AzWWA Golf Tournament, Membership Meeting and Picnic

Friday, June 21, 2019 – Golf Tournament
Quailwood Greens Golf Course, Dewey
9AM Shotgun start

Friday, June 21, 2019 – Membership Meeting
Prescott Conference Center and Resort
1500 Az Highway – 69
Prescott, AZ

5:30-6pm Meet and Greet
6pm - Dinner
6:45pm - Speaker: Marcus Donaldson with Mount Sopris

Saturday, June 22, 2019 – Picnic at Goldwater Lake, Prescott
8am – ??

To register golf or to attend the membership meeting email admin@azwwa.org
You do not have to register to attend the picnic.

Please join us!
Any questions, email admin@azwwa.org or call 480-609-3999

REGISTRATION
(Scan and email to admin@azwwa.org)

Name: ________________________________
Company: ________________________________
Address: ______________________________________
City: __________________ State: ______ Zip: _______

Phone: __________________ Email: __________________
Number of herbed chicken dinners@$40 each __________ $___________
Number of steak dinners @$45 each _________ $___________
Total $ ___________

Fax registration to 480-609-3939 or mail to: 4802 E. Ray Rd. #23-500, Phoenix, AZ 85044
ARIZONA WATER WELL ASSOCIATION

Officers

Gabe Tregaskes, President
Southwest Waterworks Contractors
480-369-0456

Vacant - President Elect

Nathan Reveles, Sec.– Treasurer
SRP
480-603-7083

David Williams, Immed. Past President
David E. Williams Water Well Services
520-235-8549

District Directors
Gary Hix, 520-631-7113
District 1(Yuma, Mohave)

Nathan White, 928– 634-4978
District 2 (Coconino, Yavapai, Gila)

Vacant
District 3 (Navajo, Apache)

Russ Hunter 520-686-1346
District 4 (Graham, Greenlee, Cochise)

Dave Williams, 520-235-8549
District 5 (Pinal, Pima, Santa Cruz)

Ralph Anderson, 480-983-2542
District 6 (Maricopa)

M&S
Dennis McKay........... 602-510-8412
Sonne Fleming......... 916-397-5755

Technical Director
Marvin Goltfelty, P.G.480-659-7131
Chris Catalano, R.G. 928-649-9993

Legislative Chair
Bob Way............... 928-684-3301

Membership Chair
Tim Collins............. 602-275-5415

Newsletter Chair
Jan Oster……….(Cell) 636-541-0201
Email……janoster@sprintmail.com

Safety Director
John Fowler, CSP .... 480-558-3500 or
480-352-2041

Executive Administrator
Debbie Hanson Tripp/Kerrell Dunsmore...480-609-3999
4802 E. Ray Rd. #23-500
Phoenix, AZ 85044
Fax: 480-609-3939
Email: admin@azwwa.org

GOT NEWS?

Any upcoming or recent events?
Open Houses?
Other Events?
Jobsite Photos?
Articles?
New Products or Services?
Items for sale? Weddings? Births?
Obituaries?

---------

Contact Debbie Hanson Tripp or Kerrell Dunsmore at
480-609-3999 or via Email
admin@azwwa.org

DIRECTORY OF ADVERTISERS

2M Company ..................................................................................................... 05
Baroid IDP ......................................................................................................... 20
Bill Johnson Equipment Co. ............................................................................. 13
BJ Drilling Co. ............................................................................................... 08, 31
Clear Creek Associates .................................................................................... 04
Custom Pipe and Coupling ............................................................................. 28
Flint & Walling .............................................................................................. 24
Flomatic ........................................................................................................... 12
Franklin Electric ............................................................................................. 06
GEFCO ............................................................................................................. 31
Gicon Pumps & Equipment ............................................................................. 27
Hole Products .................................................................................................. 31
In2Wells, LLC ................................................................................................. 08
Jentech ............................................................................................................ 29
Karam Pump & Supply .................................................................................... 22
Mitchell Lewis & Staver .................................................................................. 19
National Pump Co. .......................................................................................... 21
Northern Arizona Pump .................................................................................. 08
O-K Bit Service .............................................................................................. 30
Preferred Pump & Equipment ........................................................................ 17
Roscoe Moss .................................................................................................... 16
Simflo ............................................................................................................... 09
Southwest Exploration .................................................................................... 29
Way’s Drilling ................................................................................................. 04
That’s A Cap! ADWR Well-CAPPING Team Acts Fast To Cover Dangerous Abandoned Wells

Published: May 31, 2019

In December 2018, a Cronkite News service story described the ordeal of a western Maricopa County man who had fallen into an abandoned mine on his property.

Despite a broken leg, rope burns and three very bad days alone fighting off rattlesnakes, John Waddell survived to describe his ordeal. But with an estimated 100,000 abandoned mines throughout Arizona, the danger for others falling into the looming darkness of an abandoned mine remains a serious concern.

But abandoned mines aren’t the only human-built peril looming in isolated areas of the State. Abandoned wells are a serious matter, too. One need only remember the heart-stopping drama surrounding 18-month-old Jessica McClure, who in 1987 fell into an abandoned well near her Midland, TX, home, to realize just how dangerous abandoned, uncapped wells can be.

The Arizona Department of Water Resources is taking action now to lessen the risks to the public of abandoned wells. And it is acting fast. In Summer 2018, the Department organized an Open Well Capping Workgroup that focused and coordinated the Department’s capacity to efficiently address the matter of hazardous open wells in Arizona.

