

WorldWide Drilling Resource®

Home of Solid Gold Service™



MANUFACTURED IN
AMERICA
DELIVERED TO THE WORLD

Details of this unit - Page 6.

GEFCO, INC. an Astec Industries Company

2215 SOUTH VAN BUREN · ENID, OKLAHOMA, USA 73703 · PHONE 580.234.4141 · domsales@gefco.com · intsales@gefco.com · www.gefco.com





SEMCO S12,000H, 48' derrick, hot shift PTO, 2-speed winch w/grooved drum, auxiliary hydro valve, hydro breakout cylinder w/valve, Cathead w/valve, 3,000' capacity sandreel, hydraulic oil cooler dual fans, light kit for mast, (2) 96" toolboxes, 16' flatbed, painted white and blue, factory mounted on 2008 International 4300.



**Gibson Equipment Leasing LLC
PO Box 203
Lund, NV 89317**

SEMCO INC.

**E-mail:
semcopumphoist@yahoo.com
www.SEMCOoflamar.com**

**CALL OUR TOLL-FREE
NUMBER: 800-541-1562**

**PO Box 1216 • 7595 US Hwy 50
Lamar CO 81052-1216
719-336-9006 • 719-336-2402 Fax**



CHOOSE YOUR PLAN OF ATTACK



INFINITY[®] | TOOL MFG.

**OIL & GAS
AWARDS**

5th Annual

FINALIST

HOLE OPENERS



DTH



SUB



PDC

**PDC
REAMERS**



VISIT US AT
BOOTH B-90511
BRONZE HALL

CONEXPO-CON/AGG SHOW
LAS VEGAS CONVENTION CENTER
LAS VEGAS, NEVADA
7-11 MARCH

DTH & PDC BITS
infinitytoolmfg.com
1-888-838-6657

MARCH 2017

Ontario Ground Water Association

"protecting and promoting Ontario's most precious resource"

Friday & Saturday

April 7 - 8, 2017

OGWA 65th Annual Convention & AGM



HIGHLIGHTS -

- ◆ **Friday Day:**
Regional Training -
7 Hours MOECC
approved CE Credits
with Coffee Breaks and
Buffet Lunch
- ◆ **Friday Evening:**
Networking Evening /
Hospitality Suite
- ◆ **Saturday Events:**
Breakfast, Division &
AGM Meetings, Coffee
Breaks, Luncheon,
Outlet Shopping Tour
for Spouses, Special
Seminars, President's
Banquet & Awards...
And
Return of the Auction!

CHECK www.ogwa.ca TO REGISTER & FOR UPDATES!

NOTTAWASAGA INN CONVENTION CENTRE & GOLF RESORT
6015 Highway 89, Alliston, Ontario Canada L9R 1A4

Rooms: Queen Single or Double - \$149 - per room plus 13% HST

*Perks! Exceptional amenities and activities ~ Free parking ~ Guestroom wireless internet ~
~ 45 Hole Golf Course ~ Walking Trails ~ Spa ~ Tropical Rainforest Pool ~
~ 3 Storey Water Slide ~ Sports Dome ~ Jungle Quest Mini-Golf ~*

Attendees are welcome to stay well into Sunday after checkout to carry on using all the facilities. Your bags will be looked after by the front desk if you choose to play some mini-golf or have another swim!

Reservations: Ask for "Group Reservations Department"
Toll Free: 800-669-5501 or Tel: 705-435-5501
OR via: www.nottawasagaresort.com/contact.html

Ontario Ground Water Association
48 Front St. E., Strathroy, ON N7G 1Y6

Ph: (519) 245-7194

Fx: (519) 245-7196

ogwa@ogwa.ca

www.ogwa.ca



Breaking News.....13
Classified Section: WorldWide SUPER MART™ 65-80
Dealmakers.....17
Education Connection.....30
Fun Page.....52
Hot Off the Press.....9
Obituary: Beck, Sr., Calvin Leroy.....23
Obituary: Bohland, Terry.....23
Obituary: Cosby, Scott Owen.....47
Obituary: Cutter, Howard “Porky”.....35
Obituary: Oakes, Hazen Lawrence “Larry”.....23
Photo Gallery.....8,36,40,50
Product Spotlight.....42
Ronnie’s Real World.....63
Where are you planning to go?.....61
Who’s in the News.....13
WorldWide Business Directory™.....11,12
WorldWide Home of Solid Gold Service ~ with a Smile™.....6
WorldWide Service Center™.....64

Construction-Geotechnical

An American Construction Adventure.....10
 Frequently-Used Geological Terms Part 59.....40
 Keeping it Clean.....50
“Smith, Billy Bob”: The “Idiot’s” Corner.....26

Directional

Battersby, Mark E.: Drilling Into Money Not Boring.....22
Christ, John: Ronnie Said “No”.....29
 Dropped Objects Lead to Industry Review.....59
 New HDD Training Program Available.....36

Environmental

AMS Celebrates 75 Years of Customer Service.....28
 Effects of the Gold King Mine Accident.....17
 Emergency Preparedness a Must for the Pipeline Industry...43
Kwader, Thomas: Environmental Monitoring.....14

Exploration-Blasthole

New Rod System Unveiled at CONEXPO-CON/AGG...25,42
 Sonic Drilling Around the World.....44
White, Harold: Oil/Water Exploration.....8
Wire, Jeremy C.: Tales from the Field.....12

Gas & Oil

From Dust to Glory.....38
Storkson, Britt: You May Delay, but Time Will Not.....19,60
 The Nation’s First Clean Coal Plant is Online!.....49,54

Geothermal

Connor, Tim: Life-Changing Moments.....30
E-News Flash Readers’ Choice: Geothermal to Heat Pool..60
 Geothermal Growth Around the World by 2020.....53
 Renewable Resource Initiative Leads to Geothermal Project..48

Mining

Ancient Mining Paves the Way for Geothermal Pizza.....18
 The Merit Badge for Geology.....29,58
Wilson, Jr., Robert Evans: The Un-Comfort Zone II...37,52

Water

Constant Water Explored For Use in Ethiopia.....16
Kuebelbeck, Jim: Through the Back Door!.....55
 Providing Water is an Honor.....32
Rasmussen, Tim: Water For Life International.....7
 Water Innovation from Israel to Nevada.....26

Alberta Water Well Drilling Association (AWWDA) Conv....42
 Acker Drill Company.....41
 Allegheny Instruments.....30
 America West Drilling Supply.....77
 Aries Industries, Inc.....9
 Armstrong Machine Co., Inc. (AMCI).....64
 Atlantic Screen & Manufacturing, Inc. (ASI).....49
 Baker Water Systems.....47
 Baroid Industrial Drilling Products (IDP).....24
 Best in the West Drill & Blast Conference (ISEE).....15
 Better Water Industries, Inc.....52
 Bit Brokers International.....14
 Bitco, Inc.....18
 Bloom Mfg., Inc.....54
 Blue Demon Company, Inc.....43
 Constant Water, LLC.....16
 Cotey Chemical Corp. (CCC).....55
 Drill King International.....27
 Drill Pipe, Inc.....37
 Drilling Equipment Sales, Inc. (DES).....80
 Drilling Supply & Mfg (DSM).....39
 DRILLMAX, Inc.....79
 Eastern Driller Manufacturing Company Inc. (EDM).....34
 EXPONOR 2017.....56
 EXPONOR 2017.....57
 Filmark Products, Inc.....49
 Foremost Industries.....51
 GEFCO, Inc. (an Astec Industries Company).....1
 GEFCO, Inc. (an Astec Industries Company).....13
 GeoPro, Inc.....33
 Geoprobe Systems®.....20
 Geoprobe Systems®.....21
 Geothermal Supply Company, Inc. (GSC).....29
 HINOWA S.p.A.....53
 Hole Products.....58
 Holly Pipe Corp.....44
 Infinity Tool Manufacturing.....3
 International Construction & Utility Equip. Expo (ICUEE)...78
 Kruse Energy & Equipment, LLC (Auction).....33
 KS Bit, Inc.....31
 MARL Technologies, Inc.....59
 Maxidrill, Inc.....23
 Merrill Mfg.....32
 Mills Machine Company, Inc.....7
 National Drilling Association (NDA) Buckeye Chap. Expo..60
 Noland Drilling Equipment.....54
 Ontario Ground Water Assoc. (OGWA) Conv. & AGM.....4
 Palmer Bit Company.....46
 Qwater Well Development Tools.....36
 Rauch Manufacturing, Inc.....17
 Rex McFadden Ltd.....38
 Robit®, Inc.....48
 SEMCO, Inc.....2
 Shallow Exploration Drillers Clinic (SEDC).....25
 Star Iron Works, Inc.....28
 Star Iron Works, Inc.....61
 Sullivan-Palatek, Inc.....63
 T&T Carbide, Inc.....62
 Texas Alliance of Energy Producers Expo & Annual Mtg....19
 Throop Rock Bit Company.....22
 Tim Speaks 4 U.....59
 Well-Vu, Inc.....10
 Wyo-Ben, Inc.....18

Home of Solid Gold Service ~ with a smile!TM



Ronnie,
Managing Publisher
ronnie@
worldwidedrillingresource.com
With pen (computer) in
hand...

Here it is March already! Remember when we called late last year and asked if you had anything you wanted to sell and your reply was something like, ...ummm, planning on that in the spring? Well guess what? It's SPRING! And here we are again working feverishly to get YOUR April issue out to thousands upon thousands of those potential customers of yours. We can't do it without you though.

So, I'm asking you to look around your shops, your factories, your backyards, your lots, and decide for yourselves, is this stuff I am holding onto really making me money NOW, when I need it most? I'm thinking your answer will be, NOPE, and it certainly won't be next month unless you take a moment or two and pick up the phone that's probably now in your pocket or in your purse (yes women are also in this industry), or even on your wall or desk, and dial...

850-547-0102

Rather send an e-mail? We like them also. :)

Jan = jan@worldwidedrillingresource.com
Brenda = brenda@worldwidedrillingresource.com

Betsy = betsy@worldwidedrillingresource.com
Kathy = kathy@worldwidedrillingresource.com

Our "Public Relations Professionals" are ready, willing, and able to assist you in your marketing plans. We only ask you not to put off what YOU NEED TO DO. Remember the old saying... "Time is Money" . . . Don't waste yours.

SEE YOU ON THE TRAIL! No frowners allowed!

This month's Hot Topic is Geothermal Products and Projects



~ From the Cover ~

The GEFCO 30K, mounted on a 6x4 truck, is perfect for shallow municipal or deep residential water wells. 25,000-lbs (11,340 kg) single-line winch combined with the hydraulic rod spinner makes tool handling fast and easy. This is the flagship of the GEFCO water well line, and continues to be a leader in the groundwater industry.



GEFCO, INC. an Astec Industries Company



2215 SOUTH VAN BUREN · ENID, OKLAHOMA, USA 73703 · PHONE 580.234.4141 · domsales@gefco.com · intsales@gefco.com · www.gefco.com

Proudly Made in the United States of America - delivered WorldWide!

WorldWide Drilling Resource[®]

The **complete magazine** for the drilling industry worldwide, owned by drilling industry associates dedicated to bringing the most up-to-date technology and information to subscribers. Covering **construction-geotechnical, directional, environmental, exploration-blasthole, shallow gas & oil, geothermal, mining, water well, irrigation, wastewater**; from bits, to pumps, to rigs, to tanks, through wire and more - *whatever it takes to get the drilling job completed!*



WorldWide Drilling Resource[®] is published monthly by WorldWide Drilling Resource, Inc., a Florida Corporation
PO Box 660 (3089 Northridge Lane) Bonifay FL 32425-0660.
Telephone: 850-547-0102
Fax: 850-547-0329



E-mail: wldr@worldwidedrillingresource.com
Website: www.worldwidedrillingresource.com

Copyright 2017, WorldWide Drilling Resource, Inc. Seen by countless WorldWide. Publication Agreement No. 40892520. Back issues may be requested. Cost per issue \$10.00 USD. No part of this publication may be reproduced in any manner without the strict written consent of the publishers. Advertising rates furnished upon request. Editorial contributions are welcome subject to editorial review. *WorldWide Drilling Resource[®] reserves the right to refuse any advertisement.

Managing Publisher/CEO/President: Veronica I. "Ronnie" Jones
Vice President: Troy Cunningham
Office Administrator: Michele Stevens
Editor: Bonnie Love
Associate Editor: Caleb Whitaker
Public Relations Professionals: Brenda Helms Jan Allen
Betsy Willett Kathy Heinrich
Production/Webmaster: Marcel Schimpf
Representative: Marie Cunningham



*Editorial contributions & advertisements include statements of fact and opinions that are the sole responsibility of the author and/or companies and do not necessarily imply any opinion of the owners, management, or staff of WorldWide Drilling Resource[®]. Images may have been altered for clarity. Complete advertising information may be found at:

www.worldwidedrillingresource.com

or by calling 850-547-0102. WorldWide Drilling Resource[®] makes every effort **not** to place advertisements for "like" products on the same page in our publication; this may occur however, due to size and space within the publication. We regret any inconvenience this may cause our advertisers.

Editorial Contributors for this month:

Mark Battersby John Christ Tim Connor Jim Kuebelbeck
Thomas Kwader Tim Rasmussen "Billy Bob Smith" Britt Storkson
Harold White Robert Evans Wilson, Jr. Jeremy Wire

Hyd/Eng Consultant: Thomas Kwader, Ph.D.,P.G. Consultant: Mary Ann Pelletier



by Tim Rasmussen

While I was in Guatemala, someone called Berny and reported the pump at Tan Hoc was having a problem, so Berny, my wife Annette, and I went out to look at the situation. Tan Hoc is about 12 miles out the road running from Poptun, past our headquarters toward the old town of La Compuerto on the Guatemala frontier with Belize. Although the distance is short, it takes about an hour to get there. Most of the road is sufficiently bad, and there are some very weird spots. One in particular, requires you to crest a hill without seeing where the road goes beyond. It takes a little courage to just keep going over the ridge without being able to see beyond the hood of the truck.



The day was sunny and hot, and the scenery was lovely. I did not see much on the way except the road in front (when I could see it), but we stopped a few times. There were many jagged little hills and then steep hillsides planted with corn. Wood homes sprinkled around the little valleys and hillsides. It was very typical and very beautiful.

Tan Hoc only has one well and it is a little over a mile to the next best source. This one well is very important to the village.



Berny looked it over and determined it was broken inside the pump, and was being held together with a piece of cable. It was working, but just. The best thing to do was replace the whole pump - cylinder and all. He would send the service truck and it would get fixed in a day or two. While Berny spoke with the men who had gathered around, Annette and I talked a little with the ladies and children. We had some little toys we gave the children. I made them all laugh at my Spanish and made a joke or two. There were lots of smiles and laughter. We spent about 20 minutes with the villagers, then we got into the truck for the jostling ride back to our shop.

One errand done off a list that goes on and on. The people need water every day. Pumps need service. More than 25,000 people use the water made available through Water For Life and the blessings of the Good Lord who sends the volunteers and donors who make it possible. The people of Tan Hoc thank you for your help and the clean water.

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

Jim

Tim Rasmussen may be contacted via e-mail to michele@worldwidedrillingresource.com

WATER WELL • ENVIRONMENTAL • CONSTRUCTION • GEOTHERMAL • MINING

Don't Buy Cheap Knockoffs! Get the Originals from Mills

Mills Machine Company offers the MilClaw®, KenClaw® and GeoClaw® Rotary Drilling Bits for the Water Well, Blasthole Mining, Construction, Geothermal and Shallow Oil Drilling Industries. These bits offer inexpensive, rugged, carbide-tipped, field-replaceable cutters offering fast penetration rates in a variety of formations.

- Cuts formations ranging from Soft Clay to Limestone (10,000 psi)
- Reduces cost per foot, average cutter life from 500' to 10,000'
- Sizes range from 3 1/2" to 24" diameter
- Suitable for air or mud drilling
- Claw reamers, custom sizes and other configurations available upon request

www.millsmachine.com
800-654-2703
405-273-4900

Get VIP Flash Notices and the Mills App!
 Click this QR reader for more details or text mills to 95577

Scan this QR Code

STABILIZERS HOLEOPENERS AUGERS HOIST PLUGS UNDERREAMERS CASING CUTTER FISHING TOOLS SUBS DRAG BITS FISHING TOOLS

PO Box 1514, Shawnee, OK 74802 • Fax: 405-273-4956 • sales@millsmachine.com

Open the Doorway to all the Event Photos during the 2017 Oklahoma Ground Water Association Conference & Trade Show.



To see all the pictures from this event, go to: www.worldwidedrillingresource.info/gallery/2017/OGWA2017, or just click [here](#).

Feel free to download at will and print the photo(s) of your choice.

Compliments of WorldWide Drilling Resource®.

Photos are copyrighted and released for personal use only - no commercial use permitted.



Oil/Water Exploration

by Harold White

December 28, 2016, our house finally quit burning. The hot spots lasted past New Year's. It would have been nice to have a clean burn, so there would be less to remove. It was a total burn and a total loss, with no insurance.

While at the Las Vegas Water Expo, I was talking to *WWD&R*'s Ronnie about teaching a blind person to sense or see, so we determined I would write about it.

While I was doing a water location for a house, I was pointing out the underground creeks to the homeowner when he said, "My wife is in the house. She is blind and likes to learn things like this." I said I would be glad to teach her to sense or see the creek's energy.

So she came out and talked to us. She did want to learn, so I taught her to feel the energy of moving fluid. We later went into the house and I was talking to them about what blind people can sense or feel. I said I had not had the opportunity to be around blind people and had no idea what they could feel or sense, and people in general think it is always dark in the mind of blind people. I asked if this was true.

She said it was not true at all. She was not blind for the first part of her life. When she began to lose her eyesight, she had tunnel vision. The doctor told her she would go blind, and she did. She could still remember what she saw before her blindness, and could still see it. I asked if this was common for all people who go blind, and she said it was from what she had heard.

I was about six feet from her and I stepped back a few feet and she said, "You are backing through the door." I was standing in the doorway. Wow! How did she know I was exactly in the doorway to another room?

I asked her a lot of questions trying to understand how well she could feel or sense where things were. I began to get the idea she could see, all she needed was to add color.

*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*.*

Harold

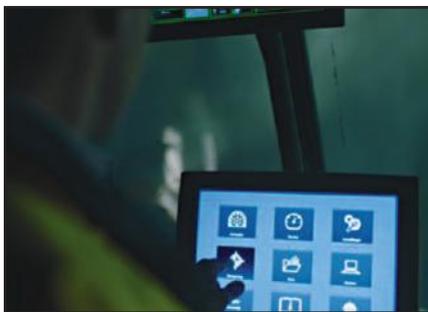
Harold White may be contacted via e-mail to michele@worldwidedrillingresource.com

Hot Off the Press

New Automation Software Lets the Drill Rig do the Work

Atlas Copco's Dynamic tunneling package is a new automation software for face drilling rigs, which gives improved accuracy of the excavation, thanks to the fact the drill plans will always be fitted for the current section. With this software, the drill rig can create its own drill plans directly at the face of the tunnel. Simply by downloading the contours of the tunnel or mine drifts to the drill rig, together with a drill rule file, and the drill rig can create drill plans tailored for the section it is navigated within. No more going back and forth with drill plans is needed.

In large tunneling projects in urban areas, there are differences in the cross section, making you go up and down with the drill plans. The Dynamic tunneling package helps so you don't have to go up and down anymore. The drill plan is made on the drill rig, and at the face.



Atlas Copco

For a link to this website, visit:
worldwidedrillingresource.com



Hot Off the Press page is proudly sponsored by Aries Industries, Inc.

EXPLORER Aries New Portable Borehole Inspection System

ARIES
INDUSTRIES, INC.

See what you're missing.

ONE OPERATOR. IMMEDIATE RESULTS.

The Explorer is the new, affordable system for borehole inspections to depths of 1200 feet (366m).

The compact unit is easy to set-up and operate, truly requiring only one operator.

A downhole and 360° Side Scan camera efficiently detects integrity problems early to reduce costly, unnecessary repairs.



Manual Focus and Iris ensure clear images



Control unit with swivel head and height adjustment



Compact, maneuverable cart with 16-inch wheels

Scan below to see the Explorer in action.



www.ariesindustries.com/explorer
(844) 750-4923

© Aries Industries, Inc.



An American Construction Adventure

Adapted from Information by Diggerland USA

For a young child, there is something enticing about heavy machinery and dirt. Children all over the world grab toy construction equipment and run outside to roll them around and dig in the earth. For some children, they even have an entire toy set of all different kinds of heavy machinery at their disposal. But there has always been one problem with this common scenario, children could only play with mere toys while the real machines lie forbidden from use and only accessible in the imagination.

Thanks to the team at Diggerland USA, today's children can experience the thrill of these powerful machines up close and in reality.

The vision for an American theme park centered on heavy machinery and construction was set in motion by Ilya Girla. Ilya and his family own Sahara Sam's Oasis, an indoor and outdoor water park, and they were looking for ideas for a neighboring theme park. Ilya stated, "The opportunity to take the concept of a construction theme park and make it our own was very exciting for us."

The theme park, Diggerland USA, opened directly behind the water park in West Berlin, New Jersey, in 2014. The park is modeled after four UK-based Diggerland parks, but the Girla family incorporated their own personal touches into the project since construction had been in the family for years. Diggerland USA is designed to allow children as small as three feet tall and their parents to safely dig, drive, and ride actual construction equipment with as little hinderance as possible. The park currently has 25 on-site attractions, which use mostly modified heavy construction equipment to bring the safe, yet realistic, experience to the park visitors.

The park has much more to offer than just moving dirt with impressive machines. There are daily heavy machinery stunt shows to watch, one of the world's tallest rope courses to climb, a rock wall, off-road adventures in a military truck, and a video arcade. It is truly one of the



most unique theme park experiences in the world.

Diggerland USA caters not only to children but adults too. An attraction called Diggerland XL allows unrestricted fun on giant pieces of construction equipment for adults. This unusual experience allows the visitor to incorporate a riding combination of a full-sized wheel loader, excavator, or bulldozer in either a 90-minute package or 3-hour package, along with 30 minutes of one-on-one instruction from a heavy machinery foreman prior to having fun on the machines. Besides the exhilarating feeling of being behind the wheel of the thrilling machines, there are several heavy machinery games to go along with the attraction. Diggerland XL combines real construction equipment with hands-on fun for adults in a variety of ways. Whether you are a kid or an adult, Diggerland USA is a great place to experience the power and fun of real heavy machinery used on construction sites.

DO YOU WANT TO GET THE MOST OUT OF YOUR VIDEO CAMERA?

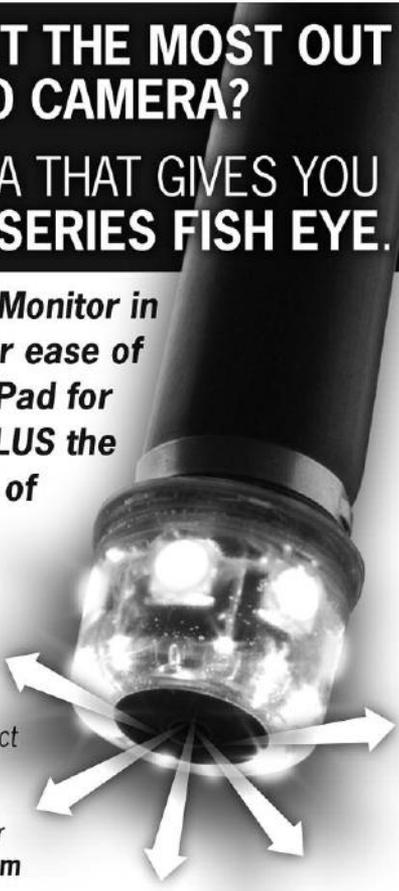
THEN GET THE CAMERA THAT GIVES YOU THE MOST—THE PRO SERIES FISH EYE.

Our DVCC with 15" Color LCD Monitor in lid, DVR to SD Memory Chip for ease of transfer, Microphone and Key Pad for Data entry on screen/video. PLUS the Industries' FINEST WARRANTY of 30 MONTHS.

Well-vu



For more information, contact your favorite wholesale distributor or go to our website to find a distributor near you at: www.wellvu.com or call 406-436-2087



Stay in the black with WorldWide Business Directory™

acker
DRILL COMPANY

P.O. Box 830
Scranton, PA 18501

Matthew K. Vass
SALES
REPRESENTATIVE

Office: 570.586.2061
Toll Free: 800.752.2537
Fax: 570.586.2659

www.ackerdrill.com mkvass@ackerdrill.com

READY TO DRILL *Atlas Copco*

Quality rigs with local support.

Kiki Price
Kiki.Price@us.atlascopco.com
520-403-0654

New and Used

www.atlascopcomarketplace.com

Mid America Meter Inc.

Nationwide Sales & Service
Water Meter Testing, Repairs & Calibration
1-800-324-0365

Bruce Pietig
710 Hamel Road
Medina, MN 55340

Phone 763-478-8041
Fax 763-478-8043

www.midamericameter.com

BAKER
WATER SYSTEMS DIVISION

Campbell Monitor MONOFLEX

RESIDENTIAL ENVIRONMENTAL INDUSTRIAL
QUALITY WATER SYSTEM PRODUCTS

www.bakerwatersystems.com
800-356-5130

BIT BROKERS INTERNATIONAL

CHESTER THOMAS
SALES REPRESENTATIVE

chester@bitbrokers.com
OFFICE: 618.435.5811
CELL: 618.218.5373

5568 Logan Road
West Frankfort, IL 62896

BITBROKERS.COM

BOSHART INDUSTRIES
COMMITTED TO EXCELLENCE SINCE 1958

PO Box 310,
25 Whaley Ave.
Milverton, ON N0K 1M0

Tel: 519-595-4444
Fax: 519-595-4380
Toll Free: 1-800-561-3164

www.boshart.com

Mike Felder

Tel: 708-354-7112
Fax: 708-354-3881

mfelder@chemgrout.com
www.chemgrout.com

ChemGrout
Widest Selection of Grouting
Equipment in the World

P.O. Box 1140
805 E. 31st. Street
LaGrange Park, IL 60526

EWA
EAST WEST
MACHINERY EXPORTING, INC.
ALEX XAGORARAKIS
SALES & MARKETING MANAGER

289 MAGNOLIA STREET
COSTA MESA, CA 92627 USA
PHONE: 949.722.5643 PHONE: 909.528.6131
FAX: 949.722.2561 CELL: 949.422.2369

www.eastwestdrilling.com
alex@ewdrilling.com

EDM **Eastern Driller Manufacturing Co., Inc.**

DTH Hammers and Drill Bits
Made in Pennsylvania...
Sold Around the World!

105 Walnut Street, Columbia, PA 17512 U.S.A.
Bus: (717) 684-3070 1-800-233-0173 Fax: (717) 684-2566
www.edmfg.com Email: sales@edmfg.com

ELGIN Recover Your
Drilling Fluid

SEPARATION SOLUTIONS

Containerized mobile dewatering solutions for complete closed-loop fluid cleaning.

281-261-5778 x 2148
raypietranale@elginindustries.com
Raymond Pietranale

www.ElginSeparationSolutions.com

kingland S.P.I.
Drill International Inc.

7920 Ward Drive, Mercersburg, PA 17236

tel: (800) 563.4988 tel: (717) 328.4988
US and CANADA fax: (717) 328.4998

David F King | President
dking@kinglanddrill.com

MITSUBISHI The Solutions Partner

GARY BARNETT
North America SMB Sales Manager
Rock Tools Group / Engineered Carbide Products

J. MITSUBISHI MATERIALS U.S.A. CORPORATION
2090 Salisbury Hwy, Statesville, NC 28677
(800) 423-1358 • Cell (503) 602-2647 • Fax (704) 838-8177
E-mail: gbarnett@mmus.com
www.mmus.com • www.mitsubishicarbide.com

David Delorme
General Manager
B.Sc. (Eng.)

