/Good-Old-Days/Welcome>)

➤ *The Good Old Days: They Were Terrible!* - This book explains why the "good old days" were only good for a privileged few, and why they were unrelentingly hard for most. Sobering.

➤ Good ol' days is a cliché in popular culture. It refers to an era considered by the speaker to be better than the current era. It is a form of nostalgic romanticizing.

➤ "The good old days are now." - Tom Clancy.

As I sit here writing this, I am filled with both tears and laughter about what was and what wasn't in my good ol' days. How about you? Want to go back to your good ol' days, or can't wait for your new days coming around the corner (which will one day be your good ol' days!)?

*Billy Bob*

Contact him via e-mail to [michele@worldwidedrillingresource.com](mailto:michele@worldwidedrillingresource.com)

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## Assessing the Quality of America's Groundwater

*Adapted from Information by  
U.S. Geological Survey*

The U.S. Geological Survey (USGS) started a complex undertaking in 2012 seeking to survey the quality of America's largest drinking water resource. The survey is focused on assessing groundwater throughout the country by extensive aquifer sampling, which will be carried out through 2023. Roughly half of the nation's population relies on groundwater as their source for drinking water. Thus, as the population grows, the need for a high-quality drinking water supply becomes increasingly urgent.

USGS scientists are analyzing water quality of untreated water from wells in principal aquifers. Though most consumers receive treated water from local utilities to meet federal drinking water standards, understanding what constituents are in untreated water can help decision makers manage and treat water resources. The comprehensive sampling is targeting wells which tap deeper groundwater because the data can be used to explain how and why aquifer vulnerability to contamination varies across the nation. The samples will also give insight to information about geology, hydrology, geochemistry, and chemical and water use.

In-depth, regional-scale assessments will be conducted on 20 of the most heavily used aquifers in the nation. Groundwater quality results for five principal aquifers sampled in 2012 and 2013 have already been published. One or more inorganic constituents exceeded human health benchmarks in 4-20% of samples collected from the five principal aquifers. Organic contaminants were not found at levels of concern, while contaminants from geologic sources - primarily trace elements such as arsenic, fluoride, and manganese - were the most common to exceed human health benchmarks. Radioactive constituents exceeded human health benchmarks by small percentages in all but one of the five aquifers studied, and the nutrient nitrate was the only constituent from man-made sources which exceeded the human health benchmark.

What is the quality of the nation's groundwater? Is it getting better or worse? What factors affect the quality of this vital resource? Over the next few years, results will be released for additional principal aquifers which are important sources of drinking water for the nation as the National Water-Quality Assessment Project continues to address these central questions.

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## The Un-Comfort Zone II

by Robert Evans Wilson, Jr.



### Upstream vs. Downstream ~ Can't I Just Tread Water?

Deb asked me, "Would you like to come over to my house tonight and learn about a business opportunity?" I'd met Deb on a church trip, and had been crushing on her for weeks. She could have ended her question with, "and scrub dirty toilets?" and I would've been there, because all I heard was "come over to my house tonight."

When I arrived, I was greeted by her father who ushered me into the living room where a bunch of people were seated on rows of folding chairs. Deb was surrounded by several other young men, so I sat as close to her as I could. Then a man at the front of the room with a chalkboard began a presentation.

He explained how I could own my own business for less than \$100, and only put in a part-time effort. It sounded fabulous. I was a 19-year-old student paying my way through college by working several part-time jobs. He said if I followed their time-proven directions, I would become wealthy. He made it look simple and seem like something I could easily do. My father had preached the benefits of self-employment and being your own boss for years, so I was ready to take the bait. I wrote a check to get started and handed it to Deb. It was the last time I ever saw her; shortly after, she went off to college in another state.

The business turned out to be a multilevel marketing plan. Initially, I didn't know what it meant, but I was determined to follow their

directions to the letter. Over the next 22 months or so, I bought lots of sample products, books, tapes; and went to meetings - lots of meetings. I got all my mother's friends and neighbors to buy products, and I invited all of my friends to meetings - over and over again; in short order, I alienated everyone I knew. Pretty soon, everything about this business felt wrong to me. It made me feel very uncomfortable. The people above me in the pyramid, however, were very persuasive, and said all I needed was to read one more book or listen to one more tape, and I'd be on my way. After spending a great deal of time and money on this business, I realized I was paddling against the current and getting nowhere. I quit.

A year or so later, I made a necklace for my girlfriend. It was unique and all her friends loved it and wanted one. So I made more necklaces and sold them to her friends. Then more people saw the necklaces and wanted one. I made more. I started carrying samples with me everywhere I went, and showed them to everyone. I sold more and more. Then I started making earrings as well. Before long, I got a few stores to carry my jewelry. I built a word-of-mouth business effortlessly. It felt great. I was paddling with the current and everything was going swimmingly.

A few years later, after I'd started collecting graffiti (see my previous article: *Compelled by an Idea* [WWDR, June 2009], I came across this written on a bathroom wall: *Only dead fish swim with the current*. Beside it, written in a different hand was: *Go with the flow*.

I understood the latter. *Go with the flow* was a mantra from the Hippie Era I grew up in along with *Be Cool*, and *Chill Out*. It means, don't get upset by adversity because there will always be bumps in the road, unexpected occurrences, and surprises.

On the other hand, the first graffiti implied the second one was

Wilson cont'd on page 30.