The result? Of the 83 reported open wells currently on file, 80 percent have been temporarily capped, permanently capped or safely abandoned. That includes all of the wells that ranked as high priorities because of the hazard they presented.

(Continued on page 4)
While the number of abandoned wells posing safety hazards is much lower than the number of mines, they are no less of a concern.

The Department partnered in the well-capping effort with the Arizona Department of Corrections- Arizona Correctional Industries (ACI), which provided ADWR the new temporary well caps. The caps fabricated by ACI are made by inmates in the State Prison system looking to gain job skills that help their rehabilitation as well as provide an important product that benefits public safety.

Staff members from ADWR’s Field Services division coordinated with ACI, including overseeing the initial cap design.

ADWR recognized the need to address this hazard and coordinated a collaborative effort to cap wells, or have owners safely abandon them. The workgroup organized a comprehensive process to identify open wells, notify the well owners, and ensure that these hazards are properly capped or abandoned.

The program centers around prioritizing the well hazards and communicating with the well owners to address the issues. After field staff enters the reported information into the Open Well Database, the ADWR project coordinators prioritize the open well according to hazard risk and dedicate resources to the most serious open wells first. Owners of open wells that are judged to be so hazardous that they constitute an emergency are notified as soon as possible and may even receive immediate notification by phone call or email. The new Open Well Capping Initiative coordinates the efforts of several Department sections to ensure that well owners are properly capping or abandoning open wells in the state of Arizona.

As of May 2019, the Department notified and addressed the owners of all of the emergency open wells – a total of 14, in all – that have been reported to ADWR or identified by ADWR field staff.

There are currently 43 open wells with temporary caps in place and 23 with permanent caps or which have been properly abandoned.
ARIZONA
PROUDLY SERVING CONTRACTORS IN

2Mco.com

1839 W. Culver Street

PHOENIX
602-283-2805

THOUSANDS OF PRODUCTS IN INVENTORY
WATER WELL SUPPLIES
WATER TREATMENT
PIPELINE & ACCESSORIES

2M OFFERS:
• After Hours Availability
• Free Delivery
• Custom Turbine Builds
• All-Inclusive Incentive Trips

KNOWN FOR OUR LEGENDARY SERVICE

5
75 YEARS OF MOVING FORWARD.

Named after Benjamin Franklin, a pioneer in electrical engineering, Franklin Electric’s core is the world’s first reliable submersible electric motor for water systems, which has remained a staple of the water well industry. 75 years later, we continue to manufacture and distribute improved versions of this unrivaled motor design all around the world, and have expanded our expertise to create innovative solutions, including pumps, electronics, and adjacent products, addressing modern industry challenges and serving our customers’ needs.

franklinwater.com
On November 29th of 2017 a 39 year old driller in Missouri was killed when he raised his derrick into 12,000 volt power lines. The driller was working along Interstate 44 taking multiple core samples of the concrete for an upcoming project. The force of the electricity was so powerful that it blew a crater in the reinforced cement that the driller was standing on. He failed to look up and this mistake cost him his life. More recently in May of 2018 a driller and a helper were killed in Colorado when their rig contacted a 12,500 volt power line.

We in the pump servicing and drilling industry often work in the vicinity of power lines. But how close is too close? OSHA has a table in 1926.1400 (new Crane Regulations) which lays out the minimum safe clearances for cranes operating near power lines.

OSHA also says that if you don’t know what the voltage is, but know that it is under 350 kV, stay a minimum of 20 ft. away from the line. If you don’t know what the voltage is, but know that it is over 350 kV, OSHA requires you to stay a minimum of 50 ft. away from the line.

So, how can you determine the voltage? I have heard people say that you can determine the voltage by counting how many insulators are being used on each line. This can be done, but only if you know what power company is responsible for the lines and what type of insulators they are using. For this reason, counting insulators is not a good way to determine voltage. The best way is to pick up the phone and call your local power company. Give them your location using cross streets and the number that is on the pole. Usually each pole has a metal tag with a number on it. They will either tell you the voltage of the lines over the phone or come out themselves to have a look. Keep in mind that this process could take a week or more so plan ahead.

The best option when working around power lines is to have them de-energized or moved, but that is not always possible. So, how close is to close? The OSHA table above is good guidance, but we have to remember that it is designed for crane operators. Crane operators have the ability to swing away from the power lines, but when we setup a pump rig or a drill rig we are locked in place. Why is this important? Because if we setup on a calm day and begin to work and then the wind starts blowing those power lines might move several feet or more back and forth. If we followed the OSHA table and setup 10 ft. from a 50kV line thinking we were safe, we would find ourselves much too close and in what OSHA calls the “Prohibited Zone”. It’s not just wind, but torrential rains and dense fog that can also effect the safe working distance from power lines. So always give yourself a cushion in case the conditions change.

I have had a couple people ask about whether or not you can work closer to power lines when they are covered in insulating blankets. Nowhere in the OSHA crane standards does it list this as an option allowing you to work within the “Prohibited Zone”. The insulating blankets can be helpful and help prevent brush contact with the power lines, but are not designed to allow drill rigs to work closer than the recommended distance. If someone wants you to use insulating blankets ask questions and if possible get the power company involved. Remember: it is the pump or drill crews who are the ones who will suffer if the rig is energized.

