Texas On-Site Wastewater
32nd Annual Conference

MARCH 17-19, 2025

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TOWA 2025 ROE-D-HOE CONTEST!

EXHIBIT HALL BY THE OVERHEAD DOOR

SIGN UP AT CONTEST AREA. PROCEEDS SUPPORT THE TOWA SCHOLARSHIP FUNDS!

Open to compete Tuesday 9am - 5:30pm.
Compete during each break, lunch or 5pm-5:30pm reception.
FINALS round will be held 5:45pm-6:30pm.

Champion - Buckle, Bragging rights & cash prizes
2nd & 3rd - Trophies and cash prizes

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TOWA 2025
PRESIDENT'S WELCOME MESSAGE

Welcome to the latest edition of the Texas On-Site Wastewater Association (TOWA) newsletter! As we navigate the evolving landscape of on-site wastewater management in the State of Texas, our commitment to innovation, compliance, and education is constant and unwavering. TOWA has made great strides on education for Installers, DR's, RS's, Maintenance Providers, their technicians and homeowners. This is the Golden Age for the on-site wastewater industry but we all must do our part to protect the people and environment of the State of Texas to ensure clean water for the future generations.

Non-Standard Systems rules have been in Chapter 285 regulations for over two decades that are now being enforced. This is much bigger than we previously thought, with thousands of Non-Standard systems having been installed in Texas for the past 35 plus years that are now having performance issues due to improper design. In the past most of the designs were based on gallons per day (flow) only, not on mass (BOD) and flow. Especially with residential NSF ATU's, proper calculations for high strength wastewater influent and flow equalization is critical for adequate performance. Flow equalization needs to mimic the NSF daily dosing scheduled protocols and is critical to the design of Non-Standard Systems. These two major aspects (Flow Equalization and BOD loading rates) are the most important design criteria a designer must consider. Chapter 285 Rules for Non-Standard systems require an additional review by TCEQ to ensure the Non-Standard System not only meets minimum regulations but also meets the real-world needs of each commercial facility. All Non-Standard Systems should be forwarded to TCEQ for additional review by the Executive Director unless the DR performing the initial review has authorization from TCEQ to review that specific design of a Non-Standard System.

Get involved with TOWA and your local TOWA Chapters. If you are interested in starting up a TOWA Chapter, please reach out to a TOWA Board member.

When you come to the 2025 TOWA show please take a moment and thank the vendors and sponsors for attending the show, which keeps your cost to attend the show affordable. If it was not for the vendors and sponsors, we could not put on a show like this for all of you. I want to thank the entire TOWA Board, Krista Richter and her staff for everything in putting on this great show.

Sincerely,

Steven C. Murdock

Steven C. Murdock

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The TOWA Board of Directors donates their time and financial support to advance the onsite wastewater industry. Thank you TOWA Board!

Thank you!

2025 CONFERENCE COMMITTEE

Bruce Lesikar, PhD
Anish Jantrania, PhD
Randi Weber
Brian Wakefield
Steve Murdock
Jim Prochaska

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Safety Lid Top and Bottom View

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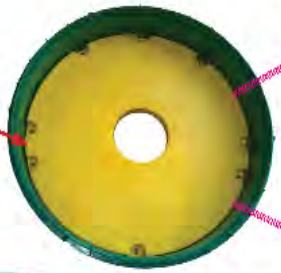
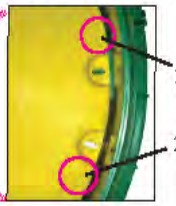
24"-RISL-FLAT-SL is made with 2 sets of screw holes for proper alignment in 6" tall and 12" tall risers.



(close-up view)



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20-RISL-FLAT-SL in 20-RIS-GREEN

24-RISL-FLAT-SL in 24x12-RIS-GREEN

TOWA 2025 CONFERENCE CE PROCESS

TOWA is an approved continuing education provider by TCEQ (**TCEQ Provider 0408**).
The conference is Course Code **#1316** and offers up to **24.5 CE contact hours**.

CE hours for Pre - Conference Courses are listed below.

- Attendees MUST wear their badge (with the RFID Code on the back) at all times.
- Attendance is tracked by RFID monitoring in each session room.
- You are welcome to be anywhere (Classrooms or Exhibit Hall) however you will only get CE Hours for time **spent in classrooms**. *Attendees will get* **.5 credit for Exhibit Hall attendance.**
- You will be scanned in and out of each lecture hall and total time will be calculated automatically.
- You must walk in and out through the towers. It's just that simple, nothing to sign.
- The total hours will be calculated automatically and a certificate with an evaluation will be emailed to you within a week.
- If you DO NOT have access to email, please advise the TOWA registration desk and we will fax or mail your copy.
- Total CE hours will be uploaded to the TCEQ following the conference and a CORRECT license number is required.
- You can verify hours uploaded under your license on the TCEQ website.
- For any questions, see the TOWA Conference Desk, or email txowaconference@gmail.com after the show.

TCEQ requires accountable attendance tracking for ce credit. Thank you for your cooperation and support of advancing education in the industry. Any unethical or fraudulent representation of attendance is subject revocation of your TCEQ license.

ADDITIONAL CEU INFORMATION

- **Pre-Conference: "Fast Track High Strength Wastewater Systems"** TCEQ Approved for (8hrs) OSSF CE's - 9:00am - 6:00pm 3/17/25
- **Pre-Conference: "Design for OSSF: Drip Dispersal Systems"** TCEQ Approved for (8hrs) OSSF CE's - 8:30am - 5:30pm 3/17/25
- **Pre-Conference: "Advanced Maintenance Provider"** TCEQ Approved for (16hrs) OSSF CE's - 9:00am - 6:00pm 3/17/25 and 3/18/25
- **FULL Conference:** TCEQ Approved for (11hrs) OSSF CE's 8:00am - 5:00pm (6hrs) 3/18/25 and 7:00am - 12:30pm (5hrs) 3/19/25
- **Post-Conference: Water Reuse: Moody Garden Water Reuse Systems& Tour** TCEQ Approved for (3.5hrs) OSSF CE's - 12:30pm - 4:00pm 3/19/24

REGISTRATION HOURS

March 17th	4PM - 6PM
*Exhibitor Registration	12PM-4PM
March 18th	7AM - 6PM
March 19th	7AM - End

DESIGN FOR OSSF: DRIP DISPERSAL SYSTEMS

Monday, March 17 from 8:30AM - 5:30PM

Drip distribution systems effectively distribute effluent into the soil. The shallow placement of the drip tubing improves water treatment and reuse. Because of the ability to place drip tubing relatively high in the soil profile, drip distribution is the best method for distribution on sites with limited existing soil over restrictive conditions such as groundwater and fractured or fissured rock. Additionally, pressurized effluent distribution equally distributes the effluent and the associated mass loading of organic and nutrient concentrations to the soil biozone for assimilation and plant utilization. Drip tubing is placed directly into the soil which requires matching of emitter discharge rate and soil acceptance rate. Drip dosing cycles consist of four stages: pressurization, pressurized, depressurization and resting. Uniform effluent distribution occurs during the pressurization stage and that stage should be maximized to facilitate equal effluent distribution. Supply and return manifold configurations are optimized relative to site conditions to limit effluent drain down during depressurization. Drip laterals are placed level and along site contour lines to limit the risk of effluent redistribution to the lowest field elevations during the dosing cycle depressurization stage.

Drip systems contain critical parts including pumps, filtration, supply and return manifolds, drip laterals, air relief and field flushing. The pump sizing is based upon the flow rate and total dynamic head requirement for dosing and flushing the drip field zones. Filtration separates suspended particles from the liquid entering the drip field. Filter cleaning options range from manual clean to automated operations. Supply and return manifolds deliver and collect liquid from drip laterals. Manifolds can affect water distribution in the field and should be configured to support uniform field pressurization and limit water movement to the lowest lateral during field depressurization. Drip laterals are arranged to uniformly apply liquid to the soil treatment area. Lateral length is limited by available pump pressure to pressurize and flush the zones. The number of lateral connections in a zone is limited by the pumps capacity to meet both dosing and flushing requirements. Air relief/vacuum breakers at the high point of the supply and return manifolds facilitates rapid pressurization and air entry during field depressurization. Field flushing is a critical to long-term drip field operation. Field flushing operations can be continuous or intermittent. Continuous flushing supports constant circulation of liquid through the drip field and return liquid to the pump tank. Intermittent flushing is provided by manual or automated operations. These design features are discussed and recommendation for effective decision making are presented.

Sample drip designs are presented and discussed. Critical design considerations are identified and discussed to support participant knowledge gain and establish skills for effective implementation of the drip technology. Common design errors are discussed to raise awareness and encourage following of industry accepted practices.

Drip installation according to accepted industry practices is critical to establishing a system with the ability to be operated and maintained as a long-term effective dispersal system. The filtration system requires accessibility for routine cleaning and maintenance. Data recording during system start-up establishes baseline information for assessing operational parameters with time. Proactive maintenance can be performed through identification of operational parameter trends and deviations from acceptable operating conditions. Troubleshooting system operation is discussed relative to identification of operational conditions outside of normal accepted parameter ranges.