Robit Inc.
757 W Diversey Pkwy
Chicago, IL 60614
tel: +1-708-667-7892
cell: +1-224-401-3974
e-mail: david.delorme@robit.fi

www.robit.fi

Ring Power **CAT**

Power Systems Division

Chris Kaczmarczyk
Compressed Air Division
Inside Air Compressor Sales
Representative

Ring Power Corporation
500 World Commerce Parkway
St. Augustine, FL 32092
804.484.1285 tel
904.881.8871 cell
chris.kaczmarczyk@ringpower.com
compressedair.ringpower.com

Ashish Rathi
National Sales Manager

SHAKTI
PUMPING LIFE

M: 602-327-4306
T: 407-574-2797, 4001
E: ashish@shaktipumps.com
W: www.shaktipumps.us

SHAKTI PUMPS USA LLC
740, Florida Central Parkway
Suite # 100B, Longwood,
FL 32750, USA

Eijkelkamp
North America

Jay Boland
Sales

M 413 329 7525 E j.boland@sonicsampdrill.com
T 919 694 1114 I www.sonicsampdrill.com

9230 Globe Center Drive
Suite 110
Morrisville, NC 27560

814-427-2555 FAX: 814-427-5164
800-927-0560

STAR Iron Works, Inc.
Serving the drilling industry

Web Site: http://www.starironworks.com 257 Caroline Street
E-mail: sales@starironworks.com Punksuttawney, PA 15767

See more
on the next page.

Stay in the black with *WorldWide Business Directory™*



Sullivan Palatek
Tom Viskniski
V.P. of Sales

"The Ultimate Performance Rotary Screw Compressor"

1201 West US Highway 20, Michigan City, Indiana 46360
Office: (219) 874-2497 Fax: (219) 809-0203

www.Sullivan-Palatek.com tviskniski@palatek.com

T & T Carbide, Inc.
17409 Lowry Ave.
Logan, IL 62856

Ph. 618.439.7253
800.333.1816
Fax 618.435.4347



www.tandtcarbide.com
email: sales@tandtcarbide.com

Nathan Colvin
Sales



Property Casualty Insurance

Kyle Rehme
PROPERTY & CASUALTY CONSULTANT

1100 Haxton Drive | #100
Fort Collins, CO 80525

☎ (970) 223-1804
☎ (970) 225-6596
☎ (970) 420-6669
✉ kyle.rehme@voicell-pe.com
🌐 voicell-pe.com



WINDMILL 702 LLC

Daniel Ruiz

702 ENTERPRISE SUITE #1 LAREDO TX 78045

Phone: (956) 717-2900
Fax: 717-2933
Cell: (956) 319-4409
druiz@windmill702.com www.windmill702.com

Want your business to be seen here?

Give us a call: (850) 547-0102
or e-mail us:
wwdr@worldwidedrillingresource.com

Tales from the Field

by *Jeremy C. Wire*
Geoconsultants, Inc.



The Invisible Mud Pit

A recent discussion of drilling site safety (a serious topic which should be reviewed more frequently than it usually is) recalls an incident which happened many years ago, involving a drilling mud pit or sump at a location. Now, mud pits are about nonexistent in our area, having been eliminated by portable mud systems used by most drilling contractors.

The setting of this incident was in the southeastern Mojave Desert of California, near the Colorado River. At the time, there were several sites in the region being evaluated for nuclear power plants, and drilling of exploratory borings and monitoring wells was required to characterize geologic site conditions. Geophysical logs were specified in these studies, and in those days there were only a relatively few service companies which could log "slim holes". A geotechnical engineering firm involved in one of these projects knew we had a logging unit used for our own work, and needing to log several holes, he persuaded me to undertake the roughly two-day drive to the jobsite.

On the second day, it was late and getting dark on the main highway near the location of the first hole, and being tired, I decided not to detour and check out site conditions, but wait for more favorable light in the morning. In addition, a summer thunderstorm was underway, not an uncommon occurrence in this area, with high winds starting to blow sand and pieces of vegetation across the road. The next morning, I was at the site a little after sunrise, before the drill crew arrived. I was not paying too much attention to the ground, looking up at the rig mast to see how to hang the logging tool, when I suddenly tripped, and found myself waist deep in drilling mud! How could this have happened? Obviously, I had stumbled into the mud pit! Overnight, the wind had covered it with a sufficiently thick layer of sand and vegetation debris so the surface looked almost identical to the surrounding desert landscape. The pit surface was basically invisible in the early morning light, at least to me, since I was primarily looking up and not paying close attention to the ground.

By now, the drill crew had arrived; they thought this was a very unusual and funny situation, and rightfully so, and although embarrassed by my stupidity, I had to agree. The heat of the day was rising, and the drilling mud was quickly drying, creating a mud sheath on the outside, and a mud cake on the inside of my pants. Very uncomfortable to say the least! A trip to the motel for a change of clothes while the crew made a trip to clean the hole, and we were back in business without much loss of rig time. This hole and two more were logged that week without further incident.

The moral of this story? If you are working around a drilling location, occasionally you need to look down as well as up. There may be potential hazards on the ground which could result in a much more serious safety incident than the humorous one just related!

Jeremy

Jeremy Wire may be contacted via e-mail to michele@worldwidedrillingresource.com

BREAKING NEWS

Robit Acquires Halco

Robit Plc has agreed to purchase the manufacturing assets and industrial property rights from Halco International LLC and Halco America LLC. As part of a global growth strategy, Robit Plc strengthens its footprint in the USA, which includes a 40,000-square-foot manufacturing factory in Sherman, Texas.

With this purchase, Robit Plc receives the strong brand of Halco and an excellent presence in the USA. Halco is a pioneer brand in down-the-hole (DTH) drilling equipment.

Robit Plc will be manufacturing its DTH-line products used for quarrying, construction, mining, and well drilling applications.



20th Annual Drilling School

GEFCO, Inc. in conjunction with the Canadian School of Environmental & Natural Resources Sciences, Fleming College present:
The 20th Annual Resource Drilling Fundamentals Training Seminar,
May 8-12, 2017.

COURSE CURRICULUM

- TOPICS: ·Drilling Fundamentals
- Parts and Components
- Geology & Cutting Actions
- Mud Drilling
- Grouting and Abandonment
- Drill Bits & Subs
- Geology and Well Development
- Air Drilling Fundamentals

For additional information, log on to
www.gefco.com or call Daphne Schmidt:
Phone: 580.977.3214
Email: dschmidt@gefco.com



GEFCO, INC. an Astec Industries Company

2215 S. Van Buren · Enid, Oklahoma, USA 73703 · Phone 580.234.4141 · domsales@gefco.com · intsales@gefco.com · www.gefco.com



WHO'S IN THE NEWS



The Utah Ground Water Association (UGWA) recently presented Jason Lamb with an award in recognition of his dedication and leadership as president of the association.

Look for additional announcements from UGWA, as well as announcements from Robit, Walter Payton Power Equipment, and H2O Midstream LLC online at

worldwidedrillingresource.info/Whos3-17.pdf

Send your Who's in the News to: promotions@worldwidedrillingresource.com

Environmental Monitoring

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



Support Your Drilling Industry by Attending Meetings and Conventions ~ It is Worth Your Time

Many of us do not like to get out of our normal, daily routine to attend drilling and groundwater meetings and conventions. We can think of many reasons "not to go". If we do not get out of our routine, we will continue in the same rut while our competition will have an edge in this very competitive industry.

First, I can't tell you how many times I "forced" myself to go to a local, state, or national meeting or show and later looked back and said, "I'm really glad I went." Otherwise, I would not have learned about a new product, met a fellow drilling professional I can share ideas and information with, or found a piece of used equipment I really needed at a great price, etc. When you go to a meeting with fellow drilling professionals, don't think of them as "the enemy" or your "competitors". Relax and think of them as new friends you can share ideas, solve problems, or even make a lifelong friend you have a lot in common with.

Recommendation - when you go to a meeting whether a small gathering or a national show, force yourself to be "outgoing" as you see and meet people. Read their name tags, see where they are from and start a conversation - ask "Where are you from?" "What type of drilling do you do?" "How is business?" Remember, you don't learn anything if you do all the talking. Some of the most interesting folks are those who are "the quiet type". Generally, people like to help. If you have a drilling problem or need a piece of equipment, people can help you - they probably have as many contacts as you or more, and you would be surprised what you can learn.

Take time to attend the education sessions, especially the ones you have an interest in, you may be surprised what you did not know.

Bring business cards with your contact information. Give them out to those you talk to, they may contact you about future work opportunities; and collect their business cards for your files, make notes about your conversation to help remember who you met. Make an effort to call them briefly after a few weeks just to say hello. All of the above is good business, an investment in your future, and is well worth whatever the cost may be. You will be glad you did!

Bring business cards with your contact information. Give them out to those you talk to, they may contact you about future work opportunities; and collect their business cards for your files, make notes about your conversation to help remember who you met. Make an effort to call them briefly after a few weeks just to say hello. All of the above is good business, an investment in your future, and is well worth whatever the cost may be. You will be glad you did!

Bring business cards with your contact information. Give them out to those you talk to, they may contact you about future work opportunities; and collect their business cards for your files, make notes about your conversation to help remember who you met. Make an effort to call them briefly after a few weeks just to say hello. All of the above is good business, an investment in your future, and is well worth whatever the cost may be. You will be glad you did!

Tom

Tom Kwader may be contacted
via e-mail to michele@worldwidedrillingresource.com

BIT BROKERS INTERNATIONAL
618-435-5811

BIT BROKERS INTERNATIONAL
ESTABLISHED 1988
USA

#1 WORKOVER BIT

VALCO QUALITY ROCK BITS

**OIL FIELD TESTED & APPROVED
A BETTER BIT AT A BETTER PRICE!**

CALL FOR YOUR QUOTE TODAY!

1-618-435-5811

5568 LOGAN ROAD
WEST FRANKFORT, IL 62896
WWD@BITBROKERS.COM
PH 618.435.5811
FX 618.435.2388

VISIT US ONLINE AT BITBROKERS.COM
ALSO FIND US ON FACEBOOK AND TWITTER!

Deadlines for May issue:
Space Reservation:
March 25th
Display & Classified
Ad Copy: April 1st



April 19-21, 2017
Spearfish, SD

Spearfish Holiday Inn and Convention Center
Phone: (800) 999-3541 • (605) 642-4683

For room booking use group code: BIW
www.holiday-inn.com/spearfishsd

What you can expect from this conference:

Regulatory session • Crazy Horse Mountain Tour • Paul Muehl Scholarship Shoot • Bob Martin Scholarship Golf Scramble • primer social hour • technical sessions • booster social hour • banquet • live scholarship auction • exhibitors • booths with the latest in blasting technology and products • lunch • door prizes and much more!

Blaster recertification credit hours available for Wyoming and many other states!

James McNulty: (605) 786-4959 • bitwconference@gmail.com
Doug Hoy: (605) 940-1055 • dough@sayreassociates.com

For more information, or to register online,
go to: bitwconference.org

See you there!





Booming construction in Addis Ababa, Ethiopia, has led to power and water disruptions becoming a way of life, but not for long.

curring and protracted power outages that impact the flow of water in cities. One Ethiopian business leader seeks to assure the availability of water even with power outages.

Earlier this year, Dr. Addis Zeleke, founder and general manager of Addis Geosystems Co., Ltd and Addis Environmental Services in Addis Ababa, Ethiopia, met with U.S.-based Constant Water Founder/CEO Judson Walls to explore the use of Constant Water systems to ensure and expand the availability of safe water and sanitation in his home country. Constant Water automatically activates in response to a power outage, providing 40-120 gallons of pressurized water to every faucet and toilet; and automatically resets, recharges and refills when power is restored. "As a provider of soil analysis, well drilling and groundwater services inside and outside Addis Ababa, we understand the challenges of reliable water in both urban and rural environments," Dr. Zeleke stated.

Dr. Zeleke read about Constant Water's backup system in *Worldwide Drilling Resource*® magazine (*Are Your Water Well Customers Vulnerable to Power Outages?* Page 17 of the August 2016 issue) and immediately recognized its potential. He visited the company's headquarters in Warrenton, Virginia, to see the system first-hand and discuss how it might be employed in commercial and residential applications in Addis Ababa.

In commercial or high-rise applications, multiple Constant Water systems installed around a facility allows a prioritized and less capital-intensive approach to backup water. Relying on a single larger, expensive single system creates significantly greater impact in the event of system failure. By using multiple systems around a building, each contributes a portion of the backup water requirements. Multiple small systems reduce the impact of failure associated with very large single-purpose systems. Space constraints also limit larger systems in more dense construction environments of our cities.

Smaller systems are more easily integrated in new construction, or retrofitted in existing construction. Additionally, by identifying facility areas with the greatest need, systems can be deployed to high-priority areas first. "Power outages and municipal water supply interruptions are common in Addis Ababa," said Dr. Zeleke. "We think Constant Water could be very important to assuring the availability of water to our citizens. Constant Water systems are the right level of technology for this application and for Ethiopia. It is a simple, rugged, reliable system that will be very easy to install."

Constant Water Explored For Use in Ethiopia

Adapted from Information by Constant Water

Ethiopia remains one of the world's most underdeveloped countries for potable water to its citizens. In recent years, Ethiopia has been one of the fastest growing economies in the world. As a result, urbanization is growing, especially in the capital Addis Ababa and other regional cities. The expanding housing development sector is not without problems - frequent power and water supply cuts are major challenges. Continued demand-driven construction and outdated power infrastructure all contribute to re-



Dr. Addis Zeleke during his recent visit with Judd Walls.

Walls said his company is also exploring international aid opportunities worldwide. "We're confident Constant Water has a strong role in supporting the efforts of government and nongovernment organizations to expand the availability of potable water in disadvantaged countries. There is a huge gap between the point of water production and the point of water consumption that exposes the water to a range of contaminants detrimental to the goals of assuring clean water and hygienic practices. Integrating Constant Water in the planning stages can reduce the cost associated with "laying pipe" across long distances, and put clean, pressurized water closer to the point of consumption," concluded Walls.

LIFE DOESN'T STOP WHEN THE POWER GOES OUT. WATER SHOULDN'T EITHER.

Are your customers ready?

Do they lose water when:

- they lose power?
- the well pump fails?
- the water main breaks?
- the generator fails or runs out of fuel?

Reduces or eliminates reliance on generators

- Reliable
- Easy to use
- Easy installation
- Environmentally friendly

CONSTANT WATER

Automatically provides fresh pressurized water to the whole house as soon as they lose power—every sink, every shower, every toilet.

Discount available for distributors and installers

www.constantwater.com • 540-347-3440

SEMCO, Inc.

GEFCO, Inc.



Schneider Water Services of St. Paul, Oregon, was pleased to purchase this \$30,000 SEMCO pump hoist. On the right, the Sam Jorgensen Pump Co., Inc. Team from Reedley, California, was pleased to attend the event after receiving an \$8,000H SEMCO pump hoist from SEMCO, Inc. of Lamar, Colorado.

Yadkin Well Co., Inc. of Hamptonville, North Carolina, purchased their 12th rig, a 30K, from GEFCO, Inc., an Astec Industries Co. in Enid, Oklahoma. Pictured are Caitlyn, Rachael, and Matthew from Yadkin; and Jamie, Aaron, and Chip with GEFCO.



Although the GKM metal deposits were highly visible as a bright yellow plume, they were on average, similar to existing metal concentrations stored in river sediments from years of mining activity in the area.

EFFECTS OF THE GOLD KING MINE ACCIDENT

Adapted from a Press Release by the U.S. Environmental Protection Agency

Recently, the U.S. Environmental Protection Agency (EPA) posted the final fate and transport report for the Gold King Mine (GKM) release.

It was August 5, 2015, when a field investigation of the GKM near Silverton, Colorado, accidentally triggered the estimated release of three million gallons of acidic, mine-impacted waters into the Animas River. The GKM release crossed three state lines and three tribal lands over a nine-day period for an approximate total distance of about 340 miles.

The report focuses primarily on understanding preexisting river conditions, the movement of metals related to the GKM release through the river system, and the effects of the GKM release on water quality. The research confirmed the EPA's earlier statements that water quality in the affected river system returned to its preexisting levels.

"This report is a comprehensive analysis of the effects on water quality from the Gold King Mine release," said Dr. Thomas A. Burke, EPA's science advisor and deputy assistant administrator of EPA's Office of Research and Development. "While data indicate that water quality has returned to preevent conditions, EPA is committed to continue our work with states and tribes in the river system affected by the Gold King Mine release to ensure the protection of public health and the environment."

The area affected consists of complex river systems influenced by decades of historic acid mine drainage. As the yellow plume of metal-laden water traveled downstream after the release, metal concentrations within the plume decreased as they were diluted by river water and as some of the metals settled to the riverbed.

EPA researchers analyzed more than 1750 total and dissolved water samples collected by EPA, states, and tribes through August 2016, as well as 963 sediment samples from 294 sites throughout the total river system.

Fortunately, there were no reported fish kills in the affected rivers, and post-release surveys by multiple organizations have found other aquatic life does not appear to have suffered harmful short-term effects from the GKM plume. The concentrations of metals in well water samples collected after the plume passed did not exceed federal drinking water standards. However, some metals from the release contributed to samples which exceeded state and tribal water quality criteria at various times for nine months after the release in some locations.

Results from this analysis will be used to inform future federal, state, and tribal decisions on water and sediment monitoring. The EPA plans to continue working with states and tribes to ensure the protection of public health and the environment in the river system affected by the Gold King Mine release.

Rauch Spinner
MODEL 512B
Hydraulic-Pneumatic tools in stock. Sizes 1" to 2"

Model 113HD
All Hydraulic
Sizes 1"-13"

RAUCH MANUFACTURING INCORPORATED
2547 W Success Way
Emmett, ID 83617
(208) 365-3492 • Fax: (208) 365-3792
rauchmfg.com • rauchmfg@frontiernet.net



www.bitcoinc.us



New & Used Bits	Re-tipping
Hole Openers	Stabilizers
Drag Bits & Wings	Claw Bits
Hammers	Pipe Wipes
Hammer Bits	Bolt-on Teeth
Diverter	Subs

12102 Vista Montana Dr
Bakersfield, CA 93306

Office: (661) 834-4348

Rod Henderson
(661) 201-6259

Eran Henderson
(661) 330-0790

bitcoincrod@hotmail.com

Ancient Mining Paves Way for Geothermal Pizza

Compiled by the Editorial Staff of *WorldWide Drilling Resource*®

Beneath the beautiful city of Naples, Italy, rests a silent almost forgotten parallel city from times long ago. Vast quarried sandstone caverns, tunnels, Greek and Roman tombs and aqueducts, and secret passageways run below the bustling streets above. Naples is located on the edge of the Campi Flegrei volcanic structure. Over millions of years, volcanic activity created Neapolitan Yellow Tuff Sandstone, which would become the city's foundation.



Photo of geothermal pizza, courtesy of Le Sorelle Bandiera pizzeria.

This sandstone was perfect for digging deep aqueducts because it was easily worked yet durable. The Greeks first made aqueducts nearly 2500 years ago, and the first artifacts of underground excavations date back 5000 years ago. The Romans later occupied the city and added on to the aqueducts left behind by the Greeks, creating a complex system, which stretched over 40 miles underground from the center of Naples.

In addition to the aqueducts, the Greeks opened underground quarries to extract the tuff blocks needed to build the walls and temples of their city. The abundant sandstone quickly became a predominant building material and can still be seen in architecture throughout Naples. Over the centuries, the underground complex grew through more quarrying and excavations and was touched up along the way, even altered for use as air raid shelters in the 1940s. No one knows the exact dimensions of the Neapolitan underworld, but calculations suggest up to 60% of the current population lives and works above the ancient cavities.

Tuff sandstone also has unique physical and chemical properties, which make it an excellent thermal insulator, ensuring minimal changes in temperature and humidity. These conditions favor the process for fermentation of dough used to make pizza. Going all the way back to Roman times, a baked product similar to modern pizza has been popular in Naples. By using data derived from geotechnical monitoring, a scientific study concluded some parts of the city have reached microclimatic parameters necessary for the natural rising of pizza dough.

Le Sorelle Bandiera pizzeria opened at one of these locations, and specializes in a natural leavening process used to rise the dough. The pizza dough is taken over 130 feet belowground into a cave created by the ancient Greeks around 500 B.C. It is leavened for 24-48 hours exclusively in tuff-walled chambers within the cave, while the microclimatic parameters of the chambers are constantly monitored to make sure the dough rises completely. Afterwards, the process is completed by cooking the pizza in an oven made of tuff. The result is an exquisite "geothermal pizza", which is easy to digest and has a unique sensory appeal.

The ancient workers who created the cave could never have imagined it being used in such a way thousands of years later. What will future generations stumble upon buried beneath the earth from our explorations and mining? What uses, many years into the future, might the empty cavities from our excavations yield?

NATURALLY SUPERIOR





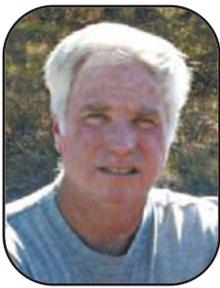


Bring profitability to your jobsite with WYO-BEN's line of high-performance, cost-effective drilling fluids.

- No Complicated Recipes
- Highly Concentrated Products

- Maximize Your Rig's Performance
- Less Handling, Fewer Problems

Contact us today! 1-800-548-7055 or www.wyoben.com



You May Delay, but Time Will Not ~Benjamin Franklin

by Britt Storkson
Owner, P2FlowLLC

The above quote is from Benjamin Franklin, who obviously knew the importance of time. Time governs everything in our lives whether we like it or not. Instead of groaning about the limitations time imposes upon us, let's look at the positive aspects of time.

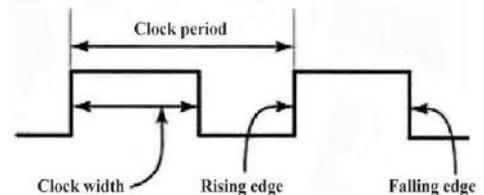
Many culinary (food preparation) and industrial processes are timed, especially when heat is used. Too little time in the process and the product is unusable. We get the same thing with too much time. In addition, I believe it's good practice to have almost everything turn off automatically at some point, for safety reasons if nothing else. I would rather have to turn something on again than deal with heat or other damage caused by a forgotten clothes iron, electric blanket, or other out-of-control heat source. The same also goes for things like sprinkler and other watering systems as being dry is far better than flooding something.

Microprocessors are great at timing things. The "heart" of a microprocessor is a timer of sorts called an oscillator or "clock" oscillator. It's much like a heartbeat in the sense that while it does not pump a fluid like a heart, it switches on and off (oscillates) at a stable, controlled rate. This rate is measured in cycles per second or Hertz. The drawing illustrates a "clock" signal which simply goes from zero volts to a higher voltage (usually to 3-5 volts) and back to zero again.

There are several types of oscillators from really cheap and not very accurate to much more expensive and highly accurate, especially over temperature and humidity variations.

Often, we need a timing function, but we don't need high accuracy. Say we want to turn off a clothes iron after 30 minutes of inactivity for safety reasons. Most likely, the user will not notice if the iron turns off after 22 minutes or 38 minutes of inactivity because the user will not know when the inactivity period starts. The critical issue is the iron turns off at some point - not exactly *when* it turns off.

Other things need more accuracy, and the microprocessor can handle it too. As mentioned in a previous article, I made a pinewood derby timer for a church group one time and it had a resolution of 1/1000 of a second which eliminated any "ties". For this, I used a highly accurate crystal oscillator and wrote the code instructions to update the timer 1000 times per second. When each pinewood derby car crossed the finish line, I simply "captured" what the timer value was at the time and stored the



Storkson cont'd on page 60. 

Innovation. Excellence. Expertise.
Solutions for your business challenges



2017 Alliance Expo & Annual Meeting
April 25 & 26, 2017 Wichita Falls, Texas

Reserve your booth or sponsorship today

- ★ 350 Booths in Exhibit Hall & Outside Equipment Showcase
- ★ Energy professionals & exhibitors from all over the U.S.
- ★ Country & Western BBQ feeds over 2,000 people
- ★ Networking in a casual, professional environment
- ★ Sponsorships available at all levels

800-299-2998 | www.texasalliance.org | #AllianceExpo2017

Geoprobe[®] Sonic *indexing rack*

NEW

for 10-foot tooling

- ▶ Simple to Use
- ▶ Easy to Transport
- ▶ No More Heavy Rod Lifting
- ▶ Eliminates Third Person Crew Member

View the video at ...

geoprobe.com/index-rack

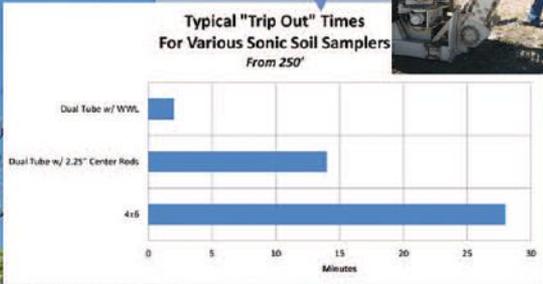




The Geoprobe® indexing rack is a simple approach to assisting drill crews with tripping sonic rods in and out of boreholes, as well as easily moving large amounts of drill casing around the drill site. The indexing rack, which works in tandem with the Geoprobe® Rod Handling System, is adaptable to run 3.5-in. to 10-in. sonic casing in 10-foot lengths.

Visit our website
... geoprobe.com ...
for more information.

NEW Sonic Offerings for Geoprobe® Sonic Rigs & Tooling!



Sonic Weighted Wireline System
geoprobe.com/wwl



High-Speed Sonic Coring Head
geoprobe.com/core-head



Sonic Double Wall Sampling System
geoprobe.com/sdw45

the Geoprobe® Family of Rotary Sonic Rigs

8250LS ... 8150LS ... 8140LS ... 8140LC

Full-Size Rotary Sonic
20 ft. Tooling
24 ft. 6 in. Head Travel

Full-Size Rotary Sonic
10 ft. Tooling
13 ft. 1 in. Head Travel

Mid-Size Rotary Sonic
Long Stroke Option
13 ft. 7 in. Head Travel

Mid-Size Rotary Sonic
Low Clearance Option
7 ft. 8 in. Head Travel

WorldWide Drilling Resource®



Drilling Into Money Not Boring

by Mark E. Battersby

Trade-Ins, Swaps, and Like-Kind Exchanges

One area overlooked by lawmakers and the President-elect amongst the talk about changes, repeal or reform, allows the drilling operation to defer taxes using swaps, exchanges, and trade-ins. So-called "like-kind" exchanges involve swapping or trading one asset for another without receiving strictly cash on the transaction - or a large, immediate tax bill.

Regardless of whether business or investment property is sold or disposed of, wherever there is a gain, there is tax on the gain. Fortunately, Section 1031 of the tax rules allows a drilling professional to postpone paying tax on the gain if the proceeds are reinvested in similar property in a like-kind exchange. Remember however, gain in a like-kind exchange is only tax-deferred, not tax-free.

Most exchanges must merely be of a "like-kind" although, under the surprisingly liberal rules, one business can even be exchanged for another. Again, there are traps for the unwary.

First, both the property given up and the property received must have been held for investment or productive use in a

trade or business. Vehicles, equipment, machinery, etc. used in a business all qualify.

