Making Connections

The Official Publication of the Louisiana Ground Water Association

Volume 8 Issue 2 Winter 2023

From the Executive Director's Desk

This year feels as if it is flying by. It seems like just a few days ago we were in Marksville at the last convention.

A lot of good things have happened and are still happening since the last convention. A letter was sent to current vendors asking them to help us with convention expenses to help us recover from low attendance during COVID. We did get a few responses and they were varied, but helpful.

Benson Pump sent a nice check which we set up as a scholarship fund to restart our scholarships for qualified applicants. The rules and amounts have been modified until we get a feel for convention attendance. We may be able to raise the amount and number of scholarships with your help.

Wholesale Pump agreed to continue covering the cost of the bar tab during the cocktail hour, dinner, and BINGO game.

Some other vendors have agreed to pay for all or part of expenses for meals, coffee/tea/juice, etc. If you are interested in helping your association get back on its feet, please call me and we will discuss how this can be accomplished. We are a nonprofit corporation, so your accountant might find some tax advantages.

Another moneymaking project in progress is a raffle for a high-tech, solar cooler donated by one of our vendors. This unit comes complete with a solar/food prep. table and necessary connectors for them to work together. The unit sells in the neighborhood of $1500. A packet of numbered tickets was sent to each of you. The tickets are $5 each and an easy sell to almost anyone. The association will receive 100% of all proceeds from the sale of each ticket. Please see if you can either sell or purchase the tickets yourself and bring the money and tickets to me at the convention (or mail them if you can't come). **The drawing for this incredible cooler will be held Wednesday, January 10, 2024, at 1:00 pm during our convention.**

Next, we have been given a room for two nights at the Riverside New Orleans Hilton during the 2025 National Ground Water Convention. I hope to have these tickets printed and ready to disburse at our January 2024 convention and ask all of you to help sell them. The tickets will be $5 each and again, 100% of the proceeds will go directly to our association.

If anyone has other moneymaking ideas we could do as an association, I would like to hear about and discuss them. As long as we can maintain a constant financial balance, we can continue to do scholarships and have nice conventions. I am asking for your help.

A letter and invoice for membership dues was sent to all WWC license holders who did not attend our 2023 convention. We got a good response, but still need help from the rest of you. Please add your $100 to your preregistration or pay when you register at the convention, so we can remain financially sound.

We look forward to seeing all of you on January 9 & 10, 2024. Please, plan to attend our convention in Marksville. Let's return to meeting as the Louisiana Ground Water Association and work together as a group like we did before COVID separated us. If you have any comments or suggestions, please call me at 225-744-4554.

Joel

Joel Walton - LGWA Executive Director

Inside this issue:

The views expressed in Making Connections do not necessarily reflect the position of the Louisiana Ground Water Association. We believe in free speech and encourage contributors to voice their opinions.

Special thanks to the advertisers supporting this newsletter:

GET ASSOCIATION HELP™
Division of WorldWide Drilling Resource, Inc.
PO Box 660
Bonifay, FL 32425-0660

LSU Studies Water Treatment Using Membranes

Adapted from Information by Louisiana State University

Louisiana State University (LSU) Assistant Professor Kofi Christie and his students (known as the Christie Research Group) are researching the use of membrane distillation (MD) as a means of water purification. It is among the best available commercial technologies for extracting and recovering clean water from a wide range of water sources, including seawater, inland brackish water, and municipal/industrial wastewater. However, the formation of inorganic foulants - such as salts used for pharmaceuticals, food preservation, deicing roads, and construction materials - at the surface of the membranes severely limits water recovery and adversely impacts the overall efficiency and cost of water produced by MD desalination and water reuse facilities.

The goal of Christie's project, funded by a grant from the Louisiana Board of Regents, is to advance the understanding of this inorganic fouling at the membrane surface, thereby improving the technology.

"Addressing the global issue of freshwater scarcity, which currently affects 40% of the world's population, is one of the most significant technological hurdles in the 21st century," Christie said. "Investigating the long-standing curiosities of dynamic salt-and-water interactions is fascinating! Did you know that some salts dissolve more readily at lower temperatures? This contrasts with table salt dissolving readily into your spaghetti water at a rapid boil.