The advertisement is for Rex McFadden Co. Drilling Equipment. At the top, there is a photograph of a large, grey, circular industrial component, likely a part of a drilling rig, with a yellow sunflower placed next to it for scale. Below this, a banner reads "Introducing the 'Big Chief' from Rex McFadden Co. 60 TON SKYREX ELEVATOR PULL TESTED AND CERTIFIED 9-5/8 THRU 24". The central graphic features a muscular Native American man in traditional regalia, including a feathered headdress and a beaded necklace, holding a large industrial component (the 'Big Chief') above his head. To the left of the mascot is an American flag. Below the mascot, the words "BIG CHIEF" are written in large, bold, blue letters. At the bottom of the ad, the company logo is shown: a stylized water drop with waves inside, followed by the text "REX MCFADDEN Co. DRILLING EQUIPMENT". To the right of the logo, the contact information is listed: "office 806-791-3731 fax 806-791-3755". Below the logo and contact info, it says "Oilfield &amp; Water Well Conventional Reverse Circulation Drill Pipe &amp; Equipment". At the very bottom, it states "Family Owned &amp; Operated" and "www.rexmcfadden.com". On the far right, there is a small graphic that says "We Support Our Troops!" with an American flag.





by Tim Rasmussen

Jay Gallagher is one of our volunteers. He worked this year on several projects, primarily repairing and refurbishing pumps which were not producing. He provided a summary of his activities on a day-by-day basis. Mark Edge and Pat Kelly were helping him.

Here is a portion of his reports:

*Feb 27, at the School just north of Ixbobo with Pat Kelly. The pump was draining back. It had been pulled a couple of days previously to replace the cylinder, but someone had missed the leaking pipe. The pump was pulled and the pipe was replaced with PVC. The pump is set at 80 feet.*

*Feb 28, at the village of Santa Cruz with Mark Edge. The check valve below the cylinder was missing. It probably fell off into the well. The PVC nipple below the cylinder was undamaged. The pump was set at 121 feet. Cylinder was replaced with a rebuilt unit. Pump linkage replaced with composite bushing parts. Rod couplings should be replaced next time it is serviced. Pump rod length corrected. There are 70 homes using this well.*

*March 1, at the Los Angeles School with Mark Edge. Site has low voltage. Pump is set at 60 feet. There is a galvanized bushing at the pump. Pump is ½ horsepower, 115-volt two-wire motor. A three-wire motor would be much better.*

*March 5, at the village of El Barrial with Mark Edge. Well # 2 is solar powered. Well is pumping down, resulting in air/water mix. Plan on setting deeper and installing new hand pump on well #1.*

*March 5, at the village of Sabaneta with Mark Edge. Hand pump near soccer field shows moderate wear. Piston is setting on bottom of cylinder. Plan to pull and inspect and replace cylinder adjust rod.*

*March 5, at the village of Tan Hoc with Mark Edge. Moderate wear on pins. Water draining back. Plan to return and service unit.*

*March 6, revisit villages of El Barrial, Sabaneta, and Tan Hoc with Mark Edge. Accomplished all of the above.*

*March 7 and 8, at Herencia Maya. The well there was drilled by Bob Perry and Jon Hansen. Load truck and travel to site. Test pumping for two hours showed very little drawdown. Installed solar panels, set pump 180 feet. From the well to the solar panels is about 100 feet. Supplying water to these villages is the most gratifying job I have ever been a part of. This job was a 100% fit with my personal mission statement! Thank you Water For Life; and may I have another project like this?*

The list of his work is long. The things he accomplished provide the people with clean, safe water and make their lives better. If you would like to be a part of something which does so much for so many people, please join us.

If you would like to help, contact Gary Bartholomew at 509-466-5075 or 509-939-1941

*Tim*

Tim Rasmussen may be contacted via e-mail to [michele@worldwidedrillingresource.com](mailto:michele@worldwidedrillingresource.com)



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## Where are you planning to go? How about including this show:

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The 2017 NDA (National Drilling Association) Convention will be held September 21-22, at the Royal Plaza Hotel & Trade Center in Marlborough, Massachusetts.

The event starts with a golf outing on Thursday morning. Cocktails and visiting with exhibitors is 5-6 p.m. in the display area. The President's Dinner and "Murder Mystery" starts at 6:30, followed by award presentations and Chinese raffle at 8 p.m.


Friday's seminars abound, including information on rig safety and maintenance; SPT (standard penetration test) drilling and sampling; electronic logging devices; and core drilling. Don't miss it!

Visit [www.nda4u.com](http://www.nda4u.com) for more information.

See more events online at [www.worldwidedrillingresource.info/Planning8-17.pdf](http://www.worldwidedrillingresource.info/Planning8-17.pdf)

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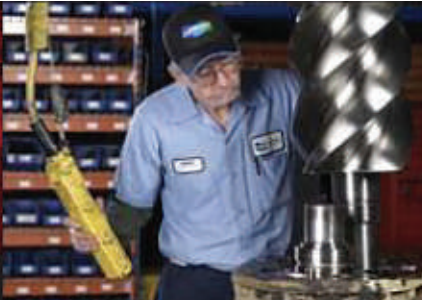


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*Battersby cont'd from page 16.*

the maximum tax credit - if the individual works at least 400 hours. In the second year, an employer may claim a tax credit equal to 50% of the second-year wages, up to the maximum tax credit, if the individual works at least 400 hours.