The second basic requirement is obvious: the property exchanged must be of like-kind. A good example is a truck for a truck. With real estate, the most popular type of like-kind exchange, almost any ownership interest in real property exchanged for another interest in real property will qualify.

Under the tax rules, a drilling business has 45 days from the date the property is relinquished to identify a new property, and 180 days (from when the property is relinquished) to close on the replacement property.

Many drilling professionals have discovered finding another party for an exchange can be difficult. Fortunately, there's an option: using a qualified exchange intermediary and a deferred exchange.

A deferred exchange is an exchange in which a drilling business transfers qualifying property and later receives replacement property. If payment is received for the property being relinquished, it makes the transaction taxable. Instead, an intermediary is found to hold the proceeds from the sale of the relinquished property and to use the amount to purchase the replacement property.

While it usually makes sense to defer gains, a drilling operation suffering from a capital loss or having a bad year expecting little or no income might want to defer deductions. Seeking professional advice and help working through the numbers is always a good idea, especially with like-kind exchanges, trade-ins, and swaps.

Mark

Mark E. Battersby may be contacted via e-mail to michele@worldwidedrillingresource.com

OIL & GAS | MINING | WATER WELLS | CONSTRUCTION



THROOP ROCK BIT

CHECK OUT OUR NEW WEBSITE

CELEBRATING 70 YEARS



U.S. MANUFACTURED
WITH AMERICAN STEEL
& LABOR SINCE 1947

WWW.THROOPROCKBIT.COM

E: SALES@THROOPROCKBIT.COM | P: +1 (580) 628-3416

AN ISO 9001 / TS 29001 REGISTERED ORGANIZATION



In Memoriam

Hazen Lawrence "Larry" Oakes (1941~2017)

The Maine Ground Water Association had the sad task of notifying Hazen Lawrence "Larry" Oakes passed away suddenly and peacefully at his home in Boothbay, Maine, January 4, 2017.

Larry was born in 1941, in Deerfield, New Hampshire. In 1954, the Oakes family moved to the Boothbay region where Larry attended Boothbay Region High School. After school, he worked a few years for Ed Harding's construction company.

Married to Jane in 1962, they soon began their family, and Larry started working in his father's business, Ace Well Service. Larry took over in 1972 upon his father's death and successfully continued the business for the next 43 years. His two sons, Peter and Jason worked with him for many years, and took over management after Larry's retirement in 2015. Larry and Jane enjoyed wintering in Florida and returning to Boothbay in the spring.

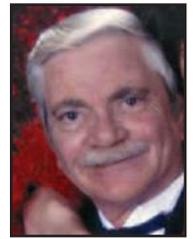
He was an avid fan of stock car racing and was a passionate dog lover. Larry was known for his humorous storytelling, generosity, moral support, and the kindness he readily provided to his family, friends, neighbors, and business customers when anyone needed it.

He is survived by his wife Jane of 54 years; sons Peter and Jason; grandchildren Meghan, Hazen, and Wyatt; brothers Harvey (Joslyn) and Dwight; sisters Norma (Bill) and Mary (Larry); as well as several cousins, nieces, and nephews.

The management and staff of **WWD&R** extend their condolences to Larry's family, friends, and former colleagues.

Terry Bohland (1949~2017)

Terry Bohland, a lifelong resident of Nova and Ruggles, Ohio, passed away January 19, 2017. Born in 1949, Terry graduated from Mapleton High School in 1967, then served in the U.S. Army Special Forces during Vietnam. He worked at Eagle Rubber, Mansfield Reformatory, then spent many years with his twin brother Jerry at T Drilling until he retired in 2001.



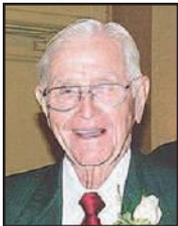
He was a member of Ashland and New London American Legion and Huntington Amvets. He was considered a hard worker who enjoyed helping others and animals.

Terry is survived by his wife Peggy; children Caprice, Peter, Dale, and Steven; three grandchildren; three great-grandchildren; and several siblings.

The management and staff of **WWD&R** offer their sympathies to Terry's family and friends.

Calvin Leroy Beck, Sr.

The South Carolina Ground Water Association reported the passing of Calvin Leroy Beck, Sr. on January 22, 2017. He was 91 years old.



A native and lifelong resident of Aiken County, South Carolina, Calvin was also a veteran of the U.S. Army during World War II. He was the former owner of Calvin L. Beck Well Drilling, then became a consultant to his son at Beck Well Drilling. A

longtime member of the South Carolina Ground Water Association, he was also a member of Montmorenci First Baptist Church where he had served as a deacon.

Calvin is survived by his sons Calvin, Jr. (Sharon) and Louie (Evelyn), seven grandchildren, and eight great-grandchildren. He was predeceased by his wife Ruby.

The management and staff of **WWD&R** extend their sympathies to Calvin's family and friends.

Lest we forget...



Maxidrill is pleased to present the **HARDAB** drilling solution:



- ▶ Small track-mounted drill rig (13 tons)
 - No access limitation
 - No overweight limitation
 - No landscape limitation
- ▶ Fast, safe, hands-free pipe handling system (patented)
 - 660' x 3½" of drill pipe onboard
 - One-man operated drill rig
- ▶ Larger auxiliary compressor with silence package
 - More production
 - Less noise
 - Better fuel economy

Surnamed **THE LITTLE MONSTER** by drillers, the **HARDAB** surpassed production of larger, more expensive drill rigs.

The **HARDAB** drill rig will completely change your working life.

(514) 833-0428 • info@maxidrill.com • www.maxidrill.com

We still Make House Calls.

Call Baroid IDP...we have all the right remedies, equipment, and jobsite expertise.



High-performance products and service for the Water Well Industry

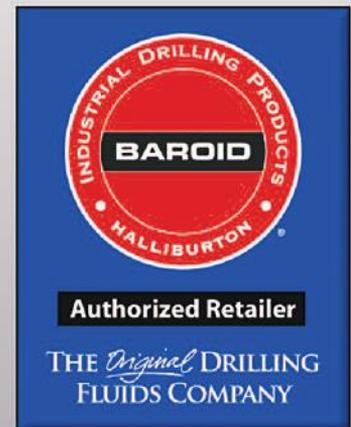
For over 85 years, Baroid IDP has built its reputation on quality products backed by the best in jobsite services. Whether in your office, at a **Water Well** jobsite, or in the lab, Baroid IDP engineers know your needs and they're always willing to get their hands dirty or boots muddy to help solve problems. Baroid IDP's international network of sales and service engineers, laboratory scientists, and support personnel are dedicated to providing industry-leading service and training (over 50 years strong!), while supplying engineered products to optimize performance and minimize end-user cost.

Baroid Industrial Drilling Products

Technical Service: 877.379.7412 281.871.4613

Customer Service: 800.735.6075 281.871.4612

www.baroididp.com



LOOK FOR THIS SIGN AT YOUR LOCAL AUTHORIZED RETAILER

New Rod System to be Unveiled at CONEXPO-CON/AGG

Adapted from a Press Release by Rockmore International



Rockmore International will officially unveil its new Vector Rod System to the North American construction and aggregate industries at the upcoming CONEXPO-CON/AGG 2017 exhibition in Las Vegas, Nevada, this month.

After several years of intense research and development, followed by monitored field tests in various ground conditions, Rockmore engineers developed a new thread design, XT, for the Vector Rod System. The new design incorporates revolutionary new guided cylindrical contact zones between the male and female thread joints. These guided surface features are located in the nose and rear of the thread connections, and serve various benefits and improvements over traditional threads.

The XT thread profile is based on the traditional trapezoidal "T" thread design and is therefore compatible with industry standard thread types such as T38, T45, and T51. Thus, one can interchange and connect standard "T" style threaded components with the new XT thread, although the guiding advantages would be neglected. For example, a T45 threaded bit or shank adapter can be connected to a XT45 threaded rod with full compatibility.

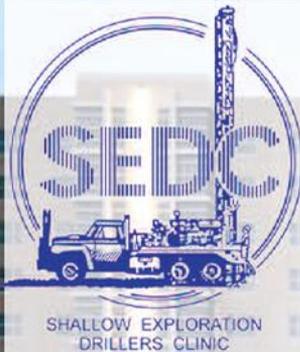
To achieve the full engineered benefits of the XT thread, however, one must consider the drill string as a system of connections between the shank adapter, rods, and the bit in extension drilling applications. Thus, the XT thread design employed in the Vector Rod System enables many performance and reliability benefits leading to major overall cost savings in the drilling cycle.

"We specifically targeted to increase thread service life while enhancing drilling performance in extension drilling applications," said Pejman Eghdami, executive vice president of Rockmore International, in explaining the goal of developing the Vector Rod System. The dual cylindrical contact zones in the nose and rear of the XT threads significantly increase the lateral support between thread joints and stabilize the connections with more rigidity to provide better energy transfer. The enhanced thread support and geometry extends thread life and increases the overall component service life of the shank adapters, rods, and bits with XT threads comprising the Vector Rod System.

Because the XT thread guide feature improves thread alignment, the impact duration when "rattling" rods, as required in uncoupling connections, is minimized. This leads to lower wasted energy transmission, cooler couplings on rods, and ultimately to longer rod life. Thread grease is also better retained on the thread pitches resulting from the new XT geometry, further increasing thread life in all XT components.

Another key advantage of this rod system over traditional threaded components

New Rod System cont'd on page 42.



Announcing the 52nd Annual Shallow Exploration Drillers Clinic!

April 11 - 13, 2017

Embassy Suites by Hilton
Olathe, KS

The 52nd SEDC will feature a National Drilling Association (NDA) program, and exhibitors, outdoor displays, and a full agenda of technical presentations. We look forward to seeing you there!

For more information contact:

Kyle Halverson
kyle.halverson@ks.gov
(785) 291-3860

Randy Billinger
randy.billinger@ks.gov
(785) 291-3037

Or visit: <http://sedc.unl.edu>

For Room Reservations Call: (913) 353-9280
www.kansascityolathe.embassysuites.com

Room rate is \$149.00/night—Mention you are with SEDC to receive this rate.
There is a limited block of rooms, early booking is recommended.

The “Idiots” Corner by “Billy Bob Smith”

“This is a takeover, not a merger
of equals.”
~Adrian Pilz



Did you do anything stupid in 2016? Well, you would be amazed at some of the stupid stuff people did last year. I will only share a few of the common ones as I'm sure you have more important things to do than read about other people's dumb actions.

Last year, a very large organization decided they wanted to be even bigger so they purchased one of their larger competitors to take them off the market and gain their revenue and market share. Guess what? It only took six months for them to realize it was a huge mistake. Yes they gained their revenue, but also their huge debt - HELLO!!!

One of my favorite stories is when Sperry merged with Burroughs. Seven years after the so-called merger, management still couldn't agree on whether Sperry bought Burroughs or Burroughs bought Sperry.

I don't care who you voted for - did you know Macy's refused to carry Trump stuff? Guess what - now they are closing 60+ stores and laying off 10,000 people. The lesson - Don't mix business with politics. How about the stupid restaurant owner who said, "If you voted for Trump, you are not welcome here."

My favorite stupid stuff from 2016 was the whole election chaos and dysfunction portrayed by the media and pundits. It's a good thing they are losing relevance because it's almost like predicting the weather. Even if they are wrong, they will find an excuse to justify their errors. Admit a mistake or stupidity - never.

Here's one more for the books. Since the internet seems to be taking over the world, this organization decided all their hiring would now be done online only. No more personal interviews. Can you believe it???? Well, it only took a few bad hires for them to realize, yes, technology is a valuable tool, but they couldn't eliminate the human touch without making serious mistakes. Been there?

Billy Bob

Contact him via e-mail to michele@worldwidedrillingresource.com

Water Innovation from Israel to Nevada

*Adapted from Information Provided by WaterStart and
the Nevada Governor's Office of Economic Development*

There are 7366 miles separating Jerusalem and Las Vegas; but while the two cities may be a world apart, their interests unite when it comes to water technology. The Nevada Water Center of Excellence (COE), the Southern Nevada Water Authority (SNWA), and the Governor's Office of Economic Development (GOED) are working together with Israel to create sustainable water solutions for the state.

"Through our work with partners, we have struck two agreements that have the potential to bring new businesses and technologies to Las Vegas from Israel," said Nathan Allen, executive director of the COE. "As we continue to do business in Israel, we are seeing progress within the water industry sector, and I'm optimistic that we'll see even more deals in the future."

Israel has long positioned itself as a global water technology leader. Enhanced research and development efforts in the arid country have spurred a number of homegrown companies to create sustainable designs for the water sector.

As the driest place in the United States, Nevada is in a unique position to collaborate with Israel on water technology. In 2014, Nevada Governor Brian Sandoval went on a trade mission to Israel to work in partnership with the country toward water solutions for two similarly dry landscapes. It was also a time for experts in water resource technology from both locations to exchange ideas. On the final day of his trade mission, the governor addressed the Water Technology and Environment Control Exhibition and Conference (WATEC) in Tel Aviv.

"Nevada and Israel are both challenged by our arid regions and as a result, we both recognize the opportunities our homelands have given us," said Governor Sandoval. "New technologies and smart solutions are essential for Israel to meet the water demands necessary for a growing and vibrant population and industrial sector; and the same can be said for Nevada. I look forward to continuing to work with Israel and WATEC to expand on the opportunities available to us."

Nevada officials hope to continue building connections through job growth and relocation between Nevada and Israel as they develop useful water technology for dry climates. "For nearly a decade, SNWA has maintained strong relationships with water agencies in Israel," said David Johnson, SNWA deputy general manager. "This not only increases service reliability for all of our customers, but also advances the evolution of these cutting-edge technologies."





X-treme Drilling Tools

VISIT US AT
Booth # B91211



Contact the DTH Manufacturing Experts

Tel: 866-900-BITS or (817) 539-2500

Fax: (682) 222-1050

Email: Sales@DrillKing.net

www.DrillKing.net





AMS CELEBRATES 75 YEARS OF CUSTOMER SERVICE

Adapted from Information by AMS, Inc.



Within any industry or even just life itself, there are moments where average people who follow their passions and work hard begin something, which will have impacts through the years. In 1942, Art Vollweiler opened a blacksmith shop, which would become the foundation for AMS, Inc., on one simple yet profound philosophy - "everything was a work of art". Much like a painter who passionately constructs a beautiful masterpiece, Art considered every AMS product a direct reflection of himself. Every innovative design was developed with purpose and longevity in mind, and every task was undertaken with a creative and serious mind-set.

The company blossomed from its roots in American Falls, Idaho, as Art's reputation for innovation grew. One particular auger design still in use today was developed when the Soil Conservation Service of the United States government asked Art to develop a tool for sampling soil. The company built on the project's success and developed a complete line of hand sampling equipment, including augers, hammer-driven samplers, specialty shovels, and accessory items.



Marc, Art, and Rick.

AMS is celebrating its 75th year as a leading manufacturer of high-quality sampling equipment used in the environmental, geotechnical, agricultural, and remediation industries by a wide range of professionals throughout the world. The company has been helmed by three generations of the Vollweiler family over the years. In 1980, Art sold the company to his son Rick Vollweiler. Art's grandson Marc Chipps joined the company in 1989, and has worked his way to his upper position as President of AMS.

The company has a complete team of professionals who design, develop, manufacture, and offer environmental and geotechnical investigation equipment. In short, AMS manufactures products to help protect and restore groundwater resources. Some of their major products include a complete line of soil, soil gas, groundwater sampling, and sludge sampling equipment. AMS also manufactures the Powerprobe™ direct push/hollowstem auger drill rig used primarily for environmental and geotechnical drilling. You can find AMS equipment all over the world working to clean the earth.

After 75 years, AMS still uses the same philosophy Art Vollweiler incorporated when he founded the company. They are focused on identifying and developing new products which address current needs within the industry; improving, as possible, the current products; and continuing to strengthen the company's customer support. To better serve their customers now and into the future, AMS looks to further enhance their craft while consistently maintaining Art's original vision and workmanship, so the quality is 100% all of the time.

SERVING THE CONSTRUCTION INDUSTRY

**Need something special?
Talk to us - we'll make it happen
faster than you think.**

Serving the Drilling Industry

STAR IRON WORKS

;@? &9<4!57 \$3<773
 .,5+0,39=57! 8@??
 166>);?>6@26 # 18:>:;?>;@ @ @
 %9+(18:>:;?>@82:
 ===-039</<45=4<"0-#4



Ronnie Said “No”

by John Christ
J.C.’s Drilling Consultant

I gave Ronnie [*WWR* Managing Publisher] a call to tell her I was going to quit writing articles. The reason being, I want you as a reader to get the best information possible. I have been out of the industries - water well, horizontal directional drilling, mining, or construction applications - for a few years now and just don’t have my finger on the pulse of what’s relevant. Things do change. Ronnie understood why I wanted to stop, but also wouldn’t accept me quitting. She has always been a motivator for me. Since I have been disabled, she has gone above and beyond to help me. So, she said there may be some people out there who have a subject they would like to get out to the industry, but don’t have the time or just don’t like writing articles. I may be able to help. I have the time, if you can provide the subject matter. Explain to me the pertinent points and I will put together the article. What do you readers think of this idea? Also if you have a question on drilling fluids or the drilling of a well, I always have an opinion! Just contact Michele here at *WorldWide Drilling Resource*[®] and she will let me know.

Just in case this is my last article, I have a few things I would like to say. Those of you who know me, know I have said what I think, no sugar added. I had a boss who wanted to see how I was taking care of business. So, he came to the territory to ride with me. We were going down the road and saw a horizontal directional drill working along the side of the road. I jumped out and checked out the situation. I walked up to the supervisor of the jobsite and said he was doing everything wrong! Needless to say, this set up a confrontational discussion. I explained why I said it in my unique way, and by the time we went to leave, the supervisor shook my hand and gave me a bro hug! My boss and I got in my truck and he said, “Unbelievable.”

Some people have said I’m cocky; no, just confident in my abilities at the time. Why was I confident? Because if there was a training class or seminar on any subject, I was there. Over the years, I have heard from drilling professionals who were too busy to go to the training, seminar, or convention. The time could probably save you many more hours throughout the year than you spent at the event. These forums are also a great place to network, whether to find potential work or help with a project. Get involved in your state, regional, and/or national associations. It is one of the most rewarding things you can do!

I have many true friends who have come out in my recent situation. I was going to name names, but it was more than my article is allowed to be. Please friends, you know who you are and be assured I do appreciate everything you have done to help me through such a trying time! You can’t pick your family and you can only be half the factor in picking your friends. Those who have chosen to accept my friendship are the best friends anyone could ask for. Those who have chosen not to accept, oh well, your loss!

After putting more thought into this, I really hope some of you give me articles to write. I do enjoy putting my thoughts down on paper, because I believe in what I say and how I do it. I know not everyone does, but that’s all right because my point is really to try and start a discussion on a subject. In the past, I would take the opposite side from the other person or people I was with just to have a comprehensive discussion on a subject to try and get all the points out and really come up with a consensus on the matter. In case this is my last article, I thank you all for the years you put up with me!

*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 *WWR*.*

John

John Christ may be contacted via e-mail to michele@worldwidedrillingresource.com

THE MERIT BADGE FOR GEOLOGY

Adapted from Information Provided by the American Oil & Gas Historical Society and Boy Scouts of America

The Boy Scouts of America geology merit badge began in 1911 as a mining badge. At the time, it was one of less than 30 badges. The mining merit badge evolved into the rocks and minerals badge and, in 1953, became the geology merit badge.

In 1953, the merit badge’s description for what a geologist does said four out of five geologists become “oil geologists” with an expected starting salary of \$300 per month. “You may have to be a nomad instead of settling down for life in one spot,” it continued. “You may have to ‘sit on’ a well all night and then drive a hundred miles to report on it. You may have to burn in India,



The Merit Badge cont’d on page 58.

Atlantis Vault

- Simple installation
- Trouble-free operation

For more information call:
(270) 786-3010
or visit us online:
www.geothermalsupply.com



Engine / Machinery Maintenance

by: Sullivan-Palatek, Inc.

Portable Diesel Driven Air

Compressor Technician Serv. School

April 24-27 ~ Michigan City, IN

phone: 219-874-2497

www.sullivan-palatek.com

Irrigation

by: Rain Bird Academy

Training

April 3-7 ~ Anchorage, AK

phone: 800-498-1942

www.rainbirdsolutions.com

Pipe

by: McElroy University

Large Diameter Operator Qualification

April 3-6 ~ Tulsa, OK

Fusion Inspector Train. & Qualification

April 18-20 ~ Tulsa, OK

phone: 918-836-8611

www.mcelroy.com

Pumps

by: Franklin Electric

Irrigation / Industrial

April 18-19 ~ Wilburton, OK

phone: 800-348-2420

<http://franklinwater.com/more/training/franklintech-schedule/>

Life-Changing Moments

by *Tim Connor*



Ever notice how a person's life can change from one minute to the next?

- A loved one passes away. And you think about all of the unspoken words and undone deeds.
- Say the words "I Do" and your life is never the same.
- A car accident - bang.
- Your first child peeks his/her head out from the safety of the womb and, bingo, you are a parent for the rest of your life.
- Those fateful words: "You are fired."
- The weather tears away at the fabric of your home, leaving a pile of debris in its wake.
- You read and reread the numbers on your lottery ticket in disbelief.

There are many other positive and negative life-changing minutes. Yes, I understand when you say "I Do," there were most likely months or even years of courting, and when you hear your child's first cry there were months of anxious waiting and excitement, but these actual events seldom take more than a few minutes to actually happen. Then your life is never the same.

I have experienced many positive and negative life-changing minutes during my 70+ years of traveling down the highways of life, and I can tell you from my perspective one can never really know the full and total consequences or impacts of these life-changing minutes - whether it is as a parent of a child, a business owner, or the son or daughter of a parent who has left this earth plane forever.

So, Tim, what is your point in this?

I would urge you to understand the critical importance of each of the momentary events which has or will impact your future. They each bring with them a series of new consequences, challenges, opportunities, and decisions. Make these decisions carefully when you can, recognizing that in the end, each of us is responsible for our own destiny; and how it is defined by us and the world, and the quality of our lives - what we take from this life and what we give back to it. Yes, there are many events occurring in our lives which are beyond our ability to control or understand. But we can still learn to live with acceptance, passion, freedom, faith, courage, and patience - regardless of the impact of these events in our lives.

The adventure of life is just that, an adventure. It brings with it surprises, lessons, failures, people who impact our attitudes and behavior, uncertainty, opportunity, and lots and lots of questions. In the end, each of us will be held accountable by life not just for how we lived it, but who we helped, what we shared, who we scorned, and what we left undone.

Relish the moments of your life - each and every one of them - because the rest of your life could change forever - in the next minute!

In His service,

Tim

To receive Tim's weekly FREE motivational booster articles, contact him at 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

GeoVISION™ Borehole Video Systems

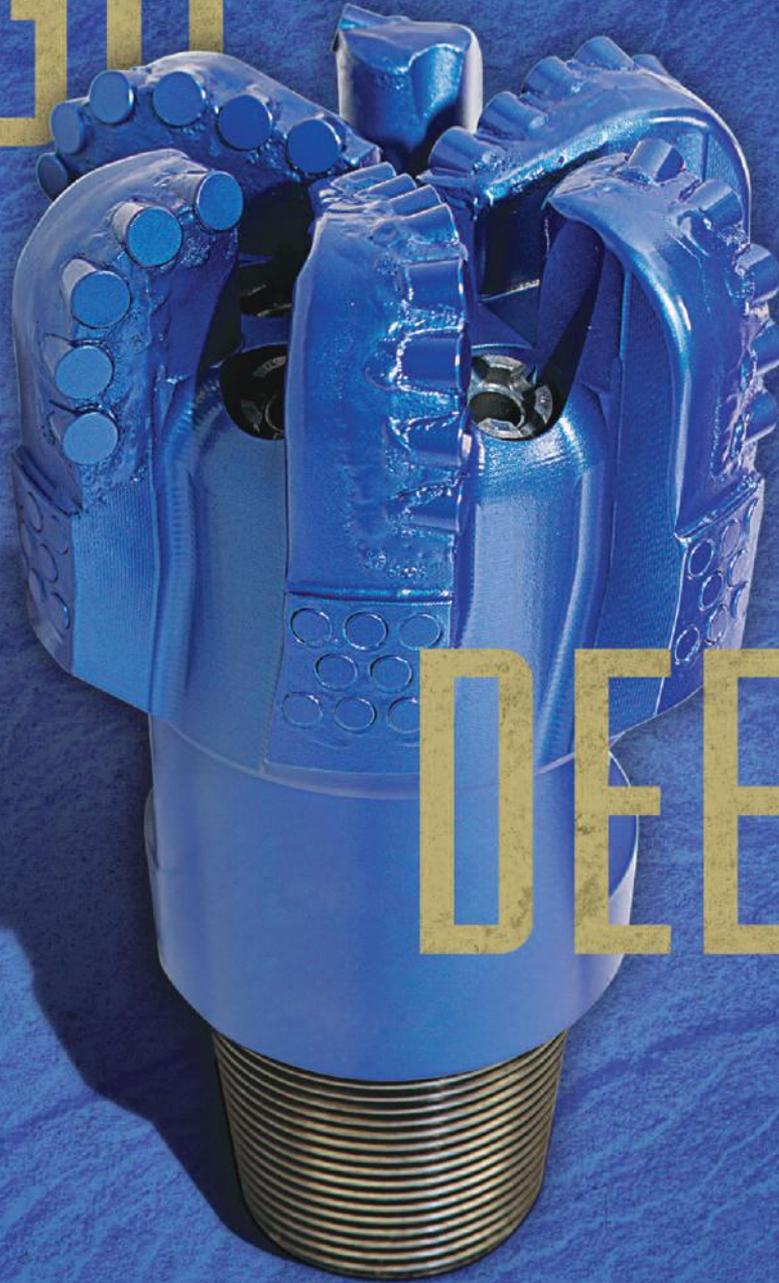
WorldWide Leader in Small-Diameter Cameras
 World-Class Support for over 25 Years
 Hand Reel Systems to 1000 Feet
 Electric Winches to 2000 Feet
 Interchangeable Cameras
 Made in the U.S.A.



ALLEGHENY INSTRUMENTS

AlleghenyInstruments.com
 800-255-1353 or +1-802-626-5302
 Sales@AlleghenyInstruments.com

GO



DEEP

We carry a complete line of new and surplus tricone bits, hammer bits, hole openers, PDC bits, HDD single cutters, HDD DTH products and much more.

KS/BIT

800.213.1389 / 618.438.9279 (ESPAÑOL) / KSBIT.COM

MARCH 2017

Providing Water is an Honor

Adapted from Information by The Water Systems Council's Water Well Trust

When it comes to helping Americans gain access to a clean, safe water supply, the Water Systems Council's Water Well Trust is the only national nonprofit organization answering the call. Recently, the organization completed two water well projects in South Texas in memory of the late E.D. "Skip" Cook, CEO of Pumps of Houston, Inc.



Matthew Cook, Tommy Cook, Jr., Tammy Brazier, Tommy Cook, Anthony Brazier, and Brent Cook

Cook dedicated 45 years to Pumps of Houston, Inc., and was an active member of several groundwater industry organizations, serving on local, state, and national groundwater boards. After his death on October 26, 2015, the Water Systems Council's Water Well Trust established a memorial fund to drill water wells for families without access to clean water in South Texas.

The first water well project was completed by J & S Water Wells in Sublime, Texas, for homeowner Charles Foley, a disabled former truck driver who had been hauling water to his home in buckets for bathing, cooking, and drinking. "You won't believe the difference the well will make," said Foley. "When I say it really means a lot, it does!"