Instructors:

Colin Bishop: is the Chief Executive Officer of Anua – a sustainable technology manufacturer that provides on-site wastewater and municipal odor control products that are integrated into the One Place vision of people, planet, and solutions. He is a Registered Sanitarian in Texas and other states and a Registered Environmental Health Specialist through the National Environmental Health Association. He graduated from the University of Texas Rio Grande Valley with a Master of Science in Kinesiology. He graduated from Brigham Young University with a Bachelor of Science in Zoology. Colin is a scientist, inventor, people connector, spiritual explorer, tech guru, outdoor enthusiast, and runner.

Jim Prochaska, P.E.: see bio under Speaker & Session Overviews

Bruce J. Lesikar, P.E., Ph.D.: see bio under Speaker & Session Overviews

Paul Small: Technical Support and Training Specialist is the lead for control panel system operations and system integration for Geoflow. Paul has 30 years of experience in the alternative onsite wastewater industry as an installer, wastewater operator, and as an instructor. He is also a former Virginia Onsite Wastewater Association Board Member (VOWRA) and past President of the association. During his career in the onsite industry, Paul has conducted training sessions at Virginia CPE events and has been a Virginia DPOR subject matter expert for the Virginia Master Alternative Installer & Master Onsite Operator examinations (WOOSOP Board), as well as a presenter at the VA-Tech Short School Operators course. Paul is a Buckingham County Virginia resident.

FAST TRACK HIGH STRENGTH

Monday, March 17 from 9AM - 6PM

Since 2018, Texas A&M OSSF team has been offering a two-day pre-conference program titled "Analyzing Wastewater Systems for High Strength and Hydraulic Loading" that offered 16 Continuing Education Units (CEUs). This year, the team plans to offer a condensed version of the program focusing on five topic areas: (1) High-Strength Wastewater Characteristics in terms of determining Quality and Quantity, (2) Calculation of mass loading, oxygen demand, aeration and tank volume for treating high-strength wastewater, (3) Examples of various treatment-trains available for high-strength wastewater treatment, and (4) Operation, Maintenance, and Failure Analysis examples, and (5) Microscopic Evaluation of Treatment Systems. Overall objective of the day-long program is to reinforce the basics of high-strength wastewater systems including design, operation, and maintenance concepts. Final exam with ten multiple choice questions will be given at the end to determine the knowledge gained by the participants. Active participation throughout the program will be required to obtained 7 CEUs.

Instructors:
Dr. Anish Jantrania, P.E., is a Professor/Extension Specialist in the Biological & Agricultural Engineering Department at Texas A&M University, TX: see bio under Speaker & Session Overviews

Dr. June Wolfe III - Texas A&M AgriLife Research, Temple, TX: see bio under Speaker & Session Overviews

ADVANCED MAINTENANCE PROVIDER

Monday, March 17 & Tuesday, March 18 from 9AM - 6PM each day

To take the AMP Course and Maintenance Provider License exam, an individual must hold one of the following licenses: Installer II, Class C or higher Wastewater Treatment Plant Operator OR have three (3) years of experience as a registered maintenance Technician. Please reference all requirements for a Maintenance Provider License on the TCEQ website to determine if you are eligible. The MP exam is available in Spanish. http://www.tceq.texas.gov

Instructor: **Ron Moomaw**

POST CONFERENCE COURSE: WATER REUSE: MOODY GARDEN WATER REUSE SYSTEMS

Wednesday, March 19 from 12:30PM - 4PM

Water is a valuable resource. Water reuse is a component of our long-term water management strategies. Residential and commercial water reuse is described in our reclaimed water guidance in 30 TAC Chapter 210. Reuse water is available for landscape irrigation, agriculture production, and indoor toilet/urinal flushing. Technologies are available to provide water treatment to a quality to comply with the requirements for using the water to meet these needs.

Water reuse treatment trains need to be robust and reliable to limit the risk of performance excursions that could potentially result in a risk to public health. Water reuse systems should be designed in a similar approach design of drinking water treatment trains which employ a multi-barrier approach to contaminant removal. Treatment processes are arranged in a sequential manner to address contaminant removal. Each treatment process targets specific contaminants and prepares the water for further treatment in the next process. All treatment processes have limitations on contaminant removal and interfering contaminants can reduce treatment effectiveness. The treatment train processes are arranged to remove interfering contaminants before liquid enters a process requiring the contaminants removal. The designer must arrange the treatment train processes correctly and effectively to maximize each processes performance to achieve a final effluent meeting the target water quality.

Treatment train effectiveness is evaluated using an approach described as log reduction values for contaminants. Public health is a primary concern when developing a water reuse system. Removal of pathogenic organisms is the goal for the final water quality. Treatment processes are assigned an indicative log reduction credit for removing these pathogenic organisms. A designer specifies a treatment train to effectively treat the liquid to the required water quality. Redundancy of critical processes such as disinfection components is typically included to ensure the liquid is exposed to a functioning system. The indicative log reduction credits are summed for the treatment processes included in the treatment train to evaluate the overall effectiveness and robustness of the proposed system. This approach demonstrates the treatment train can achieve the desired water quality. Water testing is not effective in protecting public health because detection of the target organisms means the public is exposed. Therefore, process monitoring through recording of operational data is the best approach to ensuring water treatment is achieved. The implementation of a remote continuous process monitoring approach can assist in predicting a component malfunction thus facilitating proactive maintenance. A component is maintained or replaced before an excursion from the target effluent quality occurs. The technologies currently available facilitate implementation water reuse systems while protecting public health.

Instructor:
Bruce J. Lesikar, P.E., Ph.D.: see bio under Speaker & Session Overviews

To receive full credit for the Pre-Conference Courses, attendees must sign in and receive a certificate from the instructor.

Courses will require sign in sheets for attendance verification for CE hours. All Pre-Conference Course attendees INCLUDE access to Exhibit Hall, lunch AND access to the general sessions for additional CE hours. You MUST WEAR YOUR BADGE and be sure to walk in through the scan towers in General Session Room.

TOWA 2025 CONFERENCE SCHEDULE

2025 TOWA Annual Conference - OSSF is Bigger in Texas! *Moody Gardens Hotel, Galveston, Tx*		
March 17, 2025 - Monday (Pre-Conference)		
	Pre-Conference Events	
7:30 - 9:00	**Pre-conference Registration opens at 7:30 AM**	
9:00 - 6:00	Pre-conference Event- One Day Only "**Fast Track High Strength Wastewater**" Class - 8 CEU	
8:30 - 5:30	Pre-conference Event- One Day Only **"Design for OSSF: Drip Dispersal Systems"**- 8 CEU	
9:00 - 6:00	Pre-conference Event Day 1 of 2 "**Advanced Maintenance Provider**" Class - 16 CEU (2 days)	
4:00 - 6:00	**Conference Attendee & Exhibitor Registration opens**	
	March 18, 2025 - Tuesday	
7:00 - 7:45	**Breakfast - Exhibit Hall**	
	Main Session - (6 CEU)	
7:45 - 8:00	**Opening Introductions - Randy Chelette**	
8:00 - 9:00	**Keynote Session: Septic Tank Sizing - Bigger is Better** - Sara Heger, Ph.D.	
9:00 - 10:00	**Exhibit Hall Opening & ROE-D-HOE Contest** **Hall Open from 9:00AM until 6:00PM Day 2 of 2 - AMP Class 9:00AM to 6:00PM**	
	Industry Direction Sessions - Floral Hall(Upstairs)	**Design/Regulatory Sessions - Hall A**
10:00 - 11:00	**Soil and Site Evaluation** - Bob Harbuck, R.S. & Jacob Young, R.S.	**TCEQ Update: OSSF Program** - Joseph Hopkins, P.G.
11:00 - 12:00	**Troubleshooting Pumping Systems** - Roxanne Groover	**Hydraulic and Organic Loading Rates – Designing Soil Dispersal Fields** - Bruce Lesikar, Ph.D., P.E.
12:00 - 1:15	**Luncheon Exhibit Hall & ROE-D-HOE Contest**	
During Lunch	**TOWA Annual Meeting & NOWRA Address** - Sara Heger, Ph.D.- Exhibit Hall	
1:15 - 2:15	**Flexibility and Reliability Considerations for Systems Serving Difficult Sites** - Ben Kele	**Designing OSSFs with Proprietary Aerobic Treatment Units Tested to NSF Standards 40, 245 and 350, Part 1** - John Blount, P.E.
2:15 - 3:15	**Selling YOUR Value As A Maintenance Provider Using Operational Data** - Bruce Lesikar, Ph.D., P.E.	**Designing OSSFs with Proprietary Aerobic Treatment Units Tested to NSF Standards 40, 245 and 350, Part 2** - John Blount, P.E.
3:15 - 4:00	**Exhibit Hall Break & ROE-D-HOE Contest**	
4:00 - 5:00	**Lessons Learning from Australia's Decentralized Wastewater Systems** - Sara Heger, Ph.D. & Ben Kele	**Designing Drip Irrigation Fields** - Jim Prochaska, P.E.
5:00 - 6:30	**Exhibit Hall Mixer & ROE-D-HOE Finals**	
	March 19, 2025 - Wednesday	
7:00 - 8:00	**AA Round Table Breakfast Session - Hall A** Ashli Badders, R.S.,Brandon Couch, R.S.,Kevin Prince, R.S., Tarra Reynolds, R.S., Eric Van Gaasbeek, R.S., Jacob Young, R.S., Moderator-Robert Boyd, P.E **(1 CEU)** **Exhibit Hall Breakfast 7:00AM - 8:00AM**	
	General Sessions - Floral Hall(Upstairs) - (4 CEU)	**Non-Standard Systems Sessions - Hall A (4 CEU)**
8:00 - 9:00	**On-Site Wastewater Treatment System Drainfield Malfunction:Causes,Investigation, Prevention,and Correction** - Dennis Hallahan, P.E.	**Nitrogen Loading From Septic Systems To Groundwater: What Does Science Indicate Is Possible?** - Roxanne Groover
9:00 - 10:00	**RV Park Research Updates** - June Wolfe, Ph.D.	**Nitrogen Loading – System Design Considerations & Land Area Requirements** - Roxanne Groover
10:00 - 10:30	**Exhibit Hall Break - Closes 11am**	
10:30 - 11:30	**Agrilife Research & Research-the-Research Update** - Anish Jantrania, Ph.D. & Gabriele Bonaiti, Ph.D.	***Professional Ethics in OSSF Design & Industry Practice** - John Blount, P.E
11:30 - 12:30	**TCEQ Licensing Update & Rules Revision Discussion** - Renata Kosicki & Donna Cosper, P.E., **Hall A**	
	Post-Conference Tour Course - (3.5 CEU)	
12:30 - 2:00	**Box Lunch for Pre-registered Moody Wastewater Plant Tour Attendees- Room: Floral Hall(Upstairs)** **Water Reuse: Moody Garden Water Reuse Systems** - Bruce Lesikar, Ph.D., P.E.	
2:00 - 4:00	**Moody Wastewater Plant Tour - Shuttle to Plants**	

