

## 2005 NGWA Ground Water Expo

Applications have been received for these courses and will be reviewed at the next Well Constructors Continuing Education Committee meeting.

**When:** December 13-16, 2005

**Where:** Cobb Galleria Centre

Two Galleria Parkway

Atlanta Georgia 30339

**Cost:** varies; starts at \$75 for members early registration and goes up

**Contact:** National Ground Water Association, PO Box 73111, Cleveland, Ohio 44193 or online at <<[www.ngwa.org](http://www.ngwa.org)>> or telephone 800 551-7339 or 614 898-7791

### Workshops

#### Drilling and Well Construction

##### **Drilling Fluids and Additives**

Wednesday, December 14

This workshop touches on the basics of drilling fluids, as well as the use of polymers and additives to address problems encountered in various soil conditions.

*-George Dugan, Cetco Drilling Products Group*

##### **Electronic Detection of Ground Water**

Tuesday, December 13

Learn how ground water is located using a proprietary electromagnetic sensor that measures, in digital format, the naturally occurring telluric currents that flow through subsurface formations. This procedure allows you to determine the various depths of the aquifer, as well as its thickness and relative porosity.

*-Richard Bennett, Halcyon Ground Water Technologies*

##### **General Drilling 101**

Tuesday, December 13

A general overview of drilling basics, this workshop covers geology, safety, grouting, screens, well disinfections, and overviews of the cable tool, air rotary, and mud rotary drilling well construction methods. Beneficial to those recently entering the industry, this workshop also is a good refresher for the experienced and serves to complement hands-on experience.

*- Henry Body, MGWC, Boyd Artesian Well Co. Inc.*

##### **Hole Collapse: Preventing It by Planning and Design**

Tuesday, December 13

Many mysteries surround the topic of hole collapse. Learn about the different factors that contribute to hole collapse and how to compensate for them with casing-liner materials selection, seal and pack placement methods, and testing and development techniques. Also learn about unstable consolidated and unconsolidated formations including artesian aquifers. Real-case scenarios are discussed and explained, and collapse tool resources are identified.

*Steve Schneider, MGWC, Schneider Equipment Inc.*

## **Nebraska Grout Task Force: Grout Observation Well Project Update-Well Design and Procedures Adapted to Study Grout Material in an In Situ Environment**

Tuesday, December 13

Never before have grouting materials used for sealing the borehole of water wells been documented in an in situ environment. Bentonite-based and cementitious grouts are being studied by using clear PVC well casings. Members of the Nebraska Grout Task Force discuss and present the methods used to develop the standard operating procedures for this study. This presentation will supply information that will impact the construction of any type of water well.

- *Tom Christopherson, Nebraska Health and Human Services/Water Well Standards Program, and Sue Lackey, University of Nebraska Conservation and Survey Division*

### **Orthoscopic Well Rehabilitation**

Wednesday, December 14

Going well beyond Well Video 101, you will learn tricks to fish for lost tools and dropped pumps, take samples of encrusted wells, and use the camera to market your business. Bring your worst water sample and test different flocking methods, learning how to use them properly.

- *Raymond Roerick, Well-Vu*

### **Safety Plus Mud and Oil Rotary Technology**

Friday, December 16

Accidents happen because of operator error or lack of attention. Understanding the drilling rig and its componentry is of utmost importance with regard to safety, operating the rig, and knowing that the machine is capable of handling the job at hand in an efficient way. The importance of proper maintenance is explained; actual major equipment failures that could have been avoided are cited.

- *John L'Espoir, Enid Drill Systems Inc.*

### **Well Servicing and Maintenance**

Tuesday, December 13

Learn about the tools and equipment required to service and maintain water wells, and how to safely return a water well to a state of top production.

- *Daryl Johnson, R. Webb & Son Well Drilling Inc.*

### **Water Quality/Treatment**

#### **Chlorine Treatment of Well Water**

Wednesday, December 14

Covering the history of chlorination of water supplies, a market review of well chlorination technology and applications, including residential, agricultural, and municipal case histories, is presented. This workshop also discusses the chemistry of oxidation and treatment of iron, iron bacteria, hydrogen sulfide, and other water problems. You will also learn about the business opportunities in water treatment awaiting well and pump contractors.