"Understanding why and how these phenomena occur can help us to design better fouling-prevention technology, enable maximized water reuse from wastewater sources, and achieve stronger climate change resilience. As populations grow and freshwater scarcity increases, it's becoming increasingly important to design more robust water treatment technology in order to augment freshwater supplies with unconventional water sources."

To improve this water treatment technology, the Christie Research Group will conduct experiments in which the temperature and chemical composition of the environment will be precisely controlled across a variety of wastewaters to observe the kinetic and morphological variations in mineral growth.

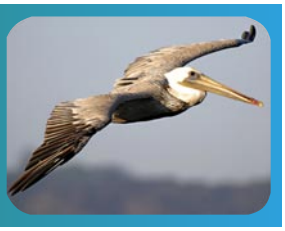
"Many people living in America take water for granted," Christie said. "The water quality and water quantity that we have come to expect from our municipalities is maintained by large teams of engineers, chemists, and project managers who work diligently against economic restraints and tight deadlines. I hope that everyone reading this can take a moment to appreciate the people who protect and supply the water that we use to brush our teeth, wash dishes, and flush toilets every day."

Newsletter contents prepared, printed, and published by GET ASSOCIATION HELP™, a division of WorldWide Drilling Resource, Inc. for the use and benefit of the Louisiana Ground Water Association.

GET ASSOCIATION HELP
a division of
WorldWide Drilling Resource, Inc.
Home of Solid Gold Service – with a smile!®

PO Box 660
Bonifay, FL 32425-0660
850-547-0102

The Louisiana Ground Water Association: Helping to preserve a priceless resource - the Louisiana groundwater aquifers and recharge areas.



LOUISIANA GROUND WATER ASSOCIATION, INC. LGWA FOR BETTER WATER

PO Box 202
Prairieville, LA 70769-0202
225-744-4554

Membership in the Louisiana Ground Water Association (LGWA) is open to water well and geotechnical drilling professionals. LGWA and its members are active throughout the State of Louisiana.

Stemming the Tide of Orphan Wells

Adapted from Information by Environmental Defense Fund

The Louisiana Department of Natural Resources Office of Conservation finalized stronger rules in an effort to reduce the state's orphan well problem. The Future Utility Rule stands to improve management of the 17,000 future utility, or nonproductive gas and oil wells by encouraging their proper closure, an action which will create jobs, raise property values across the state, and facilitate new clean energy projects, while reducing emissions and protecting public health and safety.

The rule includes incentives for operators to plug their nonproductive wells, increases fees once wells have been nonproductive for five years or more, and establishes more control over extending exemptions for plugging in perpetuity, which have historically allowed wells to sit idle for 40 years or more. The fees collected can be used by the Oilfield Site Restoration Program to continue diligent efforts to plug orphan wells, leveraging additional benefits to taxpayers, landowners, and communities across the state.

Photo courtesy of Louisiana Department of Natural Resources.

"The jobs and business opportunities created by this rule tap the existing skill sets of Louisiana's working people," said Liz Russell, Louisiana State Director at Environmental Defense Fund. "This action will grow our economy while addressing the need to remediate underutilized legacy oil and gas infrastructure."

While the state is receiving hundreds of millions of dollars from the federal government to close the orphan wells already in existence, this regulatory update will help stop the creation of tens of thousands of new ones. With this strengthened oversight, Louisiana can work to break the cycle of idle wells becoming orphan wells.

Once wells have been in future utility status for three years or more, only 20% of them ever return to service. Of those that do, over 80% of their lifetime production will have already happened prior to entering future utility status, speaking to the need to ensure wells in this program truly have future utility. Additionally, these improved regulations help make Louisiana eligible for up to $70 million more in federal funding to help tackle the statewide challenge of orphan wells.

How Does Groundwater Monitoring Work?