Unlike a crane, when a drill or pump rig is energized the operator is usually the first to be electrocuted. This is because the operator is typically standing on the ground with his hands on the controls. He/she becomes a great path for the electricity to get to the ground. Those working on the ground around the equipment have a chance, but only if they
stand still. The ground around the equipment becomes energized and if you walk or run and step from one voltage zone into another different voltage zone you can become a pathway and be electrocuted. So stand still until someone from the utility company tells you that the power is off.

And remember that other equipment is going to be on that drill site. The drill might be a safe distance from the power lines, but what about your other equipment? For example, is there a roll off dumpster under the power lines? Or what about a regular dumpster? Years ago a drilling company employee was killed while putting some old hose sections into the dumpster. He raised the boom on a reach fork so that the hoses, which were hanging down from the forks, could clear the sides of the dumpster and hit powerlines with the forks.

We need to be aware of our surroundings and this is sometimes easier said than done. When it is raining, blowing snow or we are in a hurry it is easy to forget to look up. I was not there, but the driller in Missouri was likely in a rhythm moving from hole to hole and had stopped looking up every time the derrick was raised. And it only takes one time when you should have looked up to change your life forever. Please look up and think about where you are drilling and the other activities that will take place on that site. We should never get complacent around power lines.

John Fowler is Safety Manager for National EWP and can be reached as follows:

1200 West San Pedro Street
Gilbert, AZ 85233
480.588.3500 PHONE; 480.588.3500 FAX; 480.352.2041 CELL
WHY NICKEL ALUMINUM BRONZE?

The company tasked Engineering with identifying the best material for the widest variety of applications. As an application-based manufacturer, our job is to ensure that we use the right materials for the right application. Our aim is not to reinvent the wheel, but to improve it.

High resistance to cavitation
Cavitation erosion rate half that of 316 SS

Resistant to chloride solutions and chloride-induced stress cracking
Alloy composition reduces ion exchange

High corrosion resistance
Highly alloyed with 3.5-5.5% Ni

High strength
90 ksi yield strength

Excellent wear resistance
10-11.5% Al

WE SEE WATER DIFFERENTLY

WILLCOX, AZ | LUBBOCK, TX | GARDEN CITY, KS

SIMFLO.COM
The Nevada Groundwater Association and Water Systems Council Support Exempt Wells in the Nevada Supreme Court

Submitted by Jesse Richardson, Jr., Prof. of Law, W. Virginia Univ. College of Law

On December 3, 2018, the Fifth Judicial Circuit, Nye County, Nevada Court entered an important order regarding exempt wells. In December of 2017, the Nevada State Engineer entered an order restricting the drilling of exempt wells in the Pahrump Basin. Even though the average domestic well in Pahrump uses less than .5 acre-feet of water, the order required someone wishing to drill an exempt well to acquire 2 acre-feet of water and relinquish those rights to the State Engineer. The State Engineer failed to provide notice and an opportunity to be heard (essential elements of due process) prior to issuing the order.

The State Engineer filed an Amended Order, adding two exemptions, after landowners within the basin filed suit in July. The parties eventually agreed to proceed with the lawsuit based on the amended order. The lawsuit alleged that the State Engineer lacked authority to control domestic wells, that the State Engineer violated property owners’ due process rights, that the order took private property rights for public use without just compensation and that the order was not supported with substantial evidence.

The court found that Nevada law clearly gives the State Engineer power over all groundwater wells in Nevada EXCEPT domestic wells. In addition, the court ruled that domestic wells are a legal “property rights” entitled to constitutional protection, a very important ruling. Consequently, the State Engineer must give notice and the right to be heard prior to infringing upon these rights, assuming that the State Engineer held authority in the first place.

Addressing the issue of whether the order was supported by substantial evidence, the court noted the lack of evidence or facts to back the State Engineer’s conclusions in the order. This issue is prevalent in water disputes across the country, and this court ruled that findings must be backed by FACTS and EVIDENCE. The order contained conclusory statements and assumptions - not enough under the law. Finally, since the order was invalid, the unconstitutional takings claim was not addressed.

The Nevada State Engineer immediately filed an appeal to the Nevada Supreme Court. The Nevada Groundwater Association (NGA) and Water Systems Council (WSC) joined forces to file an amici curiae (friend of court) brief to support the landowners in the Pahrump Basin. The brief first pointed out that the State Engineer’s assumption that all exempt wells in the basin use 2 acre feet of water per year (the maximum allowed) is not based on science. The actual number is about ½ acre foot per year. The brief went on the detail the many benefits that exempt wells provide to the community and the environment.

Comparing the Nevada statute to exempt well provisions in other states, NGA and WSC argued that the Nevada statute was properly interpreted by the trial court. The brief then talks about other exempt well and groundwater cases across the country that support the landowners.

After the brief was filed, the State Engineer took the extraordinary step of filing an objection to the brief. The Nevada Supreme Court overruled the objection and allowed the brief. The parties now await the scheduling of oral arguments, which could occur as early as this summer. NGA and WSC hope that a decision will be made by the end of the year.