- *Thomas Leunig and Michael Glowdowski, GE Infrastructure Water & Process Technologies*

#### **Common Contaminants and Basic Water Treatment Options**

Tuesday, December 13

Learn about some of the most common contaminants found in ground water and some basic water treatment options. How these contaminants get into ground water, how they are regulated, and various health and aesthetic effects associated with having them in your drinking water are discussed.

*- Marianne Metzger, National Testing Laboratories Ltd., and Tate Burckhardt, Better Water Industries*

### **How the 2006 Arsenic MCL Will Impact the Water Well Industry**

Wednesday, December 14

Learn about the geologic origin of arsenic and its distribution throughout the United States. Attention is given to contamination resulting from uses of arsenic in manufacturing and agriculture, as well as the potential for liberating geological arsenic by dewatering aquifers and using artificial recharge. The health concerns and the regulatory response related to arsenic in drinking water is reviewed and explanations provided regarding arsenic testing and removal/reduction technologies available for home well applications. Suggested well industry responses to public concerns about arsenic will be outlined, with an emphasis on strategies for communicating with both individual well owners and communities.

*- Andrew Stone, American Ground Water Trust*

### **Natural Disasters: Ground Water Industry Response**

Wednesday, December 14

Any natural disaster can affect ground water supplies, but the resource is especially vulnerable to flooding and hurricanes. This workshop will address some emergency response guidelines and issues, as well as discuss the role of the industry and government affairs.

*- Presenter TBA*

### **Recognition, Response, and Resolution: Identifying Well Fouling Issues and Designing Effective Treatment**

Tuesday, December 13

This workshop is designed to familiarize ground water professionals with the fouling issues of well systems, laboratory and field testing methods to determine fouling, and how the results of the tests are utilized to design more effective treatment programs. The first half of the class will focus on introducing the most common types of well fouling and the causes behind them. This will follow with a discussion of laboratory and field testing methods that aid in giving the ground water professional more insight into the well environment. Armed with this background, the class will then review chemical and mechanical means of rehabilitating well systems with a focus on developing more effective treatment programs, unique to each well encountered. The class will be somewhat interactive with attendees divided into separate sections to work on a preset "troubled well." As the class progresses, the attendees will be armed with more information to determine the nature of the well's trouble and the best means to respond.

*- John Schnieders, Mike Schnieders, Karin Ybarra, and Kathy Wiseman, Water Systems Engineering Inc.*

### **Whose Water Is It Anyway? Emerging Conflicts about the Role of Ground Water as Source of Supply**

Friday, December 16

By virtue of its broad distribution and huge reserves, ground water holds the promise to meet the ever-increasing demand for water resources. However, the recent drought conditions have

caused many states to consider or place restrictions on ground water withdrawals in order to preserve base flow to streams or maintain ecosystem function. This is happening in some places where ground water levels are at historic highs. The question that needs to be addressed is “What is the purpose for having such vast reserves of ground water?” Should ground water be used to support agricultural, industrial, and municipal growth as in the past, or held as a reserve for future generations? Should ground water be considered as a “common good” to be used to support the environment or as a commodity that supports human enterprise? And, finally, what actions/information are required to resolve the conflicts that arise when competing demands are placed on ground water reserves? This workshop will review current examples of where ground water restriction are being considered or are in place from the hydrogeologic and regulatory points of view. Open discussion will follow formal presentations to consider what all this means to the hydrogeologic community and where we go from here.

- Tom Downey, CWD/PI, Downey Drilling Inc., Stan Graves, CWD/PI, Graco Industries Inc., and Steve Ragone, NGWA

## **Water Systems**

### **Jet Pump Motors 101**

Wednesday, December 14

This workshop covers five basic areas of jet pump motors used in the ground water industry- motor frame sizes, motor types including the strengths and weaknesses of each, nameplate terminology and why it’s important, motor components, and motor installation and troubleshooting, which describes situations you are likely to encounter in the field.

- Jim Ellis and Eric DeLarGarza, Emerson Inc.

### **Large Horsepower Submersible Pumps**

Tuesday, December 13

Special Equipment and consideration are required to work with large horsepower pumps. Learn about their operation, maintenance, and installation.

- Jason Hatfield, MGWC, HAD Inc.