Subject to change and TCEQ approval. AMP Class- 16 hrs. Full conference with AMP Class, CEU = 21.5;
Main Conference Tues & Wed = 10.5 . * Professional Engineering Ethics, One-hour, CEU Course

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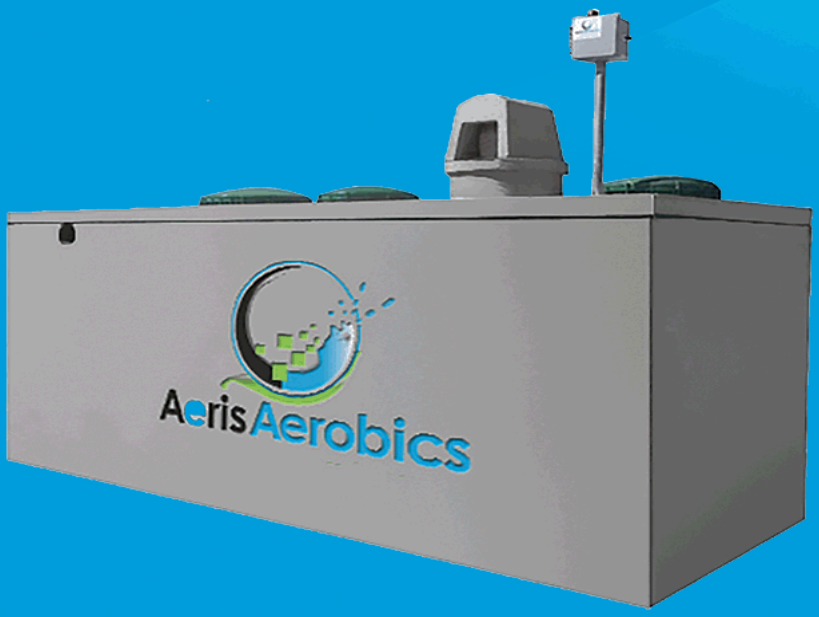

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TOWA 2025
SPEAKER & SESSION OVERVIEWS

Septic Tank Sizing – Bigger is Better - *Keynote Presentation*
The septic tank is the most crucial treatment unit in a small-scale, decentralized wastewater management system, providing approximately 50% of the overall treatment. This presentation will cover settling theory and its relationship to the design and sizing of septic tanks. We will highlight hydraulic retention time in relation to the settling and storage of sludge and scum. Additionally, we will discuss the importance of ensuring watertightness, providing access, and the need for secondary protection in access risers.

Lessons Learning from Australia's Decentralized Wastewater Systems
In November 2023, Dr. Sara Heger embarked on a tour of decentralized systems along the east coast of Australia, specifically near Brisbane and Adelaide, hosted by Ben Kele. The tour highlighted both the similarities and differences in system selection, performance, and management practices. Additionally, Sara and Ben attended a conference on the west coast in Perth, where an international group presented insights on new and emerging challenges related to decentralized systems. During her travels, Sara also discovered a company called Trademutt, which is dedicated to promoting mental health awareness in the trades. Sara and Ben will discuss the resources and tools learned about for caring for oneself, family, and co-workers.

Sara Heger, Ph.D.: Dr. Sara Heger is a researcher and instructor at the University of Minnesota in the Onsite Sewage Treatment Program, where she is faculty in the Water Resources Science program and a scholar for the Center for Transportation Studies. Sara is a past president of the National Onsite Wastewater Recycling Association. For over 25 years, she has been conducting research and providing education and technical assistance to students, homeowners, small communities, onsite professionals, and local government units regarding decentralized onsite wastewater treatment. Sara coordinates the research program at the University of Minnesota and authors monthly articles in the Onsite Installer and Pumper magazine. Dr. Heger serves on the NSF International Committee on Wastewater Treatment Systems and chairs Minnesota's Septic System Advisory Committee. She has a BS in Biosystems & Agricultural Engineering and a MS and PhD in Water Resource Science.

TCEQ Update: OSSF Program
Introduction to PSEAD's Technical Programs Team, who we are, what we do (and some of what we don't do). Overview of nonstandard reviews covering, regulatory requirements, what a nonstandard OSSF is, the nonstandard review process and the expectations.

Joseph L. Hopkins, P.G.: Prior to joining the TCEQ, Joseph was a high school science teacher and coach at a small school in west-central Texas. Joseph began employment with the TCEQ as an Environmental Investigator in the Lubbock Regional Office in 2005. His assigned responsibilities included: On-Site Sewage Facilities, Water Rights, Water Quality, Confined Animal Feeding Operations, Emergency Response, Petroleum Storage Tanks, and Public Water Supply. In 2017, Joseph transferred to the Waco Regional Office where he worked primarily as a Public Water Supply Investigator and served on the Disaster Response Strike Team. Joseph is currently the Team Leader for the Technical Programs Team, which includes the OSSF and Landscape Irrigation programs, of the Program Support and Environmental Assistance Division. Joseph lives in Waco with his wife and four children. Vanessa is a high school guidance counselor. Hayden is working full-time as a teacher's assistant while attending college full-time at Texas Tech. Kamren is a sophomore and stays busy with cross-country, soccer, band, student council, and working at a local ice cream shop. Westen is a freshman and plays football, basketball, track, and soccer. Keslee is in 6th grade and enjoys horses, playing youth volleyball, basketball, and keeping her brothers in line. Joseph spends his time trying to keep up with his kid's activities and sometimes has a chance to enjoy some outdoor activities and volunteer with his local church's youth program.

On-Site Wastewater Treatment System Drainfield Malfunction: Causes, Investigation, Prevention, and Correction
The lifespan of an onsite wastewater treatment system drainfield is influenced by numerous factors, including siting, vertical separation distance, maintenance, wastewater flow volume, septic tank volume, as well as other factors. The presentation will review methodologies to diagnose problem site systems. The intention is to have the presentation serve as a learning tool on the potential causes, how to investigate and once the problem is understood then recommending a proper solution. The presentation will review: Malfunction investigation basics, septic tank investigation, function of the tank, drainfield investigation, and malfunction issues and examples

Dennis Hallahan, P.E.: Dennis has over 30 years of experience with the design and construction of on-site wastewater treatment systems. He has authored dozens of articles for on-site industry magazines and has given numerous presentations nationally on the science and fundamentals of on-site wastewater treatment systems. Dennis also is responsible for product research and testing at universities, test centers and with private consultants. His department develops system sizing charts for national and international approvals and assists customers and field representatives in the planning and review of large commercial decentralized systems. Many of these systems have design flows in excess of one million gallons per day. He received his MS in civil engineering from the University of Connecticut and his BS in civil engineering from the University of Vermont. Dennis is a registered professional engineer in

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Connecticut. He has been with Infiltrator Water Technologies for 19 years and holds the current position as Technical Director. Dennis also holds patents for on-site wastewater products and is a member of the Water Environment Federation and of the National Onsite Wastewater Recycling Association. Dennis has served for several years on the NOWRA Technical Practices (currently serving as chairman) and Educational Committees and is also a member of the Water Environment Federation's Small Communities Committee.