__________________________________________

People who wonder whether the glass is half full miss the point. The glass is refillable!” Unknown
Water Systems Council and the National Ground Water Association File Brief in the United States Supreme Court

Submitted by Jesse Richardson, JR., Prof. of Law, W. Virginia Univ. College of Law

On May 16, 2019, Water Systems Council (WSC) and the National Ground Water Association (NGWA) filed an *amicus curiae* (friend of court) brief in the case of County of Maui v. Hawaii Wildlife Fund. The Court will consider the question of whether the Clean Water Act requires a permit when pollutants originate from a point source but are conveyed to navigable waters by a nonpoint source, such as groundwater. The brief was one of eighteen filed supporting Maui County’s position, including a brief filed by the United States and one filed by several United States Senators. Now, the Hawaii Wildlife Fund will file their brief, followed by groups that support Hawaii Wildlife Fund.

Maui County injects wastewater into injection wells near the ocean. The wastewater is added to groundwater, much of which then makes its way into the ocean, a navigable water body. The question is whether this “indirect” discharge requires a National Pollution Discharge Elimination System (NPDES) permit. A permit is clearly required if a discharge is made directly to navigable waters, but lower courts have split on whether a permit is required in this situation. In this case the United States Court of Appeals for the Ninth Circuit found that the County needed a NPDES permit.

The impact on the water well industry if the Ninth Circuit decision is upheld is unclear. However, most observers agree with the Solicitor General of the United States, who, in a brief urging the Court to take the case, stated that the case "has the potential to affect federal, state, and tribal regulatory efforts in innumerable circumstances nationwide." A new regulatory regime would have to be implemented, which conceivably could require water well contractors to obtain a NPDES permit in some circumstances. Owners of onsite septic systems and farmers would clearly be covered under the new regime, in certain circumstances.

The brief first makes clear the position of WSC and NGWA that the quality and quantity of groundwater must be protected. Groundwater proves vital in sustaining the economy of the United States and in providing drinking water for Americans. Private water wells and small community water systems rely on clean, plentiful groundwater. The principles of the two organizations include protection of groundwater for existing and potential beneficial uses and use of scientific research to guide decisions.

The brief argues that the releases of pollutants by Maui County are covered by the Clean Water Act, but by the nonpoint source provisions contained in 33 U.S.C. § 1329. The application of the NPDES provisions in the Clean Water Act to releases to groundwater would both disrespect the clear structure of the Act and prove difficult in practice. Crafting and enforcing effluent standards would be extremely difficult. Other federal and state laws apply to releases to groundwater, and adding the NPDES permit system to the list would merely further fragment an already fragmented system of regulation.

In summary, WSC and NGWA argued that the resources that would be dedicated to costly permitting and enforcement under the NPDES program for releases to groundwater would yield better results collaborative federal-state-local effort to protect groundwater resources. States should lead the way, with technical assistance and funding from the federal government.

Both the WSC and NGWA are proud to have been able to have had their members’ voices heard before the United States Supreme Court in this important case. The case is likely to be argued in October. A decision is expected in early 2020.
Flomatic’s VFD Check Valve
Now with optional Metal Poppet
THE BEST JUST GOT BETTER
Flomatic’s Non-Sticking Check Valves are available in
Stainless Steel, Ductile Iron, and Bronze

The patented submersible pump check valves are used mainly on variable flow demand (VFD) systems and applications. While standard check valves will “chatter” and be noisy when the system goes to low flow, eventually causing failure. Flomatic’s exclusive patented poppet system ensures that the valve smoothly and automatically adjusts to flow changes. Works for all applications, even non VFD systems.
Bill Johnson grew up working in a family-owned oilfield machine shop in Texas. He moved to Arizona in 1948 and discovered that there was no local source for well drilling supplies and in 1949, Bill Johnson Equipment Company was founded. Initially, he obtained a one-year lease on a building and painted the words “Bill Johnson Equipment Company” on it because he wanted people to remember his name when they walked through the door. After 4 years and over 40,000 miles traveling throughout the Southwest, he purchased the building and property where they are still located today.

Over the years, Bill was able to obtain the some of the most coveted drill and pump rig distributorships along with various lines of equipment and supplies. He also began to collect and rent specialty tools and now they have one of the largest collections of fishing tools in the Southwest. Also important was the ability to service, fabricate and repair these tools so he started a machine shop which is still a critical part of their business.

Today, Bill Johnson Equipment Company is owned and managed by Bill's Daughter, Ginger Johnson, and Granddaughter, Shelly Schira. Their goal is to continue the entrepreneurial spirit that Bill created while adapting to the ever-changing marketplace.

Bill Johnson Equipment Company Celebrates
75 Years!

Thank you for 70 years of success.
1949 – 2019 Still going strong!
Third generation family owned and run.

Complete line of Drilling Supplies and Equipment
New & Used Rigs, Parts, & Tools
Machine & Welding Shop and Rig Repair
Rental Tools, Job Site Deliveries
Steel Casing, Tricone Bits, Wire Rope

Acker Drill – Baroid – Boart Longyear - Crosby - Drill King – Epiroc - FMC – Gearench
Powers Electric - Ridgid – Sandvik – Stratex - Western Rubber

If we don’t have it, we’ll find it!
Roscoe Moss Company
Since 1926

4360 Worth Street
Los Angeles, CA 90063
Phone: (323) 263-4111
info@roscoemoss.com

Roscoe Moss Company is dedicated to providing the highest quality casing and screen products for the water well industry worldwide.