For all other targeted groups, the credit is based on the individual's hours worked and the wages earned in the first year. If, for example, the individual works at least 120 hours, the employer may claim a tax credit equal to 25% of those first-year wages up to the maximum tax credit.

There is no limit on the number of qualified individuals a business can hire, making the WOTC a significant option for any business. Still, the WOTC was extended through 2019, giving employers several more years of tax incentives for hiring eligible workers. Will your drilling operation join other businesses claiming their share of over \$1 billion in tax credits under the WOTC program?

*Mark*

Mark E. Battersby may be contacted via e-mail to [michele@worldwidedrillingresource.com](mailto:michele@worldwidedrillingresource.com)





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## **How We Think Impacts Every Aspect of Our Lives**



*by Tim Connor*

Some people are naturally optimistic and positive, while others are the opposite. When two people in a relationship have opposing life outlooks, it is often difficult for one to convince the other his way is better, right, or makes more sense than his partner's. As a result, the positive person will always see the glass as half full and will take this attitude into most life circum-

stances. The more negative partner will view the glass as half empty, and let it influence his attitudes accordingly.

Hundreds of years of research just about confirms optimistic people get sick less and live longer than pessimistic people. Over 50 years ago, Dr. Lionel Tiger wrote a book called *Optimism, The Biology of Hope*. The book is now out of print, but in it he states the ability to laugh, smile, and see life more optimistically, positively affects your health, thus the quality of your relationships. Since then, numerous physicians and psychologists have confirmed the mind has a dramatic influence over the body and its physiology. How we think impacts every aspect of our lives. Want to change some area? Change the way you think about it.

On another note, I came across an interesting statistic. Now generally, statistics can be very misleading and boring, but they can give us some insight if we don't get ourselves worked into a twit over them. Anyway, I read 90-95% of the population worries about something on a consistent basis. People worry about their health, career or job, finances, future, kids/relatives, their life in general, what other people think of them, and anything else they can think of.

Worry was depicted in ancient hieroglyphics with a picture of a wolf sinking his teeth into the neck of a man. In other words, worry literally cuts off the flow of life from the brain to the body, and from the body back to the brain. I also read recently, a large percentage of what people worry about never comes to pass. In other words, worry is a down payment on a debt you will never owe.

What good does worry do us? None. If this is so, why do people insist on giving so much mental energy to an activity that could be better directed to some other more productive objective like a hobby, general interest, creative endeavor, time with loved ones, time for reading, entertainment, activity, or exercise?

Want to live longer? Be healthier? Happier? STOP worrying about things you can't do anything about, or better still, just stop worrying.

In His service,

*Tim*

To receive Tim's weekly FREE motivational booster articles, contact him at [www.timconnor.com](http://www.timconnor.com) with "please add me to your free booster e-mail subscriber list" in the subject line. Or contact him via e-mail to [michele@worldwidedrillingresource.com](mailto:michele@worldwidedrillingresource.com)

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## Ronnie's Real World

As many of you know, I have been in this business and began this magazine many years ago. What amazes me most about the industry and especially this magazine?

**The Industry:** The people in it and their dedication to serving humans in whichever field of drilling it might be. Give that some thought - since this magazine covers all aspects of the drilling industry, that is great many being served by a very few.

**This Magazine:** Several months ago, I sat in my office here at **WWD** and listened to the hustle and bustle as those few here served the many across the world. It amazed me to hear it all, and remember not too long ago, none of them knew a thing about this industry, publishing a magazine, handling a website, subscriber database, selling advertising, and more. As I listened, I realized how much they have learned in a very short time. Their dedication is exactly like that of each of you - the few serving the many.

Recently, although I was not in the office nor on the travel schedule, I realized just how well they manage without my presence. I'm not sure if I should take credit for that success, or be saddened by it. Think I'll opt for the first (take credit)! There weren't many questions asked of me during that time, and that showed just how well I taught the few, and they taught the rest.

So, see how well they did? You didn't even realize I wasn't here. What a great success story that is. I am so very pleased with them and with the Drilling Industry period. They and you are my family.

There was a BIG question asked of me several years ago, as a matter of fact, just a few years after we began this magazine: "When are you going to retire Ronnie?" My answer was simple - "I'm NOT!" Gosh, what would I do if I weren't doing this? I've never been a homebody - when my children were born, I went back to work the minute the nursery was able to care for them (by state law). I rarely took a vacation day. I rarely took a sick day. Call me a bad mother, but after my divorce many years ago, with two very young children, and a job to keep, I paid someone more than I was making to watch my two children, Lora and Troy, at home when they had the measles. Why? Because I was afraid of losing my job. Many of you have met my children as they have helped out many times. I think they turned out great.

Guess you could call me a workaholic? Or you could say, I love to work. So retire? NO! Travel less? Perhaps. But, whenever I'm needed, I'll be here or just a phone call away.

Now, I have a request of you. We are working on our 2018 Marketing Guides. **Guides are meant to HELP YOU.** We can't help you, if we don't know what you need. So please, pick up your phone and call one of Public Relations Professionals, Kathy, Jan, Brenda, Betsy, or our Chief Marketing Officer Ed, and let them know what you need. If you don't know what you need, they will make some suggestions at your request, because they have graduated The School of Hard Knocks, just like you. Always SMILE ~ It's contagious!