### **Submersible Pumps: What You Need to Know**

Wednesday, December 14

Need to hone your skills and knowledge base on submersible pumps? Come and listen to what industry experts with extensive field experience have to say. Ideal as a refresher and troubleshooting tool, this workshop is part of an ongoing effort between NGWA and the Water Systems Council to provide quality water systems training for our industry.

- Jack R. Stubbs Jr., Goulds Pump Division ITT Industries, and Michael E. Keen Sr., Franklin Electric Co.

### **Three-Phase Motor Protection**

Wednesday, December 14

Learn the methods of selection, installation criteria, and operational characteristics of three-phase motor overload protection.

- Michael E. Keen Sr., Franklin Electric Co.

## **Business Management**

### **Charting Your Financial Success**

Tuesday, December 13

This presentation takes you beyond the basics as it explores the techniques of strategic financial analysis so you may learn how to solve the problems that cause financial distress.

- *Steve Hegg, Business Resources Services*

### **Common Contractor Losses (Insurance Claims)**

Tuesday, December 13

This all new program includes updated key information for common well contractor fleet accident programs.

- *Joe Hogan, The Hartford Insurance Group*

### **Dealing With Problem Employees**

Friday, December 16

This workshop goes to the core of a very common issue. What can you do to deal with problem employees? Issues covered include changing yourself to change your business, what to look for in new hires, why employees keep making the same mistakes, when to fire, the “secret” to proper relationships with employees, business partnerships, and much more. In addition, you will learn how a business can become a great vehicle for personal growth.

- *Martin Droz, Excel*

### **Hiring Minor Employees: Family Business and the Law**

Tuesday, December 13

This workshop will review the Fair Labor Standards and workers’ compensation laws and their applicability to employees under the age of 18. Child Labor Standards on what those younger employees can and cannot do will be presented. Operation of equipment, helper on the rig, hours of work, welding, part-time summer help, and exceptions to family members will be covered. Enforcement and potential fines issued by the Department of Labor will also be covered.

- *Roger E. Renner, MGWC, E.H. Renner & Sons*

### **Industry Performance Groups: Now Is the Time**

Tuesday, December 13

Comprised of business owners who meet regularly to share operational and planning ideas, and to act as a “board of advisors” for each of its members, a performance group gives owners the ongoing support and direction needed to keep each focused and committed to achieving goals. New-found knowledge and financial organization also provide owners with the time and ability to actually set long-desired goals to improve their return on investment. This session further details how performance groups function and offers opportunities for you to join in one.

- *Steve Hegg, Business Resources Services*

### **Nanotechnology: Implications for the Ground Water Industry**

Wednesday, December 14

Bigger may be better, but smaller continues to be the future trend. While nanotechnology is in its infancy, its future evolution will have wide-ranging influence on our lives. The ground water industry will not be neglected in this “mini” future.

- *Vicki Colvin, Rice University*

## **Regulation: A Survival Kit (Handling State Legislative and Regulatory Issues)**

Wednesday, December 14

This workshop will provide participants with the knowledge and skills to positively affect legislation and regulations in their own state. It will also provide recognition of similarities and differences in working with elected officials and regulatory agency personnel. Attendees will develop an understanding of proactive and reactive approaches to unfolding issues and regulations; develop awareness of differences and applicability of consensus building and confrontational methods of interaction with elected officials and regulatory agency personnel; and be better able to develop a plan of action to use in their home state.

*- Alan Eades, CWD/PI, Eades Drilling and Pump Service, Mike Mortensson, California Groundwater Association, and Chris Reimer, NGWA*

## **Savvy Selling – Connecting with your Customers**

Wednesday, December 14

How well do you know your customers—and yourself? How do you build relationships with them that will inspire loyalty and keep them returning to you? This pointed yet entertaining, session explores focusing on what really matters, both to you and your customers.

*- Michelle Nichols, columnist for Business Week Online and Water Well Journal*

## **Safety/Compliance**

### **Complying with the Current DOT Regulations and Catching Up on the New Ones**

Tuesday, December 13

Are you in full compliance with the new Hours of Service regulations that went into effect this year? Do you know what the new regulations are for transporting hazardous cargo or renewing your CDL? This workshop is designed to put you on the fast track to compliance.