The second water well project was completed by Patrick Drilling in Livingston, Texas, for Tammy and Anthony Brazier. Anthony is disabled, and the Braziers live in an area with no public water supply. The couple had to haul their water in five-gallon bottles. "We give thanks to Skip every night in our prayers," said Anthony. "We call it Skip's water!"

Pumps of Houston donated materials for both wells, including the pumps, control boxes, and pressure tanks.

Thomas A. "Tommy" Cook, Sr., president and CEO of Pumps of Houston, said his brother Skip started in the water well business at 14 years old, working in the business their father created in 1960. "We were required to work 40 hours a week in the summer months, and most holidays." Skip learned everything from assembling and sizing pumps, to customer relations and business management from his dad.

After graduating from the University of Texas, Skip worked a short time for a marketing company before he was recruited to join the family business as a road salesman for East Texas.

Skip had great success building a new territory for Pumps of Houston, Inc., and learning from his customers how water wells were drilled and produced to create clean drinking water. Skip's involvement and leadership in the water well industry quickly grew from local water well meetings to the state and national level.



Skip had great success building a new territory for Pumps

WWD&R was able to capture this great smile from Skip at the Texas Ground Water Association Annual Convention & Trade Show in 2010.

of Houston, Inc., and learning from his customers how water wells were drilled and produced to create clean drinking water. Skip's involvement and leadership in the water well industry quickly grew from local water well meetings to the state and national level.

Tommy Cook said although his brother dedicated many hours to the groundwater industry, "Skip's happiest moments were spent with family as loving husband, father, and grandfather."

The Water Well Trust is dedicated to helping low-income families or individuals with wells which are no longer functioning properly, have contamination issues rendering the well unusable, or have no well, or safe water source.

If you would like more information about the Water Well Trust, or if you would like to make a tax-deductible donation, visit www.waterwelltrust.org.

Known For
Service - Quality - Selection

MERRILL

MFG.™

#1

#1 In The Industry

<p>Yard Hydrants</p>	<p>Pitless Units - Kits - Adapters</p>	<p>Waterproof Splice Kits</p>	<p>Tank Tees</p>	<p>Insert Fittings</p>
-----------------------------	---	--------------------------------------	-------------------------	-------------------------------

Now #1 In

Quick Set Up
Lower Cost
Pump Control
Control Switch

Storm Lake, Iowa 50588 • 1-800-831-6962 • www.merrillmfg.com



TAKING TIME TO APPRECIATE EMPLOYEES

Adapted from Information by Fierce, Inc.

There seems to be a holiday dedicated to celebrating everything under the sun: "Star Wars Day" is May 4th, "Eat a

Red Apple Day" is December 1st, and Employee Appreciation Day is coming March 3rd. While taking a day to honor Star Wars and red apples can be fun, some things - such as hard-working employees - should be honored more than just one day each year.

While recognition rewards and programs like Employee Appreciation Day can be useful, organizations shouldn't forget the importance of frequent feedback and honest communication. Instead of rewarding "big wins" on a certain day, managers should acknowledge contributions on a regular basis. Sincere praise creates highly productive work environments, builds strong relationships, and serves as a great motivator.

Managers can show their appreciation to team members year-round in three easy ways:

- **Stay up to date.** Stop delaying, avoiding, postponing, or rescheduling feedback. In fact, don't let more than 48 hours go by when an issue arises. Avoiding a difficult conversation about performance will only result in a laundry list of complaints, causing the recipient to want to make a run for the exit.

Make things easier and much more productive by addressing issues as they arise in a short and sweet manner, free of any emotional load. Rule of thumb: if a manager has more than three positive or negative examples of employee behavior to communicate, this conversation is long overdue.

- **Praise publicly, coach privately.** Be generous and specific with praise, but don't get overly gushy or take up too much time. Acknowledgement should include the observable behavior, where it took place, when it took place, and most importantly, what changed or was produced for the better.

If the issue is negative, pull the employee aside. Keep employees' feelings in mind - if the conversation could reflect poorly on their work or reputation, discuss the issue in private.

- **Ask for feedback.** One of the best ways to acknowledge employees' efforts is to turn the tables and ask for their feedback on a high-stakes decision. More than anything, employees - especially Millennials - want to play an active role in their organization. Giving them an occasional opportunity to participate at a deeper level not only improves decisions, but also expresses appreciation for the employees' dedication and commitment to the company.

Appreciating employees is one of the simplest, most cost-effective ways to enrich connections and foster a positive workplace culture. Recognition can motivate and inspire employees, leading to higher retention rates, greater job satisfaction, and better bottom lines. Showing appreciation is much more than a once-a-year event; it's a core component of good management.

THE ORIGINAL THERMAL GROUT.



FIELD PROVEN.

If you haven't tried TG Lite for your project, maybe it's time you do.

[GEOPROINC.COM / PRODUCTS](http://GEOPROINC.COM/PRODUCTS)

KRUSE ENERGY AUCTIONEERS
on IronPlanet marketplace

IRON INTERNET BIDDING

Auctioneers: Jim Richie - OK Lic# 0330149 • James Dyess - TX Lic# 8550
A 2.5% administrative fee will be charged on all purchases

AUCTION

THURSDAY • APRIL 20TH, 2017

TONKAWA, OKLAHOMA

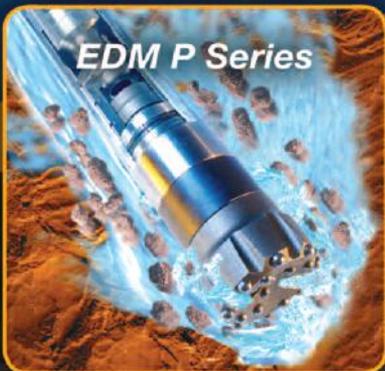
O-K Bit Service, Inc. **Inventory Reduction Sale for OK Bit Service, Inc.**
40 Plus Years in Business...Same Location

Over 3,500 Rock Bits For Oil & Gas • Water Well Mining & Directional Drilling Operations
TCI & Milled Tooth Bits, Including Many NEW
From 44" to 3-7/8" • Plus Matrix & Steel Body PDC's & Hole Openers

FOR MORE INFO Call Gary Stout @ 405-203-0311 or View Online at www.kruseenergy.com

F 20170104

Extreme Performance Gets Your Hammer **DOWN** and Your Profits **UP!**



EDM's P Series, BB Series, and HDH 500 & 600 DTH Hammers are the Best in the Industry.

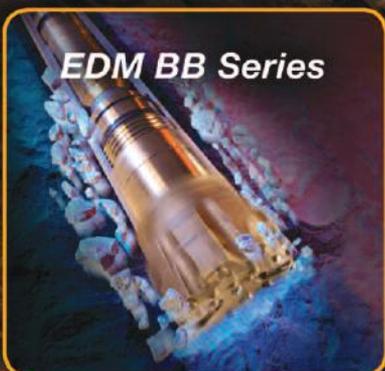
EDM's P5*, P6* & P8* perform in any application:

- Tubeless—Fear No Water
- Mining & Construction
- Geothermal/Water Well

* Patent Pending

Additional Hammer Choices for 2015:

- P Series – added a new 8" DTH Hammer
- T Series – added a new 3.5" DTH Hammer
- HDH – patented one-piece sonde
- Our BB Series – continues reliable performance



Hammers and bits from EDM's vast inventory have been well tested on job-sites around the world. They are tough enough for the gas and oil fields, fast enough for the quarries, and long lasting for the water well industry.

Contact us at **1.800.233.0173** or a distributor near you or visit us at **www.edmmfg.com**

Our Hammers and Bits are made in the USA with American Steel by Americans!

EASTERN
DRILLER
MANUFACTURING

105 Walnut St. | Columbia, PA 17512

Phone: 717.684.3070

Fax: 717.684.2566

E-mail: sales@edmmfg.com

WorldWide Drilling Resource®

In Memoriam

of our dear departed friend, Howard "Porky" Cutter

by Veronica I. "Ronnie" Jones, Managing Publisher on behalf of the **WWD** Team



An empty chair has a meaning all its own. We each have felt the loss of someone near and dear to us, such is it with our dear friend Porky. He had a smile like no one else. He was jolly and yet serious, especially when he was speaking of the world he loved, his wife, his sons, and of course the drilling community.

Yes, it is true, Porky left this earth on Sunday evening, January 15, 2017, at the young age of 80 at his home in Virginia Beach, Virginia, after a battle with cancer. He leaves behind his loving wife Bessie (Bess) Mackie Cutter, two sons Randall (Randy) Eugene Cutter; Chris Evans "Piglet" Cutter; two grandsons Randall Cutter, Jr. and Howard Anthony Cutter. He was preceded in death by his parents and infant daughter Cindy Lynn Cutter. A memorial service was held in his honor at the Unity of Tidewater Church, Virginia Beach, Virginia.

Porky was a native of Covington, Marshal, and Enid, Oklahoma; having lived most of his childhood near Covington. He was a very unusual man in that he was a second generation drilling professional in both oil/gas and water well. After moving from Marshal, Porky formed Cutter and Dad Drilling Company in the water well industry. Upon his father's death (Ellis Earl "Porky" Cutter) he and Bess moved to Virginia Beach, Virginia, and formed Drilling Consultants International.

He was very proud of being a "**GREEN JACKET**" with the National Ground Water Association, holding the early membership number of four in Master Certification in 1983 with the association.

You never saw him without his bride, Bess, as is quite evident by the photographs proudly taken by **WorldWide Drilling Resource, Inc.** throughout the years. Many may not know or remember, but Porky wrote articles in **WorldWide Geothermal Resource™** magazine during its tenure. They were always well received worldwide.

Many will recognize him from Cycle Stop Valves several years ago. Yes, there they were. As Bess delicately placed the chocolate candies around the exhibit table, Porky went to work explaining exactly how that special valve worked. I'm sure he also told some stories while he was educating the drilling contractors.

He always loved attending the shows and eagerly looked for the "red jackets" and graciously became part of our family as can be seen in these photographs taken at Virginia Water Well Association Shows (left).

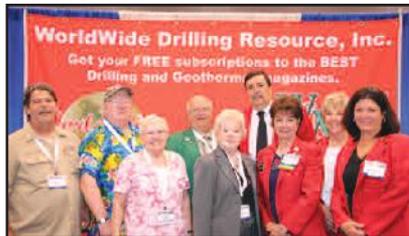


Oh, and here they are with their "red jacket" family, along with Fred and Joan McAninch, and Piglet at a JUBILEE.

No matter where the drilling road took him, from shows to drilling projects, and even to the Eiffel



Tower in Las Vegas, he had that smile from ear to ear. That year at the Eiffel Tower, it was a surprise from **WWD** for them assisting with the booth and answering drilling questions at the **WWD** Booth for the attendees at the Las Vegas Expo that year. We were so happy to have them join us.



Having had the privilege of knowing "MR. PORKY", was an honor to me and provided me much insight into the drilling industry. I shall never forget him and neither will any of the **WWD** Team worldwide.



May you rest in peace, friend . . .

Lest we forget . . .

Q WATER
WELL DEVELOPMENT TOOLS
Patent No. 6,868,904

ENVIRONMENTAL SERIES

- ◆ 3/4-inch
- ◆ 1-inch
- ◆ 1.25-inch
- ◆ 1.5-inch
- ◆ 2-inch

Advantages of Surge Block Method

- ◆ Most effective way to develop any well
- ◆ Produces more water, less color and turbidity
- ◆ Only the surge block method "back washes" the well screen, removing clay bridge, sands and silts
- ◆ Flexible wiper creates suction and pulls water into the screen (not available with other methods)
- ◆ Constructed of inert long-lasting materials
- ◆ Capable of lifting water over 50 feet
- ◆ Removable ball valve prevents water from flowing back into well and will not clog with sediments
- ◆ Fast, effective and saves time and money

PRODUCTION SERIES

For more information visit:
www.welldeveloper.com
850.727.4427

New HDD Training Program Available

Adapted from Information by Vermeer Corporation

Vermeer has created a partnership with the Des Moines Area Community College (DMACC), Iowa's largest two-year college, to certify the Vermeer HDD CircuitSM training program. Individuals who complete the course will be classified as a certified horizontal directional drill (HDD) operator.



The partnership opens the enrollment of Vermeer HDD Circuit training to veterans or other individuals seeking a career in HDD or looking to advance their career in the industry. "Vermeer and DMACC are particularly excited about the potential benefits to our growing veteran population," commented Rob Denson, president of DMACC. "The fact that the HDD Circuit training program is a certified addition to the DMACC curriculum offerings means that veterans can use their GI Bill benefits to cover the cost of the HDD Circuit program tuition and lodging to attend the two-week instructor-led program that provides a mix of classroom time with hands-on experience in a small-group learning environment."

The school has worked with Vermeer on a number of training initiatives focused on building the pipeline of skilled workers for its operations. "Instead of training people to work at Vermeer, this innovative program is training individuals to work in the HDD industry, with skills that can be applied anywhere in the country or the world. These are high-skilled jobs that provide outstanding career opportunities for individuals willing to train. DMACC is very proud to be able to certify this program," said Denson.

Dave Wisniewski, vice president, underground products at Vermeer said, "While

other training programs may provide a certificate of completion, each student who successfully completes the Vermeer HDD Circuit training program will be certified as an HDD operator from an accredited college. This is important as more project owners are asking underground contractors to verify their HDD operators have received training."

Vermeer HDD Circuit program will be taught by Vermeer trainers with extensive experience in horizontal directional drilling operations. During each two-week course, students will be exposed to topics on HDD safety, jobsite evaluation and setup, drill operation best practices, underground utility locating and potholing best practices, drilling fluid mixing and testing, proper bore and pullback techniques including the development of a bore to plan, as well as basic drill maintenance and inspection. Students will get approximately 40 hours of classroom time and 40 hours of hands-on experience - 20 hours locating and 20 hours operating the drill in the field.

The goal of the training program is each student who successfully completes the program will be a productive drill operator or crew member. HDD Circuit program students must complete and pass a written test and hands-on evaluation to complete the certified HDD operator designation.

Tony Bokhoven, lifecycle training manager at Vermeer said, "We are creating an opportunity for a new generation of drill operators to have a career in a growing global industry. At a time when the horizontal directional drilling industry is experiencing a shortage of drill operators, the HDD Circuit program is an ideal training program to help veterans, students, and others looking for a way to enter this growing industry."

Open the Doorway to all the Event Photos during the 2M Trip to West Yellowstone.



To see all the pictures from this event, go to:
www.worldwidedrillingresource.info/gallery/2017/2M2017,
or just click [here](#).

Compliments of *WorldWide Drilling Resource*®.

Photos are copyrighted and released for personal use only - no commercial use permitted.

The Un-Comfort Zone II

by Robert Evans Wilson, Jr.



Weighing in on Freedom ~ Is it a Lifestyle, Mindset, or a Right?

Janis Joplin famously sang the lyrics of Kris Kristofferson and Fred Foster in the song *Bobby McGee*, "Freedom's just another word for nothin' left to lose."

Is freedom simply the lack of entanglements, obligations, and responsibilities? Is the homeless man on the street corner free? He certainly doesn't have to be at work by 9:00 a.m., pay rent, raise children, or keep up with friends and family. There might be freedom from stress in such a lifestyle, but is he free? I think most of us would answer, "No."

Some say freedom is a spiritual concept. Osho, an Indian spiritual teacher said, "True freedom is always spiritual. It is something to do with your innermost being, which cannot be chained, handcuffed, or put into a jail." Is freedom then a mind? Being able to be at peace regardless of the conditions? An example of that might be this quote from Holocaust survivor Viktor Frankl in his book *Man's Search for Meaning* which recounts his experience in a German concentration camp during World War II: "The highest and greatest of the human freedoms is to choose your attitude in any given set of circumstances."

Which leads me to think of the debate over Free Will vs. Determinism. Are we free to make our own choices, or are our actions and behaviors determined by either a higher power, or our background and environment? I'll leave this argument to the professional philosophers and psychologists, and for the sake of this article assume we have free will.

I recall my father telling me when I was a child, "Your freedom ends where my nose begins." My father was always saying funny things, so at the time I wasn't sure if he was being serious. In hindsight, I think what he meant is I am free to do as I want as long as it doesn't interfere with someone else's freedom to do what they want. Which brings to mind this example: freedom of speech does NOT mean you can yell, "Fire!" in a crowded movie theater when there is no fire.

Milton Friedman, in his bestselling book *Free to Choose*, talks about having choices in everything we do - especially economic choices - as the basis of freedom. French philosopher Simone Weil, concurs with her statement, "Liberty, taking the word in its concrete sense, consists in the ability to choose." As did the power hungry, Napoleon Bonaparte, who, perhaps paradoxically proffered, "Nothing is more difficult, and therefore more precious, than to be able to decide."

The founders of the United States were motivated by what they considered to be the inalienable or nontransferable rights of life, liberty, and the pursuit of property. Their belief in the Right to Life means an individual owns his or her life and the sustenance necessary to maintain life and body. The time and labor put into producing one's life's sustenance creates property we then own. This is how the concept of property

Wilson cont'd on page 52.

Serving the Water Well, Environmental, Sonic, HDD, Mining, and Construction Industries

A Manufacturer of: Inertia-Welded Drill Pipe, Dual-Wall Drill Pipe, Wireline, Drill Rod/Casing, Composite Wireline Drill Rods, Sonic Drill Pipe/Casing/Bits, Percussion Casing/Bits, Drill Collars, Fishing Tools, Subs, Starter Rods, and Stabilizers.

Threads: API, Mayhew, BECO, DCDMA, FEDP, 88.9mm-177.8mm
Other Industrial Threads and Custom Threads



We now accept:



Drill Pipe Inc.

550 S Third St. • Winsted, MN 55395

Phone: (866) 220-8342 • (763) 592-8670 • Fax: (763) 592-8661

tom@drillpipeinc.com • www.drillpipeinc.com

FROM DUST TO GLORY

Compiled by the Editorial Staff of *WorldWide Drilling Resource*®

What does it take for a country to grow into the tenth largest gas and oil nation in the world? In the case of Canada, many failures, determination, grit, and a last-ditch effort to strike oil in the 1940s. The famous well which started Canada's modern oil industry was named Leduc #1. It was drilled by Imperial Oil, which had a 133 dry hole streak prior to the fateful day of February 13, 1947.

The company had invested over \$23 million in unsuccessful drilling operations throughout the provinces of Alberta and Saskatchewan. The drilling site in Alberta, on a farm just southwest of Edmonton, was a promising site, but the board members of the company were discouraged by the lack of success and wanted to move on to other operations. After hours of debate, they gave in and authorized the drilling of one more hole at Leduc #1.

The winter was bitterly cold, so working conditions were harsh. For those working on-site, it took persevering from drill site to drill site on a seven-day work week, for months straight, as the dry holes continued to mount. Most of the crew expected the Leduc #1 well to turn out dry like all

the others, so morale was low. After months of drilling in the blistering cold, the crew

was ready to give up and abandon the site, but they continued to drill a few more feet down into what they deemed barren earth. Suddenly, light crude oil erupted from the hole to the surprise of nearly everyone, and one of the most important economic discoveries in Canada's history was made.

Leduc #1 was capped in 1984, after producing over 240 million barrels of oil. Today, the history and artifacts of Leduc #1 are preserved at the Canadian Petroleum Discovery Centre. The museum includes an expansive 13 acres outside and 23,000 square feet of indoor exhibits. There are scale models, fossils, working rigs, antique equipment, machinery, murals, archives, classrooms, and much more. The short walking tour allows visitors to check out the Leduc #1 derrick, the cable tool rig, command rig, and actual Leduc #1 well site. It's a rare look back into the history of the unexpected success of Leduc #1, which changed the Alberta area forever, and as a result, started the economic climb of a world power in oil production.



Leduc #1, courtesy of Leduc #1 Historic Site.

Same Day SHIPPING

SKYREX ELEVATORS
Used Worldwide

Stock Sizes:
1" thru 24" for casing, column pipe, tubing and drill pipe.

*Load test certificates available
*Offered with or without base

We Support Our Troops!

REX MCFADDEN Co.
DRILLING EQUIPMENT

Oilfield & Water Well Conventional Reverse Circulation Drill Pipe & Equipment

We have elevators of all sizes, types and weights
Can build to any special applications

- ◆ Drill Pipe
- ◆ Drill Collars
- ◆ Manual Tongs
- ◆ Spiders
- ◆ RC Swivels
- ◆ Stabilizers
- ◆ Bits
- ◆ Bowls
- ◆ Centrifugal Pumps
- ◆ Crossover Subs

New & Used Equipment

We look forward to serving you this coming year and the next!

Look for our expanded website.

Family Owned & Operated

office **806-791-3731** fax **806-791-3755**

www.rexmcfadden.com

May's Editorial Focus will be **Gas and Oil** drilling.

Have an article idea? Submit it to us today.

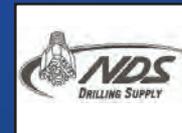
Call Bonnie at **850-547-0102**
or e-mail bonnie@worldwidedrillingresource.com

Does your rig need help?

We can take care of your new or not so new rig.
Remounts • Rebuilds • Overhauls



Our distributors are:



Drilling Supply & Mfg.

7301 Hwy 183 South

Austin TX 78744

Tel: (512) 243-1986 Fax: (512) 243-1091

Check out our Web site for a list of units for sale.

www.dsm-mayhew.com



**THIS DIRTY OLD RIG
PAYS MY BILLS**

The Little Company with the Big ♥

Austin, TX

Frequently-Used Geological Terms Part 59

Glossary Adapted from the Dictionary of Geological Terms



WWD photo of open-pit mining operations at the Kennecott Copper mine in Utah.

Open-pit Mining - A form of surface mining in which the valuable rock is exposed by removing the overburden. Coal, numerous nonmetals, and metalliferous ores (such as iron and copper) are mined in this fashion.

Open Form - A crystal form whose faces don't enclose space such as a trigonal prism.

Open Hole - An uncased well or borehole, or the portion extending below the depth in which casing has been set. Also refers to a borehole free of obstructing objects and materials.

Optical Calcite - Crystalline calcite so clear it can be used for optical use.

Order of Crystallization - The apparent chronological sequence in which crystallization of the various minerals of an assemblage takes place.

Ordovician - Named after a Celtic tribe, the Ordovices, this refers to the second earliest period of the Paleozoic era (after the Cambrian and before the Silurian), and is believed to cover the span of time between 500-440 million years ago.

Ore - The naturally occurring material from which a mineral or minerals of economic value can be extracted at a reasonable profit.

Orebody - A continuous, well-defined mass of material containing enough ore to make extraction economically feasible.

Ore Control - Any tectonic, lithologic, or geochemical feature considered to have influenced the formation and localization of ore.

Ore Magma - A magma which may crystallize into an ore; the sulfide, oxide, or other metallic facies of a solidified magma.

Ore Mineral - The part of an ore, usually metallic, which is economically desirable.



Open the Doorway to all the Event Photos during the **2017 Empire State Water Well Drillers Association Annual Meeting.**



To see all the pictures from this event, go to: www.worldwidedrillingresource.info/gallery/2017/ESWWDA2017, or just click [here](#).

Feel free to download at will and print the photo(s) of your choice.

Compliments of WorldWide Drilling Resource®.

Photos are copyrighted and released for personal use only - no commercial use permitted.



Acker Celebrates 100 Years with the Introduction of Revolutionary New REBEL

To celebrate our 100th year in the drilling industry, we are releasing a game-changing new drill rig - the Acker REBEL. The design of the REBEL is based on many years of drillers' feedback. Our most common request was for a compact drill rig with incredible versatility and power, which the REBEL achieves. AND...with the REBEL you will no longer lose bids due to lack of angle drilling capability or clearance. Many said this package could not be done, but the REBEL is here and it hits the sweet spot on all fronts.

Notable features include:

- Compact package (6 ft. wide).
- Drill Head offers big torque and high RPM. Powerhouse for Geotechnical, Environmental, Rock Coring.
- Capable of drilling under 13 ft. clearance with full use of Auto-Hammer.
- Simple and efficient angle drilling capability.
- Engine Tilt allows for drilling on hillsides up to 45 degrees.
- Dump Mast allows for convenient mast positioning when drilling angle holes or on uneven terrain.
- Recovery Winch operates in conjunction with the tracks. Ideal for stable tramping on slopes.
- Dual Action Slide Base allows for precise positioning over hole.
- Turbo-Charged Tier 4 engine.

Toll Free: (800) 752-2537
E-Mail: sales@ackerdrill.com • Website: www.ackerdrill.com

acker
DRILL COMPANY

Product Spotlight

Vanderlans & Sons, Inc., manufacturers of LANSAS® Products, is proud to produce LANSAS® RP™ rupture protected pipe plugs. These plugs have a built-in relief valve to help prevent the plug from being overinflated due to faulty gauges or operator error. Once the valve's cracking pressure is reached, the LANSAS® RP™ relief valve will open, relieving the excess air pressure from overinflation. The valve will then reset (reseal) at or just below the required inflation pressure of the plug.

LANSAS also manufactures the **650 Series NIGHT CAP PLUGS** to protect pipe while the crew is away. The NIGHT CAP is used during pipeline construction to prevent dirt, mud, debris, and animals from getting into the pipe during nonworking hours.

The patented design is available in 12 inches through 36 inches in diameter, eventually being available from 6 inches up to 60, for every type of pipe. The NIGHT CAP nonpressure plugs have the standard gasket to fit most pipe styles and sizes.



New Rod System cont'd from page 25.

is providing straighter holes and minimizing deviation, so inherently critical in modern drill and blast techniques. The guided XT thread feature increases the rigidity and stability of the connections between the shank adapters, rods, and bits so significantly overall rod bending is minimized and hole straightness improved. In fact, this improvement allows for larger and deeper blastholes to be achieved using existing rod diameters, but only by converting to XT threaded components. In underground mining long-hole and production applications where up to 30 rod connections are common, hole deviation can be reduced substantially by using Vector Rods.

Mr. Eghdami said, "As a major breakthrough for extension drilling systems, we have significantly improved drilling productivity and increased drill string lifetime by introducing new design features in the XT thread configuration. And just as important, the new XT design is fully reverse compatible with industry standard "T" style threads, enabling the Vector Rod System to be truly remarkable, yet a practical choice for premium drilling tools."

The Vector Rod System is offered in multiple configurations of button bits, MF rods, and shank adapters. These drill string components are available in XT38, XT45, XT51, and XT60 thread types.



Alberta Water Well Drilling Association Convention and Trade Show

Be Sure To Join Us Once Again In Red Deer at the Sheraton Hotel & Conference Center, Red Deer, AB, Canada

April 27 - 29, 2017

Technical Sessions
Entertainment

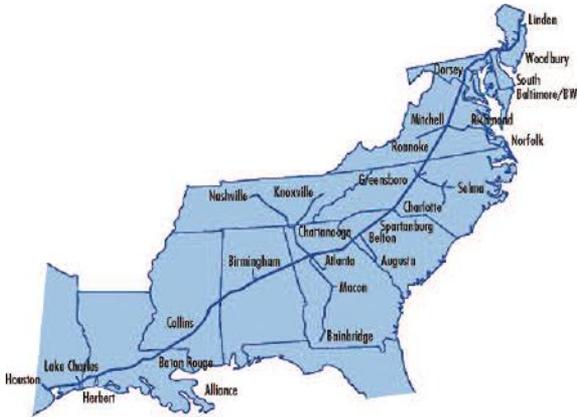
Regulations and Information • Annual Meeting
Drilling Rigs and New Technology Displays



For More Information Contact Carol Larson
Phone: (780) 386-2335 • E-mail: awwda@xplornet.com

Emergency Preparedness a Must for the Pipeline Industry

Compiled by the Editorial Staff of *WorldWide Drilling Resource*[®]



The system map of the Colonial Pipeline, courtesy of Colonial Pipeline.