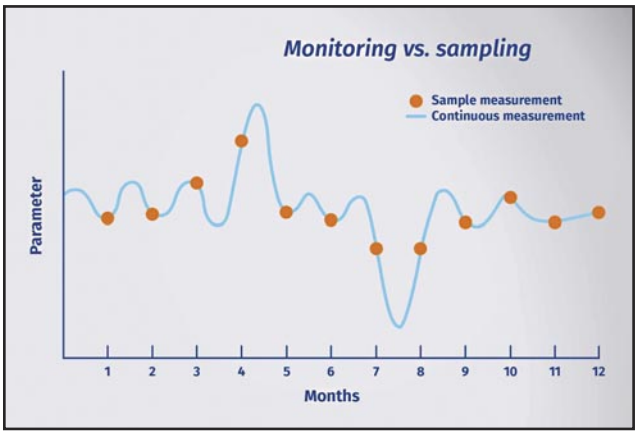
Adapted from Information by Royal Eijkelkamp

Have you ever wondered how groundwater monitoring works? First, let's discuss why we monitor groundwater. If we don't know how much groundwater there is, then we don't know how much we can use. Overpumping groundwater can cause all sorts of problems, which is why groundwater monitoring is such an essential part of any environmental information system. Constant monitoring provides the necessary data for responsible groundwater use.

Groundwater monitoring can be small with just one well, or large with a whole network of wells installed throughout an area. A monitoring well is generally equipped with either a water level logger or water quality probe to do the measurements, depending on the parameters that need to be measured. Some of those parameters include water level and conductivity, fluctuations in groundwater, and even salt intrusion. A modem can be added to the well to transfer the data from the sensors to an online environment, where the data can be reviewed and analyzed.

Continuous groundwater monitoring helps:

- Identify subsurface contaminants, estimate the speed and direction of the contamination flow, and narrow down the contamination sources.
- Manage groundwater levels and prevent damage by saltwater intrusion, drought, or flooding.
- Track the long-term sustainability of an aquifer as a safe and stable water source and adjust policies accordingly.



A groundwater monitoring network can help water boards and municipalities issue drought or flood warnings in a timely manner, allowing them to take appropriate mitigation measures as quickly as possible.

In all cases, consistant groundwater monitoring is essential to maintain or improve water quality and ensure a steady amount of water.

Another option would be to use a water level meter to take manual measurements regularly. The main benefit of monitoring versus manual measurement is the data collection is continuous: every small fluctuation or deviation is recorded, which can be important during sudden weather changes.

In addition, big changes can be detected immediately, so any necessary actions can be taken in time.

By monitoring over time, trends can be detected and models created. These valuable insights are essential for regulating the use of groundwater.

Louisiana Ground Water Association Convention & Trade Show

Membership and Convention **Registration**

January 9-10, 2024 Paragon Casino Marksville, LA

Company: _____ WW Contractor License Number : _____

Address: _____ City, ST, Zip: _____

Attendee Name: _____ Company e-mail: _____

Personal e-mail: _____ Company Phone : _____

Cell: _____

Payments:

Annual Dues (includes convention registration): **$160**	
Nonmember Convention Registration: **$160**	
Student and Government Employee Registration: **$75**	
Banquet Fee Per Person: **$20**	
Late Registration Fee if Paid after December 1, 2023: $20	
Total Due	

Attendees, please return this form with your check made payable to LGWA, P.O. Box 202, Prairieville, LA 70769 Phone: 225-744-4554

Tabletop Exhibitor **Application**

Company: _____ Address: _____

City, ST, Zip: _____

Representative Name: _____ Company e-mail: _____

Personal e-mail: _____ Company Phone : _____

Cell: _____

Payments:

Exhibit Fee (includes membership for current year): **$350** Includes draped table and 2 chairs	
Night before convention dinner (per person): **$20**	
Total Due	

Name Badges Should Appear as Follows:

_____

_____

_____

_____

Exhibitors, please return this form with your check made payable to LGWA, P.O. Box 202, Prairieville, LA 70769 Phone: 225-744-4554

Louisiana Ground Water Association Scholarship Application

February 28th of each year is the final day scholarship applications will be accepted.

All items required by this application must be completed as stipulated, incomplete applications may be eliminated from consideration.

The Louisiana Ground Water Association (LGWA) will award up to two scholarships to qualified applicants.