Manufacturing hydraulically efficient, cost-effective, and long lasting products has remained our core business since our inception almost 100 years ago.

www.RoscoeMoss.com
THE #1 DISTRIBUTOR FOR
WATER WELL EQUIPMENT & ACCESSORIES

Submersible Pumps • Motors & Controls • Valves & Fittings
Residential & Industrial Water Systems • Steel & PVC Pipes

Preferred Pump & Equipment, L.P. is the leading wholesale distributor of domestic water system products in the United States. Our goal is to build long-lasting relationships with loyal customers who rely upon us to meet their business needs. We build these relationships with superior customer service, coast-to-coast warehouse locations, and the best dealer rewards program in the industry.

5020 W. Watkins St. • Phoenix, AZ 85043
Toll Free: (800) 526-7608

4320 E. Illinois St. • Tucson, AZ 85714
Toll Free: (800) 526-7609

www.preferredpump.com
“Earth-Observing” Satellites to Help Analyze Impacts of Climate Change on the Colorado River

Reprinted from CAP News - May 2019

CAP partners with ASU on NASA grant for Colorado River Study

The ASU/CAP team will use data collected from “MODIS” onboard NASA’s Aqua Earth-observing satellite mission. Credit: NASA/GSFC

The Colorado River is one of the most engineered watersheds in the world with three major tributaries and ten major regulating reservoirs. In the U.S. and Mexico, the river supplies more than 40 million people with renewable water in nine states, 22 Native American nations, and 22 national parks and refuges. It is also used to irrigate 5.5 million acres of agriculture and to produce 4,180 MWh of hydroelectric power.

Thanks to a $1 million grant from NASA’s Earth Science Division, an interdisciplinary team of ASU researchers will work with Central Arizona Project on a comprehensive evaluation of climate and land use changes and how these impact the Colorado River Basin. Data collection for the study will involve Earth-observing satellites as well as ground data from the US Geological Survey, the National Oceanic and Atmospheric Administration and other entities.

This project builds on work previously performed for CAP by Enrique Vivoni and his ASU team, exploring the response of the Colorado River Basin to future climate changes. The end goal of the project is to incorporate new modeling products, tools and enhancements into the existing modeling and analysis framework used by the CAP Colorado River Programs department. This data will be shared with other Colorado River Basin stakeholders to inform decision making regarding the future of the Colorado River as a major water supply to the West. The data may also be used as CAP continues to work on its Climate Adaptation Plan.

Mohammed Mahmoud, CAP senior policy analyst and co-investigator on the grant team, will provide expertise on the Colorado River management system and on climate and land use change scenario planning processes. “The work produced by this project will be beneficial not only to CAP, but to many of our partners in the Colorado River Basin,” says Mahmoud. “We are fortunate to have been a selected recipient of this grant. This is a testament to the quality and importance of the work in the submitted proposal, which was made possible by our continued partnership with Dr. Vivoni and his team at ASU.”

(Continued on page 20)
THE RIGHT SOLUTION FOR THE JOB, EVERY TIME.

PUMPING SYSTEMS FOR RESIDENTIAL & IRRIGATION APPLICATIONS

Since 1882, Mitchell’s has partnered with contractors to understand requirements and provide options that result in delivering the best solution for a job.

From residential pumps and vertical turbines to VFDs and packaged systems, customers depend on Mitchell’s quick response times to deliver results. Our engineering team is available to help build custom systems to meet your project needs.

Depend on us. Give us a call (866) 748-8077.

mitchellewis.com
Similar to CAP’s Climate Adaptation Plan released earlier this year, this effort demonstrates CAP’s commitment to enhancing its resiliency against the effects of future climate change.

Arizona depends heavily on the Colorado River Basin, the drainage area of the Colorado River that includes parts of seven states in the U.S. and the country of Mexico, which supplies the majority of the state’s current renewable water. “Water management is a pressing issue for Arizona,” says Enrique Vivoni, principal investigator of the project and professor in the School of Earth and Space Exploration and the School of Sustainable Engineering and the Built Environment. “This grant will assist in helping local, state, and federal entities with their drought contingency planning.”

The Colorado River basin is currently under threat from rising demands linked to population growth and economic activities, as well as declining amounts of available streamflow and reservoir storage. “The focus on a major freshwater source in the Colorado River Basin, and how it impacts stakeholders, highlights how and where we want to target NASA Earth observations and science to meet our freshwater management challenges,” says Bradley Doorn of NASA’s Science Mission Directorate Earth Science Division. “We are focusing on advancing the use of satellite observations and hydrologic modeling to monitor and assess local and regional water quality and quantity for improving water resource decisions.”

In addition to Vivoni and Mahmoud, the interdisciplinary team includes ASU co-investigators Theodore Bohn of the School of Earth and Space Exploration; Dave White of the School of Community Resources and Development and director of the Decision Center for a Desert City; Giuseppe Mascaro of the School of Sustainable Engineering and the Built Environment, and graduate students Kristen Whitney of the School of Earth and Space Exploration and Zhaocheng Wang of the School of Sustainable Engineering and the Built Environment.
Your Vertical Pump Specialists

- 4” - 30” Diameter Designs
- Flows to 20,000 GPM, Heads to 2,000 FT
- Testing to 1,500 HP, 460 & 4160 volt

Jets and Centrifugals

- Shallow and Deep Well Jets
- Multi-stage Centrifugals
- Self-priming Sprinklers
- Booster Pumps

www.nationalpumpcompany.com
7706 N. 71st Avenue | Glendale, Arizona 85303
623-979-3560 | 800-966-5240