Petroleum for the Southeastern United States is supplied primarily by refineries and a pipeline which flows along the U.S Gulf Coast. When a problem occurs with a pipeline, there must be a quick response or there could be grave environmental consequences. The Colonial Pipeline has had two such devastating missteps recently with a major line responsible for the transportation of 1.4 million barrels of gasoline per day throughout the Southeast.

The first incident occurred on September 9, 2016, when Colonial Pipeline had to shut down Line 1 because of a leak in the state of Alabama. The leak released an estimated 7370 barrels of gasoline, diesel, jet fuel, and other refined products. The released product was contained in a man-made mine water retention pond adjacent to the site of the leak. Environmental controls were immediately deployed with caution to help prevent any contamination. A water quality sampling commenced next, and an air monitoring plan was initiated to maintain safe working conditions. Operations for the line were down until September 21, when workers completed the construction of a 500-foot,

aboveground bypass, which would serve as a temporary solution until the installation of new pipe could be made.

The second issue arose on October 31, 2016, when fire exploded from the Line 1 pipe a few miles from the September leak site. Flames shot hundreds of feet into the air around a crew working to drain sections of the pipe, so a more permanent tube could be placed at the site of the leak. For such an explosion to take place, three factors must be present. There must be the right mix of fuel and oxygen levels and an ignition source. In this case, those factors led to the pipeline's shutdown for the second time as an investigation and emergency protocols were quickly started. The fire was permitted to burn to prevent the release of gasoline vapors and product into the environment. A ditch and earth wall were constructed to contain any potential release, and containment booms were deployed at three locations on the nearby river as an additional precautionary measure. The surface water and sediment of the river were sampled, and no observable impacts were noted in the initial or subsequent testing. After the fire burned itself out, all remaining product from the pipeline was safely removed, and the excavation and removal of the impacted segment of the pipe was completed. Within a week of the incident, a new pipe was installed, allowing for the restart of Line 1. The investigation into the ignition source revealed the explosion was the result of a worker who accidentally hit the line while doing excavation work.

It's easy to see how quickly environmental measures need to be put in place when a problem occurs with a pipeline. The environment could become contaminated or working conditions could become unsafe if procedures are not initiated quickly. With the right actions by those involved, the environment can be maintained effectively and efficiently even amidst chaos.

WorldWide Drilling Resource[®] is a proud member of these associations.

Alaska Miners Association
Phone: 907-563-9229 Fax: 907-563-9225
ama@alaskaminers.org
www.alaskaminers.org

Alberta Water Well Drilling Association
Tel: 780-386-2335
awwda@xplornet.com

American Exploration and Mining Assn.
Phone: 509-624-1158 Fax: 509-623-1241
info@miningamerica.org
www.miningamerica.org

Atlantic Water Well Association
Tel: 888-242-4440 Fax: 902-435-0089
nsgwa@ns.aliantzinc.ca • www.nsgwa.ca

Australian Drilling Industry Association
adia@adia.com.au

Black Hills Chapter of the ISEE
President: Doug Hoy
www.bitwconference.org

British Columbia Ground Water Assn.
Tel: 604-530-8934 Fax: 604-530-8934
secretary@bcgwa.org • www.bcgwa.org

National Drilling Association
Tel: 877-632-4748
Fax: 216-803-9900
www.nda4u.com

New Zealand Drillers Federation, Inc.
www.nzdrillersfederation.co.nz

Northern Plains Chapter of the ISEE
President: Billy Obermire
Tel: 307-689-0050
www.bitwconference.org

Nova Scotia Ground Water Association
Tel: 888-242-4440 Fax: 902-435-0089
nsgwa@ns.aliantzinc.ca • www.nsgwa.ca

Ontario Groundwater Association
Tel: 519-245-7194 Fax: 519-245-7196
ogwa@ogwa.ca • www.ogwa.ca

Women In Mining
866-537-9694
wim@womeninmining.org
www.womeninmining.org



NEW

A completely field replaceable PDC drilling system available in 4 wing from 3 7/8" to 6 3/4" diameter in 1/8"

increments and in 3 wing from 6 3/4" to 24".

We also have 5 and 6 blade standard PDC bits.

Call for price and availability.



Contact us at 800-282-6760
or sales@bluedemon.com.

SONIC DRILLING AROUND THE WORLD

Adapted from Information by Argyle and Associates for Sonic Drilling, Ltd.

Canadian engineer, Ray Roussy established Sonic Drilling, Ltd. more than 30 years ago to test his newly patented sonic drilling technology. Roussy holds dozens of patents, and he was the only one able to figure out the commercialization of sonic drilling technology.

"Not that long ago, we would be accused of exaggerating at trade shows when we told people how fast a sonic drill could bore," said Roussy. "People thought it was a gimmick . . . even engineers had a hard time understanding how it worked until they saw one in action."

Although drill operators were skeptical at first, when they heard a sonic rig was in town, they would make time to stop by and see if the hype was true - and it was!

Today, the revolutionary sonic drilling technology is used around the world in almost every application imaginable. Of all its uses, it has earned a stellar reputation as a rescue rig capable of drilling through impossible soil conditions which would jam up rotary rigs, delay projects, or make others unfeasible.

"We've taken these rigs on the road as far north as the arctic, across Canada, and into the U.S., depending on client requests. We've even barged rigs into more remote locations," said Roussy, president of Sonic Drilling Ltd. and the Sonic Drill Corporation. His technology has won four awards and grown into an international export. Based in Surrey, British Columbia, Canada, Sonic Drilling, has proven its success across the globe. Here's a small sampling of where some of Roussy's drill heads are now and what they're working on:

- Diamond exploration in Africa
- Revealing glacial secrets in Alberta, Canada
- Drilling for bauxite in Guyana, South America
- Platinum mining at the Kondyor Mine in Russia
- Mineral exploration in Chile
- Installing a road pavement melting system in Japan
- Rehabilitating nuclear waste sites in the USA
- Expanding an underground subway in New York, USA
- Searching for gold in Yanacocha, Peru
- Geothermal drilling for an American school in Chofu, Japan
- Helping to rebuild after the tsunami at Sendai, Japan
- Drilling offshore of New Zealand from a WWII landing craft
- Unlocking gas deposits in the Arctic
- Drilling in the difficult silica-laden Mississippi area, USA

Closer to home, Roussy's drilling technology has been used on numerous projects throughout the Lower Mainland, as well as further afield. In fact, companies on the Lower Mainland have embraced Roussy's fleet of sonic drill rigs and used them on a number of projects, including:

- Surrey Woodward Hill School
- Langara Community College
- Vancouver Tunnel
- Skytrain Evergreen Line
- Langley Municipal Building
- UBC library extension
- New Westminster Dominion Complex



Sonic drilling offers incredible speed (3-5 times faster, it's the fastest drill on the planet). It also has the ability to core easily through mixed soils without jamming up or requiring a rig switch out. Additionally, only a sonic drill can recover a continuous core sample including boulders, clays, silt, sand, and gravel, and lay it in its stratigraphic sequence - from the surface all the way down to 300 feet and beyond.

Nowadays, sonic drilling technology is pretty well known, however, what isn't as well known is despite different brand names, almost all of the sonic drills in existence carry the patented Roussy sonic drill head.



HOLLY PIPE CORP.

PREMIUM DRILLING TOOLS & SERVICES



DRILLING TUBULARS



DRILL STEM SUBS



MACHINE SHOP

- API & CUSTOM THREADING
- CUSTOM DRILL STRING DESIGN
- WASH PIPE ACCESSORIES
- DRILL PIPE TONGS
- THREAD COMPOUND

HOLLYPIPE.COM 1-800-221-2009

WE ALSO PROVIDE DRILL STRING INSPECTION SERVICES



WorldWide Drilling Resource® is proud to be a member of these associations.

National Ground Water Association
Tel: 800-551-7379 Fax: 614-898-7786
www.ngwa.org

Alaska Water Well Association
Tel: 907-562-2312 Fax: 907-562-5971
www.alaskawaterwellassoc.org

American Ground Water Trust
Tel: 603-228-5444 Fax: 603-228-6557
trustinfo@agwt.org
www.agwt.org

Arizona Water Well Association
admin@azwwa.org
www.azwwa.org

Arkansas Water Well Contractors Assn.
Tel: 501-282-6779
tashad@cei.net
www.awwca.com

California Groundwater Association
Tel: 916-231-2134 Fax: 916-231-2141
cga@groundh2o.org
www.groundh2o.org

Colorado Water Well Contractors Assn.
Tel: 303-759-2294 Fax: 303-757-0158
ExecDir@cwvca.org
www.cwvca.org

Connecticut Water Well Association
Tel: 203-272-3077 Fax: 203-250-7199

Empire State Water Well Drillers Assn.
Tel: 315-339-8960 Fax: 315-339-8960
sue@nywelldriller.org
www.nywelldriller.org

Florida Ground Water Association
850-205-5641 Fax: 850-222-3019
kbarclay@executiveoffice.org
www.fgwa.org

Georgia Assoc. of Ground Water Prof.
Tel: 678-646-0369 Fax: 678-646-0379
bruce@brucewidener.com
www.georgiadrillers.com

Illinois Assn. of Groundwater Prof.
Tel: 815-973-3000 Fax: 877-434-9047
info@iagp.org
www.iagp.org

Indiana Ground Water Assn.
Tel: 317-889-2382 Fax: 317-889-3935
ingroundwater@msn.com
www.indianagroundwater.org

Iowa Water Well Association
Tel: 515-243-1558 Fax: 515-334-1164
staff@iwwa.org • www.iwwa.org

Kansas Ground Water Association
Tel: 620-548-2669 Fax: 620-548-2369
www.kgwa.org

Kentucky Groundwater Association
Tel: 270-247-6658 Fax: 270-251-3004
kygwa@bellsouth.net

Louisiana Ground Water Association
Tel: 225-744-4554
www.lgwa.org

Massachusetts Ground Water Association
Tel: 508-240-1000 Fax: 508-240-1003
info@mgwa.net www.mgwa.net

Michigan Ground Water Association
Tel: 855-225-6492 Fax: 614-898-7786
www.michigangroundwater.com

Minnesota Water Well Association
Tel: 800-332-2104
www.mwwa.org

Missouri Water Well Association
Tel: 314-974-6992
Mwwa.MoWaterWellAssociation@yahoo.com

Montana Water Well Drillers Association
Tel: 406-686-3168
www.mwwda.org

Nebraska Well Driller Association
Tel: 402-476-0162
lee@h2oboy.net
www.nebraskawelldrillers.org

New Hampshire Water Well Assn.
www.nhwaterwell.com

New Jersey Ground Water Association
info@njgwa.org
www.njgwa.org

North Carolina Ground Water Assn.
Tel: 919-876-0687
www.ncgwa.org

North Dakota Well Drillers Association
Tel: 701-225-2674 Fax: 701-783-2685
Cell: 701-290-7522
sorenson@ndwda.com

Ohio Water Well Association, Inc.
Tel: 937-278-0308 Fax: 937-278-0317
www.ohiowaterwell.org



Oklahoma Ground Water Association
Tel: 405-209-6482
info@okgroundwater.org
www.okgroundwater.org

Pennsylvania Ground Water Association
Tel: 814-933-8714
roseann65@comcast.net
www.pgwa.org

Rhode Island Ground Water Association
Tel: 508-562-0569
info@rigwa.org www.rigwa.org

South Atlantic Well Drillers "JUBILEE"
Tel: 855-987-7469 Fax: 850-222-3019
kgordon@executiveoffice.org
www.jubileewatershow.com

South Carolina Ground Water Association
Tel: 803-356-6809 Fax: 803-356-6826
scgwa@sc.rr.com
www.scgwa.org

South Dakota Well Drillers Association
Tel: 605-734-6631

Tennessee Water Well Association
Tel: 865-761-4363
info@tnwaterwellassociation.org

Texas Ground Water Association
Tel: 512-472-7437 Fax: 512-472-0537
goodson@twca.org
www.tgwa.org

Utah Ground Water Association
Tel: 801-541-7259
www.utahgroundwater.org

Virginia Water Well Association
Tel: 804-387-8395 Fax: 804-302-7978
info@vawaterwellassociation.org
www.vawaterwellassociation.org

West Virginia Water Well Drillers Assn.
Tel: 304-636-6025 Fax: 304-636-0231
framedrilling@frontier.com

Wisconsin Water Well Association
Tel: 608-326-0935 Fax: 608-326-0966
info@wisconsinwaterwell.com
www.wisconsinwaterwell.com

Wyoming Water Well Association
Tel: 307-267-3806
wyywaterwell@gmail.com
www.wyywaterwell.org

Want to be listed?

(850) 547-0102

wwdr@worldwidedrillingresource.com



PALMER BIT CO.

Manufacturer of Red Devil Bits



PDC Hole Opener

Our hole openers meet a variety of needs from expanding test holes in water wells to drilling holes for pylons. When you need to open a hole, we can meet your needs.

- Any thread
- Any size
- Any length
- Many numbers of wings

Palmer Bit Company

800-421-2487 • sales@palmerbit.com

www.palmerbit.com



In Memoriam

Scott Owen Cosby (1968~2017)



It is with great sadness we announce the unexpected passing of one of our popular contributing writers, Scott Cosby. Scott proudly served the State of Oklahoma through his 20-year career with the Department of Transportation where he worked on a drill crew for six years before becoming the branch safety officer. He was also the main organizer for the 2016 Shallow Exploration Drillers Clinic in Oklahoma. Although his articles for our magazine primarily focused on construction and geotechnical issues, his *Safety Spotlight* features were applicable to the entire drilling industry.

Born in Oklahoma City, Oklahoma, Scott lived a life of love, faith, and hard work. He also had a passion for writing, comics, and sci-fi.

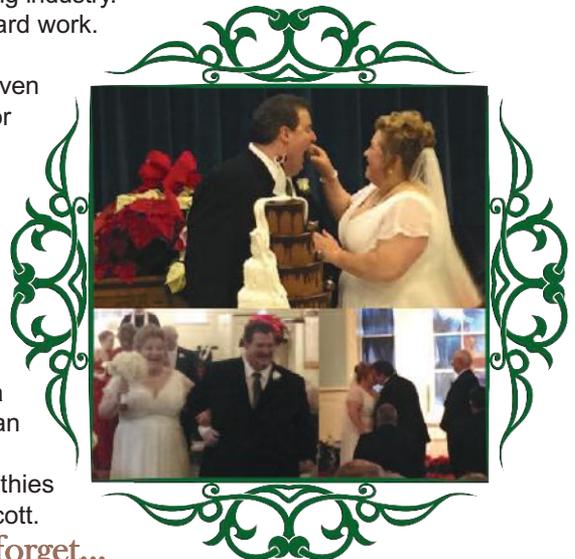
In addition to being a contributing writer with **WWD&R** for more than seven years, Scott published two mini books, was a featured writer and contributor to *The Aquaman Chronicles*, and was a published comic cover artist for Cremona Publishing in Ireland. He was a talented, self-taught artist and a member of the Oklahoma Comic Creators Group.

Above all, he loved his family and his cats. When he first told the **WWD&R** Team of his wedding to J'Layne McClure, he was thrilled to be marrying his best friend and shared these wedding photos with us.

In addition to his loving wife J'Layne, Scott is survived by his parents, Paul and Frances Cosby; aunts and uncles Don and Norma Hacker; Marvin and LaMatha Baker; Don and Ruetta Alexander; Bob and Brenda Steeley; Pat Baker; mother-in-Law Jackie Hall; sister-in-law Jennifer Van Meir; and his brother-in-law Jon McClure.

The management and staff of **WWD&R** wish to extend deepest sympathies to Scott's family, friends, and colleagues. You will be missed by many, Scott.

Lest we forget...



NEEDING TO IMPROVE WATER CAPACITY OR PRESSURE?

Monitor

OUR WELLS AND BOOSTER STATIONS ENSURE WATER IS EFFICIENTLY DELIVERED WITH CONSISTENCY, QUALITY, AND SPEED

800-356-5130 | WWW.BAKERWATERSYSTEMS.COM
MONITORSALES@BAKER-MFG.COM

BAKER
WATER SYSTEMS DIVISION
Campbell | Illinois | Texas

RENEWABLE RESOURCE INITIATIVE LEADS TO GEOTHERMAL FIELD PROJECT

Compiled by the Editorial Staff of *WorldWide Drilling Resource*®

The University of Notre Dame's coal usage is down from 85% to 15% in recent years, thanks in part to a combined heat and power plant on campus. It's part of a University initiative to reduce the carbon footprint and diversify their means of energy production by focusing on renewable and recoverable energy. One of the interesting projects the University is working on involves geothermal energy and three athletic fields used by the Notre Dame Marching Band and RecSports.

The athletic fields are called the Ricci Family Fields, and the University will be constructing a geothermal well field beneath the three field complex. The well field will contain around 700 geothermal wells, each about 300 feet deep. The process for forming the geothermal field will involve drilling



Construction site of the geothermal well field, courtesy of the University of Notre Dame.

each individual well, then piping the wells together, and building the earth back on top.

The geothermal well field is designed as a closed-loop geothermal system, which means water is in a closed pipe system instead of being pulled from the ground directly. The water will be transported through the pipes to a depth of around 300 feet. The depth is important because the system is meant to use the most the earth has to offer to produce the necessary energy. For the process to work, the temperature below the earth's surface must be around 50°F (10°C). From the depth, water will be brought to the temperature of the earth, then it will be brought back to the surface for heating and cooling.

During the summer months, water moving through the pipes will be cooled because the temperature underground will be cooler than air temperature. Whereas during the winter months, the temperature underground will be warmer than air temperature, and the water will be heated. This process allows for the generation of cooler or warmer air on campus as needed throughout the year. When the project is concluded in the fall of 2017, the University expects the wells to essentially be able to heat and cool about 15% of the current campus, and significantly reduce their carbon footprint.

Robit[®] INC.

The widest offering in drilling consumables!

Bulroc Robit
COMPLETE SELECTION OF DRILLING CONSUMABLES

DTA Robit
COMPLETE SELECTION OF DRILLING CONSUMABLES

Bulroc Robit HYPER 2415
COMPLETE SELECTION OF DRILLING CONSUMABLES

Robit

757 W Diversey Pkwy · Chicago, IL 60614 · tel. +1-708-667-7892
www.robitegroup.com

I had a nice chat with this man from Maryland. He wants to help WFL after reading about it in *WDR*.

Thanks,
Tim Rasmussen

Water For Life International
Deer Park, WA

THE NATION'S FIRST CLEAN COAL PLANT IS ONLINE!

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

Construction has been completed for the world's largest post-combustion carbon capture plant. The Petra Nova project, located near Vanderbilt, Texas, is a joint venture between NRG Energy, Inc. and JX Nippon Oil & Gas Exploration Corporation.



Ductwork measuring 16 feet in diameter takes flue gas from the coal plant to a carbon capture facility where the CO₂ is removed from the flue gas using amine solution (a basic organic compound derived from ammonia) in the tall absorption tower and then separated from the amine as 99.9% pure CO₂. Photo courtesy of Business Wire.

The nation's first large-scale clean coal facility uses a carbon capture process developed by Mitsubishi Heavy Industries, Ltd. and the Kansai Electric Power Co., Inc., and employs a proprietary KS-1 high-performance solvent for the CO₂ absorption and desorption called the KM-CDR Process®.

The process begins at the WA Parish coal power plant where the CO₂ is captured and sent to Petra Nova. The captured CO₂ is compressed and transported through an 80-mile pipeline to an operating oil field, the

West Ranch oil field near Vanderbilt, Texas, where it is utilized for enhanced oil recovery (EOR). Using wells more than a mile underground, the CO₂ is injected into oil reservoirs. The CO₂ acts as a solvent loosening oil stuck on rock surfaces enabling it to flow freely to production wells. Once on the surface, the oil and CO₂ mixture is separated, then the CO₂ is recompressed and reinjected. When production is completed, much of the CO₂ is confined in the rock formation.

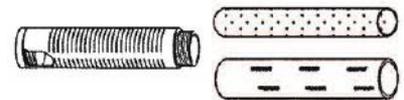
"Completion of the Petra Nova project is an important milestone in our quest to help ensure reliable, affordable, and increasingly cleaner energy from fossil fuels," said Mauricio Gutierrez, president and CEO of NRG Energy. "This project represents another major step in NRG's effort to reduce our carbon emissions and create a more sustainable energy future, and we are proud that this accomplishment was achieved on-budget and on-schedule in a competitive energy environment."

Construction on the Petra Nova project began in 2014, with a goal to be operational by the end of 2016. With construction finished and final performance acceptance testing completed, the Petra Nova carbon capture facility has achieved its goal.

Hilcorp Energy Company is the operator of West Ranch oilfield. Both Hilcorp and the University of Texas Bureau of



- Well Rehab. Products
- Manholes
- Bentonite
- Filter Sock
- Inline Chemical Mixers
- Sampling Bailers
- Clear PVC Pipe
- Locking Caps



Manufacturers of Slotted & Perforated Pipe ranging from 1/2" to 24" diameter

302-684-3197

FAX: 302-384-0643

142 Broadkill Rd. • Milton, DE 19968

www.atlantic-screen.com

email: atlantic@ce.net

Economic Geology will monitor the movement of CO₂ deep in the oil reservoir. Over the next few years, oil production at the field is estimated to increase from approximately 300 barrels per day to 15,000 barrels per day using captured CO₂.

"To date we have drilled nearly 100 new wells in the West Ranch field and have implemented a robust CO₂ and groundwater monitoring program," said Jeffery D. Hildebrand, chairman and CEO of Hilcorp Energy Company. "We are excited about this project, and expect to see a meaningful increase in oil production at West Ranch in the near future."

The project was partially funded through the United States Department of Energy, which is providing up to \$190 million in grants as part of the Clean Coal Power Initiative Program.

The Nation's First cont'd on page 54.

FILMARK Products, Inc.

PO Box 60249 Midland TX 79711-0249
432-563-5941 432-563-5942 (fax)

5x6 Pump Parts

5" File Hard Liner	\$145.00
Liner Packing T.T. Style.....	\$10.00
Piston Rod API-1	\$87.86
Rod Packing Set (4 pcs.).....	\$12.00
Standard Valve (Rubber).....	\$65.00
Gravel Valve (Rubber).....	\$69.50
Seats.....	\$45.00
Rubber Valve Inserts.....	\$7.00
Urethane Valve Inserts.....	\$11.00
Valve Spring S.S.....	\$5.25
Valve Cover Gasket.....	\$7.50
2" Swivel Packing.....	\$6.00

Rod & Piston Specials

5x6 API-1.....	\$155.00
5-1/2x8 API-3.....	\$235.00
5-1/2x10 API-3.....	\$240.00
5x8 API-3.....	\$225.00
5x10 API-3.....	\$230.00

Pistons & Rubbers

	Pistons Complete	Rubber Kits
4" Series A, API-1.....	\$70.00	\$45.00
4-1/2" Series A, API-1.....	\$72.50	\$48.50
5" Series A, API-1.....	\$75.00	\$50.00
5" Series B, API-3.....	\$133.65	\$65.00
5-1/2" Series B, API-3.....	\$146.55	\$68.00
7-1/2" Series B, API-3.....	\$240.00	\$112.63

Pump Liners

5x8 Liner.....	\$210.00
5-1/2x8 Liner.....	\$215.00
5x10 Liner.....	\$210.00
5-1/2x10 Liner.....	\$215.00
7-1/2x10 Liner.....	\$440.00

sales@filmarkproducts.com

800-635-5229



Prices Subject To Change Without Notice. PRICES ARE C.O.D.

Open the Doorway to all the Event Photos during the **2017 Utah Ground Water Association Conference & Expo.**



To see all the pictures from this event, go to: www.worldwidedrillingresource.info/gallery/2017/UGWA2017, or just click [here](#).

Feel free to download at will and print the photo(s) of your choice.
 Compliments of *WorldWide Drilling Resource*®.
 Photos are copyrighted and released for personal use only - no commercial use permitted.

Keeping it Clean

Adapted from Information by the Association of Equipment Manufacturers

Tier 4 (T4) emissions were first implemented between 2008 and 2015. The new engines reduce diesel emissions, protecting our health and environment, but they are also sensitive about fuel. You see, according to William “Bernie” Bernhard, the Association of Equipment Manufacturers (AEM) technical and safety services manager, T4 engines feature high-pressure common-rail (HPCR) technology which uses extremely precise components. Water and other contaminants in the fuel can prematurely plug onboard filters or cause expensive damage to the engine itself.

As Bernie explained, today’s Ultra-Low Sulfur Diesel (ULSD) is very different from the diesel of just a few years ago. “Among other things, it is subject to change and contamination as it moves from the refinery to the engine, making storage, temperature, age, and filtration, and related factors critical in maintaining fuel quality,” he stated.

About a year ago, several AEM member companies concerned about diesel fuel quality issues came to the association to discuss their ideas for an end-user awareness initiative. They worked diligently to come up with a way to spread awareness of the importance of diesel fuel quality and decided on the CLEAN acronym.

- C** - Commit to understanding your T4 engine
- L** - Learn the facts about today’s fuel
- E** - Evaluate your fuel source and fuel handling
- A** - Always follow manufacturer guidelines
- N** - Never take your role for granted

AEM decided to release a downloadable infographic to help equipment owners and users keep their T4 machines up and running. The AEM “Get CLEAN on Fuel” diagram outlines five key actions to help protect T4 engines.



5 KEY AREAS FOR EQUIPMENT OWNERS

- C** Commit to understanding your T4 engine
- L** Learn the facts about today’s fuel
- E** Evaluate your fuel source and fuel handling
- A** Always follow manufacturer guidelines
- N** Never take your role for granted

Learn more at aem.org/clean

For more information, or to download the infographic visit www.aem.org

FOREMOST DRILLS provide TOTAL CONTROL

DRILLS THE STRAIGHTEST HOLES



The rotation of the casing by the lower drive results in a very straight hole making it ideal for shaft holes and foundation piles. This also minimizes stress on casing and casing welds, and eases the task of installing screens and pumps in water well applications.

COMPLETE CONTROL OF DISCHARGE



Cuttings are diverted through the discharge swivel and can be directed to a safe and convenient dumping or monitoring point. This is a useful feature when drilling in urban areas or when cuttings must be contained for sampling environmental or safety reasons.

EASIEST DRILL TO MAINTAIN



Foremost DR rigs feature a directly connected hydraulic feed system – which means no chains, sheaves, or sprockets. This type of feed system generates zero load on the mast crown, permitting a simple, low-maintenance mast design that does not sacrifice pullback capability.



DR-12



DR-24



DR-24HD



DR-40

To learn more, visit foremost.ca
or call 1.800.661.9190 (Canada/U.S.A.) 1.403.295.5800 (Worldwide)

WorldWide Drilling Resource®

FOREMOST
DRdrills 

Well Safe Well Sanitizer Pack

Protecting Your Family



Sanitizing Your Well



Shock Your Well After Any Equipment Installation

Shock Your Well After Pump Installation

Shock Your Well in the Spring and Fall

Shock Your Well After a Flood



BETTER WATER INDUSTRIES INC.

www.BetterWaterInd.com

(507)247-5929

Watch Our



Video!

rights is derived from the right to life. Therefore, if someone takes your property, they have stolen your time and labor, and therefore a portion of your life and freedom.

Others have said freedom is not a right, instead it is something which must be acquired - even fought for. Novelist Aldous Huxley wrote, "Liberties aren't given, they are taken."

