

WATER WELL PERFORMANCE: THE ECONOMIC BASIS FOR OPERATION, REHABILITATION & MAINTENANCE DECISIONS

PROGRAM AND PRESENTER BIOS

AMERICAN GROUND WATER TRUST

Monday, November 17th, 2008 • 8:15am - 5:00pm
Holiday Inn, Orlando Airport, 5750 T.G. Lee Blvd., Orlando, FL 32822



The AGWT recognizes AMPS Inc. for its sponsorship support

AMPS, Inc.

**Aquifer Maintenance & Performance Systems
(AMPS), West Palm Beach, FL**

WHAT IS IT ALL ABOUT?

The workshop will help improve asset management assessment skills, increase awareness of the economic importance of sustainable management of assets among engineers, utility operators, and water managers, and address core questions involved in assessing well performance to assist decisions related to, operation, maintenance, rehabilitation and replacement. The program includes fundamental aspects of well design, construction, operation, rehabilitation and maintenance.

This is a multi-disciplinary program that provides up-to-date information about water well rehabilitation technologies and well maintenance from real case study experiences. This program provides water engineers, water managers, well-field operators and well contractors with the latest information about cost-effective installation, operation and maintenance of water wells. The presentation team members are all experienced experts and their presentations will combine the practical aspects of well rehabilitation and maintenance with the economic principles of asset management so that well designers, owners, operators and managers can have a clear-cut basis to make decisions.

- ◆ What proportion of your water cost is related to well efficiency?
- ◆ Which asset management tools & concepts work best as a basis for decision-making?
- ◆ Do your well construction and design decisions include maintenance needs?
- ◆ What should be included in an RFP for well construction, maintenance or rehabilitation?
- ◆ What diagnostic indices can determine the most effective rehabilitation techniques?
- ◆ Do you know if your supply wells have the potential to provide higher yield?
- ◆ Is declining yield related to the aquifer, the pump or the well?
- ◆ How can you calculate the cost-benefit of maintaining well efficiency?
- ◆ What is the basis for assessing the success of maintenance or rehabilitation?

PROGRAM

- 7:30 – 8:15 **REGISTRATION, COFFEE, SIGN-IN FOR CEUs**
- 8:15 – 8:30 **OVERVIEW OF THE WORKSHOP PROGRAM**
Andrew Stone, Executive Director, American Ground Water Trust, Concord, NH
- *Ground water as a local, regional and national economic & environmental resource*
 - *Water is free! What are the costs of accessing and delivering water?*
 - *How to solve the conundrum of identifying well, pump or aquifer problems*
 - *What's new in the well rehabilitation decision-making process?*
- 8:30 – 9:15 **ASSET MANAGEMENT PRINCIPLES AND IMPLEMENTATION STRATEGIES**
Gordon Kennedy, Principal Geologist, MWH, Cape Coral, FL
- *How to compile and interpret true costs*
 - *Assessment of well field economics in the context of overall utility assets*
 - *Value of an economic model template in rehabilitation/ replacement decisions*
 - *Risk-based Approach for Asset Management Prioritization*
- 9:15 – 10:00 **FLORIDA GEOLOGY AND WELL DESIGN BASICS**
Helen Hickman, Regional Groundwater Practice Leader, Brown & Caldwell, W. Palm Beach, FL
- *Matching well design to geology*
 - *Well construction for high capacity performance*
 - *Well construction for on-site private wells*
 - *Well design for ASR wells*
 - *Regional & local well performance issues*
- 10:00 – 10:30 **BREAK** (networking)
- 10:30- 11:15 **DECLINE IN WELL PERFORMANCE**
Neil Mansuy, Vice president, Subsurface Technologies, Kansas City, KS
- *Chemical, microbiological and physical reasons for well problems*
 - *Understanding typical “declining yield” problems*
 - *Case studies of well yield declines attributable to encrustation*
 - *Rehabilitation techniques for Class 1 injection wells*
 - *Rehabilitation techniques for ASR wells*
- 11:15 – 12:00 **PRINCIPAL CHEMICAL METHODS FOR IMPROVING WELL PERFORMANCE**
Kevin McGinnis, President, Cotey Chemicals, Lubbock, TX
- *The arsenal of chemicals available to enhance/ restore well performance*
 - *Matching the solution to the problem (How to decide on the “cocktail” to be used)*
 - *The importance of a dual mechanical/ chemical approach*
 - *Successful well-yield restoration case-studies*
- 12:00 – 1:00 **LUNCH** (provided)
- 1:00 – 1:30 **THE HYDROGEOLOGIST’S TOOL-KIT FOR IDENTIFYING WELL PROBLEMS**
Jim Andersen, President, JLA Geosciences, Jupiter, FL
- *Well data to assist in well rehabilitation decisions*
 - Geologic – formation characteristics*
 - Well completion specifications – screens, casing etc.*
 - Hydraulic data – yield, drawdown*
 - Water quality information*
 - *How these data are obtained – driller’s logs, down-hole cameras, geophysics, performance records*