Flexibility and Reliability Considerations for Systems serving Difficult Sites

This presentation will cover what types of difficult sites can be encountered; examining volumes, wastewater generation patterns, water chemistry, soils, site constraints, and interesting clients. Design, construction, and operation & maintenance considerations for challenging sites will be covered. Options for different treatment methods and dispersal techniques will be discussed, with some case studies presented. Trouble-shooting existing installations on difficult sites that have failed will also be covered.

Ben Kele: Ben is an Australian on-site & decentralized wastewater treatment systems specialist. He has completed his Master's degree in Applied Science in on-site wastewater treatment and has high hopes of handing in his PhD thesis on this topic, if he can ever find the time to write it. Ben has patented technologies from his research. He has built a company that focuses on providing on-site wastewater treatment options for difficult sites. He has a passion for working with interesting to treat effluents. He maintains that any splash you don't taste is a good splash.

Selling YOUR value as a maintenance provider using operational data

All OSSF require operation and maintenance to be a long-term wastewater solution. The level of operation and maintenance is directly related to the technology and the loading rate relative to the maximum OSSF hydraulic and organic loading capacity. The owner is responsible for conducting the operation and maintenance for their system. Some owners are interested in performing the operation and maintenance activities associated with their system while others prefer to have a maintenance provider perform the necessary activities. The owner is seeking a service provider that will provide them valuable service. The service desired include conducting operational inspections, performing proactive maintenance, replacing malfunctioning components, identifying component degradation, troubleshooting malfunctions, recognizing indicators of soft malfunctions, and analyzing operation data. These activities are recognized as valuable services. The knowledge, skills and abilities of the service provider are communicated through their ability to perform these services efficiently and effectively. Service providers engaging in business practices identified as dependable, reliable, knowledgeable and ethical increase their value. Service provider conducting reactive maintenance such as "parts changer" have less value due to periods of system malfunctions while parts are replaced. Service providers using telematics to record system operational information have the benefit of accessing data to support troubleshooting activities. The process monitoring capabilities offered through telematics improves their ability to accurately identify the root causes of malfunctions. The development of remote continuous process monitoring is using computational analytics to identify data trends indicating required maintenance activities and excursions from normal operating conditions. The remote continuous process monitoring greatly enhances your value as a service provider because performance of proactive maintenance reduces the disruptions of the owner life. System malfunctions cost the owner to not be able to enjoy their property and reduce your value as a service provider.

Hydraulic and organic loading rates - designing soil dispersal fields

OSSFs are typically designed using hydraulic loading rate factors. The water usage for a facility is estimated based on the size of facility and anticipated activities in the facility. Water conservation programs are being effective in reducing the total water usage in facilities. However, the organic and nitrogen mass loading associated with the waste generating activities remains constant. Therefore, the concentration of contaminants in the liquid are increasing. Advanced treatment and soil dispersal fields are impacted when designs consider only hydraulic loading rates. The mass loading rate to treatment units is the second design factor. In many instances, the mass loading factor controls component sizing. The soil treatment system is affected by the mass loading rates. The soil infiltrative surface is the location for active treatment of organic contaminants in the liquid. As the liquid enters the soil, the soil collects suspended volatile solids for feeding the microbes living in the soil. The bioaccumulation of organic material and biofilm formation on the soil particles develops a restrictive layer at the infiltrative surface typically described as the biomat. The biomat serves the role of restricting liquid movement through the soil and distributing the liquid along the soil trenches. The liquid distribution is critical to soil treatment and contaminant reduction. The active soil treatment layer in the dispersal field is typically referred to as the biozone. The biozone is the aerobic soil providing active treatment of organic material, ammonia, and disease-causing organisms described as pathogens and viruses. The slow migration of the liquid through the soil pores and the active microbial environment can effectively remove contaminants from the wastewater. The critical factor defining treatment is aerobic conditions in the soil dispersal area. Oxygen is critical to controlling the restrictive effect of the biomat and

maintaining aerobic conditions in the biozone. Aerobic conditions are critical to effective treatment. The organic loading rate to the infiltrative surface defines the oxygen demand. Therefore, maintaining a healthy treatment environment is directly related to the organic loading rate to the infiltrative surface of the trench or bed. The soil organic loading rate is discussed to serve as a guide when evaluating the required soil trench area (soil infiltrative surface) to accept the liquid and mass loading from a facility.

Bruce J. Lesikar, P.E., Ph.D.: Bruce holds graduate degrees in Agricultural Engineering from Texas A&M University and University of Illinois. Bruce served in multiple roles during his professional career including: professor, researcher, director of engineering for a water treatment system manufacturer, and technical sales for rental of mobile water treatment systems. He is currently serving as a contract engineer to the Texas Commission on Environmental Quality. Bruce provides support to design reviews, educational material development, and conducts training events. Bruce supports the Texas Onsite Wastewater Association in development and delivery of educational programs. Bruce enjoys developing and delivering educational materials for communicating effective use of our water resources. Wastewater is a resource to meet our water needs and we must effectively utilize the resource. Public health, public safety, environmental health and environmental safety are critical aspects of beneficial use programs. The educational materials are delivered through short courses and meeting presentations.

Designing OSSFs with Proprietary Aerobic Treatment Units Tested to NSF Standards 40, 245 and 350, (Part 1 & 2)

This presentation will discuss the test protocol of Standards 40, 245 and 350 as well as the organic and hydraulic loading associated with the standard. A detailed discussion on appropriate use of certified units when high strength wastewater is encountered, as well as common misconceptions and mistakes when specifying certified treatment units.

Professional Ethics in OSSF Design

The designer has an ethical requirement to protect public health, public safety, environmental health and environmental safety. Protection of our water resources is critical and is supported through environmental health and environmental safety. As a professional designer, the public perceives them as a resource to protect them from liability associated with malfunctioning systems. The professional engineer has a code of ethics that shall be followed when performing their duties. It is the responsibility of the professional engineer to serve their client but also protect the pubic and the environment. Effective wastewater treatment system designs provide wastewater treatment and protect the public. Design safety factors, redundancy of components and owner education can be effective means to improve system reliability. This presentation will explore ethical considerations of Designers, Site Evaluators, Installers, Maintenance Providers, and Regulators in the Onsite Wastewater Industry. Numerous examples will be given of ethical and unethical behavior in each of these categories.

John Blount, P.E.: John is a 1984 graduate of the University of Houston. After college he served as an Army Corps of Engineers officer on both active and reserve duty, achieving the rank of captain while being stationed in the United States, Republic of Germany, and the Republic of Honduras. He has worked in the civil engineering field for thirty-seven years and is a Registered Professional Engineer (WI) (TX) (ME) as well as a LEED Accredited Professional, Certified Flood Plain Manager (CFM) and Envision Sustainability Professional (ENV SP). He was employed by Harris County for over thirty-four years starting as an Inspector and advancing to the position of County Engineer responsible for 766 employees and over a billion-dollar annual infrastructure program. He previously served on the National Sanitation Foundation (NSF) Joint Wastewater Committee and was previously Chairman of the Texas Onsite Wastewater Research Council appointed by the governor. Currently John is principal of Civil Solutions, a Consulting Engineering firm located in Houston.

Basic Soil and Site Evaluation

Jacob and Bob will have a lively discussion on conducting a site evaluation in order to design the best system for a home or business. A site evaluator is often the first on-site professional on the site and must have a good grasp of the state rules, surveys, house plans, basic design criteria, local permitting requirements, local soil conditions, types of systems used in the area, etc. A site evaluator must have good listening and communication skills, take accurate measurements and good notes, and be able to convert that information into the planning materials required by each jurisdiction. Bob and Jacob will discuss gathering pre-site documents, on-site time saving techniques and tips for producing clear drawings and reports.

Bob Harbuck, RS, SE: Bob is a native of East Texas and received his Bachelor of Science Degree from Stephen F. Austin State University. He has been a Registered Professional Sanitarian for 37 years and an OSSF Site Evaluator for 27 years. He, is the owner of Rural Wastewater Systems in Lufkin, Texas. Bob has evaluated sites and designed systems in 26 Texas counties, 3 river authorities, and 3 TCEQ regions during his career. He has also served as a (DR) Designated Representative in Angelina, Trinity and Nacogdoches Counties. Bob and his wife, Mary Ann, have been married for 50 years, have 8 children and currently have 12 grandchildren.