To be considered, you must be an immediate family member of an LGWA member, or an LGWA member's employee. Applicants must be high school seniors intending to start, or be currently enrolled in a two- or four-year college program, or attending an independent water well drilling school. Studies should include groundwater science, drilling, ground source heating / cooling, dewatering, or related courses.

Completed applications must be accompanied by an official copy of the student's high school or college transcript, class rank, and SAT / ACT scores.

Recipients will be required to maintain a 2.0 grade point average. The fall semester scholarship will be awarded $750 once the association receives a copy of the recipient's fall semester transcripts. An additional $750 will be awarded for the spring semester once a copy of the spring semester transcripts are received.

Student Name _____

LGWA Member Name _____

Student's Relationship to LGWA Member _____

Address _____

City _____ State _____ Zip _____

Phone _____ Date of Birth _____

Planned Graduation Date (High School) _____ (College) _____

College Major (if Declared) _____

LGWA Member Company Name _____

Company Address _____

City _____ State _____ Zip _____

Phone _____

Name of High School / College _____

School Address _____

City _____ State _____ Zip _____

In addition to this application, please include (attached on a separate sheet):

- List all high school honors and awards.
- List all extracurricular activities.
- Describe an event in your life that has made you the person you are today and how it has affected your goals.

ALL ITEMS ABOVE MUST BE SUBMITTED.

Signature of Applicant _____ Date _____

Signature of Parent _____ Date _____

Please return the application and all additional items to:
Joel Walton, PO Box 202, Prairieville, LA 70769-0202

Emergency Declaration for Calcasieu Parish Salt Cavern Operation

Adapted from Information by the Louisiana Department of Natural Resources

The offices of Louisiana Governor John Bel Edwards and Louisiana Commissioner of Conservation Monique M. Edwards (no familial relation) announced emergency declarations were made in response to concerns about the future stability of a salt cavern on the western side of the Sulphur Mines Salt Dome in Calcasieu Parish. While no imminent signs of collapse or major surface impact have manifested, Governor Edwards and Commissioner Edwards are exercising emergency powers to expedite efforts to bring in experts and resources to understand both what is happening deep underground now, and what it might mean for future stability of caverns in the area.

"Our Office of Conservation scientists and inspectors are telling us they are seeing significant early warning signs of a potential subsurface problem on the Sulphur Mines Salt Dome. I want them to have access to every tool available to best understand what is going on in and around these caverns and map out the best response to ensure protection of our people and the environment," Governor Edwards said.

The governor issued Executive Order 160, authorizing the director of the Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) to take any actions which are appropriate and authorized by law in response to the emergency declaration, and directing all state agencies to cooperate as needed.

The Office of Conservation's (OOC's) primary concern is focused on the brine cavern known as PPG-7, on the west side of the salt dome, operated by Westlake US 2 LLC. The core issue is the PPG-7 cavern is unable to maintain a stable pressure without constant pumping of salt water into it. OOC staff have documented a number of sites over the central and western areas of the salt dome where natural gas is bubbling up to the surface in water bodies and near wellheads. In addition, at least one oil seep has been detected and initial subsidence monitoring of the area revealed a potential accelerating trend of downward movement. The nearby PPG-6 cavern, also operated by Westlake, is also being closely monitored due to its proximity to PPG-7.

"Nothing we are seeing out there indicates we are past the point of no return on the structural integrity of these caverns yet. I am hopeful our established requirements for monitoring and reporting by cavern operators are giving us time to apply the best science available to understand what is developing underground and mitigate future impacts," Commissioner Edwards said.

Commissioner Edwards said that while many of the issues her staff has investigated could be considered notable but routine problems individually for salt caverns as old as these, the confluence of gas seepage and pressure issues in the PPG-7 cavern were compounded by the recently detected apparent acceleration in subsidence, spurring the decision to declare an emergency.

OOC's Injection and Mining Division is currently overseeing the response, coordinating as necessary with the GOHSEP, Louisiana Oil Spill Coordinators Office, state Department of Environmental Quality, state Department of Health, and the U.S. Environmental Protection Agency Region 6 office.