*- Gary LaBrake*

### **DOT Vehicle and Brake Inspections**

Tuesday, December 13

Whether your firm conducts its own vehicle and brake inspections, or your firm outsources these activities to another company, you need to know your responsibilities as mandated by law. Learn how to qualify your company personnel to conduct and/or oversee mandatory vehicle inspections and brake inspections and repairs.

*- Gary LaBrake*

### **Drill Rig Safety**

Wednesday, December 14

Improper drill rig setup, poor maintenance, and improper operational procedures are the key causes of rig rollovers, rig fires, mechanical failures, and injury to operating personnel. A review of each of these is provided and recommendations to minimize occurrence and risk are given. Special attention is given to operation of the rig with use of “hands-free” equipment.

*- Matt Starkweather, Schramm Inc.*

### **Drivers and Vehicles - DOT has Regulations for Both**

Tuesday, December 13

Whether you are just starting in the business, or if you want a refresher on driver qualifications and vehicle inspections, this workshop is ideal. Learn what records you must keep on drivers; what the new regulations are regarding new drivers as well as former employees, and how to keep your vehicle records in order.

- *Gary LaBrake*

### **Electrical Safety**

Wednesday, December 14

After attending this workshop, you will be able to list and explain the three basic electrical principles, define terms associated with each, and be able to answer important questions such as “What is wrong with common electrical beliefs?” and “What do I do should the unthinkable happen?”

- *Gene Tootle, The Southern Co.*

### **Fitting Well Drilling Health and Safety Education into Workday Realities**

Friday, December 16

Learn about health and safety materials developed specifically for the well drilling industry and how you can incorporate them into your work schedule. NIOSH researchers have produced health communication products packaged in a “real world” style covering topics such as noise exposure at the work site, hearing loss prevention, choosing hearing protection devices, and electrical safety. They are designed in formats to be used at both the work site and at the home shop to provide quick bites of information.

- *David Ingram and Dana Reinke, NIOSH*

### **Introduction to Ergonomics**

Tuesday, December 13

Ergonomics is common sense safe material handling that allows you to help prevent lifting strains and hand injuries, which are the two injury areas most frequently occurring in the water well industry.

- *Joe Hogan, The Hartford Insurance Group*

### **Living With OSHA - OSHA and Your Business**

Tuesday, December 13

What is OSHA and how does OSHA impact the daily operations and management of your drilling company? This program provides you with general information on actions needed to comply with OSHA requirements. You will learn what OSHA expects from employers, and how to deal with OSHA questionnaires and inspectors. OSHA fatality and employee complaint procedures will also be reviewed. With the information gained from this program, you-the drilling company owner or supervisor-will be better able to conduct company safety and OSHA compliance activities in a more cost-effective manner, and be better prepared to deal with OSHA inspectors.

- *Joe Hogan, The Hartford Insurance Group*

### **Lock Out/Tag Out for Water Well Drillers**

Wednesday, December 14

Learn how to comply with OSHA’s electrical safety requirements.

- *Joe Hogan, The Hartford Insurance Group*

### **Supervisor's Drug and Alcohol Testing Course**

Wednesday, December 14

Normally offered as a stand-alone \$150 course, this workshop is included in your Expo registration fee! The Supervisor's Drug and Alcohol Testing Course provides an overview of the requirements mandated by federal law. Postaccident investigations and identifying the use of substances of abuse and alcohol in the workplace will be addressed. Due to the nature of this highly specialized workshop, preregistration by November 15 is required so the specially designed course materials can be prepared. Certificates will be issued to those who attend the entire session.

- *Gary LaBrake*

### **Certification**

#### **Show Your Stuff: New Dimensions in NGWA Certification Programs**

Tuesday, December 13

Do you want to build upon your achievements and increase your credibility as a ground water professional? It's now easier than ever to participate in one of NGWA's certification programs. In this workshop, you will learn about the enhancements NGWA has made to the Voluntary Certification Program for contractors, including offering exams through computer test centers nationwide. A new program has been developed for suppliers wishing to distinguish themselves by demonstrating a high level of troubleshooting and technical support service to their customers. The existing Certified Ground water Professional program, geared to scientists and engineers, is exploring the best avenue to take to properly recognize those who hold the credentials.