**This truly is, Ronnie's Real World . . .**  
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We now accept:



*Wilson cont'd from page 24.*

wrong. Going with the flow means you're not doing anything with your life and you're as good as dead. Going with the flow means you accept your lot in life; you are content with what you have; you follow the herd, move with the prevailing forces, and do or agree with what everyone else is doing or saying because the majority knows best.

*Only dead fish swim with the current* implies those who swim against the current are those who wish to invoke change; who want to control, manipulate, and improve their environment. People who swim upstream make things happen. They are the movers and shakers; the innovators and inventors; the disrupters of the world. There is nothing new downstream; only that which is old and boring, ancient history, the past, the been there and done that . . . the tried and true. One must swim upstream to find and explore new territory; learn new stuff, have new experiences. To create; fly; soar.

It's stressful to fight against the current. Doesn't going with the flow also mean adapting to changes, and seeing them as opportunities and not as crises? It means giving up control; letting go of perfection; and living in the now. It means following your passion and your joy.

Is one way better than the other? You decide.

*Robert*

Robert is an author, humorist, and innovation consultant. He works with companies that want to be more competitive and with people who want to think like innovators.

For more information on Robert, visit [www.jumpstartyourmeeting.com](http://www.jumpstartyourmeeting.com) or contact him via e-mail to [michele@worldwidedrillingresource.com](mailto:michele@worldwidedrillingresource.com)

## Product Spotlight

Eno Scientific recently released the world's first commercial-grade sonic water level indicator specifically designed for municipal, agricultural, and oil/gas applications. The Well Watch 700 can operate on wells containing caustic water, oil, or pressurized gas. Installation is simple and there is no yearly maintenance or calibration, eliminating the recurring fees common with other measurement technologies. The Well Watch has a built-in data logger with USB download, pump control relays, alarm outputs, and a flow meter input. It has outputs for RS232, RS485 (Modbus), 4-20mA, 0-5V, SDI-12, and optional Ethernet.





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## Environmental Monitoring

by Thomas Kwader, Ph.D., P.G.



### Well Development Can Make or Break a Well

Oftentimes when we are drilling a new well in an "unknown" area, it's difficult to estimate the specific capacity or well yield, especially if we are drilling by the mud rotary method.

Well development is an important part of drilling every well. If the mud and gel are not sufficiently removed from the well, the true well yield cannot be determined. There is no doubt many boreholes have been abandoned because they did not appear to have a sufficient amount of water to complete the borehole as a well.

A quick "lesson learned" story: About 20 years ago, one of my industrial clients tried to save some money and pulled an eight-inch submersible pump out of a well with a crane he had on-site. They ended up ripping the stainless steel screen and had to have a new well. Of course, the new well was awarded to the lowest bidder. The company, from another state, was not familiar with the sand and gravel formations of the site and mixed up a heavy, viscous, gel-based mud which really plugged the formation. The well screen and casing were set, and drilling mud pumped out. The well was drilled 30 feet away from the last well, which was a very productive well, producing about 20 gallons per minute (gpm), per foot of drawdown. This new well, drilled exactly to the same specifications as the original well, was pumping dry at the total depth of 130 feet. After a day of pumping water in and out of the well, the well could still be pumped dry at 20-30 gpm.

The second and third day was not much better. The mud gel was still strong and not breaking down. After using some chlorine and mud dispersant, the well began producing the same amount of water as the original well. Once the gel started to breakdown, the specific capacity increased dramatically.

Moral of the story - developing a well, which includes breaking down the "mud-cake" and using a surge block to move the "fines" (clay) into the borehole and out of the well by surging may be the most important part of the drilling process. You don't know how good your well is until you have fully developed the fine material out of the borehole that was "packed" there by the drilling process.

*Tom* Tom Kwader may be contacted via e-mail to [michele@worldwidedrillingresource.com](mailto:michele@worldwidedrillingresource.com)

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## Save Time and Money on Pump Installations

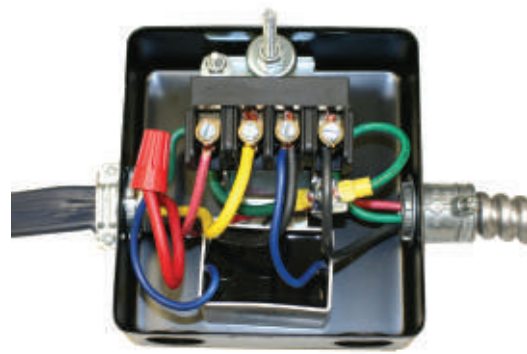
*Adapted from Information by Merrill Manufacturing*

One of the most important things all water well drilling and pump installation contractors need to do is save time, along with reducing costs for contractors to remain profitable in today's competitive market. These needs are answered with products to simplify installations and eliminate items which commonly need replacement, such as the relay and start capacitor used in a common three-wire control box.

The better option which is lower in cost and cuts installation time in half (for a three-wire pump) is the Merrill Control Switch. This device (nine years of proven field use) combines a three-wire control box into an extra heavy-duty pressure switch. The extra-large case, pressure switch, and single component heavy-duty run capacitor does everything a traditional control box does. For example: instead of installing a control box and pressure switch which involves running wires between them; fitting all the connections; along with extra parts, simply run power lines to the control switch and other wires to the pump, and you're done.

The control switch has an extra-large case for easy wiring, and heavy brass wire connectors that hold #4 wire. "The most proactive contractors are now using the control switch," said Danny Ahrens, owner of Florida-based Water Products Marketing. Ahrens has been involved with more than 50 field installations with the control switch, some operating for over nine years. Since the control switch works with all brands of motors, it also reduces the inventory of replacement parts contractors must bring to the jobsite.