Glendale, Arizona
Certificate No. 13778
We are a stocking distributor of the following lines:

Goulds Pumps
CentriPro Motors & Controls
Lorentz Solar
Baldor Motors
Service Wire
Simmons Valves & Seals
Flomatic Valves
Symcon
Warrick Level Controls
Cresline PVC drop pipe

Tempe, AZ - 800-524-7867
Tucson, AZ - 520-670-1266
Albuquerque, NM - 505-797-1012
AzWWA Membership Meeting
April 20, 2019
Coco’s Restaurant
The AZWWA membership meeting was held at Coco’s Restaurant in Phoenix on April 20th. We had a great turnout and a lot of various issues were discussed. Our guest speaker was Todd Eden with HCT who gave a great presentation on his products, their applications and the results they’ve been having in over 800 wells to date.

Bob Way, our Legislative Chair, performed the installation and swearing in of our new Officers; Gabe Tregaskas, President and Nathan Reveles, Secretary/Treasurer. It was decided to work on updating the associations bylaws and doing another member survey, which will include information on continuing education.

Debbie Tripp announced she had sold her administrative management company and the new owner, Kerrell Dunsmore with the next great event was there, and told us a little about her and her company. We look forward to working with her in the future. She will also be at our Summer Meeting and Picnic in June so those of you who weren’t at the meeting, will have the opportunity to meet her then. She officially takes over on July 1st. The association’s email address and phone number will stay the same.

The new mailing address for AzWWA is:

4802 E. Ray Rd. #23-500
Phoenix, AZ 85044.
<table>
<thead>
<tr>
<th>Legislator</th>
<th>District</th>
<th>Party</th>
<th>Email</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karen Fann—President</td>
<td>1</td>
<td>R</td>
<td><a href="mailto:kfann@azleg.gov">kfann@azleg.gov</a></td>
<td>(602) 926-5874</td>
</tr>
<tr>
<td>Eddie Farnsworth -- President Pro Tempore</td>
<td>12</td>
<td>R</td>
<td><a href="mailto:efarnsworth@azleg.gov">efarnsworth@azleg.gov</a></td>
<td>(602) 926-5170</td>
</tr>
<tr>
<td>Rick Gray -- Majority Leader</td>
<td>21</td>
<td>R</td>
<td><a href="mailto:rgray@azleg.gov">rgray@azleg.gov</a></td>
<td>(602) 926-5413</td>
</tr>
<tr>
<td>Sonny Borrelli—Majority Whip</td>
<td>5</td>
<td>R</td>
<td><a href="mailto:sborreelli@azleg.gov">sborreelli@azleg.gov</a></td>
<td>(602) 926-5051</td>
</tr>
<tr>
<td>David Bradley—Minority Leader</td>
<td>10</td>
<td>D</td>
<td><a href="mailto:dbradley@azleg.gov">dbradley@azleg.gov</a></td>
<td>(602) 926-5262</td>
</tr>
<tr>
<td>Jamescita Peshlakai—Minority Whip</td>
<td>7</td>
<td>D</td>
<td><a href="mailto:jpeshlakai@azleg.gov">jpeshlakai@azleg.gov</a></td>
<td>(602) 926-5160</td>
</tr>
<tr>
<td>Lupe Contreras -- Assistant Minority Leader</td>
<td>19</td>
<td>D</td>
<td><a href="mailto:lcontreras@azleg.gov">lcontreras@azleg.gov</a></td>
<td>(602) 926-5284</td>
</tr>
<tr>
<td>Lisa Otondo—Minority Whip</td>
<td>4</td>
<td>D</td>
<td><a href="mailto:lotondo@azleg.gov">lotondo@azleg.gov</a></td>
<td>(602) 926-3002</td>
</tr>
<tr>
<td>Andrea Dalessandro</td>
<td>2</td>
<td>D</td>
<td><a href="mailto:adalessandro@azleg.gov">adalessandro@azleg.gov</a></td>
<td>(602) 926-5342</td>
</tr>
<tr>
<td>Sally Ann Gonzales</td>
<td>3</td>
<td>D</td>
<td><a href="mailto:sgonzales@azleg.gov">sgonzales@azleg.gov</a></td>
<td>(602) 926-3278</td>
</tr>
<tr>
<td>Sylvia Allen</td>
<td>6</td>
<td>R</td>
<td><a href="mailto:sallen@azleg.gov">sallen@azleg.gov</a></td>
<td>(602) 926-5409</td>
</tr>
<tr>
<td>Frank Pratt</td>
<td>8</td>
<td>R</td>
<td><a href="mailto:fpratt@azleg.gov">fpratt@azleg.gov</a></td>
<td>(602) 926-5761</td>
</tr>
<tr>
<td>Victoria Steele</td>
<td>9</td>
<td>D</td>
<td><a href="mailto:vsteele@azleg.gov">vsteele@azleg.gov</a></td>
<td>(602) 926-5683</td>
</tr>
<tr>
<td>Vince Leach</td>
<td>11</td>
<td>R</td>
<td><a href="mailto:vleach@azleg.gov">vleach@azleg.gov</a></td>
<td>(602) 926-3106</td>
</tr>
<tr>
<td>Sine Kerr</td>
<td>13</td>
<td>R</td>
<td><a href="mailto:skerr@azleg.gov">skerr@azleg.gov</a></td>
<td>(602) 926-5955</td>
</tr>
<tr>
<td>David Gowan</td>
<td>14</td>
<td>R</td>
<td><a href="mailto:dgowan@azleg.gov">dgowan@azleg.gov</a></td>
<td>(602) 926-5154</td>
</tr>
<tr>
<td>Heather Carter</td>
<td>15</td>
<td>R</td>
<td><a href="mailto:hcart@azleg.gov">hcart@azleg.gov</a></td>
<td>(602) 926-5503</td>
</tr>
<tr>
<td>David C. Farnsworth</td>
<td>16</td>
<td>R</td>
<td><a href="mailto:dfarnsworth@azleg.gov">dfarnsworth@azleg.gov</a></td>
<td>(602) 926-3020</td>
</tr>
<tr>
<td>J. D. Mesnard</td>
<td>17</td>
<td>R</td>
<td><a href="mailto:jmesnard@azleg.gov">jmesnard@azleg.gov</a></td>
<td>(602) 926-4481</td>
</tr>
<tr>
<td>Sean Bowie</td>
<td>18</td>
<td>D</td>
<td><a href="mailto:sbowie@azleg.gov">sbowie@azleg.gov</a></td>
<td>(602) 926-3004</td>
</tr>
<tr>
<td>Paul Boyer</td>
<td>20</td>
<td>R</td>
<td><a href="mailto:pboyer@azleg.gov">pboyer@azleg.gov</a></td>
<td>(602) 926-4173</td>
</tr>
<tr>
<td>David Livingston</td>
<td>22</td>
<td>R</td>
<td><a href="mailto:dlivingston@azleg.gov">dlivingston@azleg.gov</a></td>
<td>(602) 926-4178</td>
</tr>
<tr>
<td>Michelle Urgenti-Rita</td>
<td>23</td>
<td>R</td>
<td><a href="mailto:Mugenti-rita@azleg.gov">Mugenti-rita@azleg.gov</a></td>
<td>(602) 926-4480</td>
</tr>
<tr>
<td>Lela Alston</td>
<td>24</td>
<td>D</td>
<td><a href="mailto:laisson@azleg.gov">laisson@azleg.gov</a></td>
<td>(602) 926-5829</td>
</tr>
<tr>
<td>Tyler Pace</td>
<td>25</td>
<td>R</td>
<td><a href="mailto:tpace@azleg.gov">tpace@azleg.gov</a></td>
<td>(602) 926-5760</td>
</tr>
<tr>
<td>Juan Mendez</td>
<td>26</td>
<td>D</td>
<td><a href="mailto:jmendez@azleg.gov">jmendez@azleg.gov</a></td>
<td>(602) 926-4124</td>
</tr>
<tr>
<td>Rebecca Rios</td>
<td>27</td>
<td>D</td>
<td><a href="mailto:rrrios@azleg.gov">rrrios@azleg.gov</a></td>
<td>(602) 926-5863</td>
</tr>
<tr>
<td>Kate Brophy McGee</td>
<td>28</td>
<td>R</td>
<td><a href="mailto:kbrophymcgee@azleg.gov">kbrophymcgee@azleg.gov</a></td>
<td>(602) 926-4486</td>
</tr>
<tr>
<td>Martin Quezada</td>
<td>29</td>
<td>D</td>
<td><a href="mailto:mquezada@azleg.gov">mquezada@azleg.gov</a></td>
<td>(602) 926-5911</td>
</tr>
<tr>
<td>Tony Navarrete</td>
<td>30</td>
<td>D</td>
<td><a href="mailto:tnavarrete@azleg.gov">tnavarrete@azleg.gov</a></td>
<td>(602) 926-4864</td>
</tr>
</tbody>
</table>
AZWWA Scholarship Funds are Available!