The two caverns of concern, PPG-6 and PPG-7, were originally drilled as brine mining wells to supply salt water for petrochemical processes in the mid-1950s, decades prior to the establishment of the state's Underground Injection Control (UIC) program under the OOC. In 1979, the U.S. Department of Energy took over the caverns for Strategic Petroleum Reserve (SPR) oil storage, using the caverns as part of the SPR until the mid-1990s when they were transferred back to a private company, PPG Industries. PPG was the forerunner of the company now known as Westlake Chemical. Brine mining was reported as having ended for both PPG-6 and PPG-7 by 2014, after which both caverns have remained in inactive status.

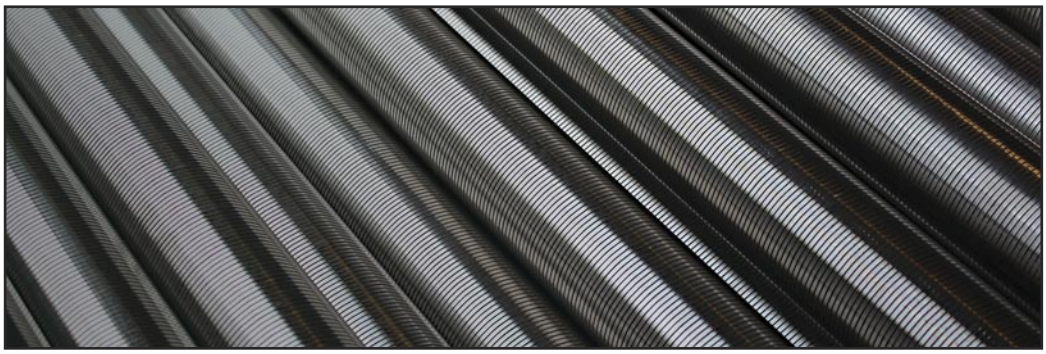
Ongoing monitoring required by OOC regulations detected a pressure anomaly in December 2021 in caverns on Sulphur Mines Salt Dome and follow-up work indicated a focus on PPG-6 and PPG-7, particularly PPG-7, was warranted. Continuing investigation over the course of 2022 turned up issues with PPG-7's ability to hold pressure and the cavern failed a Mechanical Integrity Test (MIT) in 2022 after having passed a similar MIT in 2021. As observations of PPG-7's inability to hold pressure on its own continued, Westlake began pumping brine into the cavern to maintain a minimum pressure. Through late 2022 and 2023, operators and OOC staff observed natural gas bubbling spots and an oil seepage over and around the dome, which in combination with what was seen in subsidence monitoring, led to OOC Governor Edwards' emergency declarations.

"At this point, we are monitoring internal pressure of these caverns and other caverns across the salt dome, seismic activity in the area, subsidence above the salt dome, the extent of natural gas bubbling, and potential impacts to nearby groundwater," Commissioner Edwards explained. "Next steps include bringing in additional expertise to better understand the potential for structural failure, the impacts of that, and what we can do to mitigate or minimize threats to people and the environment."

Longer Well Screens are Not Always Better

Some well owners want to maximize the amount of water they can produce from a well. It seems logical a longer screened interval (or open borehole in rock-finished wells) would produce more water, but there are other potential issues with wells having long screens which need to be considered.

Longer screens in wells that have multiple separate water-bearing zones can increase the specific yield (gallons per minute per foot of drawdown). If the aquifer is generally one thick, fairly uniform continuous unit, a longer screen will not significantly yield more water. The short answer reason is that when the water is drawn down in a well, vertical leakage will occur in a large area and extend a long way away from the borehole. Water in the aquifer will seep downward into this "cone" and flow directly to the well. Multiple clay layers will hinder the vertical flow.



Other problems may occur in wells where the water level is pumped below the top of the screen or into the open hole. When the water level is lowered into the screen or below the casing, the "cascading" of the water allows air to mix with the water so it becomes aerated, creating favorable conditions to grow aerobic forms of bacteria and generate chemical reactions that form precipitates (iron, oxides, calcium carbonate, etc.) These chemical and biological reactions will actually reduce the well yield, possibly requiring well rehabilitation and/or well abandonment. To help avoid these issues, consider screening only the lower section of the water-producing zone.