- 1:30 – 2:15** **PRINCIPAL MECHANICAL METHODS FOR IMPROVING WELL PERFORMANCE**
Jim Murray, President, Aquifer Maintenance & Performance Systems (AMPS), West Palm Beach, FL
- *Surge and bail, wire brushing, hydrojetting, blasting etc.*
 - *Methods that have been tried and proven in Florida*
 - *Cost considerations for selection and combination of well improvement method(s)*
 - *Techniques for down-hole well reconstruction*
- 2:15 – 2:45** **THE COST BENEFITS OF MAINTAINING MAXIMUM WELL PUMP EFFICIENCY**
Charlie Diehl, Diversified Drilling Corporation, Tampa, FL
- *Pump selection/design considerations*
 - *Pump operating costs*
 - *Pump repair/replacement and upgrading*
- 2:45 – 3:00** **ECONOMICICS OF FLEXIBLE DROP PIPE WHEN WELLS NEED REHABILITATION**
Rusty Shaw, Regional Sales Manager, Angus Flexible Pipelines, VA
- *Physical properties of flexible hose (strength and durability of hose)*
 - *Hydraulic performance capabilities (elasticity, pressure thresholds)*
 - *Pump installation and removal logistics (time out and time in)*
- 3:00 – 3:15** **BREAK** (networking and exhibits)
- 3:15– 3:45** **CONTRACTOR WELL REHABILITATION PERSPECTIVES**
Stuart Anderson, President, Applied Drilling Engineering Inc. Tampa, FL
- *Methods and procedures for improving the performance of class 1 injection wells*
 - *The potential of combining plugging and directional drilling to restore well yield and water quality*
- 3:45 – 4:30** **PREVENTION IS MORE COST EFFECTIVE THAN CURE**
Neil Mansuy, Vice President, Subsurface Technologies, Kansas City, KS
- *Cost / Benefit evaluation of well rehabilitation techniques*
 - *Case studies on effective well maintenance*
 - *Preventive maintenance procedures*
 - *Equipping the well for rehabilitation at the time of installation*
- 4:30 – 5:00** **PANEL - REGULATORY AND ENVIRONMENTAL ISSUES**
Ann Marie Superchi, Water Well Regulations Division, SFWMD, West Palm Beach, FL
Tony Gilboy, South West Florida Water Management District, Brooksville, FL
Warren Zwanka, St Johns River Water Management District, Orlando, FL
- *Who has given authority to whom to regulate what?*
 - *State, Water District, County and City authority over permits for wells*
 - *Licensing and inspection requirements related to well rehabilitation*
 - *Permits and reporting rules for new wells and for well improvement work*
 - *Reporting differences between drinking supply wells and wells for other water uses*
 - *Disposal of well rehabilitation chemicals - What are the environmental guidelines?*
- 5:00** **ADJOURN**
- **Continuing Education Credit sign-out**

PRESENTER BIOGRAPHIES

(Alphabetical)

Jim Andersen, President, JLA Geosciences, Jupiter, Florida

Mr. Andersen is responsible for company operations, project management, well design and construction phase services team leader. Mr. Andersen has over 23 years working experience in hydrogeology, groundwater water resource investigations, water resource permitting, well problem evaluations and well rehabilitation. He has an extensive background in the state of Florida coastal and inland aquifer systems; membrane system raw water supply development for Nanofiltration, Low Pressure RO and Seawater RO. Mr. Andersen has served as a short course instructor at the biannual environmental permitting school given by the Florida Chamber of Commerce, an AWRA conference moderator on Aquifer Storage and Recovery, and a speaker on well design, water resource permitting and well construction for the Southeastern Desalting Association and American Membrane Technology Association conferences.

Stuart C. Anderson, President, Applied Drilling Engineering, Inc., Tampa, Florida

Mr. Anderson has 33 years of related experience in positions of authority including 12 years as an oil and gas Drilling Engineer, 5 years with the Southwest Florida Water Management District in Resource Management and 16 years in the construction and rehabilitation of Class I, Class V, Public Supply, Industrial and Agricultural Wells. He has significant drilling experience in the Continental U.S., Gulf of Mexico, North Sea, Central and South America. Stuart is a Licensed Water Well Contractor in multiple States, active in numerous professional organizations and the current Chairman for the SWFWMD's Well Drillers Advisory Committee. He attended the University of Alabama with a major in Petroleum Engineering.

Charlie Diehl, Pump Services Division Manager, Diversified Drilling Corporation, Tampa Florida

Mr. Diehl has been actively engaged in the municipal and industrial water well and pump business for over 40 years. His professional experience includes design, installation and maintenance of wells and pumps. He is the Pump Services Division Manager for Diversified Drilling Corporation in Tampa Florida and oversees all pump related activities for the company.