Don't be concerned about having all the replacement parts for a repair job, simply carry a control switch on your truck to complete the job in less time. Your customers will appreciate having the pump control fixed and a new pressure switch all at a better cost than traditional repair work.



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## Upswing Expected in the Construction Industry

*Adapted from a Press Release by VDMA*

German manufacturers of building materials for the construction industry are expecting a broadly based upswing in sales this year. At the end of 2016, orders received in most subsectors of the industry had risen considerably compared with the previous year. Experts expect this to translate into a sales growth for construction equipment and building material machinery in coming years.

After several years of decline without any real movement forward, German manufacturers of building material plants recorded an 8% rise in sector sales compared with the previous year, which increased largely due to orders from international business. At the same time, there was a rise in new orders of about 20%, which largely came from international customers. The United States continues to be the largest sales market for building material machines from Germany, followed by China and Russia.

These increases do not necessarily dictate a boom because the growth has mainly originated from several large-scale orders which have mathematically boosted the industry as a whole, yet there is significant optimism about 2017 and beyond. Europe's construction industry is predicted to grow by an estimated 2%, with Germany and the United Kingdom as the greatest stimulants. Good market opportunities are also developing in the United States and in some emerging economies internationally, such as India and Indonesia. Global demand for cement is also expected to rise 2% this year, with

mining companies becoming increasingly interested in making purchases again throughout the world.

After fairly weak sales in 2016, manufacturers of mineral processing systems and of cement, lime, gypsum, and dry mortar plants believe business in 2017 will be better than the year before. This means by 2018 there should be a revival in the industry, which will impact both subsectors. Since there is no longer a boom region or even a boom country, as there used to be in the past, the growth should be seen across the globe. Europe, excluding Russia, continues to be seen as the most prominent region to initiate this growth, particularly for gypsum and cement. Companies are mostly pleased with market devel-

opments in Southeast Asia and India, where they believe growth is likely for coal and cement, in particular. The same applies to Brazil and also Northern Africa and the Arabian peninsula.

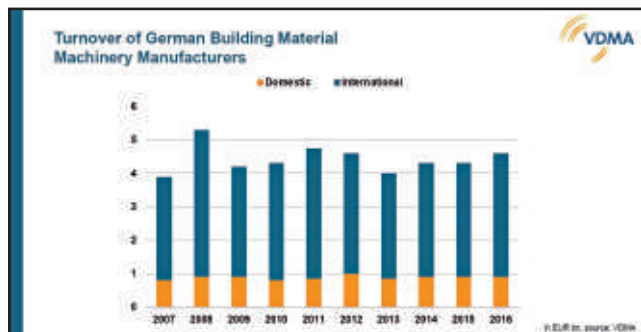


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## Frequently-Used Geological Terms Part 64

*Glossary Adapted from the Dictionary of Geological Terms*

### P

**Petrologist** - Someone who studies petrology.

**Petrology** - The branch of geology which deals with the origin, occurrence, structure, and history of rocks, especially igneous and metamorphic rocks.

**Phanerite** - An igneous rock having the grains of its essential minerals large enough to be seen microscopically.

**Phantom Crystal** - A crystal within which an earlier stage of crystallization or growth is outlined by dust, tiny inclusions, or bubbles. An example of this would be serpentine containing a ghost or phantom of original olivine.

**Phenocryst** - One of the relatively large and ordinarily conspicuous crystals of the earliest generation in a porphyritic igneous rock.

**Phi Grade Scale** - A logarithmic transformation of the Wentworth grade scale. The scale was developed specifically as a statistical device to permit the direct application of conventional statistical practices to sedimentary data.

**Phlogopite** - A magnesium-rich mineral of the mica group. It is yellowish brown to brownish red and usually occurs in crystalline limestones as a result of dedolomitization (a metamorphic process in which the magnesium in dolomitic rock forms new minerals).

**Phosphate** - A mineral compound containing tetrahedral groups. An example is pyromorphite, phosphorus, arsenic, and vanadium may be substituted for each other in the tetrahedron.

**Phosphate Rock** - Any rock containing one or more phosphatic minerals especially apatite, of sufficient purity and quantity to permit its commercial use as a source of phosphatic compounds or elemental phosphorus. About 90% of the world's production is sedimentary phosphate rock, or phosphorite; the remainder is igneous rock rich in apatite.

Look  
for more terms  
next month!





## Oil/Water Exploration

by Harold White

For the investors, the fear of drilling a non-productive well is a risk they would like to eliminate as much as they can by exploration, not just in the new fields, but also in the old fields. A lot of dry holes have and will be drilled no matter what is being drilled for - geothermal hot water, oil, gas, water for irrigation, saltwater, lithium, etc. All of these are moving fluids, underground creeks.

The professors of geology have been telling me since 1953, they do not teach students how to find underground creeks and rivers of any kind. The professors still say the same today. They say there is no method of detecting them, nothing that works - they have tested all of them.

Every well I have ever tested for its fluid source is in a creek or river underground. So to me, it means all the wells ever drilled have been hit by accident. Is this correct?

What a professor told me was: "If that is scientifically true, you are correct, they have all been hit by accident. With the knowledge we have today, we have no way of finding underground creeks or rivers."