Concurring with this line of thought are Somerset Maugham: "If a nation values anything more than freedom, it will lose its freedom; and the irony of it is that if it is comfort or money that it values more, it will lose that too." And Voltaire: "So long as the people do not care to exercise their freedom, those who wish to tyrannize will do so; for tyrants are active and ardent, and will devote themselves in the name of any number of gods, religious and otherwise, to put shackles upon sleeping men."

Former slave, Frederick Douglass, also agrees, "Those who profess to favor freedom and yet depreciate agitation, are people who want crops without ploughing the ground; they want rain without thunder and lightning; they want the

ocean without the roar of its many waters. The struggle may be a moral one, or it may be a physical one, or it may be both. But it must be a struggle. Power concedes nothing without a demand; it never has and it never will." And, as many have declared: "Eternal vigilance is the price we pay for liberty."

On the other hand, freedom is NOT valued by all. Newspaper Editor H. L. Mencken observed, "The average man does not want to be free. He simply wants to be safe." Playwright George Bernard Shaw stated, "Liberty means responsibility. That most precious possessions."

It seems whether freedom is a lifestyle, mindset, or natural right; it comes with a price. And, if we want to keep it and use it, we will have to stand up for it.

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 or contact him via e-mail to michele@worldwidedrillingresource.com

You can't get much done by starting tomorrow.

Time for a Little Fun!

Congratulations to:

Sterling Hair

Hair Pump Sales

Knoxville, TN

Winner for February!

Can you identify which ads in this issue these two photos came from?



Win a prize! Send your completed puzzle to:

WDR PO Box 660

Bonifay, FL 32425

or fax to: **850-547-0329**

February Puzzle Solution:

Hinowa S.p.A.

Throop Rock Bit (wrong cutout in puzzle, sorry)

Geothermal Growth Around the World by 2020

Adapted from a Press Release by Transparency Market Research

Transparency Market Research, a New York research and consulting company has released its forecast for the geothermal heat pump industry through 2020.

The major end users of geothermal heat pumps currently include residential and commercial customers. Both these end users have been further subsegmented on the basis of installation type as new building systems and retrofit systems.

Installation of horizontal loops involves excavation of trenches, while installation of vertical loops involves drilling boreholes into the ground. Since vertical installations require a significantly smaller space, the report indicates they will be more preferred across the world. With average home sizes gradually reducing in the past decade, the available land area for each house is also expected to decrease. This is likely to boost the installation volumes of vertical loop geothermal heat pump systems. Generally, vertical loops are preferred for retrofit system installations since very limited earthmoving requirements are associated with the installation of such loops. A large number of new building systems are still expected to install horizontal closed loops throughout the forecast period. Horizontal loops are less expensive to install than vertical loops where the soil type has a major impact on the overall cost of drilling.

The residential and commercial sectors are the primary adopters of geothermal heat pumps globally. Commercial geothermal heat pump systems are generally of much larger capacities than individual residential systems. Commercial customers are likely to emerge as the most attractive end user segment of geothermal heat pumps within the forecast period. The primary reason for this is commercial customers are relatively desensitized to the high up-front expenditures required for geothermal heat pumps.

The report also shows Europe is currently the largest market for geothermal heat pumps globally, followed by North America and Asia Pacific. The U.S. is the largest market in North America followed by Canada, which has high potential for geothermal heating systems. There are four large markets for geothermal heat pumps in Europe: Sweden, Germany, France, and Switzerland. These four countries are mature markets for geothermal heat pumps and have been exhibiting declining annual capacity additions in the recent past. Poland, Greece, the UK, and the Czech Republic are some of the nations which are likely to emerge as attractive markets for geothermal heat pumps in the future. China accounts for nearly all of the installed capacity of geothermal heat pumps in Asia Pacific. China has exhibited significant growth rates in annual installations over the past decade, which peaked in 2008 during the Beijing Olympic Games. South Korea, New Zealand, and Australia are likely to emerge as highly attractive markets for geothermal heat pumps in Asia Pacific within the forecast period.



TRACKED UNDERCARRIAGES

www.hinowa.com



Capacity from 1,000 to 60,000 lb (1 to 30 tons) !



- Versions:**
- Rubber crawlers
 - Steel crawlers
 - Hydraulic widening
 - Customized models
 - Double speed
 - With open and closed circuit



Hydraulic unit
Ready to mount your equipment
Capacity from 1,000 to 6,000 lb
(1 to 3 tons)



Exhibitor at

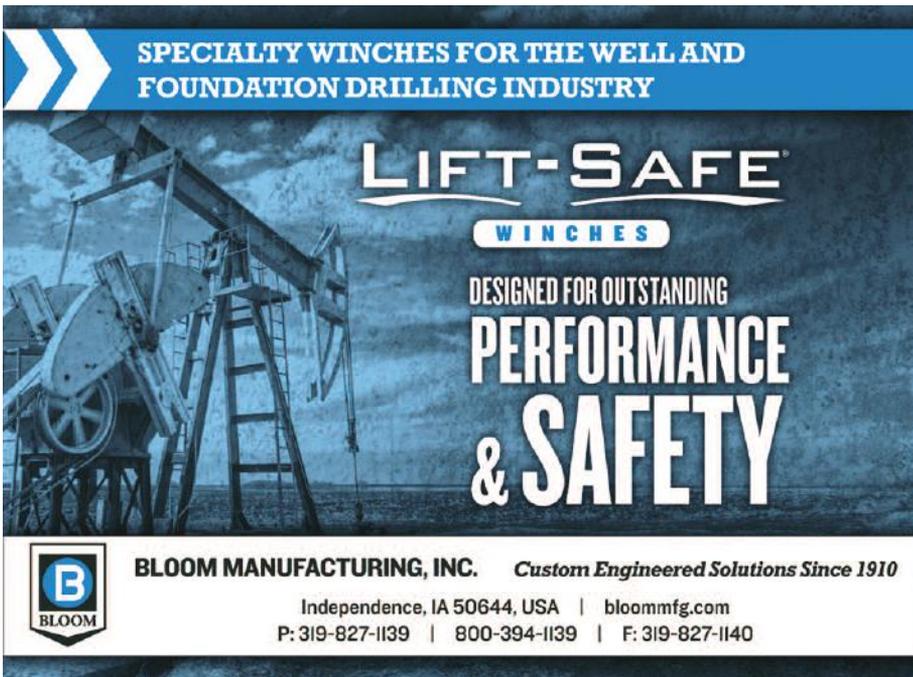
SaMoTer

MILANO, ITALY - 22-23 February 2017

Hall 1, Stand D2-E2

HINOWA S.p.A. • Via Fontana • 37054 Nogara • Verona • ITALY • Tel. +39 0442 539100 • Fax +39 0442 539075 • info@hinowa.com

SPECIALTY WINCHES FOR THE WELL AND FOUNDATION DRILLING INDUSTRY



LIFT-SAFE
WINCHES

DESIGNED FOR OUTSTANDING
PERFORMANCE & SAFETY

B
BLOOM

BLOOM MANUFACTURING, INC. *Custom Engineered Solutions Since 1910*

Independence, IA 50644, USA | bloommfg.com
P: 319-827-1139 | 800-394-1139 | F: 319-827-1140

The Nation's First cont'd from page 49.

Michael Nasi, General Counsel of Balanced Energy for Texas said, "[The] announcement of operations of the Petra Nova carbon capture project marks a tremendous milestone in the development of carbon capture, utilization, and storage technology. This project in a rural area southwest of Houston is the largest post-combustion carbon capture project in the world. The world-changing potential of the technology being developed there cannot be overstated. Even in the current divided political environment, this project can be championed by a wide range of interests - whether they desire technology with the potential to control carbon dioxide emissions at new or existing coal and natural gas plants, or they understand the dramatic increase in domestic and global oil supplies that could be realized as a result of the avail-

ability of large quantities of carbon dioxide for use in enhanced oil recovery projects. NRG, JX Nippon, the Department of Energy, and the State of Texas should be commended for their investments in this project and the approach of using markets, not mandates, to develop carbon capture technology."

Since this process virtually eliminates all carbon emissions from coal-burning power plants, and increases production in the oil field, one wonders if this could be the answer to the country's environmental coal debate. Coal provides affordable power, and since the United States is home to the world's largest coal reserves, it's only fitting the country leads the world in clean coal technology.

The **Choice**
of **Drilling Professionals**

YOUR DOOSAN DEALER



NOLAND
DRILLING EQUIPMENT

Generators • Light Towers • Air Compressors

Roanoke, VA
Phone: 800-462-9340 • 540-982-8001
Fax: 540-342-0546 • nolandrill@noland.com





www.nolanddrilling.com





Through the Back Door!

by Jim Kuebelbeck

It was about five o'clock when we got home one night; and before we even had a chance to change clothes, we got a phone call from a drilling contractor who had drilled a dry hole for someone building a new home. He told me to expect a call from the landowner. Sure enough, the landowner called about five minutes later asking how soon we could come to assist, as the drill crew had left the rig in the yard and planned to drill again in the morning. We jumped right back into our truck and headed out. It was about 40 miles away, and we told the landowner it would take us about an hour to get there. He thanked me pro-

fusely, then admitted other water finders had previously offered advice about where to drill, but only dry holes were drilled on those sites. The drilling contractor had told him we worked together many times in the past, and we had always located a good drilling site. When we arrived at the property, the landowner and his wife were already waiting in the yard. What I didn't realize was, I was about to be educated and taught some additional lessons about water dowsing!

When we shook hands and introduced ourselves, I noticed another individual sitting some distance away on a flatbed trailer in the yard. I waved to him to recognize his presence, but he just looked at me without moving. He just sat there staring at us, even when I said hello as we passed the trailer. Getting to work, I first checked the area around the dry hole, and indicated to the owner I didn't think there was any good groundwater source at the site. The owner then asked if I would check the area on the other side of the flatbed trailer (where the speechless guy was sitting). The lights began to come on and I could see where the grass was flattened. Not only had the grass been trampled in the area, but three or four, six-inch-diameter trees had already been removed and cut off at ground level. As I started to work in the area, someone barked "Now go east!" I looked to see who was doing the talking, and sure enough, it was the guy on the trailer. I decided to pay no attention to him. Then he yelled, "Now go north a few feet!" Just to patronize him a bit, I then walked north a little. As I walked, I heard the guy say to the landowner, "Look, he missed it, he walked right over it!" Walking back to where they were standing, I noticed a small stake in the ground.

I then said to the owner, "In my best judgment, I don't believe there's any good groundwater source in this area." From the expression on the trailer guy's face, I could tell immediately my newfound "local dowser" wasn't going to be my best friend after all! Only then did I notice his tools of the trade lying on the trailer. They were two of the most humongous L-shaped metal rods I had ever seen. They must have weighed about five pounds apiece. I would guess they were about 5/8-inch in diameter. The dimensions were about 8 by 24 inches in length. If they'd have been magnetic, it would've taken two people to pry them off the steel trailer bed! About that time, the guy stomped off somewhere and we never saw him again before we left the property.

We subsequently located and marked a couple of promising sites, and headed home. Later, the drilling contractor called and his first words were, "Today is a better day. We got about 20 gallons per minute at 75 feet." I asked him if he had a lot of fun with the big water finder out there, and he just laughed. He told me I should have been there that morning because the guy came back out before they started to drill, and told them there was NO water on the site I selected. Then he told them the water on my second site was at exactly 192 feet! The crew didn't pay any attention to him, but told him the property owner wanted them to drill on my selected site closest to the new house, and that's what they were going to do. The guy left, and the drill crew was gone before he came back. The contractor said the guy had previously told the homeowner they had gone through and missed the water when they drilled the first holes in the yard!

*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**.*

Jim

Jim Kuebelbeck may be contacted via e-mail to michele@worldwidedrillingresource.com

Bringing drilling news from around the world, to your world. You can count on **WWD** to keep you informed. We are **YOUR** resource.



worldwidedrillingresource.com

MUD-NOX® THE HARD-WORKING "PROBLEM SOLVER" FOR WELL DEVELOPMENT

Mud-Nox dispersant is scientifically designed to remove mud, clay and sediment from gravel packs and producing formations.

- Increases development efficiency
- Increases well yield
- Reduces pumping costs
- Will not harm metals, rubber or plastics
- Environmentally friendly
- ANSI/NSF Standard 60 certified

TO LEARN MORE, CALL 800.457.2096






COTEY CHEMICAL CORP.

4410 MLK Jr. Blvd.
Lubbock, TX 79404
806.747.2096
coteychemical.com

EXPORT WITH PURPOSE. EXHIBIT WITH CONFIDENCE.

When the world looks for leadership and innovation in mining, it turns to the United States. And when American exporters look to meet overseas buyers and decision-makers, they turn to Kallman Worldwide. For more than 50 years, Kallman has helped enterprises of all sizes build their brands and businesses at international trade events.



JOIN US AT THESE UPCOMING EVENTS



EXPONOR 2017
May 15 - 19, 2017
Antofagasta, Chile



PERUMIN | EXTEMIN 2017
September 18 - 22, 2017
Arequipa, Peru



EXPOMINA PERU 2018
September 2018
Lima, Peru

Book your space in our place at the world's premier mining shows. From our flagship U.S. International Pavilion to custom stand-building and corporate hospitality services, Kallman delivers more impact for your export marketing investment.

LEARN MORE. SELL MORE. YOU KNOW THE DRILL.



+1.201.251.2600 | info@kallman.com

WWW.KALLMAN.COM



CHILE IS BUYING. WHAT ARE YOU SELLING?

METALS, MINERALS, MATERIALS, ENERGY.

Below the surface, the mining business is rebounding in South America, and EXPONOR 2017, Chile's biennial technology and innovation show, is bracing for the boom. Hosted in the heart of the rugged and robust Antofagasta region, EXPONOR positions exhibitors in "point-of-sale proximity" to major mining operations. The 2015 edition saw 1,000-plus exhibitors generate more than \$850 million in new business from the show.

FOLLOW THE ROAD TO RESULTS

Organizers have published a **detailed roadmap** outlining the Chilean mining industry's operational needs and challenges — and your opportunities to increase productivity, increase resources, protect the environment and improve worker safety. (**Contact us** - we'll send you a copy!)

JUST ADDED: SUSTAINABLE ENERGY PAVILION

If you're in the business of helping miners cut their power costs, ask about exhibiting in the NEW Sustainable Energy Pavilion at EXPONOR. Produced by a partnership of the Antofagasta Industries Association & Kallman Worldwide's IFT Energy, this international showcase area sharpens the focus on high-efficiency, low-impact solutions so everyone can dig deeper cheaper.



CONTACT US

UNITED STATES

JODI MUNZER

JodiM@kallman.com

+1-201-251-2600 ext. 119

SOUTH AMERICA

RODRIGO BASTIDAS

rb@kallman.com

+1-201-251-2600 ext. 153

ORGANIZER OF THE
U.S. INTERNATIONAL PAVILION



WWW.KALLMAN.COM

MARCH 2017

57

freeze in Alaska, or do both in the Texas Panhandle.”

Minor revisions were made to the geology merit badge in 1957, and major revisions were made in 1985 with cooperation from the American Association of Petroleum Geologists. The badge now has 13 requirements organized under five categories:

1. **Earth minerals** includes the collection and identification of rocks and minerals.
2. **Earth processes** covers geomorphology, the hydrologic cycle, volcanoes, mountain building, and the ocean floor.
3. **Earth history** includes the geology time chart, fossils, and continental drift.
4. **Geology and people** covers environmental geology and energy courses with a field trip option.
5. **Careers in geology** gives boy scouts a closer look at specific geology professions.

The merit badge counselor is a key player in the Boy Scout advancement program. Geologists in the drilling industry can play a vital part in stirring young men's curiosity about a particular field. By serving as a merit badge counselor, you offer your time, knowledge, and other resources so Scouts can explore topics of interest to them. Through adult association, leadership development, and advancement, the Scouting program emphasizes helping young men develop character, citizenship, and physical and mental fitness.

Aside from parents and relatives, school teachers, religious leaders, and coaches, most Scout-age youth have little contact with other adults or professionals. A Scout's association with merit badge counselors provides an excellent way for him to grow and gain confidence through exposure to positive adult role models and mentors. Working with people like business and community leaders, a Scout can experience personal growth, along with a life-changing experience for the betterment of their future while earning a merit badge.



With over 120 merit badges to choose from, opportunities abound for professionals to help Boy Scouts. For more information about becoming a merit badge counselor for geology or another profession, visit www.scouting.org/scoutsources/BoyScouts/GuideforMeritBadgeCounselors/MBCounselorGuide.aspx

FORCE DPT
Direct push tooling.

- Tooling Systems
- Soil Sampling Systems
- Groundwater Sampling Systems
- 100% Geoprobe® Compatible
- 6 Nationwide Stocking Locations

Call Now to Experience the **FORCE** Advantage! **1.888.465.1569**

hole PRODUCTS
www.holePRODUCTS.com



Dropped Objects Lead to Industry Review

Adapted from Information by STANLEY Engineered Fastening courtesy of Power PR

Dropped objects, equipment, and tools which fall from hundreds of feet above a work area due to improper fastening and unreliable securing, present a significant danger at jobsites and a growing number of advocates have pushed for better safety hazard management practices.

In the late 1990s, an increase in reportable incidents (including injuries, near misses, and deaths) related to the unintended falling of overhead objects led to the creation of DROPS (Dropped Objects Prevention Scheme). The independent workgroup started with a small booklet which caught on within the industry, and many companies wanted to implement the life-saving strategies.

DROPS has since expanded its guidebook into a 130-page PDF which addresses safety practices for all operational activities (a free edition is available at www.dropsonline.org).

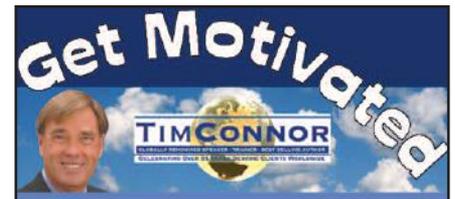
One volume, *Reliable Securing*, or secondary retention, discusses every form of fastening, including rope, wire, welding, and soldering. About 90% of the world of fastening recognizes secondary retention as a backup plan for the fasteners to make sure they will not come loose and create another dropped object incident.

Primary retention on a nut, bolt, or tapped hole typically refers to torque. If you put a nut and bolt together and you torque them to a specification, you achieve primary retention. Secondary retentions refers to the backup plan.

Fasteners can also loosen as a result of vibration and heat (when adhesives are used) in confined spaces, offshore and onshore. For many years, the conventional method of secondary retention was standard locknuts, bonding agents, or safety wire. They all are reliable and accepted, but are not reusable. Spirallock®, a product of STANLEY Engineered Fastening, introduced the first reusable locknut in the world and was added as an acceptable secondary retention device to the DROPS book.

Spirallock also introduced the first thread innovation for fasteners since World War II. The reengineered thread form adds a unique 30-degree wedge ramp at the root of the thread which mates with standard 60-degree male thread fasteners.

The wedge ramp allows the bolt to spin freely relative to female threads until clamp load is applied. According to STANLEY



Engineered Fastening Technical Sales Representative Ryan Bostick, "The free spinning function is important when you are 40 feet aboveground attempting to torque down a fastener without falling."

The crests of the standard male thread form are drawn tightly against the wedge ramp, eliminating radial clearances and creating a continuous spiral line contact along the entire length of the thread engagement. This continuous line contact spreads the clamp force more evenly over all engaged threads, improving resistance to vibrational loosening, axial-torsional loading, joint fatigue, and temperature extremes.

Entertaining, thought-provoking methods, practical and relevant ideas and techniques is what you will receive Tim Connor's vast experience as the motivational sales and management/ leadership speaker in over 4000 presentations / 25 countries plus, will keep your audience / employees totally engaged.

Contact him today

704-875-1230

Timspeaks4u@gmail.com

Timconnor.com

Providing the very best in geotechnical drilling technology to drillers worldwide since 1977



It's our anniversary and we're celebrating!

We've got a year of shows and special events planned, and you're invited.

Follow us on our website and Facebook page so you don't miss a thing!

720.822.2293 | 1.800.404.4463 | marltechnologies.com



Deadline for the May!
Space Reservation: March 25th
Display & Classified
Ad Copy: April 1st



NDA
BUCKEYE CHAPTER

**NATIONAL DRILLING
ASSOCIATION BUCKEYE
CHAPTER
2017 BUCKEYE EXPO**

May 18, 2017

- Live Drilling Demonstrations
- Safety Presentations
- Auto Hammer Calibration Services
- Great BBQ

NDA4U.com/buckeye/events

Geothermal Energy to Heat Section of Jubilee Pool

Compiled by the Editorial Staff of
WorldWide Drilling Resource®



Jubilee Pool was opened in a traditional bathing spot at the Battery Rocks near the harbor at Penzance in Cornwall, United Kingdom in 1935. The pool is triangular in shape, but has gentle, sleek curves, and high streamlined seawalls terrace up within the interior to close in the structure, making it a pleasant environment in which to swim. Unfortunately, in 2014, the pool suffered massive damage in a winter storm, and it had to undergo major renovations before reopening in 2016. In an effort to further upgrade the pool, plans were announced to make Jubilee the first facility of its kind in the country to be partially heated by geothermal energy.

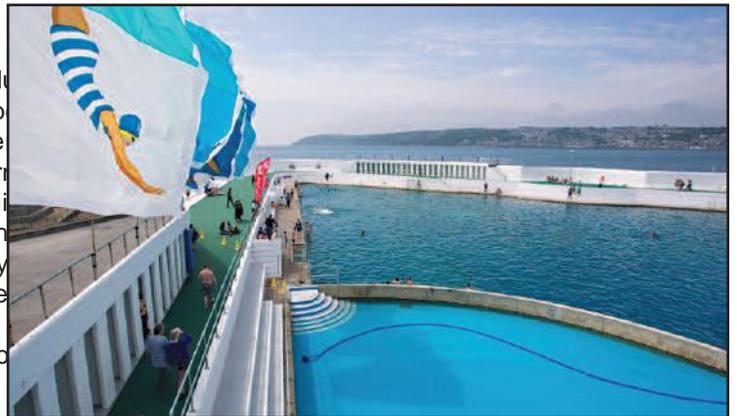
The project will be carried out by industry experts Geothermal Engineering Ltd (GEL) in late September of this year. GEL plans to drill a geothermal well to a depth of around one mile at a drilling site outside the boundary of the pool. The well will supply heat to a new section of the pool, which will be created as part of the project.

The proposed heated section will be a rectangular pool in front of the main entrance with a swimming area of over 3,000 square feet, and there are also preliminary plans to add hot tubs along the pool's east terrace.

Ryan Law, from GEL said, "Jubilee Pool will be the first deep geothermal heat project in the U.K. for over a quarter century. We hope that the project will help to promote both the pool as a destination in itself and deep geothermal energy across Cornwall and beyond."

The use of geothermal energy at the pool will reduce the emission of greenhouse gases. It is hoped the expertise gained from the project will be exported elsewhere giving Cornwall the chance to be a leader in geothermal technology and installation. "Should the project be delivered successfully and realize its full potential, it will help promote the Jubilee Pool and Penzance in a new way at the forefront of the implementation and use of green technologies," said Mayor of Penzance Mike Lovegrove.

Martin Nixon, chairman of the Friends of Jubilee Pool shed some light on how the project originated when he said, "My brother Charles initially proposed to me that we should heat a section of the pool with geothermal energy over five years ago, so I'm very excited to see his fantastic idea move closer to reality. I'm confident it will be hugely popular locally and that tourists from around the world will flock to Penzance all-year-round to experience this unique facility."



Jubilee Pool overlooking the Battery Rocks, courtesy of Jubilee Pool.

Editor's Note: In between our print issues, the WDR 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)

Storkson cont'd from page 19.

value in memory for later reference. This elapsed time could also be viewed on the display, as well as sent to a printer.

Making a microprocessor timer is really simple. To make the math easy, let's say we have an oscillator that moves at 256 "clock" cycles per second or 256 hertz. Most oscillators run much faster than this, but we can divide down the clock cycles internally so the extra speed isn't a problem. We then route this clock signal into what's called a timer. This timer is nothing more than an up counter. When this up counter gets one full cycle (turns on then off) from the clock oscillator, it increments or adds 1 to the total value from 0-255 (256 total).

With a 256 hertz clock signal we know if the timer counts from 0-255, then 1 second has elapsed. So if we want a one second delay we can instruct the microprocessor (in code) to let the timer count from 0-255 five times and then stop. We can even slice and dice the timer by instructing the microprocessor to check to see if the timer has equaled or exceeded a certain value. For example, if we want to time 1/10 of a second, we know with this timer 1/10 of a second would be 25.6 timer cycles. Timer value 25 or 26 will work here, and we need to decide whether it's accurate enough for what we're trying to do.

No matter how complex the computer you have working for you, virtually all of them use this method of measuring time. It's cheap and reliable, and used in literally billions of applications worldwide. No wonder these little computers are everywhere.

Britt

michele@worldwidedrillingresource.com

Where are you planning to go? How about including these shows:

Join *WDR*



The 52nd Annual Shallow Exploration Drillers Clinic will be hosted by the member state of Kansas, to be held April 11-13, at the Embassy Suites by Hilton in Olathe, Kansas. Learn new techniques, get the latest updates, and review some things you may have forgotten so you can stay ahead in the exploration drilling industry. The schedule consists of a full agenda of technical presentations, a National Drilling Association program, plus indoor and outdoor vendor displays. **For more information, visit <http://sedc.unl.edu>**



Mark your calendar for the 30th Annual Best in the West Drill & Blast Conference April 19-21, once again at the Spearfish Holiday Inn and Conference Center in Spearfish, South Dakota. This milestone event includes a regulatory session, primer social hour, technical sessions, booster social hour, exhibitor booths, banquet, live scholarship auction, door prizes, and more. You can also take part in a Crazy Horse Mountain Tour, the Paul Muehl Scholarship Clay Shoot, or Bob Martin Scholarship Golf Scramble. **Visit www.bitwconference.org**

Get set for innovation, excellence, and expertise at the 2017 Texas Alliance Expo & Annual Meeting in Wichita Falls, Texas, held at the MPEC (Multi-Purpose Event Center), April 25-26. First, enjoy three rounds of golf at the Wichita Falls Country Club. Then network with fellow energy professionals and vendors at the Alliance Expo & Oil Patch Reception in the exhibit hall. End the evening with The Mavericks' delicious barbecue.

Wednesday, have breakfast with the exhibitors, then attend the seminars for solutions for your business challenges. The membership luncheon is at noon, followed by the expo open to the public.

Learn more at www.texasalliance.org



The Alberta Water Well Drilling Association Convention and Trade Show will be April 27-29, at the Sheraton Hotel & Conference Center in Red Deer, Alberta, Canada. There will be regulation updates, technical sessions, entertainment, drilling rigs and new technology displays, and the annual meeting. Don't miss it!

For more information, e-mail Carol Larson: awwda@xplornet.com

See more events online at www.worldwidedrillingresource.info/Planning3-17.pdf

SERVING THE WATER WELL INDUSTRY

257 Caroline Street
Punxsutawney, PA 15767
800-927-0560 • 814-427-2555
Fax: 814-427-5164

Need something special?