The AZWWA offers educational scholarships in the amount of $1,000 per semester for the children and/or grandchildren of contractors who have been members of our Association for a minimum of 2 years or employees of said contractor who has a reasonable relationship with the Association.

Other qualifications of the applicant are:

- Has the support of his/her family. If the applicant is a child or grandchild of an employee of a contractor, the owner/manager must also support the applicant.
- Acceptance by aforementioned Arizona institution. The Committee will take into consideration any requests or attendance at schools outside of Arizona.
- Full time enrollment. The Committee will also take into consideration requests for less than a full schedule.
- Maintain a 2.5 grade point average.

The above qualifications are in reference to university or junior college enrollment. However, the Committee will consider requests for trade school or other participation at reduced levels of financial support if such education is deemed beneficial to the family’s business effort.

A completed Scholarship Application, including a resume, a letter of endorsement from the applicant’s parents or employer and a transcript from the last educational institution attended are required. The sum will be paid upon applicant’s submittal of proof of registration at an Arizona or other pre-approved institution.

For more information or to request a Scholarship Application, please contact our current Scholarship Chair or the AZWWA office as listed below:

**Scholarship Chair**
Fred Tregaskes
ftregaskes1@gmail.com
PH: 480-404-2788

**AZWWA Office**
Debbie Hanson Tripp or Kerrell Dunsmore
admin@azwwa.org
PH: 480-609-3999
WE WILL EXCEED YOUR EXPECTATIONS!

For 40 years, Gicon Pumps & Equipment has supplied only the highest quality products for superior performance and durability to meet all of your application needs.