What will the investors do when they hear or find this to be a fact? Which it is a fact from my decades of research and learning. All of this is being said to take away some of the fears of the investors and speed up the research and exploration time from years to days, and eliminate guessing where to drill. To do this, I would do the research on the area for the fluid

being looked for, and tell if it is on the property (or well site if you have one, and if you have drilled and missed). I can show how far to move to hit the center of the fluid you're trying to hit.

This takes the guesswork out of the questions of: "Is the fluid I'm looking for under this lease? And if so, where do we drill to get the best results?"

We drill in the center of the moving fluids - creeks - where we can get the largest and most in one drill.

*The statements and comments in this article are based on information and references believed to be true and factual. If you have any questions or comments, please forward them to me in care of **WDDR**.*

**Harold**

Harold White may be contacted via e-mail to [michele@worldwidedrillingresource.com](mailto:michele@worldwidedrillingresource.com)

The deadline for the October issue is almost here!  
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## Storing Heat Belowground for Winter

*Adapted from a Press Release by the Karlsruhe Institute of Technology*

Aquifers are water-bearing layers in the subsoil where the water does not flow, or hardly flows. As a result, the heat is not transported away within the aquifer. After drilling boreholes to reach the aquifer, water can be heated by using the waste heat from industrial plants or solar heat, while the surrounding rock acts as an insulator. This stored heat can be recovered by means of a heat exchanger.



*The GeoSpeicher.bw project will help optimize the utilization of heat for this pool, courtesy of Waldsee-Therme.*

The GeoSpeicher.bw project, coordinated by the Karlsruhe Institute of Technology (KIT) in Germany, plans to use waste heat as a method to warm water in the soil, which will act as a storage process until the heat can be retrieved at a later date. The practice of storing summer heat or waste heat from industrial plants in subterranean water-bearing layers is a widespread practice in the Netherlands, which has more than 1800 locations where the technology is being used. In Germany, there are currently only three locations with

the capability of using groundwater conductors as a means of geothermal energy storage.

One example is the Reichstag building in Berlin, which is supplied warmth in winter and cold in the summer via several aquifers.

The GeoSpeicher.bw project currently intends to use the waste heat from a swimming pool, and either the heat supply of a hospital or the elephant house in Stuttgart. A system is also planned for the surplus heat of a large swimming pool and adventure pool in Hockenheim where the cellar rooms are heated to temperatures over 86°F (30°C) all year round due to the heating system and waste heat from technical installations. This excess heat will be stored in a groundwater conductor during the summer months, to be used again in winter. KIT scientists will develop an innovative monitoring and storage concept for the project.

The Ministry of the Environment of Baden-Württemberg provided a grant to scientifically evaluate the potential of geothermal heat storage at eight locations. Over the next three years, under the leadership of KIT, participants will look for innovative monitoring and storage concepts, produce detailed heat transport models, conduct hydrochemistry studies, and prepare extensive system and optimization analyses for communication strategies.



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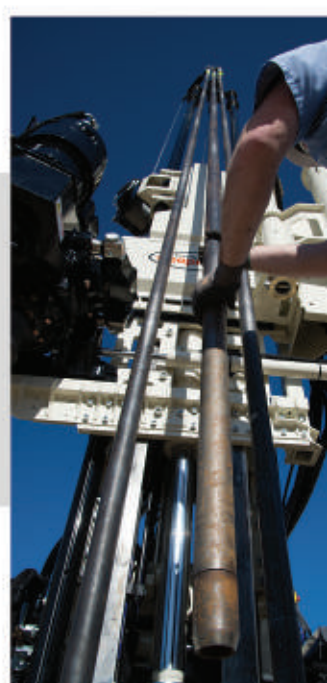
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## Tales from the Field

by **Jeremy C. Wire**  
*Geoconsultants, Inc.*



### Fire in the Desert

Sometimes we think a "bad" day in the field where nothing seems to go right is still better than a "good" day in the confines of the office. However, there are exceptions, and the tale about to be related is one of them.

The setting is what was formerly the Nevada Test Site (now Nevada National Security Site) in southern Nevada, northwest of Las Vegas, where testing of nuclear devices was carried out during the 1950s, through the early 1990s. We were subconsultants to another consulting firm that was preparing a proposal to investigate, by geophysical methods, deep hydrogeologic conditions along the Yucca Fault, as part of a study to evaluate movement of contaminants into the regional aquifer system. One day, we met on the site with one of their consultants to plan the layout of the proposed field survey. It was a clear, fall day, one of those times on the desert between the heat of the summer and the onset of winter, when the weather was just perfect for fieldwork, so what could go wrong?

The first hint occurred at the motor pool, when we learned the pickup requested in advance was not available, and the only vehicle we could have was a sedan. Although disappointed at this development, we reasoned a pickup was probably not needed anyway, since the proposed survey area was crisscrossed by dirt roads, not requiring four-wheel drive for access.

By later in the day, we were nearly finished with our reconnaissance in a rather remote part of the survey area. Suddenly, we thought we smelled smoke coming from somewhere around the car. Looking underneath, thinking the source was some vegetation lodged near the catalytic converter, it was evident that smoke and now flames were originating from under the hood. We quickly grabbed a small fire extinguisher from the trunk. However, by now the hood wouldn't open because of the advancing fire, and it was useless to try to control the flames. After quickly removing our maps

and briefcases from the rear seat, all we could do was stand by at a distance and watch the flames envelop the car. Because of all the plastic components, in about 15 minutes it was totally consumed and reduced to a smoking hulk. By this time, the facility fire brigade, because of the clear sky, had seen the column of smoke from several miles away, arrived at the site and foamed down the remains.