Tony Gilboy, P.G., Well Construction Manager, Southwest Florida Water Management District

Mr. Gilboy, a Professional Geologist, currently serves as Well Construction Manager for the Southwest Florida Water Management District, and has been in that position for over 15 years. Mr. Gilboy oversees the Well Construction Program in the District's 16-county area. He also serves as the District's Sinkhole Coordinator, and is responsible for ensuring the protection of this area's water resource and notification of appropriate local and state agencies during sinkhole events. Mr. Gilboy received his Bachelor of Arts degree from the College of Natural Sciences in 1980. He majored in geology at University of South Florida, before completing his post-graduate work in advanced hydrology.

Helen Hickman, Regional Groundwater Practice Leader, Brown & Caldwell, West Palm Beach, FL

Ms. Hickman has 26 years of experience in groundwater resources availability and development including regional groundwater studies, saltwater intrusion studies, direction of groundwater exploration projects, and many projects involving well design and construction in all parts of South Florida. Ms. Hickman's experience is focused in the areas of groundwater, well and wellfield design, water supply management and injection wells. Injection well experience includes: feasibility, design, permitting, construction, and operation of deep injection wells for both domestic and industrial wastewater disposal, and aquifer storage and recovery facilities. Ms. Hickman has a B.Sc., Joint Honours, degree in Geology and Chemistry, from University College of Wales, U.K.

Gordon Kennedy, Principal Geologist, MWH, Cape Coral, FL

Mr. Kennedy has 30 years of experience in a wide variety of well projects from West Texas to the Caribbean. He received his B.S. in Earth Sciences at the University of New Orleans. His professional background includes exploratory and development work for Oil and Gas, and design, permitting and construction for numerous water supply projects in Florida.

Mr. Kennedy has served as Project Manager for major municipal well and wellfield projects including production wells, Aquifer Storage and Recovery wells, and deep injection wells, and he has experience in rehab and modification of all three types of wells.

Neil Mansuy, Vice President, Subsurface Technologies Inc., Newburg, NY

Mr. Mansuy has 20 years of extensive worldwide well rehabilitation experience. He holds a MS from the Univ. of Regina, Saskatchewan, Canada, specializing in iron-related bacteria and causes of well plugging. He was previously an aquifer and well rehabilitation specialist with Layne GeoSciences Inc. for 10 years. Mr. Mansuy's workshop presentations cover all aspects of well problems and solutions related to lost capacity and water quality problems. Neil is the author of the book, "Water Well Rehabilitation," 1999, Lewis/CRC Press.

Kevin McGinnis, President, Cotey Chemical Corporation, Lubbock, TX

Mr. McGinnis graduated from Texas Tech Univ. in 1984 with a BA degree. He has worked in the water well remediation industry for 10 years. He has delivered technical papers to Saudi Arabia's Ministry of Agriculture and Water in Riyadh, and to the Philippine Water Works Assoc. In addition to his experiences in the U.S., Mr. McGinnis has supervised water well rehabilitation projects in several states of the Middle East, Far East and Latin America.

Jim Murray, President, Aquifer Maintenance & Performance Systems (AMPS) Inc., West Palm Beach, FL

Mr. Murray founded Aquifer Maintenance and Performance Systems in 1989. AMPS is a service company specializing in well field maintenance, well reconstruction, well rehabilitation, down-hole video surveys, pump repairs and well-field production management. AMPS has rehabilitated over 3,500 Florida wells. From the mid 1970s to 1989 Jim obtained extensive drilling and well design experience in many overseas countries and US states in both oil and water wells, working for Morrow Drilling, KTM Consulting, Layne Christensen and Beylik Drilling.

Andrew Stone, Executive Director, American Ground Water Trust, Concord, NH

Mr. Stone has degrees from London University, England. For 12 years he was a professor at Rhodes University, South Africa. He has extensive experience as a ground water scientist working on exploration and development projects in the US and overseas. Prior to joining the Trust he worked as a hydrogeologist for a New England consulting company. From 1990 to 2003 he taught an annual course on Ground Water Protection Policy in the MS degree program at Antioch New England Graduate School. In 1999 he received the National Ground Water Association's Oliver Award in recognition of his outstanding contributions to the ground water industry.

Ann Marie Superchi, Well Permitting Program Manger, SFWMD, West Palm Beach, FL

Ms. Superchi is the Program Manager Water Well Permitting and Water Well Contractor Licensing at South Florida Water Management District She is a 34 year veteran of the District and her experience includes 12 years in the soil and water chemistry lab, 22 years in the Water Use Division with 6 years processing water use permits, 18 years of issuing well permits and 10 years licensing water well contractors. Ann Marie Superchi holds a B.A. degree from the University of Florida.

Warren Zwanka, P.G., Supervising Hydrologist, St. Johns River Water Management District

Mr. Zwanka was promoted to Supervisor of the District's Water Well Construction Program in April 2008. He has worked over thirteen years at both the St. Johns and Suwannee River Districts conducting hydrologic monitoring, abandoned artesian well plugging, geophysical logging, deep observation well drilling, and Consumptive Use Permitting. He received a BS in Geology from the University of South Carolina in 1989 and MS in Soil and Water Science from the University of Florida in 2005.