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Jacob Young, RS, DR: Jacob is a native of Livingston, TX. He attended Sam Houston State university where he earned his Bachelors of Science degree in agriculture Business in 2004. Jacob works for the Trinity River Authority on Lake Livingston. He has worked at TRA in the OSSF industry since 2008 starting as a Field Inspector with his Designated Representative license. Jacob obtained his Registered Sanitarian license as well as a Site Evaluators license and was promoted to his current position of Area Administrator over the Permits Department in 2012. Jacob and wife, Alisha have been married for 18 years and have 2 children.

Designing Drip Irrigation Fields

Drip distribution systems effectively distribute effluent into the soil. The shallow placement of the drip tubing improves water treatment and reuse. Drip systems contain critical parts including pumps, filtration, supply and return manifolds, drip laterals, air relief and field flushing. The pump sizing is based upon the flow rate and total dynamic head requirement for dosing and flushing the drip field zones. Filtration separates suspended particles from the liquid entering the drip field. Filter cleaning options range from manual clean to automated operations. Supply and return manifolds deliver and collect liquid from drip laterals. Manifolds can affect water distribution in the field and should be configured to support uniform field pressurization and limit water movement to the lowest lateral during field depressurization. Drip laterals are arranged to uniformly apply liquid to the soil treatment area. Lateral length is limited by available pump pressure to pressurize and flush the zones. The number of lateral connections in a zone is limited by the pumps capacity to meet both dosing and flushing requirements. Air relief/vacuum breakers at the high point of the supply and return manifolds facilitates rapid pressurization and air entry during field depressurization. Field flushing is a critical to long-term drip field operation. Field flushing operations can be continuous or intermittent. Continuous flushing supports constant circulation of liquid through the drip field and return liquid to the pump tank. Intermittent flushing is provided by manual or automated operations. These design features are discussed and recommendation for effective decision making are presented.

Jim Prochaska, P.E.: Jim holds a Bachelor's and Master of Science (Agricultural/Civil Engineering) from Texas A&M University, 1987. Mr. Prochaska began his extensive career in wastewater treatment and effluent reuse. Since that time, he has been responsible for the design and development of projects ranging from 300 gpd to 8 million gpd. His projects have included domestic, municipal and industrial wastewater generators. Since 1994, Mr. Prochaska has devoted the majority of his time towards the development of on-site wastewater treatment and disposal using subsurface drip irrigation. He has worked as a principal designer and reviewer on several of these projects, and has spent even more time training and educating engineers and sanitarians on how to design on-site systems. He has taken this technology to domestic, agricultural and food processing wastewater generators as an environmentally sound means of wastewater treatment and dispersal. Currently he is active throughout the United States in developing the onsite wastewater industry and the use of subsurface drip dispersal methods.

Mr. Prochaska provides leadership and guidance in his principal role as President of JNM Technologies, Inc. In this capacity he along with his staff have developed and refined the most modern and effective methods used for wastewater effluent dispersal using subsurface drip irrigation. Under his leadership, the company has developed an extensive line of equipment including patented filtration processes, system controllers, installation methods and design aides. The equipment and applications range from single family homes to large, non-sewered communities.

Troubleshooting Pumping Systems

Pumping systems provide a means to pressure distribute liquid within the OSSF. Pumping systems contain a pump tank, pump, discharge piping, water level sensors and a control method. Operational parameters recorded in a pumping system include dosing events, pump run time, and alarm events. Special controls features include timer override and override timer sensors. The components of the pumping system require maintenance for continued operation.

A demand dosing system has no limitations on pump run time. The pump will run as long as required to discharge liquid from the tank. Extended run times result from flow restrictions on the suction and discharge side of the pump. A plugged intake screen will not allow liquid to enter the pump. A reduced flow rate from the pump can result from plugged drip filter, drip emitters, sprinkler head filters, sprinkler head orifice, orifices in the low pressure distribution piping.

Timed dosing systems have a defined pump run time. The timer applies electricity during defined periods of time. The timer "on" time is calculated based upon the design flow volume and the flow rate for the discharge components. As the pump delivery rate decreases due to plugging in the distribution system, the pump must run longer. However, the timer restricts the pump run time to the amount of time in the "on" setting. Therefore, a pump tank with a high-water condition in a timed dosing system can indicate the need for maintenance in the distribution components. A timer override float below the alarm float causes a condition where the pump will run for an extended period of time and not allow the high-water alarm to activate and inform the owner that the system needs maintenance.

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Nitrogen loading from septic system to groundwater – What does the science indicate is possible

Nitrogen is a component of wastewater. Nitrogen is introduced from the organic waste and urine as well as nitrogen-based cleaning products. A wastewater stream has an anticipated nitrogen loading based upon the number of people in the facility, typically 0.03 pounds per day. The ammonia nitrogen is converted to nitrate through aerobic treatment in a process called nitrification. A nitrogen reducing treatment system returns the nitrate rich liquid to an anoxic condition for denitrification. Denitrification is the process of converting the nitrate to nitrogen gas for release to the atmosphere. The nitrogen conversion processes consume alkalinity and carbon during the chemical reactions The nitrification process consumes alkalinity at a rate of approximately 7.2 mg as calcium carbonate per milligram of ammonia converted. The nitrifying bacteria utilize the carbonate ions to maintain a suitable pH level for the oxidation of the ammonia to nitrate. The alkalinity is measured in the form of calcium carbonate. A treatment system designed to oxidize the ammonia nitrogen may require supplemental carbonate to completely convert the mass of ammonia present in the waste. Alkalinity is typically added to a treatment system in the form of limestone, lime or soda ash. Microorganism consume carbon during the conversion of nitrate to nitrogen gas. Typically, the nitrified liquid is mixed with the raw wastewater to have an optimum environment for the denitrifying microbes which is rich in carbon and low in dissolved oxygen. A treatment system designed for denitrification may require addition of carbon in the form of methanol or commercial products if sufficient carbon is not available. The nitrification and denitrification treatment processes occur in the treatment systems. Advanced treatment and soil treatment can provide the environment for these chemical reactions to occur. Nitrification can occur in an oxygen rich environment with the presence of carbonate. Denitrification can occur is an oxygen deficient environment with the presence of carbon. The aerobic environment must be followed by an anaerobic environment for the nitrification and denitrification processes to occur.

Nitrogen loading – System design considerations and land area requirements

Nitrogen addition to the environment can result in nutrient loading exceeding acceptable concentration thresholds. These thresholds are related to human health or environmental criteria. A nitrate – nitrogen concentration of 10 mg/L is typically viewed as a groundwater threshold to maintain the water resource a drinking water supply. The acceptable level of nitrogen in surface water or coastal water resources is related to the types of plant and animal species that live and thrive under those conditions. An acceptable nutrient level is established based upon the desired water resource condition for the area. Nutrient loading is based upon the mass of the nutrients in the wastewater. Traditional soil treatment systems relied upon treatment or dispersal of the nutrients. Nutrient dispersal required sufficient land area to essentially dilute the nutrient loading through addition of percolating rain water or groundwater. Minimum lot sizing was utilized as a means to evaluate the land area needed for receiving the dilution water volume for reducing the nutrient loading below acceptable levels. Another approach to limiting the nutrient loading to the environment is the utilization of nutrient reducing advanced treatment systems. These onsite wastewater treatment systems utilize proprietary packaged treatment systems or designer specified processes to achieve the desired level of nutrient reduction. The desired criteria are established for the threshold nutrient level and the designers specify the treatment systems to achieve those levels

Roxanne Groover: has been the Executive Director of the Florida Onsite Wastewater Association (FOWA) since 2006. She wears various hats for FOWA by coordinating and teaching continuing education, outreach to the community regarding onsite wastewater treatment systems, running a not-for-profit association, and staying extremely active in the politics and rulemaking that affect the Industry. Prior to FOWA she worked for Bord na Mona as an Environmental Engineer. She holds an Engineering degree from ODU and belongs to various organizations including ASAE, NAWT, and NOWRA, which assist her in the different aspects of her career.

AA Round Table Breakfast Session

Robert Boyd (Moderator) Jacob Young, Ashli Badders, Brandon Couch, Kevin Prince, Tarra Reynolds, and Eric Van Gaasbeek will have a "round table discussion" of topics addressing current management of OSSF permitting programs. They will be discussing processes that work for their permitting departments. The panelists are planning to discuss approaches to effectively implementation the processes required for managing OSSFs. m.

Ashli Badders: is the Director of Kerr County Environmental Health Department. She has been in her current position for 8 years and has worked for Kerr County 11 ½ years. Her department administers the OSSF Program. She graduated from the University of Texas at San Antonio with a Bachelor of Science, Environmental Science. Ashli holds a Registered Professional Sanitarian, Designated Representative and Site Evaluator licenses. Ashli and her husband, Buddy, have three children and live in Kerrville, Texas. The great outdoors is enjoyed and appreciated by the entire Badders' Family, including hunting, fishing, skiing, and camping/hiking in state and national parks.