We hitched a ride back to the motor pool at the main entrance, and filed a report with the County Sheriff concerning the incident. We heard later that apparently the car had been serviced a day or two previously, and the cause was a leaking gas line connection which had been improperly tightened. So not our fault for driving on dirt roads!

On the return trip to Las Vegas to catch a plane, the consultant and I agreed this was more excitement than we needed and this was truly one really "bad" day in the field, and it would have been better to remain in the office!

*Jeremy*

Jeremy Wire may be contacted  
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## Live for the Present, Learn from the Past, Plan for Tomorrow

by **Britt Storkson**  
Owner, P2FlowLLC

There is a saying something like "Live for today, learn from the past, plan for tomorrow." It's good advice, as there is nothing we can do to change the past, but we can learn from our experiences. Like humans, computers can learn from "experiences" and adjust future behavior to execute the "good" behavior (as the programmer defines it) and avoid the "bad" behavior.

All computers have a way to remember information which, of course, is called MEMORY. If you recall from previous articles, information memory is simply voltage levels stored on silicon with a measurable voltage defined as a "logic 1" and no measurable voltage defined as a "logic 0". Individual voltage levels are called "bits" and eight different voltage levels in a row are called "bytes".

Both the byte locations and the bit locations are numbered. Not only do we need to know WHAT the data (information) is, we need to know WHERE the data is so we can find it when we need it. The memory location gives the data meaning. Suppose 100 people attended a certain event and if I place that value (100) at memory location #10 in memory, I know location #10 in this memory represents the number who attended this event.

One way we can use this capability is by "remembering" certain points where equipment malfunctions or does not function well, storing those points in memory, and avoiding them in the future. A good example of this would be water pumps and motors which often have large, heavy rotating masses which sometimes vibrate at certain rotational speeds. There is a sensor called an accelerometer which measures the vibrational "G forces" on whatever surface it is mounted (like a pump motor, in this case), and outputs a voltage signal to the microprocessor which represents these forces.

When writing the computer code, we can set an "acceptable level" of vibration and note if the pump/motor vibration exceeds this level at certain speeds. We can store the "problem levels" in memory and avoid those speeds in the future by either quickly "skipping past" these speeds or not going there to begin with. Some conditions can change, like if a rotating part collects mud and dirt which alters its balance characteristics.

If this value changes over time, we can perform the test periodically - like monthly - and adjust the parameters if needed. We can also initiate this "test" or "update" as a PM (Preventive Maintenance) function where the operator manually "tells" the control unit

to perform this test and adjustment. Or we can execute this test automatically in addition to having a manual "trigger on" option. Whatever best suits the circumstance.

The above example is one of the reasons why this technology is so useful. Virtually anything which can be measured and defined can be implemented. The computer can make decisions based on information obtained from sensors and physical inputs like program selections. These computers are fast, reliable, and inexpensive. They can be as simple or sophisticated as needed. If correctly designed and manufactured, these computers can handle most any environmental condition like extreme heat, cold, moisture, and vibration and function reliability for years.

**Britt**

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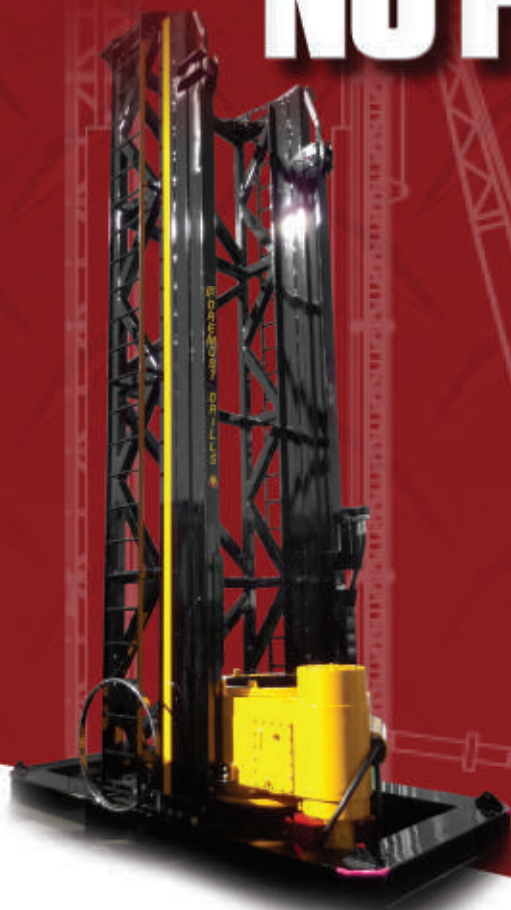
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That means you can take on jobs under service station canopies, bridges, or other overhead restrictions that others can't.

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## A History of Growth Since 1929

Information Courtesy of Western Well Repair, Inc.

Joe Guardino first started working in the water well business back in 1929. In 1933, he was working as a shipping clerk for Western Pump Company in San Jose, California. Western Pump Company assembled, installed, and serviced water pumping plants. Joe had been in this position for approximately three years when he was promoted to superintendent of the drilling department. Western Pump Company grew considerably and was divided into two separate companies, Western Pump Company and Western Well Drilling Company. The two companies started out under the same ownership. However, in 1962, Layne & Bowler Co. of Memphis, Tennessee, purchased the pump company.