PHOENIX, ARIZONA
7506 W. Madison Street
Tolleson, AZ 85353
800-772-6265
giconpumps.com

Submersible Pumps · Turbine Pumps · Commercial Pumps · Solar Pumps · Windmills
Water Tanks · Motors · Drives · Controls · Submersible Cable · Pipe · Fittings · Valves
Drilling Fluids · Water Treatment

Value-Added Services:
• Product Delivery
• Field Services
• Motor & Control Repair
• Pump & Motor Testing
• Product Applications
Custom Pipe and Coupling Co., Inc.

are a full line manufacturer of intermediate vertical turbine pump products used primarily in the agricultural and municipal water well industry. Custom Pipe offers a variety of products and services to meet all the needs of the water well drilling contractor, distributor and wholesaler.

Established in 1972, Custom Pipe & K&K Supply have grown to be the premier source for vertical turbine pump column, pump column couplings, bronze line shaft bearings, ductile iron pipe spools and numerous other products.

Visit www.custompipe.com for more information:

**CALIFORNIA:**
Custom Pipe
10560 Fern Ave.
Stanton, CA 90680
P.O. Box 978
Phone: 800.553.3058
Fax: 714.761.5794

**CALIFORNIA:**
Custom Pipe
5220 S Peach Ave.
Fresno, CA 93725
Phone: 559.834.1342
Fax: 559.834.1343

**ARIZONA:**
Custom Pipe
302 S. 28th Street
Phoenix, AZ 85034
Phone: 602.471.0199
Fax: 602.275.6462
Southwest Exploration Services, LLC
borehole geophysics & video services

Geophysical Well Logging/Inspections
- Experienced engineers focused on data quality and customer service
- Seven modern logging trucks outfitted with the latest generation logging tools and equipment
- 2 in. to 8 ft. diameter wells up to 10,000 ft. in depth
- Open & cased hole capabilities
- Portable units, UTV, and 4X4 trucks to access remote well locations

Basic Well Logging to Advanced Methods
- 3/4-Arm Caliper, Electric Log, Full Waveform Sonic, Temperature, Fluid Resistivity, Natural/Spectral Gamma
- Magnetic and Gyroscopic Deviation
- Focused Resistivity, Induced Polarization, Magnetic Susceptibility, Density, Neutron, Induction, Spinner Flowmeter

Exploration for Water, Minerals, & Geothermal Energy

Environmental & Engineering
- Pier evaluation, elastic moduli, rock properties
- Flow log acquisition, analysis, modeling, and fluid sampling
- Ambient & pumping flow with single or multi-well testing/analysis

Well Evaluations with Video and Imaging
- Water production wells, gas storage, and monitor wells
- High resolution, real-time video inspection
- Casing thickness evaluation (4” to 20”)
- Acoustic casing inspections
- Leader in the industry in imaging acquisition with 2nd generation Acoustic/Optical Televviewer, analysis & fracture characterization

25811 S. Arizona Ave. Chandler, AZ 85248
Phone: 480-926-4558  Fax: 480-926-4579
www.swexp.com

Jentech Drilling Supply

Serving The Mining, Exploration, and Groundwater Industries Throughout The West

DTH Hammers & Bits
Drill Steel & Sbs
Drilling Fluids & Thread Compounds
New & Rerun Rotary Bits
Bit & Pipe Handling Tools

Main Office
195 Ingenuity Drive
Sparks, Nevada 89441
Phone 775.424.3045
Fax 775.424.3046

Branches
Elko, Nevada
Bakersfield, @lifornia

“Top to Bottom Drilling Tools & Accessories”
www.jentechdrillingsupply.com
We supply a complete line of Mill tooth and TCI tricone bits, from 2 inches to 44 inches. PDC bits from 3 inches to 28 inches. We also custom make reamers and hole openers to our customer’s specifications.

Arizona Office
3345 N Nevada St. STE 1
Chandler, AZ 85225

John Linton
580-628-1605
johnlinton75@yahoo.com
480-892-5044 fax

Oklahoma Office
307 Thunderbird Rd
Tonkawa, OK 74653

Jimmy Linton
580-628-1619
jimmylinton33@yahoo.com
580-628-3097 fax
### Events Calendar

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 21, 2019</td>
<td><strong>Golf Tournament</strong>&lt;br&gt;Quailwood Greens Golf Course, Dewey, AZ&lt;br&gt;9am Shotgun Start</td>
</tr>
<tr>
<td></td>
<td><strong>Membership Meeting and Dinner</strong>&lt;br&gt;Prescott Resort and Conference Center&lt;br&gt;Prescott, AZ&lt;br&gt;5:30pm Meet &amp; Greet; 6pm Dinner</td>
</tr>
<tr>
<td>June 22, 2019</td>
<td><strong>Picnic, Auction, Chili Cook Off and Horseshoe Tournament (8am)</strong>&lt;br&gt;Goldwater Lake, Prescott</td>
</tr>
<tr>
<td>October, 2019</td>
<td><strong>AzWWA Membership Meeting</strong>&lt;br&gt;Location and speaker: TBD</td>
</tr>
<tr>
<td>February 6 &amp; 7, 2020</td>
<td><strong>Mountain States Ground Water Expo</strong>&lt;br&gt;Aquarius Casino Resort&lt;br&gt;Laughlin, NV&lt;br&gt;For more information go to <a href="http://www.mountainstatesgroundwater.com">www.mountainstatesgroundwater.com</a></td>
</tr>
</tbody>
</table>