- *Ron McAfee, The Water Mechanic, and Kathy Butcher, CMP, NGWA*

### **Equipment Maintenance**

#### **Air Compressor Operation and Maintenance**

Tuesday, December 13

The compressor is the heart of the drill rig for air rotary and down-the-hole hammer drilling. As both an essential device and one of the most expensive components of a drill rig, proper operation and maintenance procedures are essential. In this workshop, you will learn about design principles, system requirements, essential maintenance, and how to prevent compressor-generated drill rig fires.

- *Matt Starkweather, Schramm Inc.*

#### **Drill Rig Maintenance**

Tuesday, December 13

This workshop details required routine and major service intervals for drill rig equipment. New EPA regulations for diesel engines don't have to create new headaches for drillers. A brief review of diesel engines and electronic systems provides insights to future maintenance needs. Proper safety circuit maintenance to ensure personnel-and equipment-protection is reviewed, as are major mechanical component overhaul and maintenance. The how-tos of implementing an oil analysis program are also provided.

- *Matt Starkweather, Schramm Inc.*

### **Monitoring/Logging/Geology**

## **Borehole Geophysical Logging: What are the Benefits to My Project?**

Tuesday, December 13

Borehole geophysics is, and will continue to be, a highly effective tool for water resources/water supply applications. This workshop will demonstrate some of the important applications of borehole geophysical logging including identifying water producing zones in well boreholes; evaluating the thickness, distribution and sand quality of aquifers; identifying fractures; evaluating relative water yield and water quality; planning well systems; and planning and evaluating well workovers/rehabilitation and abandonment. The workshop also provides you with basic information on the various types of logs (including new developments) and their uses, log quality/validation issues, and what sort of work products to expect from a logging program.

- *John Sciacca, Shaw Environmental & Infrastructure Inc., and Bruce Manchon, ERM*

## **Direct-Push Methods for Measurement of Formation Hydraulic Conductivity**

Wednesday, December 14

There is a growing need for information on formation hydraulic conductivity and its variations both vertically and laterally across a site. Two methods have recently been developed allowing for this information to be obtained using direct-push methods. This workshop will introduce you to the equipment, field methods, and interpretation of data for the hydraulic profiling tool and the pneumatic slug test system.

- *Wes McCall and Steve Knobbe, Geoprobe Systems*

## **Making Standard Penetration Measurements with Direct-Push Tools**

Wednesday, December 14

The ability to conduct standard penetration tests with direct-push methods has become practical with the advent of larger and more powerful direct-push machines. This workshop introduces you to tools and equipment available to perform such endeavors, as well as reviewing the procedures to conduct tests.

- *Vic Rotonda, Geoprobe Systems*

## **Special NWGW Programs**

### **NGWA's Director Candidates School**

Friday, December 16

Leader. Visionary. Committed. Responsible. Credible. Dependable. Networker. Knowledgeable. Experienced. If these words describe you, or what you aspire to be, make sure to attend the Director Candidates School. The school is for members considering making themselves available as future candidates for NGWA volunteer director positions. You will receive valuable insight from your peers into what it means to serve among the distinguished ranks of the Association's 42 volunteer director leaders. You'll also have a chance to win special leadership materials!

- *Kevin McCray, CAE, NGWA*

### **NGWA's New System for Submitting Abstracts and Manuscripts**

Tuesday, December 13

Thinking of submitting an abstract for an NGWA conference or a workshop proposal for next year's NGWA Ground Water Expo? If you answered "yes" to either of these questions, then you will want to attend this workshop. NGWA has a new online content management system to

handle these submissions. This system provides immediate feedback to the submitter, uniform formatting, and a more efficient review process for all concerned. While there are online instructions on the NGWA Web site for you to follow, this workshop provides a firsthand opportunity to see the software and ask questions.

- *Kathy Butcher, CMP, and Bob Master, NGWA*

### **Hands-on Demos**

#### **Borehole Geophysical Logging for Water Resources/Water Supply Applications: What Are the Benefits for My Project?**

Thursday, December 15

This demonstration is designed to be a hands-on complement to the workshop, "Borehole Geophysical Logging for Water Resources/Water Supply Applications: What Are the Benefits for My Project?" This hands-on demonstration will provide detailed expansions on the case studies discussed in the workshop. These case studies will be examined from the beginning with the attendees directly involved with the interpretations and correlations. In addition, we will look at geophysical logs or studies that attendees bring with them that they may be having difficulties interpreting. Finally, since quality control of logs is a constant area of concern to all that utilize borehole geophysics and that log quality control in some ways is becoming more difficult as tools and procedures become more sophisticated, the demonstration will show how to leave the field site with a log that will provide answers--not create questions.