Talk to us - we'll make it happen faster than you think.

www.starironworks.com

T&T Carbide Inc. Est 1976



- HOLE OPENERS
- TRICONE BITS
- PDC BITS
- FLY CUTTERS
- BARREL REAMERS
- SUB ADAPTERS

WE SPECIALIZE IN CUSTOM BUILT
HOLE OPENERS AND BACK REAMERS
FROM 8 TO 60 INCHES
NO OUTSIDE CONTRACTING

17409 LOWRY AVE
LOGAN IL 62856
800.333.1816
618.439.7253
FAX 618.435.4347
EMAIL sales@tandtcarbide.com
www.tandtcarbide.com



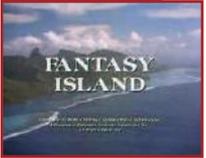
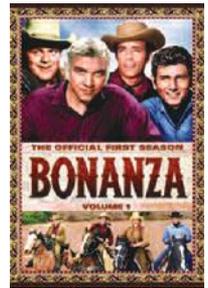
Ronnie's Real World

Travel - OH HOW WONDERFUL IT CAN BE...

I remember as a child, watching the old television with Dad in the living room while Mom was making dinner in the kitchen (No open floor plan then.), and my sister in her room reading.

As we sat and waited for the next show,

I heard, ♪♪Dun da ladda da dun dun♪♪.



We couldn't wait for that show to begin.

And oh yes, later in years, the *Love Boat*, *Fantasy Island* "Zee Plane, Zee Plane, Mr. Roarke", and many more. I used to lay on the floor and dream I was actually with them - part of it all. Never once, did I ever think I would in fact become part of that wonderful world of travel. It has been great fun for all these years. I have truly been fortunate to have been able to go to places I never even heard of and meet all the wonderful people who have become a part of my life for so many years - true friends across the world (*WorldWide*, that is!).

Along with all that travel and those friends, comes the reality, so many working in this industry to bring each and every one of you and me, the **NEW** exciting "toys, as they are sometimes called", are leaving their families, friends, outings, church gatherings, vacations, and more behind. Instead, they pack their bags, lug them wherever, travel by car, truck, train, bus, airline, boat, etc., spend nights in hotels, eating restaurant food (believe me, that can get tiring, no matter how good it is), sleeping in yet another bed, setting up the displays, exhibits, and more. Alas, they look up in that wonderful arena and realize . . . it's another convention hall! YIKES!!! It is no "*Fantasy Island*" for sure.

I say all this because I interview many for this "glamorous" position. They are truly excited to travel the world! So, try as hard as I can to let them know the true reality, they remain oblivious to the real "facts of this lifestyle". It is for some quite rewarding as it is for the *WDR* Team, but for others, "it's not what I thought it would be" is what they say as they walk out that door.

Okay, so you say, why are you telling us this Ronnie? Just so you will appreciate all those "travelers" *WorldWide* in the drilling industry who work so hard for **YOU**. So please attend the industry events, and perhaps when you see them, you might just say a mere "Thank-you".

I'll bet they will give you a true *WDR* SMILE! Try it and see . . .

This truly is, *Ronnie's Real World* . . .



OVERPAYING FOR TIER 4?

TIER 3 PORTABLE AIR COMPRESSORS STILL AVAILABLE 750-1800 CFM



When purchasing a Sullivan-Palatek portable air compressor, you acquire a machine expertly engineered for superior performance and power. With our Tier 3 Flex portable air compressors still available from 750-1800 CFM, why wait to save?

Discover More

>>

www.sullivan-palatek.com



WorldWide Service Center™



BAKER
WATER SYSTEMS DIVISION
Cambell Monitor MONOFLEX
(800) 356-5130
bakerwatersystems.com



BITCO Bitco, Inc.
(661) 201-6259
bitcoinc.us



Diedrich Drill
(800) 348-8809
diedrichdrill.com



FLOMATIC VALVES
Flomatic Corporation
(800) 833-2040
flomatic.com



JET-LUBE
(800) 538-5823
jetlube.com



Rockmore International
(503) 682-1001
rockmore-intl.com



Simmons Mfg.
(800) 241-1935
simmonsmsg.com

These companies provide outstanding service!

To advertise yours here, call: (850) 547-0102 or e-mail: wwdr@worldwidedrillingresource.com



Armstrong Machine Co. Inc.

201 SW 7th Street • Pocahtontas, IA 50574 USA
712-335-4131 ~ 24 Hours 7 Days a Week • Fax: 712-335-4561
Watts: 800-831-4527 USA & Canada (8AM to 4PM Monday-Friday)
See our Web Page: www.armstrongmachine.com
Email Address: amci@armstrongmachine.com

Rebuilt Mud Pumps

4½x6 Gaso Duplex.....CALL FOR PRICE
4½x6 Oilwell Duplex.....CALL FOR PRICE
Gardner Denver 4½x8 PA-8 Triplex.....CALL FOR PRICE
Gardner Denver 5x6 Duplex.....CALL FOR PRICE
Gardner Denver 5x10 Duplex.....CALL FOR PRICE
Gaso 5x10 Duplex.....CALL FOR PRICE

WE HAVE OVER 300 PUMPS IN STOCK

We Have a Variety of Pumps and Power Units in Stock.

Brand New Pumps In Stock

Gardner Denver 4x5 TEE Triplex.....CALL FOR PRICE
Gardner Denver 5½x5 TEE Triplex.....CALL FOR PRICE
Gardner Denver 4x5 or 4½x5 Duplex.....CALL FOR PRICE
Gardner Denver 5x6 Duplex.....CALL FOR PRICE
Gardner Denver 5x6 Air Drive Duplex.....CALL FOR PRICE
Gardner Denver 5x8 Duplex.....CALL FOR PRICE
Gardner Denver 5½x8 Duplex.....CALL FOR PRICE
Gardner Denver 7½x8 Duplex.....CALL FOR PRICE
Gardner Denver 7½x10 Duplex.....CALL FOR PRICE
Gardner Denver 5½x5 THE Triplex=.....=CALL FOR PRICE
Gardner Denver 5x8 PAH Triplex==.....=CALL FOR PRICE
Hydraulic Grout Pump 5".....\$4400.00
Hydraulic Grout Pump 6".....\$4900.00
Hydraulic Grout Pump 7½".....\$10,500.00

*We Pay Cash for Surplus Mud Pumps
Special or Obsolete Parts Made to Order
We Have a Variety of Brands of
Mud Pump Parts in Stock.*

Nitrate Coated Premium Liner

5x6 Gardner Denver.....\$230.00
5x8 & 5x10 Gardner Denver.....\$250.00
5½x8 & 5½x10 Gardner Denver.....\$275.00
7½x8 & 7½x10 Gardner Denver.....\$450.00

Rods Heat-Treated & Chromed

5x6 Gardner Denver.....\$103.00
5x8 & 5½x8 Gardner Denver.....\$121.00
5x10 & 5½x10 Gardner Denver.....\$121.00
7½x8 Gardner Denver.....\$121.00
7½x10 Gardner Denver.....\$121.00



Grout Pump



Brenda

WorldWide SUPER MART™



Kathy

Call Now!

850-547-0102

Appraisals

120

QUICK CASH MONEY

Paid for Drill Rigs, Pump Hoists,
Mud Pumps, Drill Pipe, & Bits.

RENE HENDON Tel: 281-260-0880

120-120

Auger Rigs

130



1987 B-53 drill rig mtd. on 1996 FL70,
Deutz diesel engine, Pullmaster main
winch 10-speed head, safety drive
winch rotation safety guard, new
hydraulic control valves and hoses
new 2-speed 3L6 pump, 2J8 swivel
setup for mud & air rotary work, new
300 gal. water tank, new hydraulic
tank.....\$90,000

604-888-2206

130-529

Bits

220

HOFFMAN DIAMOND PRODUCTS

sales@hoffmandiamond.com
www.hoffmandiamond.com
800-444-4180

NEW!
Diamond Grinding Cups

**Quality, Integrity,
and Customer Service**

- Diamond Core Bits
- Casing Shoes
- Reaming Shells
- Diamond Cup Grinders

220-712

JERRY'S BIT SERVICE INC.
710 CR 3336
Paradise TX 76073

(940) 683-2874 Fax: (940) 683-
Mobile: (940) 393-2394

Contact: Jerry Shoemaker
jerryshoemaker54@yahoo.com

Jerry's Bit Service Inc. will meet your
every drilling need. We service and
tricone, PDCs, as well as hole openers.
Rather rent a PDC? No problem. Got
covered. Our company will repair your
PDC regardless if it is a rental or purchase.

220-919

Always behave like a duck. Keep
calm and unruffled on the surface,
but paddle like crazy underneath.

ROCK BITS!



**Cable Tool
Air Hammer
Roller Cone
3" to 24"**

"A Good Bit
Better"

800-523-5760

540-635-7753 Fax 540-635-6352

TRIDENT TOOL INC.

tridenttool.com

220-1200

Moab Bit & Tool Co., Inc.



PDC's, tri-cones,
custom bits, hole
openers, drill pipe,
subs & stabilizers.

Doing business for over 50 years.

24 hr. service

PH 800-453-1052 • FX 435-259-2968
sales@moabbit.com • moabbit.com

220-822

INTERNATIONAL DRILL BIT SUPPLIER.



KS/BIT
KNOWLEDGEABLE - DEPENDABLE - GLOBAL

**NEW
SURPLUS**



**RERUN
RETIP**

OVER 15,000 BITS IN STOCK
MILL TOOTH TCI - SEALED OPEN BEARING

800.213.1389 SALES@KSBIT.COM

220-648

K&T Hammer and Bit

Start your business with K&T,
South Korea's leading
manufacturer
& exporter.



Sale on
Hammers
& Bits

20% Off

kandti@kandti.com
82-70-4221-1108
www.kandti.com



Visit
K&T at
Booth #B90828

220-1246

Drill Bits

Water Well, Geotech, Exploration
Tricone - PDC - Drag Bits
Hammer Bits - DTH Hammers
Hole Openers (Cone & Blade Type)
Reamers & much more!

Call Us 24/7

helanbak.com / 601-441-6414

220-1213

WorldWide Sales Of New & Rebuilt Roller Cones and PDCs

Complete Repair of PDCs



Call, Fax, or Email
For Quotes
P.O. Box 1067
Archer City, Texas 76351
940-574-4977 Fax
Abilene Sales: 713-254-8376
325-864-7075 Cell
e-mail: usabr1@usarockbit.com
Visit Our Web Site At
http://www.usarockbit.com
We Accept Visa, MasterCard & Discover

We Purchase New and Used Bits
OIL FIELD, WATER WELL & ENVIRONMENTAL
NEW BITS IN STOCK
CALL US FOR SIZES AND TYPES
1-800-451-2906 TOLL FREE

220-162

Boom Trucks
225

Terex 23½-ton boom truck on 2002 Peterbilt, 27,000 miles.....\$98,000
National 800D 23-ton crane, 8685 hrs, 4-section x 100' boom, on 2003 Peterbilt 330, Cummins ISC, 120,362 miles.....\$99,000
Call Alan Lang: 801-554-2419
225-1027

Breakout Tools
238

SEMCO, INC.
All-Hydraulic Hydrench
S112H in Stock
1-12" Four Rollers
Breaks Pipe, Makes Pipe to Torque Specs
800-541-1562
238-135



BLACKDOG INDUSTRIES, LLC
Richland, WA

CHECK OUT OUR UPDATED WEBSITE!

Specializing in Hydraulic Breakout Tools

- Models Ranging from: 1.5" - 10.75"
- Torque up to 21,000 Ft-Lbs
- Optional Rod Spinner
- Optional Control Panel



NEW MODELS ARE AVAILABLE!!!

(509)946-6400
Email: sales@blackdogind.com
www.blackdogind.com

238-574



May issue deadlines are right around the corner!
Space Reservation:
March 25th
Display & Classified
Ad Copy:
April 1st

Business Opportunity
245

Pump Service and Drilling Business
FOR SALE
Located in Center Point, Iowa
▶Call 319-721-7902◀

245-246

FOR SALE - OWNER RETIRING
Great Business Opportunity
Everything Goes!



2006 Int'l 4300 ext. cab, TranStar®, DT 466 eng., Allison trans., like Michelin rubber, only 46,796 ml (7) cameras, 3 w/zoom, (3) hyd. wir 3-speed trans., (1) 5000' w/cable, 10,000' w/cable, (1) 4500' w/new c Comprobe mech., digital measur systems, various lightheads, weigh bars, stabilizers, parts, (1) trailer rig 1000' w/cable, new trailer, too n items too list. Call or e-mail for description of equip 865-310-4421 substratacamera@aol.com
A steal at \$200,000. Make Offer

245-545

Cable Tool Rigs
305

36 Cyclone, good shape, (3) hydraulic jacks, derrick has been extended to 50 ft..... \$28,000
Also 22W with Atlas casing hammer, (2) 55 SpeedStars, and Alten 32A, 24A. Call for price on rigs.

269-963-2529 or
E-mail: cablewelldriller42@yahoo.com
Ray Leonard, Battle Creek, MI USA

305-170

It's better to do it than wish it done.

22W mtd. on '86 Chevy truck
Tooled up for 5", 6", & 8" drilling
All kinds of tools
4 cyl. Allis-Chalmers power unit
Good shape. Asking \$17,500
Call David 417-277-5460

305-548

Now Celebrating 5 Years!
We Buy and Sell All Makes & Models!
For Sale - BE Rigs All Sizes!
Wanted - BE Rigs All Sizes!
Schramm T64HP & SIMCO® 5000
Rotary Rigs
Reese Rig & Tool Co. LLC - 740-408-0725
neh810@yahoo.com reeserig.com

305-982

Cable Tools
307

RAMPP COMPANY
CARBIDE BUTTON BITS
CABLE DRILLING & FISHING TOOLS
800-272-7886
www.RAMPPCO.COM

307-518

CABLE TOOLS!



**ROPE SOCKETS
STEMS
BAILERS
JARS & SUBS
Combination
Sockets**

800-523-5760

540-635-7753 Fax 540-635-6352

TRIDENT TOOL INC.
tridenttool.com

307-1200

Hocker Drilling and Fishing Tools
Special Price on Cable Tools! We accept Visa & Master Card. New & Used Cable Tools, Rope Sockets, Stems and Bailers.
Call 270-926-2889

307-107

Some of us never put our best foot forward until we get the other one in hot water.

Cameras
309

CAMERAS!



GeoVISION™ Economy Camera System
GeoVISION™ Deluxe Camera System

800-523-5760

540-635-7753 Fax 540-635-6352

TRIDENT TOOL INC.
tridenttool.com

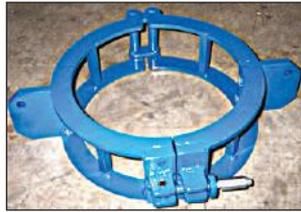
307-1200

Casing Tools
320

TekMark Industries



Internal Casing Lifter 35 Tons



Flush Joint Elevator



Casing Holder 35 Tons

PVC Cutoff & Torch Guide
DTH Spear - PVC Puller
Heavy Column Pipe Holder
Other Casing Tools
tekmarkwellcasingtools.com
800-747-2485 or 509-747-2485

320-254



Torch Guides



Torch Guides 6" thru 16"
Mix & Match for a 20% discount
6" Sale Price.....\$59.00 • 8".....\$79.00

For all your drilling products and supplies
visit us online:

www.americawestdrillingsupply.com
www.awds.com
(800) 800-8444 • (775) 355-1199
sales@awds.com

320-490

Compressors
335

900 cfm/350 psi **Sullair** rebuilt air end
model 02250056-648.....\$15,000
1170 cfm/350 psi **Ingersoll-Rand/Cat®**
C15. New cooler, skid, and paint. Looks
better than new.....\$99,000
900 cfm/500 psi - 1150 cfm/350 psi
Sullair/Cat® C15.....\$35,000
Gardner Denver Joy/WB12 booster/
Cat® C16.....\$95,000
Joy WB12 booster/Det. series 60..\$50,000
Joy WB12 booster/Det. 12V 92 ..\$60,000
Call Alan Lang: 801-554-2419

335-1027

R & R DRILLING INC.
800-874-3907
PH. 423-626-5302 FAX. 423-626-1232
E-mail: airdocron1@gmail.com



Distributor of
SULLAIR Compressors

INGERSOLL-RAND

AIR COMPRESSORS
NEW & REBUILT
HR2s - HR2.5
AIRENDS IN STOCK



Schramm Distributor
GHH - RAND

Distributor of Genuine GHH Rand Parts

Will Ship Worldwide!

**NEW & REBUILT SULLAIR
& GHH COMPRESSORS
SHIPPING WORLDWIDE**

Sullair 750/350 to 1350/500
GHH 204/128 and CF 1000
Excellent Exchange Prices!

335-183

Air Compressors for Sale!
Schramm 900/350, IR 900/350, IR 1170/350
Skid mtd. portable Atlas Copco 976/365
swneilly@gmail.com
814-598-1320

335-400

Direct Push Drills
401

THESE HANDS WERE MADE FOR WORKING. THE TOOLS THEY HOLD SHOULD BE TOO.

BUILT TO LAST

See our article on page 28.

EQUIPPING THE WORLD TO SAMPLE THE EARTH

AMS PowerProbe

800.635.7330 | 208.226.2017 | www.ams-samplers.com

401-1118

ECT is now a proud distributor of Genuine Geoprobe® products!



MC5, MC7, RS60, DT22, DT32, DT35, DT375, DT450

INJECTION TOOLS

MANUFACTURER OF PREPACKED WELL SCREENS

1/2" Up to 4" ID Pipe Size

Annular Bentonite Seals

JOHNSON SCREENS® DISTRIBUTOR

PROACTIVE PUMPS® MASTER DISTRIBUTOR
SCHUMAPROBE POROUS POLY SPARGE SCREENS

11 Black Forest Road, Hamilton, NJ 08691

609-631-8939 ~ 888-240-4328 (Toll-Free)

ectmfg@aol.com ~ ectmfg.com

proactivepumps.com ~ torquerplug.com

401-719

Drill Pipe
435

200+ pieces 4½ external flush drill pipe,
30-foot lengths, 2-7/8 reg joints, RD20 type,
some new, others like new...\$20 per foot
Call Alan Lang: 801-554-2419

435-1027

75 Joints (1500 ft) 3½" x 20'
\$6.00 per ft
903-714-1256

435-1219

New & Used Drill Pipe
Water Well, Geotech, Exploration
Up to 6-1/2" OD Pipe
Mayhew Regular - Mayhew Jr
AWJ - NWJ - IF - API - FEDP
Call Us 24/7
helanbak.com / 601-441-6414
We Are The Manufacturer

435-1213

CALL 850-547-0102

Drill Pipe
435

Flush Joint & Bottleneck Drill Pipe
IN STOCK - SURPLUS & USED
2-3/8", 2-7/8", 3-1/2", 4", 4-1/2", 5, 5-1/2"
Economy Drill Pipe, Tool Joints for
WELD-ON & SCREW-ON Applications.
RENE HENDON 281-260-0880

435-120

Drilling Products
458

"We make the tools that make you money"



HOME OF THE HM FLOTATION SUB



It's Showtime!

Standard Duty
6" OD, 2 3/4" Float
70/80,000 lbs Holdback

Deep Hole
7" OD, 3" Float
110/120,000 lbs Holdback

Blue Max
8" OD, 3 1/2" Float
140/150,000 lbs Holdback

Ask About Specials!

www.heiseymachine.com
Toll Free 1-800-433-3677
717-293-1373 Fax: 717-293-1091

458-813

Rock Drill Lube, Enviro-Friendly,
Made in USA, Buy Direct \$8 per Gal.
Pails, Drums, Totes www.jadelube.com
724-302-5233 sales@jadelube.com

458-1253

IES DRILLING SUPPLIES
THE MUD MEN

- Water Well - HDD - Geothermal - Env. & Remediation
- Drilling Mud •Polymers
- PVC and Stainless Screens
- Above Ground Protectors •Manholes

IES Exclusive Products



We deliver to all 50 states 7 days a week Give us a call!

Cam-lock Manholes
Aluminum Anodized
Procovers

104 E. DeVore St. Pearl City, IL 61062
Ph: 800-388-2906 Fax: 815-443-2893
E-mail: sales@iesdrillingsupplies.com
www.iesdrillingsupplies.com

458-814

Electric Motors
510

-WANTED-
20 to 300 hp vertical hollow
shaft pump motors.
Good or Bad! Will pick up!!
800-541-1562

510-135

Elevators
515



**Easy Lift
Casing Elevators**

6" and 8" easy lift casing elevators provide a positive grip on the casing without the need for weld-on tabs. Carbide teeth dig into casing on both sides.

Set casing FAST • Grab & Go
No slings included

For all your drilling products and supplies visit us online:
www.americawestdrillingsupply.com
www.awds.com
(800) 800-8444 • (775) 355-1199
sales@awds.com

515-490

ELEVATOR SPECIAL
1", 1 1/4", & 2" Slip-type Elevator w/kwik-clamp
Package Special
All 4 pieces for \$1000

DRILLING EQUIPMENT SALES, INC.
2515 Highway 70 SW • Hickory, NC 28602



828-322-3056
www.drillingequip.com

515-121

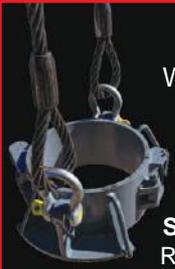
SEMCO INC.
1" Thru 16" Elevators
All steel with safety latch.
800-541-1562
Fax 719-336-2402
www.SEMCOoflamar.com
Ship by  same day




515-135

SkyRex
Water Well Elevators
1" to 24"
Also Lightweight
PVC Elevators

SAME DAY SHIPPING!
Rex McFadden Co., Inc.
806-791-3731
See our ad on page 88
www.rexmcfadden.com



REX MCFADDEN CO.
DRILLING EQUIPMENT

515-123

*Home of Solid
Gold Service™*



- Kwik Klamps
- PVC Pipe Elevators
- Flush Joint PVC Pipe Clamps

J&K Tool Company, Inc.
www.jktool.com • sales@jktool.com
320-563-4967

515-187

ELEVATORS!



For 1/2" to 19" Casing
Steel and PVC
800-523-5760
540-635-7753 Fax 540-635-6352
TRIDENT TOOL INC.
tridenttool.com

515-1200

Fusion Equipment Repair
625

Fusion Equipment Recoating
► Socket Sets \$24 each ◀
fusionrecoating.com
Call 580-276-5432

625-986

Grouters
715

DES
DRILLING EQUIPMENT SALES, INC.



Single &
Double hopper
Rose-Wall
grouters in
stock.

828-322-3056
jeff@drillingequip.com
www.drillingequip.com

715-121

Hydro Frac Equipment
815

Hydro fracture unit with triplex pump
mtd. on 1992 IHC w/1100 gallon water
tank, pipe plus (2) Baski seals.
Call 715-498-7427

815-542

Injection Pumps
820

FMC Bean pump model W1122 BCD,
rebuilt.....\$4300
FMC Bean pump model L0918BCDE8,
new.....\$3800

Call Alan Lang: 801-554-2419

820-1027

DU-ALL Injection Pumps



All parts in stock and available for shipment
Overnight delivery available. Call your local
parts supplier or Fred's Water Service at
(440) 259-5436 with
your order or questions.

Fred's Water Service, Inc.

4390 Elberta Road Perry, Ohio 44081
Phone (440) 259-5436
www.fwservice.com
Fax: (440) 259-4795

820-610

Hammers
805

HAMMERS!

Made in U.S.A.



IR Style
Mission Style
Halco Style
3" to 24"

800-523-5760

540-635-7753
Fax 540-635-6352

TRIDENT TOOL INC.
tridenttool.com

805-1200

ATLAS
MANUFACTURING LTD.
EST. 1989



Casing
Hammers

Atlas "Pure Strike"
Casing Hammers

Casing
Jacks

Atlas "Yellow
Jacket"
Casing Jacks



Hydraulic Power Packs

Diesel and Electric
Hydraulic Power Packs

To see all our products,
visit us online:
www.casinghammer.com

Atlas Manufacturing Ltd
6524 North Island Hwy
Merville BC V0R 2M0
Canada

Phone: 250-337-5030
Fax: 250-337-5136
Toll-Free 866-338-5090
E-mail: atlas@casinghammer.com

805-313

Magnets
990

**RETRIEVING
MAGNETS!**



3 1/2"
to
6 1/2" Dia.
100 to 600 Lbs.

800-523-5760

540-635-7753 Fax 540-635-6352

TRIDENT TOOL INC.
tridenttool.com

990-1200

Mud Pumps
1120

GD & Wheatley 4x5 to 7x12
Complete Pump, Gearend, Fluidend
RENE HENDON 281-260-0880

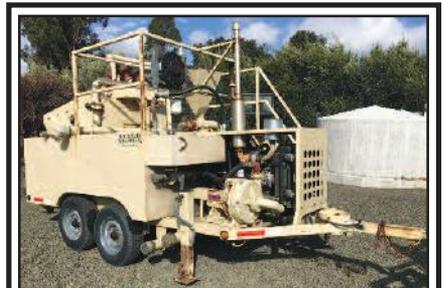
1120-120

Gardner-Denver 4x5, 4 1/2x5, 5x6,
5x8, 5 1/2x8, 5x10, 5 1/2x10, 7 1/2x8, or
7 1/2x10 - several used/rebuilt bare pump
or skidded & diesel powered. Gaso Fig.
1743 7 1/2x10 skidded w/diesel power.
LeRoi 253S2 rebuilt compressor. New
American Mfg. 5x6. Stocking distributor
for American Mfg. pump parts.

Danny Stull: dannystull.jws@gmail.com
Ph: 405-794-3600

1120-784

Mud Systems
1125



Custom 1000-gal. mud recycler built
in 2000, 4-cylinder Isuzu turbo diesel
engine, rebuilt hyd. pump w/approx.
300 hours on it, 3x2 Cobra centrifuga
desander pump with mechanical seal,
5'x4' shaker deck, (3) desanding cones
mounted above a sand screen on shaker
bed, (4) leveling jacks (2 hydraulic in
rear / 2 manual in front), located in
Northern California.....\$15,000
707-255-7923

1125-552

Mud Systems
1125

MUDSLAYER MFG.



Where you
come for
Innovation



360-477-0251
www.mudslayermfg.com

Built for Drillers by Drillers

1125-576

Clean out the clutter and sell
it in our classified section -
WorldWide SUPER MART™



worldwidedrillingresource.com

Packers
1203



Continuing to provide ...
Quality, Service & Price!

QSP Packers, LLC

Quality - Service - Price

Serving Your Complete Packer Needs

- ◆ **INFLATABLE PACKERS**
Pressure Grout, Wireline,
Water Well, Environmental,
For 1.5" I.D. to 19" I.D. + Hole Diameter
- ◆ **MECHANICAL PACKERS**

Call us with all your Packer questions!!

Phone: 253-770-0315

Fax: 253-770-0327

Email: info@QSPPackers.com

WebSite: www.QSPPackers.com

1203-409

Baski, Inc.

PACKERS,
ASR FLOW
CONTROL
VALVES &
PITLESS
UNITS

1586 S. Robb Way
Denver, CO 80232
Ph: 303-789-1200
Fax: 303-789-0900
info@baski.com

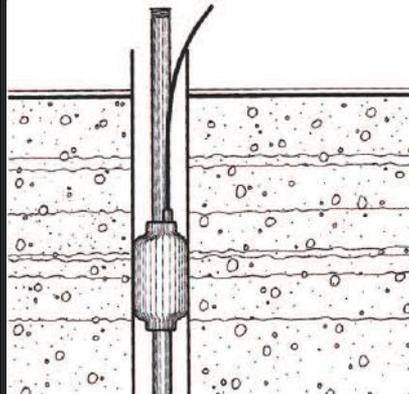


www.baski.com

1203-115

lansas PRODUCTS

Inflatable Well Packers



CUSTOM BUILT
PACKERS FOR ANY
APPLICATION

COMPETITIVE
PRICES

800-452-4902

Manufactured by Vanderlans & Sons
1320 S. Sacramento Street
Lodi CA 95240
209-334-4115
Fax: 209-339-8260
www.lansas.com

1203-1190

DuraFRAC®

Water Well Hydrofracturing Packers

4.33" and 4.75" Standard OD Sizes
East and West Coast Locations
Replacement packer elements

IPI DuraFRAC@inflatable-packers.com
1-406-446-9940
www.inflatable-packers.com
Inflatable Packers International, LLC

1203-567

Perforators
1205



MILLS Knife Type Perforators
For Sale or Rent
4" thru 24"
Montana 406-580-2818

1205-1184

Pump Hoists
1230

Duke Equipment Company, LLC
"Reliable and Versatile Pump Hoist
at an Affordable Price"



See Used Trucks @
www.pumphoist4u.com

1000 E. Oklahoma Avenue
P. O. Box 215
Darrouzett, TX 79024

806-624-2200

1230-511

Pump Hoists
1230

Now Celebrating 5 Years!