Joe Guardino

From shipping clerk, to company president, was quite a climb, but Joe, with little experience at the start, picked up all the necessary information and experience along the way. In fact, he learned enough and gained enough respect from his fellow contractors in California, and throughout the country, to be elected president of the National Water Well Association in 1963. The Association was renamed the National Ground Water Association in 1991. Also, in that 32-year span, he was a founding father of what is now known as the California Groundwater Association where he served as president for seven years.

Joe's son Samuel "Bud" Guardino followed in his footsteps and started a well repair division in San Jose, California, and opened another branch in Bakersfield, in 1971. Bud's three sons and several of his grandchildren are still carrying on the family tradition today.

Western Well Repair, Inc. is now in the manufacturing business specializing in well repair and rehab equipment including their MPXSWAGE™ hydraulic swage tool designed for repairing broken water well casing, patching holes, and sealing off unwanted areas. The tool can also be used for a more efficient way to brush a well, and as a fishing tool.

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The Editorial Focus for our October issue will be safety.

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## A TOWN ABLAZE

Adapted from Information  
Centralia.org

Throughout history, cities rise and fall, but every city or town has a story to tell concerning its beginning and in some cases its end. Centralia, Pennsylvania, was once a booming coal mining establishment in the late 1800s and early 1900s. The town was formed in 1842, after Alexander Rea, a mining engineer, moved his family to the area and began drawing up plans for a network of streets and lots. Large scale mining began in 1854, when the Mine Run Railroad was completed, allowing for vast quantities of anthracite coal to be efficiently transported out of the mountains. Mining camps quickly started to spring up in the surrounding forests as people flocked to the town. By 1890, Centralia's population had risen to around 2800 people, and the town had 5 hotels, 27 saloons, 7 churches, 2 theaters, 14 grocery stores, a bank, and a post office.



In the early 1920s, the town started to decline, but coal mining was slow to die in the region and continued into the 1960s, keeping Centralia stable. However, things would change forever in 1962, when Centralia's landfill was set on fire to help clean it up in preparation for the upcoming celebration. Unfortunately, the landfill site was above an old mining strip. When the fire wasn't fully extinguished, it entered the abandoned mines around the pit. The fire grew and spread as efforts failed to control the blaze beneath the town. While drilling, it was discovered the fire had reached depths of 225 feet, which meant any efforts to control the blaze with trenches would not be effective. Different experimental barriers were used, but nothing had any success. As the fire crept below residential areas, the people living in the town faced threats, which lead to homeowners accepting buyouts to move elsewhere, and eventually buildings were simply condemned and residents asked to move. After people left, their homes were leveled, returning the landscape of Centralia to wilderness. A few families fought to keep their homes, and in 2013, a settlement was reached which allows the handful of people to remain as long as they live.

Except for streets, only a few homes, a church, and several graveyards remain in the ghost town of Centralia. The mine fire beneath the town continues to burn, traveling approximately 75 feet per year. Based on estimates of the amount of remaining coal, some expect the fire to rage for another 250 years.

*WWD* reported on last years cleanup efforts in the September issue of the magazine.

*Thanks, I have been reading your mag now for many years. My Dad got it at my address, Dad passed away back in Nov. 06 of 2011, he was a lifelong well driller. I miss him very much! I look forward to your new mags and all the stories inside each one!*

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## Life Without Mining

by Bonnie Love, Editor, *WorldWide Drilling Resource®*

What does the Industrial Revolution, the American Gold Rush, Space Race, Digital Revolution, and the Hybrid Age all have in common? They require mined products. It's not as far-fetched as you might think. Technology for one, would grind to a complete stop without mining, but it isn't the only industry counting on this vital resource. Here are a few more sectors which rely on mining:

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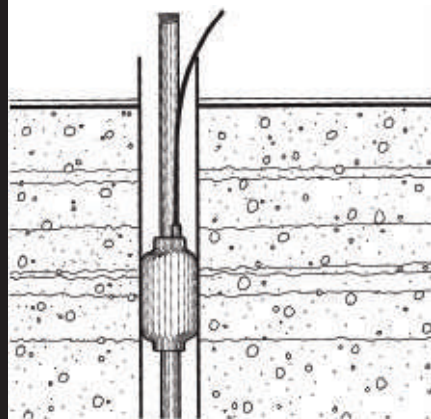
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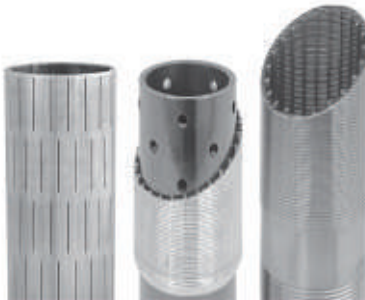
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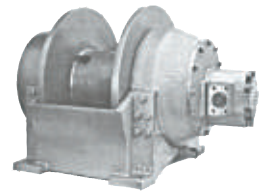
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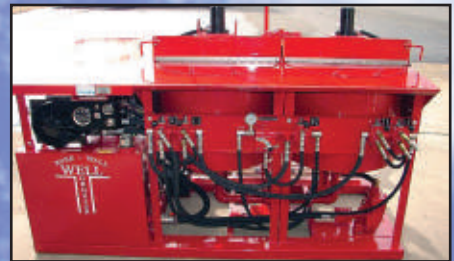
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