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Robert Boyd: obtained a degree in Civil Engineering from Texas A&M University in 1998 and has been a professional engineer since 2003. He has worked as an Assistant County Engineer with Comal County since 2003 and became the County Engineer in March 2024. He obtained his Designated Representative license in 2003 and has supervised the Comal County Environmental Health group since that time. Comal County Environmental Health currently employs 9 Designated Representatives that issue approximately 1,500 OSSF permits per year and investigate approximately 600 Environmental Enforcement cases per year.

Brandon Couch: After more than 13 years in the private sector side of on-site wastewater, Mr. Couch joined Travis County Transportation and Natural Resources as a Designated Representative for the On-site Wastewater Program in 2010. Licensed in Texas as a Registered Sanitarian since 1998, his design experience within the varied geological areas of Central Texas has garnered a unique perspective on treatment and disposal techniques used in this area today. Mr. Couch also has experience with development of products to meet ANSI/NSF Standard 40 and State of Texas requirements including writing technical and training manuals. Since joining Travis County, he has become the team lead for the On-site Wastewater group within Development Services division of the department and helped to guide the department policy and operations.

Kevn Prince: is the Environmental Inspections Manager for the Ellis County Department of Development. Kevin has been with Ellis County for 9 years. He is a 2001 Graduate from Stephen F. Austin State University, Nacogdoches, Texas with a Bachelor of Science, Environmental Science. He was a Designated Representative for the Tarrant Regional Water District from 2006 to 2016. He is a Registered Professional Sanitarian, Designated Representative, and Site Evaluator.

Tarra Reynolds, DR: Originally from New Mexico, Tarra now serves as DR for San Jacinto County. Her family loves to rodeo and loves what Texas has to offer so far.

Eric Van Gaasbeek: is the Chief Environmental Health Specialist and Floodplain Administrator for Hays County, Texas. He has been in his current position for 3 years and has worked for Hays County for 15 ½ years. His department oversees all the development, on-site sewage systems, restaurants, day care facilities, and environmental investigations for the county. Eric is a Designated Representative, Site Evaluator, Registered Sanitarian, and Certified Floodplain Manager. He graduated from Texas State University. Eric currently lives in Kyle, Texas. In his free time (if he's lucky to have some), he loves to fish.

Jacob Young: is a native of Livingston, TX. He attended Sam Houston State university where he earned his Bachelors of Science degree in agriculture Business in 2004. Jacob works for the Trinity River Authority on Lake Livingston. He has worked at TRA in the OSSF industry since 2008 starting as a Field Inspector with his Designated Representative license. Jacob obtained his Registered Sanitarian license as well as a Site Evaluators license and was promoted to his current position of Area Administrator over the Permits Department in 2012. Jacob and wife, Alisha have been married for 18 years and have 2 children.

Texas RV Park Research Updates

As the number of Recreational Vehicle (RV) parks catering to short-term campers, long-term seasonal visitors, and full-time residents has increased and expanded services in recent years, Texas A&M Agrilife Research contracted with the Texas Commission on Environmental Quality to monitor and characterize RV park wastewater streams associated with different PV park amenity arrangements and patron stay-lengths. Between October 2022 and November 2024, a total of twenty RV-park onsite sewage facilities were monitored to produce a publicly available dataset. Twelve systems were monitored for one month using automated composite sampling and 8 were monitored for 3 months using grab sampling. Water usage was recorded using flow meters. Five-day biochemical oxygen demand (BOD5), and total suspended solids (TSS) were measured at influent and/or effluent points. This presentation will describe project goals, methods, and results.

Dr. June Wolfe III: involved in research investigating water resource development, management, and protection. He directs the Water Science Laboratory (WSL) at Texas A&M AgriLife Research's Blackland Research and Extension Center in Temple, Texas where environmental field instrumentation and telemetry are used to monitor hydrological parameters of interest and combined with water quality data to evaluate both aquatic and terrestrial conditions, processes, and effectiveness of agricultural land management practices. He has been a member of the Texas A&M University – On Site Sewage Facility (OSSF) Research Team for more than 10 years and has investigated the performance and improvement of OSSF aerobic treatment units in both real-world field installations and at the TAMU RELLIS Campus OSSF Research Center. Currently he is monitoring Recreational Vehicle (RV) park wastewater systems and collecting data to assist designers and regulators with developing and managing future RV-OSSF systems. Dr. Wolfe is currently serving on the National Sanitation Foundation's Joint Committee on Wastewater Technology.

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Texas A&M Agrilife Research & Research-the-Research Update

Passage of House Bill 2771 in 2017 required the Texas Commission on Environmental Quality (TCEQ) to reinstate the On-Site Sewage Facility (OSSF) research grant program using revenue generated from the $10 permit fee, as originally intended. The Texas On-Site Sewage Facility Grant Program (TOGP) issued its third call for proposals in Fall of 2023, and AgriLife Extension was awarded the entire budget to address research needs for the 2023-2025 grant cycle. This research included three topics and three corresponding awards. Contracts for all three projects were finalized on August 2023 and a QAPP (Quality Assurance Project Plan) signed on January 2024. This presentation will provide an update on work done within Award #2, "Research the Research". Real-world consumers, including industry, do not have a single point source for publicly available on-site wastewater knowledge, data, research, and publications. TCEQ intends to fill this gap by making it available to the public through a publicly accessible website. With this project, AgriLife Extension is collecting relevant data, research, and publications ("the Material") so that TCEQ may put together the website and is also obtaining permission for the use of the Material so that the public will be able to download it. The current database includes 8 sources (Texas A&M University Library, TCEQ, ASABE, NOWRA, Texas Ground Water Commission, National Small Flows Clearinghouse, Decentralized Waste Resources Collaborative, and WEFTEC), over 700 entries, and 40 tentative subjects, touching on industry, business practices, and research. This presentation will provide an update on the work done so far on all three projects, including the collection of material, the creation of a database that could be used by TCEQ when finalizing their website, and the creation of a query tool to access the material.

Dr. Anish Jantrania, P.E: is a Professor/Extension Specialist in the Biological & Agricultural Engineering Department at Texas A&M University, Texas. Dr. Jantrania has over 35 years of experience in wastewater public and private sectors with a focus on On-Site Sewage Facilities (OSSF/septic systems) and decentralized water and wastewater systems. His research and extension interests focus on sustainable infrastructure to ensure the availability of clean water to meet societal demands and ensure safe sanitation protecting both public health and environmental quality. Dr. Jantrania directs the Texas A&M University OSSF Research Center located on the RELLIS Campus in Bryan and leads the Texas A&M OSSF Research Team. He currently heads research projects funded by the TCEQ's Onsite Grant Program and from other agencies.

Dr. Gabriele Bonaiti: is an Extension Program Specialist and has been employed by Texas A&M AgriLife Extension since February 2009. During this time, he has developed and implemented educational programs for water districts focusing on water conservation and efficiency through irrigation scheduling, identification of head and seepage issues in open canals, soil water balance and quality modeling, data management, and use of Geographic Information Systems. He is currently supporting TCEQ's CZARA and TOGP projects by developing and implementing methodologies for building and maintaining an inventory of On-Site Sewage Facility systems along the Texas coastal zone and other Texas watersheds and leading a research project funded by the Texas Commission on Environmental Quality's Onsite Grant Program to create a single point source for publicly available onsite wastewater knowledge, data, research, and publications.

TCEQ Licensing Update

Licensing considerations, policies and processes are discussed. Changes to the processes and procedures are highlighted.

Renata Kosicki: License and Permit Specialist, Occupational Licensing Division, Texas Commission on Environmental Quality. Renata Kosicki's role as a license and permit specialist at TCEQ showcase her commitment to managing and enhancing the on-site sewage facility licensing program. Her dedication reflects her effort to assist the community in understanding and meeting licensing requirements for the industry.

OSSF Rules Revision Update

The rules revision process is underway. The current status of the rule process is discussed. The stakeholder input regarding topics requiring clarification and enhancement along with possible approaches to addressing the comments is presented. A possible timeline for the process is discussed.

Donna Cosper, PE, MSSE: Donna received her bachelor's degree in Aerospace Engineering from the University of Texas-Austin and master's degree in Sustainable Engineering from Villanova University. Donna has put her engineering degree to good use at the Texas Commission on Envi¬ronmental Quality where she has worked since 2009, and before that as a consultant with URS Corporation. Not known for sitting still, during her downtime, Donna enjoys hiking, gardening, playing and teaching music, and hosting performance events. Donna will provide an update on the ongoing OSSF rulemaking project.