- *John Sciacca, Shaw Environmental, and Bruce Manchon, ERM*

#### **Direct-Push Prepack Screen Monitor Well Installation**

Wednesday, December 14

Prepack screen monitor wells installed using direct-push methods continue to increase in usage in the United States. Future usage can also be expected to be strong as various regulatory bodies have moved to support direct-push wells for ground water monitoring. This demonstration will focus on various configurations of direct-push tools that can be used for the installation of direct-push wells. Tools will be shown for direct installation using expendable points as well as installation in cored holes.

- *Victor Rotonda and Steve Jebo, Geoprobe Systems*

#### **Effective Air Drilling Techniques**

Wednesday, December 14

Air-foam drilling operations represent a commonly used and effective drilling method. The proper use of air as a circulating medium requires a basic understanding that its use is a progression, rather than a direct application of dry air or air-foam. Attend this demonstration and learn how to optimize the design, management, and application of air-foam systems to get the maximum return for your drilling operations.

- *Jeff Blinn and Mark Whittle, Baroid Industrial Drilling Products*

#### **Ground Water Profiling with a Mechanical Bladder Pump**

Thursday, December 15

Using direct-push installed ground water samplers combined with a mechanical bladder pump provides a cost-effective way to obtain data regarding vertical and lateral changes in ground water quality and chemistry, which are needed to develop adequate remediation systems. In this hands-on demo, you will learn about basic sampling techniques and how best to use a mechanical

bladder pump.

- *Wes McCall and David Cooper, Geoprobe Systems*

### **Leading In Wire Rope Sockets**

Thursday, December 15

This hand-on session will demonstrate the steps for proper leading in of wire rope sockets. Pump trucks, rotary, and cable tool rigs all use wire rope. The art of leading in a wire rope socket will be demonstrated to provide a safe use of wire ropes in your daily use of the rig. The workshop will review wire rope terms, zinc, lead, babbitt, proper cleaning, and steps for a strong wire rope connection.

- *Roger Renner, E.H. Renner & Sons*

### **Pneumatic Slug Testing and Data Analysis**

Friday, December 16

This demonstration introduces the components of the pneumatic slug test system and how it is used in the field. The system may be used to conduct rising and falling head tests in temporary direct-push ground water sampling tools and conventional monitoring wells. Pneumatic slug tests will be conducted with a simple test apparatus and data observed onscreen. Basic field quality control measures will be demonstrate and discussed. The recently released Slug Test Analysis software package will be used to model both overdamped and underdamped aquifer responses to determine hydraulic conductivity.

- *Wes McCall, Geoprobe Systems*

### **Welding Skills: Up-Close and Personal**

Friday, December 16

The art of welding has been transformed by changes in technology and materials. Experience the positive results of these changes firsthand.

- *Tom Myers, Lincoln Electric*

## **2005 Darcy Lecture Series**

### **Inert Gas Tracers in Ground Water**

Thursday, December 15

The farewell presentation of this year's National Ground Water Research and Educational Foundation's Darcy Lecture Series. Dr. Kip Solomon's lecture illustrates the basic concepts of using inert gas tracers along with case studies that describe their applications to real ground water flow problems. The case studies focus on ground water dating, noble gas thermometry, and inject gas tracers. From 1993 to the present, Solomon has been employed by the Department of Geology and Geophysics at the University of Utah where he is currently a professor and director of the Noble Gas Laboratory.

## **2006 McEllhiney Lecture Series**

The Basic Drill Rig for Your Geology

Friday, December 16

The kickoff for the National Ground Water Research and Educational Foundation's 2006 McEllhiney Lecture Series. "The Basic Drill Rig for Your Geology," presented by Fred

McAninch, covers the basics of how to view the drilling rig in relation to the geology in which you will be working. Routine maintenance and its costs will be discussed, as well as the costs of tooling and trucks. McAninch and his wife, Joan, started their own company, The Rig Doctor, in 1991. The company's services include everything from selling everyday parts to complete overhauls, restorations, and remounts.