Also, it is always a good idea to establish the specific yield of the well, which is conducted by measuring the well yield in gallons per minute (gpm) and divide by the water level drawdown (in feet).

For instance, if a well yields 20 gallons per minute with 10 feet of drawdown, the yield is 20 gpm/10 feet = 2 gpm/ft of drawdown. Annual measurements of the water level and yield can indicate if a well is maintaining its efficiency, or if it may need rehabilitation.

DON'T FORGET TO BRING YOUR RAFFLE TICKETS TO THE LGWA CONVENTION JANUARY 9-10, 2024*!

GRAND PRIZE DRAWING:

GoSun CHILLEST Electric Cooler + 60" Solar Table

All proceeds will be used to support the Louisiana Ground Water Association.

Drawing will be held: Wednesday January 10th, 2024 at 1:00pm CT at the LGWA Convention

lgwa.org

worldwidedrillingresource.com

baroididp.com

*IF YOU ARE UNABLE TO ATTEND THE CONVENTION, PLEASE MAKE SURE TICKETS ARE MAILED NO LATER THAN JANUARY 2, 2024 TO:
JOEL WALTON
LOUISIANA GROUND WATER ASSOCIATION
PO BOX 202
PRAIRIEVILLE, LA 70769-0202

Navy Veteran Joins DSC Dredge Team

Adapted from Information by DSC Dredge

Earlier this year, family-owned and Louisiana-based dredge manufacturer DSC Dredge welcomed Navy Veteran Keith Casey as its new project manager.

Keith Casey.

With more than 20 years of experience in construction and project management, Keith brings a wealth of expertise as he directly manages all construction projects from its early development through project completion. He will also be responsible for overall cost, schedule, and budget evaluation, as well as all construction coordination.

Recently retired after serving 22 years with the United States Navy, Keith said "I am very excited about working back home in Louisiana with Louisiana folks. I am hoping to leverage my project management experience and help guide DSC's processes into a seamless operation."

Josh Louviere, vice president of operations for DSC Dredge, warmly welcomed Keith, stating he was honored to have him join the team. "With his extensive experience and proven track record, I am confident in his ability to lead successful projects and drive operational excellence."

Commenting on the new addition, Bob Wetta, president and CEO of DSC Dredge said, "As DSC continues to lead the way, both concept- and technology-wise, purposeful team expansion is imperative. We welcome Casey to the team and strongly believe that his extensive background will undoubtedly strengthen and align with DSC's goals, values, and culture allowing us to continue to deliver customized dredging solutions that meet our clients' needs."

DSC Dredge is excited to have Keith Casey onboard and eagerly anticipates the positive impact he will bring to the organization. With his skills and expertise, DSC Dredge is poised for continued growth and success.

Attention Students - Scholarships Available!

Thanks to the support of Benson Pump and other Louisiana Ground Water Association (LGWA) supporters, the association will be awarding up to two scholarships for LGWA family members and employees.

Applicants must be high school seniors intending to enroll in, or currently enrolled in, a two- or four-year college program, or attending an independent water well drilling school. Fields of study should include groundwater science, drilling, ground source heating / cooling, dewatering, or related courses.

Completed applications must be accompanied by an official copy of the student's high school or college transcript, class rank, and SAT / ACT scores. All items required by the application must be completed for an application to be considered.

Recipients will be required to maintain a 2.0 grade point average. The funds will be awarded for the fall semester once the association receives a copy of the recipient's fall semester transcripts. Additional funds will be sent for spring semester once a copy of the spring transcripts are submitted.

Look for the Scholarship Application on Page 7.

For more information, contact Joel Walton at 225-744-4554, or e-mail jwalton022@aol.com.

The deadline to apply is February 28, 2024.

WPS

We Provide Solutions

$$\frac{GPM \times PSI}{1713 \times EFFICIENCY\ OF\ PUMP}$$

1-800-444-7096

WWW.WPSPUMP.COM