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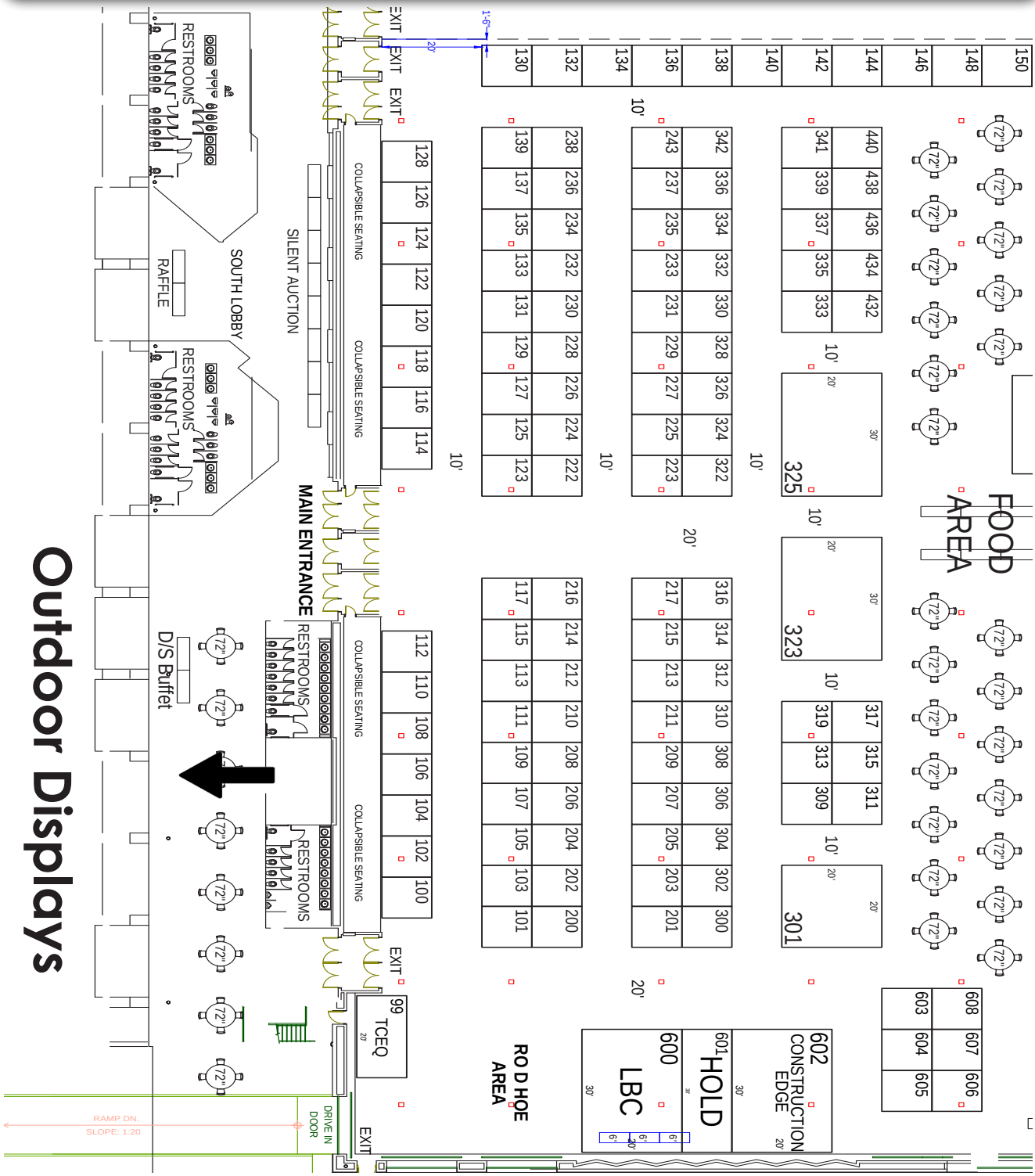
EXHIBIT HALL MAP & INFORMATION

MARCH 17TH
- 1:00PM-6:00PM Exhibitor Setup

MARCH 18TH
- 7:00AM-7:45AM Breakfast
- 9:00AM-6:00PM Exhibit Hall Open
- 9:00AM-10:00AM Grand Opening Break
- 12:00PM-1:15PM Lunch in Exhibit Hall
- 3:15PM-4:00PM Break in Exhibit Hall
- 5:00PM-6:30PM Mixer & Roe-D-Hoe Finals

MARCH 19TH
- 7:00AM-11:00AM Exhibit Hall Open
- 7:00AM-8:00AM Breakfast
- 10:00AM-10:30AM Break in Exhibit Hall
- 11:00AM Exhibit Hall Closes
- 11:30AM-4:00PM Exhibitor Tear Down

** NO blocking aisle or drive in until after 12:00pm*



TOWA 2025 CONFERENCE EXHIBITORS by booth

List is as of 2/21/25.

*Diamond Sponsor
*Breakfast/Break Sponsor
*Signature Sponsor

99 TCEQ
100 Mo-Dad Companies
101 Advanced Wastewater Promotions*
102 Mo-Dad Companies
103 Tuf-Tite, Inc*
104 TDLR
105 Tuf-Tite, Inc*
106 Texas A&M AgriLife Ext.
107 The Turner Company
108 Texas A&M Engineering Extension Service
109 TEHA
110 Hoot Systems, LLC*
111 SI Precast
112 Hoot Systems, LLC*
113 Texas Wastewater
114 Advanced Drainage Systems*
115 Texas Wastewater
116 Crane Pumps & Systems
117 Texas Wastewater
118 Crane Pumps & Systems
120 Crane Pumps & Systems
122 Prinsco
123 Infiltrator Water Technologies*
124 Riovation
125 Infiltrator Water Technologies*
126 Anua
127 Infiltrator Water Technologies*
128 Anua
129 Infiltrator Water Technologies*
130 Del Zotto Products*
131 Imperial Industries, Inc
132 Del Zotto Products*
133 Orenco Water
134 GroShack
135 Orenco Water
136 GroShack
137 Armal, Inc
138 Modular Water Systems
139 SAFE Program LLC
140 Concrete Sealants, Inc.
142 EZ TREAT, INC.
144 Southwestern Controls.com
146 FieldPulse
148 DJC Sales Co
150 K-RAIN MANUFACTURING
152 RDO Equipment Co.*
200 Advanced Wastewater Promotions*
201 Vacuum Tank Sales*
202 Ashland Pump
203 Vacuum Tank Sales*
204 Statewide Geosystems
205 Jet Inc.
206 HIBLOW USA*
207 WWIP Corporation
208 Polylok
209 Norweco, Inc.*
210 Longhorn Inc
211 Septic Panels USA
212 Texas Wastewater
213 Bad Elf
214 Texas Wastewater
215 Capital Septic Supply
216 Texas Wastewater
217 JNM Technologies, Inc.*
222 Infiltrator Water Technologies*
223 Enviro-Flo, Inc.*
224 Infiltrator Water Technologies*
226 Infiltrator Water Technologies*
227 PYLI TECH LLC
228 Infiltrator Water Technologies*
229 Wholesale Septic Supply*
230 Ater Company
231 Wholesale Septic Supply*
232 Pumps of Houston, Inc.
233 FPZ INC
234 Pumps of Houston, Inc.
235 Snyder Industries, Inc
236 Clearstream Wastewater Systems*
237 Septic Products, Inc
238 Clearstream Wastewater Systems*
243 Blue Diamond Pumps
300 Vacuum Tank Sales*
301 Ecological Tanks Inc.*
302 Vacuum Tank Sales*
304 Tyler Products Sales, Inc
306 FujiMAC Air Pumps
308 Wholesale Pump & Supply, Inc.*
309 Austin Pump & Supply Co*
310 Wholesale Pump & Supply, Inc.*
311 Austin Pump & Supply Co*
312 Aquafit Chlorination Systems*
313 South Texas Environmental
314 Aquafit Chlorination Systems*
315 Tank Track, LLC*
316 JNM Technologies, Inc.*
317 Polypure Systems, Inc
319 Polypure Systems, Inc
322 Enviro-Flo, Inc.*
323 American Tank Company*
324 EcoJohn
325 Septilink Inc.*
326 SJE Rhombus
328 Preferred Pump
330 Roth North America
332 National Vacuum Equiptment
333 Pro Flo Aerobic Systems*
334 Fuji Tank of Texas, LLC*
335 BioMicrobics, Inc.
336 Fuji Tank of Texas, LLC*
337 Gicon Pump & Equipment
339 Aeris Aerobics*
341 Aeris Aerobics*
342 Cox Concrete Products
432 Pro Flo Aerobic Systems*
434 Chlorination Concepts
436 RJR Controls LLC*
438 Aeris Aerobics*
440 Aeris Aerobics*
600 LBC Manufacturing
602 Construction Edge Equipment*
603 Inspector Cameras LLC
604 AquaKlear, Inc.
605 Green Sales Group - Hugh M. Cunningham Companies
606 Green Sales Group - Hugh M. Cunningham Companies
607 Omega Liquid Waste Solutions
608 Crust Busters

OUTDOOR

American Tank Company*
Del Zotto Products*
Paramount Wastewater Solutions*
RDO Equipment Co.*
Septilink Inc.*
Tank Track, LLC*
Vacuum Tank Sales*

TOWA 2025 CONFERENCE EXHIBITORS by alpha

List is as of 2/21/25.