NEW and USED Smeal Pump Hoists For Sale: Smeal 3T, 4T, 5T, 6T, 8T, & 10T
WANTED Smeal pump hoists of all sizes
Reese Rig & Tool Co. LLC - 740-408-0725
neh810@yahoo.com reeserig.com
1230-982



2017 \$15,000 SEMCO Pump Hoist, mounted on a 2017 Kenworth Allison automatic. *Fully tooled and ready for the field.* Available end of February, 2017.....**\$230,000**
Also available end of March, 2017
SEMCO \$12,000 on a 2017 Ford F-750, diesel, automatic. *Tooled and ready for the field.*.....**\$175,000**
These are custom built rigs by Rick Drilling: 970-567-7246

1230-130

2017 Dodge & Ford Trucks Available

\$4,000 Pump Hoist, 8,000# cap., 35' telescoping mast, 30 gal. oil tank, hyd. pump, 5T safety hook, hyd. controls & variable speed engine control..**\$15,665**
\$6,000 Pump Hoist, 16,000# 3L cap., 35' telescoping mast, 30 gal. oil tank, hyd. pump, 5T safety hook, hyd. controls & variable speed engine control.....**\$17,950**
\$8,000 Pump Hoist, 22,000# 3L cap., 36' telescoping mast, 30 gal. oil tank, hyd. pump, 7T safety hook, hyd. controls & variable speed engine control.....**\$22,950**
\$10,000 Pump Hoist, 30,000# 3L cap., 40' telescoping mast, 30 gal. oil tank, hyd. pump, 7T safety hook, hyd. controls & variable speed engine control.....**\$32,500**
\$12,000 Pump Hoist, 48,000# 4L cap., 44' telescoping mast, 6000# tail-out line, 72 gal. oil tank, hyd. pump, 11T safety hook, hyd. controls & variable speed engine control.....**\$36,250**
\$15,000 Pump Hoist, 60,000# 4L cap., 48' telescoping mast, 6000# tail-out line, 72 gal. oil tank, hyd. pump, 11T safety hook, hyd. controls & variable speed engine control.....**\$44,895**

WorldWide Drilling Resource®

\$20,000 Pump Hoist, 80,000# 4L cap., 40' telescoping mast, 6000# tail-out line, 72 gal. oil tank, hyd. pump, 11T safety hook, hyd. controls, & variable speed engine control.....**\$59,230**
\$25,000 Pump Hoist, 100,000# 4L cap., 40' telescoping mast, 6000# tail-out line, 100 gal. oil tank, hyd. pump, 15T safety hook, hyd. control & variable speed engine control.....**\$82,545**
\$30,000 Pump Hoist, 120,000# 4L cap., 40' telescoping mast, 6000# tail-out line, 100 gal. oil tank, hyd. pump, 15T safety hook, hyd. control & variable speed engine control.....**\$96,945**

EQUIPMENT IN STOCK

\$8,000 SEMCO, 44' derrick, HS PTO, 2-spd, TL, aux, sandreel, oil cooler, pipe racks, LED LK, RC, 12' bed, toolboxes, 2017 Ford F-550.....**\$108,860**
\$25,000 SEMCO, 48' derrick, PTO air, 2-spd, PA, aux, oil cooler, sandreel, PT, LK, 16' bed, toolboxes, 2009 Int'l 4300.**\$145,905**
\$30,000 SEMCO, 50' derrick, PTO air, CH, 2-spd, sandreel, aux, oil cooler, PT, LK, 22' bed, toolboxes, 2009 Int'l 4400.....**\$177,680**
\$30,000 SEMCO, 50' derrick, HS PTO 2-spd, sandreel, oil cooler, aux, PA, HBOC, CH, remote, PT, LK, 24' bed, toolboxes, 2010 Frtlnr M106..**\$203,816**

Contact us for a list of more used equipment.

SEMCO INC.
719-336-9006/800-541-1562
FAX 719-336-2402
See our Ad on page 2.
semcopumphoist@yahoo.com
www.SEMCOoflamar.com
1230-135

DES Pulstar
DRILLING EQUIPMENT SALES, INC.
Used Pulstar units available.
828-322-3056
jeffj@drillingequip.com
www.drillingequip.com
1230-121

WANTED TO BUY PULSTAR SMEAL, SEMCO PUMP HOIST RENE HENDON 281-260-0880
1230-120

The Original PUMP PULLER
In Production Since 1973
• Portable
• Lightweight
• Economical
• Welded aluminum frame.
• Waterproof motor and electrical system.
• Worm gearbox holds in any position.
• Will handle up to 2" galvanized pipe @ 600 lb. capacity.
• Pull or set 24' per minute.
• Adjustable legs. Extends down to 7". (Optional)
Wheel kit w/handles, winch, swing vise and overhead guide.
Funk Manufacturing Up-Z-Dazy, Inc.
30 Myers Road
Newville, PA 17241
Phone: 717-776-3181
Fax: 717-423-5201
1230-371

Pumps
1240

ROBBCO PUMPS INC

Manufacturer of Submersible & Lineshaft Pumps

806-749-7475
robbcopumps.com
Idalou, Texas USA

1240-1112

Rig Repair/Parts
1321

EDSI
RIG PARTS & REPAIRS by WATER WELL professionals!
Rotary Tables • Mud Pumps Major Components
Parts located, spares provided for existng equipment, 18" rotary tables now produced with large ring gear and pinion.
580-234-5971 www.eniddrill.com
1321-510

CALL 850-547-0102

Rig Parts
1320

KELLY BARS

Fluted, Round, & Square

DRILL PIPE & COLLARS

IR 4-1/2" DP w/2-7/8" Conn 30' Joints

6" Drill Collars

ROTARY TABLES

18" SpeedStar with Bushing

8-1/2" Midway

SWIVELS

2" & 3" Little Giant

King 15XV

King 20GW

King 40KG

AIR COMPRESSOR

Screw 900/200 w/Volume Tank

GEARBOXES

Failing

Spicer

Cotta

For additional information and equipment go to our web site or give us a call.

325-653-3433

www.wichtex.com

1320-948

5 1/4, 7 1/2, 8 1/2, 12, 17 1/2 Rotary Table, Hyd. Tubing Tongs, Air Slips, Type LF & C Tongs, Elevators
RENE HENDON 281-260-0880

1320-120

Rig Service
1325

The **Rxq** Doctor's
317-839-7534

Complete Rebuilding and Repair of Drill Unit Components.

31' - 6" long CF-15/1250 Failing mast, excellent condition

Failing high-torque PTO

Rebuilt to New 4x5 Gardner Denver mud pump

Gardner Denver/Failing fluid end casting 5x6, excellent condition

Call or fax for listing.

PH: 317-839-7534 FAX: 317-838-92-

1325-117

Rigs
1330

1999 & 2007 CME 550X, 1986 CME 550, 1995 CME 750X. For price and photos, call: 770-633-4252

or e-mail: idrill@bellsouth.net

1330-369

SIMCO DRILLING EQUIPMENT, INC.

WATER WELL GEOTECH GEOTHERMAL CONSTRUCTION

NEW USED REFURBISHED

The most powerful 2800 ever!

join us on **facebook**

WWW.SIMCODRILL.COM
1-800-338-9925

1330-497

2005 CME rubber tire ATV, high-speed rotary drive, quick disconnect spindle adapter, 84 gpm water pump, hydraulic rod holder, 140 lb hammer, 45" flotation tires, air compressor with dryer, angle drilling capability, 26' mast.

404-394-9469

1330-551

Failing 2500SE Single drum drawworks with air clutches, equipped with Foster catheads, 18" Failing rotary table, powered by Detroit 671 engine, 750 Allison transmission, with telescoping mast mounted on T/A trailer.

Call 325-653-3433

1330-948

2014 Nordic Drill DRC-10-A

Dual rotary mtd. on crawler, for drilling up to 10" casing, equipped with angle slide, 1400 hrs. 32,000 lbs.....\$325,000

Call 819-758-6468 or e-mail: simon@puitbec.com. For information about the rig: www.nordicdrill.com

1330-1241

EWMD EAST WEST MACHINERY & DRILLING, INC.

"Meeting Drillers Needs"

www.ewdrilling.com

Email: sales@ewdrilling.com

Ph (570)966-7312(PA yard/office)

We Buy & Sell Drill Rigs&Equip

Water Well, Oil & Gas, Auger, Core, Blasthole & Mining, Exploration Drills. Air Compressor, Mud Pumps, Parts, Engines, Drill Pipe, Hammers & Bits

All Makes & Models Available

IR / Atlas Copco, CAT, Cummins, MTU Schramm, Dritelch, REICHdrill / CP, GD, Speedstar, Simco, Mobile, CME

1330-124

1985 Dritelch D25K with 850/350 air, Gardner Denver 5x6 mud pump, Wilden grout pump; **BE 22** with 3 hydraulic jacks mtd. on 1986 GMC truck; **BE 20W 1985 Ford F-600** with manual screwed on jacks; **Mobile Drill B50** auger machine; **1986 Ford F-500**. Call 715-498-7427

1330-542

1985 Ingersoll-Rand Model #RD-10-VH-1050, SN:14088, rotary drilling.

No mud or air, plumbed for mud and air, Range II, 53' mast, 85,000 pullback, high-torque tophead, (5) hyd. leveling jacks, hyd. winch jib boom. Mtd. on and powered by 1985 Pettibone, 4-axle crane carrier, 1984 Cummins NTC 400 BC3.....\$150,000

Fred Miller 503-510-4066

1330-423

Rigs
1330

MAXIDRILL

- 2017 HARDAB 7000 H-6** new track-mounted drill rig, rod handling system (patented) with angle package, 21 stroke.....**\$345,575**
- 2011 HARDAB 7000 H-3** track-mounted drill rig, 3500 hrs, rod handling system (patented) with angle package, 12 stroke, 550' of 3.5" drill pipe.....**\$228,250**
- 2011 Atlas Copco XRVS 1000 CD6**, 1000 cfm/365 psi, trailer-mounted, 2165 hrs.....**\$120,000**
- 2009 Sullair** combo 900/1150, trailer-mounted, 1840 hrs.....**\$85,000**
- 2008 T3W** truck Int'l 7600, 4 axle compressor IR 900-350, 3200 hrs, 40' of 4 1/2" drill pipe, hydrofrac.....**\$475,000**
- 2005 DB430** track-mounted drill, 5600 hrs, remote control station, multiposition and angle package, 500' of 10"x3 1/2" drill pipe.....**\$135,000**
- 2004 REICH** drill W-650 Sullair 1050-350.....**\$185,500**
- 2007 Kenworth T-800** truck.....**\$185,500**
- 1972 CP-670** rebuild 2002 (new Sullair compressor 900-350, new engine 3406-E), Paystar 5000 truck, 12 wheel 2000.....**\$78,500**

mmailhot@maxidrill.com
www.maxidrill.com

1330-1234

- 1983 Mayhew 200**, mtd. on Gemco Buggy, 6 cyl., diesel.....**\$35,000**
- Mayhew 500**, mtd. on Ardco Buggy, runs great.....**\$63,000**
- Mayhew 200**, unmounted unit, great shape.....**\$13,000**
- 1976 GMC 6500**, mtd. on Failing 1500.....**\$17,000**

409-789-4590

1330-563



Award-Winning Patented Technology

SONIC DRILL CORPORATION
Suite 190#120, 119 N. Commercial St.
Bellingham, WA 98225
www.sonic-drill.com 1-604-886-6081

1330-301



2015 SIMCO 2800

7-1/2 x 10 Centerline Piston Pump
Ram 5500 Truck
Turbo Diesel Deck Engine
Tophead Drillhead 4,000 ft. lbs. / 200 rpm
2 winches
In/Out Slide Base
10' Stroke Mast
(Low hours and miles)

1-800-338-9925

NEW DEMO RIG WARRANTY

1330-497

- 2007 Schramm 130**, SN J1300186, with rod launcher, many extras.....**\$800,000**
 - 2004 Schramm 130**, SN J1300018, 4843 hours, 8000 miles, non-tilt head, model 1350/350 - 1150/500 Sullair.....**\$450,000**
 - 2006 Atlas Copco RD20**, SN 21053, 6000 hours.....**\$700,000**
- Call Alan Lang: 801-554-2419**

1330-1027



2008 Ford F-550 with a 2008 Pulstar P10000 HD3L, 117,329 miles, new motor with 16,713 miles, and a new transmission with 4344 miles. Located in Grangeville, ID. **208-983-2356**

1330-463



1977 GD 15W, DSM drawworks, 5 1/2 x 8, 10" table, WEJ air, pulldown, 4-axle CCC, derrick extension w/board, new tires, excellent condition, just painted **GD 15WHP 1500**, refurb., 4-axle CCC, 10" table, WEJ comp. w/ClycloBlower 5 1/2 x 8 pump, pulldown, new style 5' derrick, motivated.....**\$124,000 OBO WANTED: Used 1500 derrick**
Call Jim: 217-932-3000

1330-1243



Beeman 435-259-7281
Equipment Sales Moab, UT
BeemanEquipmentSales.com



2009 GEFCO SS 40T \$775K
P/B CAT C9 Acert, 60' Mast x 176K Lbs Cap, HD Triple Drum Drwvks, 18" Rotary Table, Trlr Mntd



2005 GEFCO SS 185K \$485K
Hydraulic Top Drive, P/B CAT C-15 (550 HP), 51' Mast x 185,000 Lbs Cap, Mntd on 5/Axle Carrier



2006 Pulstar P38HD \$189K
P/B CAT C7, 50' Mast x 45,000 Lbs Max Pull Cap, Hyd Triple Drum Drwvks, Mntd on 4x4 Pete 333



2004 Pulstar P10,000 \$62K
P/b 6.6 L Duramax w/ PTO, 37' Mast x 15,000 Lb, Max Pull Cap, Mntd on 2004 GMC C4500 S/A Trk

1330-947



Gardner Denver 1400, 5x6 GD, 7 1/2 table, air clutches, 94 Int'l truck...**\$67,000**
903-714-1256

1330-1219

CALL 850-547-0102

Rigs
1330

NE Drill Supply
northeastdrill.com

800-963-2466

QUALITY NEW & PRE-OWNED RIGS

2017 REICHdrill Legend 4

Mounted on 2018 Mack Granite, C15 on deck, Sullair 1070/375 airpac (coming March 2017)

2010 Schramm 455 WS

Mounted on 2003 AWC Mack truck, C15 on deck, Sullair 1050/350 airpac

2013 VERSA-Drill V1540

1050/350 air, 3 1/2" drill rod, 2815 hou

"ONLY Authorized REICHdrill sales, service, and parts dealer in New England."



We stock REICHdrill® and CP Parts. New REICHdrill style 4 1/2" and 4" Drill Rod in Stock

DENISON Hydraulics

DYNEX

Fan Pumps • Head Motors • Main Pumps
Hoist Pumps • Control Valves

We Ship Worldwide

NH: 603-878-0998

VT: 802-235-2466

www.northeastdrill.com

1330-204

DES
DRILLING EQUIPMENT SALES, INC.

Authorized Distributor for REICHdrill



828-322-3056

jeff@drillingequip.com
www.drillingequip.com

1330-121

WANTED TO BUY

ATLAS COPCO/INGERSOLL-RAND DRILL DM30E, DM45E, DML, T3W, T4W, T5W, RD20 DRILTECH DRILL T25K, D40K, T40K, DH1, DH2 SCHRAMM T685 RC DRILL WITH RC PIPES WE WANT SURPLUS PIPES, SPARE PARTS
TEL: 818-956-5231 FAX: 818-244-3723
www.pacificcranes.com

1330-995



Aqua Bore G2 Pro Series

Compact, portable, powerful, full-featured, economical skid mount or trailer rig!

- 300 to 400+ ft. boreholes
 - Commercial duty main drive 27 to 37hp gas or new industrial diesel option
 - Mayhew Junior tool joints on 8 ft. or 10 ft. drill pipe based on unit
 - Skid mount, single- or tandem-axle available
 - Swing away drill head standard and auxiliary cable hoist option available
 - 650 to 850 ft lbs of torque at 120 to 160 rpm available
 - 6700 to 10,000 lbs push-pull force avail.
 - MCM true oilfield mud pump for 120 psi at up to 240 gpm
 - Super flow chrome moly T-swivel with V-seals and 14,000 lb thrust bearing set
 - Universal dual wrench hydraulic ram breakout system standard
 - 12-Volt easy priming pump standard
- HD tandem axle mount starts under \$26,000 with 148 ft. of drill stem.

Xtreme Duty unit pictured with options and 160 ft. of drill stem starts at \$32,000. Diesel and many other options available upon request.

Phone: 906-458-4983 or 906-884-217

E-mail: webberconst@hotmail.com

Web: webberfabrication.com

1330-1226

Sonic Drill Rigs
1427

Sonic Drill Rigs



- No premature refusal
- 100% core recovery in most formations
- Up to 12" casing diameter standard
- Less deviation from vertical than with any other drilling method
- Proprietary TSi 150 Series Sonic Oscillator

Visit

www.terrasonicinternational.com/wwdr to learn more or to schedule a demo

TERRASONIC
INTERNATIONAL

27825 State Route 7 | Marietta, Ohio 45750 USA
866.365.3483 | 740.374.6608

1427-534

Stolen
1445

STOLEN DRILL RIG!!



1990 SpeedStar SS25K drilling rig, tophead drive, mtd. on 1990 Int VT100 w/Cummins 400, 10-spd. trans TRUCK VIN #44KHM6488LWZ17237 If anyone has any information please

call: 818-956-5231 or visit:

www.pacificcranes.com

You may also contact:
Crime Prevention Program
@ 800-432-7257 ext. 823

1445-995

Trucks
1540

(30) Freightliner Trucks 6X6, 60 Series Detroit, HT740, Allison Trans., Rockwell Axle, 68KGVW, 315/80 R22.5 Michelin, Low Miles SEMCO, Inc. 800-541-1562

1540-135

Screens
1408



Genuine Geoprobe

Johnson screens

CETCO

ALCONOX

WATER

Qatey

Koby

EMCO WHEATON RETAIL

BUFFALO WELL PRODUCTS

Sempermed

PROACTIVE Environmental Products

11 Black Forest Road, Hamilton, NJ 08691
609-631-8939 ~ 888-240-4328 (Toll-Free)
ectmfg@aol.com ~ ectmfg.com
proactivepumps.com ~ torquerplug.com

1408-719

Trucks
1540

www.Trucks123.com

Knuckleboom Trucks

Single & Tandem Axle

4x4's

100+ units in stock

3-5 in Stock Everyday

OPDYKE INC. SPECIALIZED TRUCKS & EQUIPMENT SALES (877) 224-8834 3123 Boshelchen Pike Hatfield PA 19340

1540-186

Wanted
1705

QUICK CASH MONEY
Paid for Drill Rigs, Pump Hoists,
Mud Pumps, Drill Pipe, & Bits.
RENE HENDON Tel: 281-260-0880
1705-120

Water Level Indicators
1710

Reliable Water Level Indicators
proudly made in the USA. Various
lengths & scales available, selectable
buzzer/light indication & sensitivity
control. Economical repair service.
Waterline Envirotech Ltd.
www.waterlineusa.com
360-676-9635

1710-188

CONTROL EVERYTHING HARWIL

L-21 Wide Differential Level Switch

1 to 5 inches of differential
Magnetically coupled -
no seals to fail
Very durable for truck
mounted tanks.
Chemically resistant Noryl
or Fortron

Tested - Proven - Best

L-40 Small Switch for Big Jobs

Can function NO or NC
Can mount Horizontal
or Vertical
Can mount through
the wall or submersed
Chemically resistant
Noryl or Fortron

HARWIL.COM
(805) 988-6800 sales@harwil.com

1710-1179

Water Trucks
1730



2009 International with new 2017
service body, 2500 gallons of water
and 200 gallons of fuel, w/fuel trans
pump.....\$54,000

All service bodies are new with
construction baffled every 18",
coated.

Gordon Ballard
Ballard Drilling Co., Inc.
Wadley, Alabama
256-825-5871
E-mail: gballard501@msn.com

1730-785

NORTHWEST FLATTANKS

Building and gaining trust by
manufacturing quality flattanks, serving
the water well, mining, mineral
explorations, geothermal, directional
boring, and sonic drilling industries.

We offer your company the
satisfaction of a job well done.
Check out our web site for more
information on our products.
www.northwestflattanks.com

Call (406) 466-2146 or
(406) 544-5914

(1) 2007 T800 Kenworth 450HP ISM
Cummins, 46,000 rears 4 way lockers,
Chalmers suspensions, new 2000 gallon
Flattank with upright vertical cabinets.



(2) Flattanks in stock, mounted on
2007 T800 Kenworth, low-mileage,
low-hour trucks.



Lots of information, pictures, and
specs on our web site. We also have
used drilling rigs, pump hoists, and
used flattank support trucks.
www.northwestflattanks.com

1730-665

Rose-Wall Mfg. Inc.



Rose-Wall puts a new "tilt" on
the water tank business!



We can build any shape or size!
Please call for a custom quote
1-800-321-1541
rose-wall.com

1730-390

The deadline for the May
issue is almost here!
Space Reservation:
March 25th
Display & Classified
Ad Copy: April 1st

Well Plugs
1753

TORQUER™ Professional Locking Well Plugs

Sched. 40/80

1/2", 3/4"

1", 1 1/4"

1 1/2", 2"

2 1/2", 3"

4", 5", 6"

coming soon: 8"

- Domed top
- No metal parts
- Padlocks or safety lock out tags
- Most sq. inch of gasket power
- Bright safety orange color
- Vapor extraction convertible
- Vented Plug Option
- Low Cost



U.S. Patent Protected
www.torquerplugs.com

1753-244

Well Rehabilitation
1755



**Make
the right
connections.**

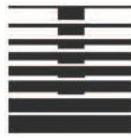
ECO-SAFE™ Nonmetallic Thread Compound is a premium quality compound containing carbon based fibers and additives and other natural extreme pressure and anti-wear agents. These components are blended into JET-LUBE's high temperature calcium complex base grease. The base grease offers the additional advantage of superior adhesion to wet steel surfaces, resistance to water wash-off and most drilling fluids. ECO-SAFE™ is especially effective for invert or high-pH drilling fluids. ECO-SAFE™ carries the NSF 61 Standard certification and is approved for all down-hole applications and contact with potable water. Excellent for stainless steel pump connections.

- Rated: -20°F (-29°C) to 500°F (260°C)
- Excellent performance on high-chrome or nickel alloys
- Contains no metals
- NSF H2 Registered
- Non-toxic
- High film strength
- High frictional properties
- NSF 61 Standard Approved

800-JET-LUBE | 800-538-5823
jetlube.com

1755-474

Well Screens
1760



**Environmental
Manufacturing
Inc.**

8887 Green Valley Drive
Manhattan, KS 66502

*Flush Thread Pipe,
Fittings, and Supplies for
Monitoring/Remediation.
Custom Slotting & Perforating
PVC CPVC HDPE*

**Toll Free 888-587-0807
Fax 785-539-1349
www.emipipe.com**



1760-156

The freezing point of water lowers as the amount of salt dissolved in it increases. With average levels of salt, seawater freezes at 28.4°F (-2°C).

**Stainless Steel • Carbon Steel
Galvanized Steel • Wedge-Wire**

Well Screens & Slotted Pipe

18102 East Hardy Road
Houston, Texas 77073 USA
Phone: 281.233.0214
Fax: 281.233.0487
Toll-free: 800.577.5068
info@alloyscreenworks.com
www.alloyscreenworks.com

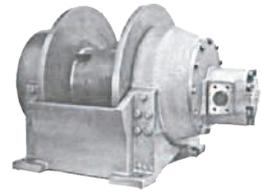
ALLOY SCREEN WORKS
▲▲▲ A division of Alloy Machine Works, Inc.



1760-378

Winches
1775

The Source of Force



Linepull: 1/2 Ton to 100 Ton plus!

In-Stock Now!



(800) Mr. Winch
Fax: (619) 474-6730
www.ryanhyd.com



RYAN Hydraulic Service, inc.
The People with Pull

1775-136

Wire Rope
1785

WIRE ROPE!

Made in U.S.A.

**Drill Line
Sandline
Non-Rotating
Hoist Line**

800-523-5760

540-635-7753
Fax 540-635-6352

TRIDENT TOOL INC.
tridenttool.com

1785-1200

It's Almost Time for JUBILEE!

List your company on our JUBILEE Pinpointer Map.



Space is limited! So call our **Public Relations Professionals** today to reserve your space.

850-547-0102



America West Drilling Supply



Our friendly and
knowledgeable staff
is ready to help



Check out our Hammer Brands

Missile LXQ
Series



Missile LX
Series



For all your drilling products and supplies, visit us online:

www.americawestdrillingsupply.com

www.awds.com

(800) 800-8444 • (775) 355-1199 • sales@awds.com

COME OUT AND PLAY!



ICUEE 2017 | Louisville, Kentucky | October 3-5

There's only one place you can play with all the new toys in the construction and utility industry before you buy them — ICUEE, North America's Premier Utility Demo Expo. Come get your hands dirty on our 2-mile outdoor test track. Or while exploring 25 acres of exhibits. And learn about the newest technology at our indoor demo stage. Every other year we gather over 950 of the leading manufacturers. So you can come play in our sandbox.

Pre-register now at ICUEE.com and receive the latest show alerts and early bird specials.



DRILLMAX[®]

**SUPERIOR QUALITY, RELIABILITY, AND SPEED
IN A POWERFUL COMPACT PACKAGE**

DRILLMAX[®] 250

The DRILLMAX[®] 250 shown is mounted on a Dodge 5500 4x4 with automatic transmission and equipped with 5x5 piston mud pump, development air compressor, single rod loader, pipe rack, driller platforms, 6,000lb winch, helper side controls, and hydraulic breakout wrench.

Call for more details on this and other
DRILLMAX[®] rigs!

Call 800-342-0234 or 352-427-7787



www.drillmaxrigs.com

Reply to: **WORLDWIDE Drilling Resource**
PO Box 660 • Bonifay FL 32425-0660
850-547-0102

PRSR STD
US POSTAGE
PAID
ATLANTA GA
PERMIT
NO. 3592

DES
DRILLING EQUIPMENT SALES, INC.

See our Equipment in the **ROUTERS,
PUMP HOISTS, and RIGS SECTIONS**
of **WorldWide SUPER MART™!**



CALL JEFF

**Need a rig?
Contact: Jeff Jacomine**

Phone: 828-322-3056 • Fax: 828-322-4042
2515 Highway 70 SW Hickory, NC 28602
E-mail: jeffj@drillingequip.com
www.drillingequip.com

HEADS UP!
**Pulstar units available for delivery
through March.**
Call now!

Pulstar