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Advanced Wastewater Promotions*	**101/200**
Aeris Aerobics*	**339/341 438/440**
American Tank Company*	**323**
Anua	126/128
Aquafit Chlorination Systems*	**312/314**
AquaKlear, Inc.	604
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Ater Company	230
Austin Pump & Supply Co*	**309/311**
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Blue Diamond Pumps	243
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Chlorination Concepts	434
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Construction Edge Equipment*	**602**
Cox Concrete Products	342
Crane Pumps & Systems	116/118/120
Crust Busters	608
Del Zotto Products*	**130/132**
DJC Sales Co	148
EcoJohn	324
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Enviro-Flo, Inc.*	**223/322**
EZ TREAT, INC.	142
FieldPulse	146
FPZ INC	233
Fuji Tank of Texas, LLC*	**334/336**
FujiMAC Air Pumps	306
Gicon Pump & Equipment	337
Green Sales Group - Hugh M. Cunningham Companies	605/606
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Hoot Systems, LLC*	**110/112**
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Infiltrator Water Technologies*	**123/125/127 129/222/224 226/228**
Inspector Cameras LLC	603
Jet Inc.	205
JNM Technologies, Inc.*	**217/316**
K-RAIN MANUFACTURING	150
LBC Manufacturing	600
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Pro Flo Aerobic Systems*	**333/432**
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RDO Equipment Co.*	**152**
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RJR Controls LLC*	**436**
Roth North America	330
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Septilink Inc.*	**325**
SI Precast	111
SJE Rhombus	326
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Texas A&M Engineering Extension Service	108
Texas Wastewater	113/115/117 212/214/216
The Turner Company	107
Tuf-Tite, Inc*	**103/105**
Tyler Products Sales, Inc	304
Vacuum Tank Sales*	**201/203 300/302**
Wholesale Pump & Supply, Inc.*	**308/310**
Wholesale Septic Supply*	**229/231**
WWIP Corporation	207

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TOWA SCHOLARSHIPS ARE OPEN TO ALL MEMBERS. TAKE ADVANTAGE OF THIS SUPPORT!

Applications for TOWA scholarships available online or at registration desk.

2025 scholarships will be awarded June 2025.

Please join with us in congratulating the winners of TOWA Scholarships!

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Home: Columbus, Texas
Attending: Texas A&M University
TOWA MEMBER: Father James Weishuhn

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VIVIAN CARPENTER

Home: Benbrook, Texas
University Undecided
Mother Aimee Rockhill-Carpenter

General Scholarship - $2500

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Father John Johnson

General Scholarship - $4000

EMILY THREET

Home: Florence, Texas
Attending: Baylor University
Father Jessie Threet

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Silent Auction, 50-50 Drawing and Ro-D-Hoe Contest all support the TOWA Scholarships.

Drawings will be announced. Auction items MUST be claimed by 11:00am Wednesday or forfeited.

DON'T MISS IT!

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Send Chapter updates, Member articles, Pictures, Suggestions, Education info or Product articles to Editor: Ryan Gerlich - ryan.gerlich@infiltratorwater.com.

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TOWA OFFERS TRAINING COURSES: BASIC & ADVANCED MAINTENANCE PROVIDER

BMP Courses and AMP Courses are approved by TCEQ and will earn 16 CEU hours towards all OSSF Licenses. If you only need 8 CEU hours the first day of either course may be taken. Both courses are two days and meet 8am-5pm each day. Space is limited and most classes do sell out. To **register** for these courses, go to www.txowa.org and DOWNLOAD form or register online. The downloadable form can be scanned, faxed or mailed.

Both classes are held in San Marcos, TX.

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2025 BMP CLASS SCHEDULE

- April 14-15, 2025
- May 19-20, 2025
- June 27-28, 2025
- August 22-23, 2025
- September 12-13, 2025
- October 7-8, 2025
- December 5-6, 2025
-

2025 AMP CLASS SCHEDULE

- May 8-9, 2025
- July 8-9, 2025
- November 21-22, 2025

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Texas A&M Team
CELEBRATING 10 YEARS OF SERVICE

Texas A&M Team Celebrating 10 Years of Service to Meet Research and Extension Needs of OSSF Community.

Back in March 2015, TOWA 23rd Annual Conference at Waco was my first time to introduce myself as "new Bruce" which was both nerve breaking and exhilarating experience, mainly because I knew about Bruce Lesikar's contributions to the Texas Onsite Industry and now it was my turn to pick-up the button and do more. Note that Bruce and I started in the Onsite Industry about the same time in the early 1990s, I had never worked in Texas, nor presented at TOWA before 2015. Ryan Gerlich, whom I met for the first time in January 2014 during my interview at TAMU, made me aware of all the work he did with Bruce since he started with TAMU back in 2006. He also introduced me to the TOWA leadership before we presented in Waco, so I knew a little bit about the event. However, the attendance in the morning session of the first day (March 10th, 2015) impressed me. I had never seen so many people at a state or the national level onsite wastewater conferences, and believe me I had been to many conferences, but all outside Texas!

Fast forward 10 years, and here I am no longer known as the "new Bruce" but just Anish. I still enjoy working at TAMU leading the OSSF Extension, Education, and Research programs, and appearing at TOWA every year. It's a good time to recap our achievements related to OSSF work at TAMU and ponder a little on our plans for the next 10 years. Let's start with the TAMU OSSF Center on RELLIS (aka Riverside) Campus in Bryan. If you visited the Center after 2016, you know what it looks like since it was rejuvenated and reopened for use in Fall of 2015, more specifically on September 22nd, 2015. See Photo-1 for the conditions at the Center in Fall of 2014 when Ryan and I started working with the TOWA leadership team to bring the Center back into operation. Scan the QR codes on the Photo-1, first at the bottom left-site and then on the top right-side to watch short video clips related to the rejuvenation of the Center. Photo-2 shows several activities undertaken at our Center since 2016 and Photo-3 shows various groups of students and OSSF community visiting our Center to learn about Water.

Besides rejuvenating and re-opening the Center, our team has been successful in securing grant fundings from various sources including TAMU internal grant funding competitions and from state plus federal agencies that are interested in advancing small/decentralized/onsite water and wastewater systems. Our team has also successfully launched Online/OnDemand education programs for homeowners (non-CEU) and for licensed professionals (CEU) using the tools and services available from the AgriLife e-Learning department. For homeowners using ATU-Spray, we offer a 6-hour non-CEU program and for licensed professionals we now have five online programs offering 4 or 12 CEUs. Visit our website https://ossf.tamu.edu/ to learn more about our education and research activities and to download several PDFs related to basic information on OSSFs and research reports from the first two rounds of TOGP funding. Also, do visit with our team at our booth in the exhibit hall and do plan to attend our presentations at the Conference.

So, what next? We at TAMU see the Onsite field moving towards the "One Water" Concept, that ponders on using all available water sources onsite to BILD Water Systems, where BILD stands for Build Infrastructure Locally for Decentralized Water Systems. Our goal is to make the OSSF community start thinking beyond Sewage to Water. We hope that TOWA will support our goal and join our efforts to achieve it in the next 10 years. Come visit our Booth and attend our presentations during the show. Have a great 32nd TOWA Annual Conference.

Photo-1: The TAMU OSSF Center in Fall of 2014. It was rejuvenated with support from TOWA, TCEQ, and TAMU-OSSF Team and rededicated for operation in Fall of 2015. Scanned the QR code in bottom left corner first an then the QR code in top right corner to watch short videos about the center conditions ten years ago!

Photo-2: A number of tasks undertaken at our Center since the re-opening that is allowing us to do most of our education, extension, and research activities. More tasks are needed to make the Center really beneficial to Texans in the emerging field of On-Site Water Facility (OSWF).

Photo-3: Various groups of students and professionals interested in hands-on experiential learning about Onsite Water and Water Quality have been coming to our Center since the re-opening ten years ago, and more can come to learn about OSWF if TAMU team gets reliable long-term financial support from the private and public sectors.

TOWA CONTACT INFORMATION

TOWA Main Office
PO Box 885
Bridge City, TX 77611
409-718-0645
randy@txowa.org
Randy Chelette, Executive Director

TOWA Conference Office
201 Stillwater, Ste. 8
Wimberley, TX 78676
512-878-9128
TXOWAConference@gmail.com

www.txowa.org

Authorization to Release/Display License Contact Information on TCEQ's Website

As required by SB 510 of the 88th Texas Legislative Session, email addresses, home phone numbers, and home addresses were deemed confidential and exempt from disclosure under Section 552.11765 of the Public Information Act. As a result, this information was withheld from public viewing on TCEQ's website effective September 1, 2024. This has made it difficult for customers and/or employers to reach out to licensees for potential business or employment opportunities. The Public Information Act under Section 552.229 allows for people to consent to the release of information that is excepted from public disclosure if they are 18 years old or older and the consent is in writing. Consenting to making your information available to the public on the TCEQ website is completely voluntary and may allow potential customers and employers to reach you. Please complete the Authorization to Release/Display Confidential License Contact Information form if you wish to have certain information made available on TCEQ's Website. You may update or revoke this authorization at any time by sending an email to licenses@tceq.texas.gov.

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