

THE Onsite Journal

NOWRA
National Onsite Wastewater Recycling Association

Spring 2023



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MESSAGE FROM THE EXECUTIVE DIRECTOR



Welcome to the first edition of the new *Onsite Journal* for 2023. The look and many of the features of the Journal will seem familiar, but we have taken a few months to review the process and work with our advertisers and sponsors to be sure to deliver to you, our members, the best magazine that we can. Because of this review process, we will only produce two issues of the *Onsite Journal* in 2023—a Spring issue and a Fall/Conference Preview issue. We will evaluate the addition of a third issue for 2024.

Inside this issue you will find many of the same recurring features—a technical article, industry news, state affiliate updates, legislative updates, and more. For the Spring issue we will also wrap up the successful 2022 Mega-Conference, preview the 2023 Mega-Conference, and showcase our new Emerging Professionals Committee.

We are excited to be back on the east coast this year for our Onsite Wastewater Mega-Conference in

Hampton, Virginia, in October. The theme for this year's conference is "Clean Water for Healthy Communities." Our opening session will feature discussions on environmental justice and sustainable communities. We anticipate that we will once again have four to five concurrent tracks to give attendees a wide variety of session options to choose from. We will also offer optional field trips on the last day of the conference, and new for this year, we plan to incorporate a thorough pre-conference workshop on Drip Dispersal. Lastly, the Mega-Conference wouldn't be the Mega-Conference without a special social event. We are pleased to be hosting our social event this year at the Virginia Air and Space Center where attendees can network and talk business while touring air and space memorabilia. We certainly hope that you will join us.

2023 has been an amazing year for NOWRA already and I'm anxious to see what comes from the

rest of the year. Our online training is setting attendance records and we are ready to roll out almost two dozen new offerings by the middle of the year. Our affiliates' winter annual conferences have been setting attendance records too as their members are coming back out in droves for topnotch training and networking events. NOWRA had a great turnout and response to our educational sessions and the national Backhoe Roe-D-Hoe championships held at the WWETT Show in February (see page 8). We are looking forward to returning again next year with additional course offerings for the WWETT attendees.

I am also excited to announce that we have had six new companies join our Corporate Membership program for 2023. See page 26 for more information.

This organization is only as strong as its members and volunteers. Much of the great work that you will read about inside of the publication is due to the dedicated committee members and volunteers. As you read about NOWRA's activities, please consider joining a committee or task force. It's a great opportunity to expand your horizons, network with like professionals, feel good about yourself and the industry that we have chosen, and make friends for life.

Thank you for allowing me to serve as the Executive Director of this organization.

— Thomas Groves

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A NOTE FROM THE PRESIDENT



It's hard to believe it has been over 6 months since I started my two-year term as President of NOWRA. Over the 22 years I have been involved with this organization and my state organization in Kansas, I am truly amazed at all the work that gets done by these mostly volunteer organizations. None of us on any committee or board are compensated for the hours we commit to these organizations and yet we have been able to achieve much over the years. It is an honor to be part of such a great group of people and I look forward to seeing us succeed and achieve more in the years to come!

There are two areas that I wanted to share that NOWRA, and our affiliates have excelled at. The first one is education. A lot of effort has gone into the online education that NOWRA provides, and we continue to populate this platform with newly developed, relevant courses as well as state specific courses. Our affiliate state

organizations have also benefited greatly from this platform and receive revenue sharing that in some cases covers their affiliate dues and provide a good source of income to be used in their state as they see fit.

In a recent survey of our membership in which we asked people to explain where they received their training to do their work, most of the members mentioned either their state association educational opportunities or the NOWRA education that is available online and at the conference. We are all succeeding in one of NOWRA's main goals and that is to offer our members quality education!

The second area of excellence for NOWRA is our advocacy efforts in Washington, D.C. for our members. We were influential in creating a decentralized grant program for the repair or replacement of decentralized systems across the country. The work isn't done yet. We are continuing to

follow this effort through to fund that and other grant programs and make sure things are done correctly when the money does come our way.

I want to thank all our members for supporting NOWRA and encourage you to stay involved and active. In that same survey mentioned above many of the respondents reported that they feel that their roles in state and national associations are an important part of what they do...and they are! Every ounce of energy you put towards your state association and NOWRA will come back to you in many ways. We are all in this amazing industry together and there is no better group of people I would want to be with on this journey!

— Allison Blodig

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STATE AFFILIATE NEWS

MINNESOTA ONSITE WASTEWATER ASSOCIATION (MOWA)

The Minnesota Onsite Wastewater Association (MOWA) will be hosting its annual Summer Soils Class near Hastings, MN, on July 19. This fully in-person event brings together professionals to discuss the soils of Minnesota. Each year the class is rotated throughout the state to discuss different challenging soil types onsite wastewater professionals have to work with. In addition, MOWA is bringing together speakers for an additional Hands-On Training Session after the soils class. It is open to all professionals regardless of whether they need soil CEs. The topics will include utility locating, setting float trees, deciphering controls panels, and others. Registration is available on the MOWA website.

MISSOURI SMALLFLOWS ORGANIZATION (MSO)

Missouri Smallflows Organization (MSO) has a partnership with the James River Basin Partnership (JRBP), H2Ozarks, and Watershed Committee of the Ozarks to provide a grant program to low-income households for septic system remediation. The grant program is based in Greene County, Missouri. MSO and JRBP will work with residents to remediate or replace their failing system. Information about the program can be found [here](#). Grant program is available until funding is exhausted or at the end of 2024. Funding is made possible by Greene County ARPA funds.

NEBRASKA ONSITE WASTEWATER ASSOCIATION (NOWWA)

In February, Nebraska had another successful Water Industries Convention with part of the convention focusing on the wastewater industry. We

added some new exhibitors for the wastewater program and sold out our 120 booth spaces at our show. We are working on fall training for our industry in Nebraska, with classes starting in August and going through December.

Our 2024 Nebraska Water Industries Annual Convention will be February 13-15, 2024, in Kearney NE.

NOWWA is also working on a 3 hour workshop as part of an open house on August 24th in Kearney NE. In addition a Warehouse/Trench Safety workshop will be conducted on August 28th in Lexington NE, August 30 in Grand Island, and September 1 in Lincoln.

OHIO ONSITE WASTEWATER ASSOCIATION (OOWA)

Greetings from the Buckeye State! The Ohio Onsite Wastewater Association (OOWA) held its 2023 Annual Conference in January. The association held the first annual ROE-D-HOE competition at the event. A huge congratulations goes out to the winners: 1st William Jones, Fisher Excavating Inc.; 2nd Tom Hiatt, Tom Hiatt's Plumbing and Heating; and 3rd Chaz Kaiser, CDK Structures, Inc.

A huge thanks goes to out Jessi Wood and other members of the Residential Sewage Treatment Company staff for making the trip to Ohio and helping with the ROE-D-HOE Competition! Also, thanks to Company Wrench for providing the mini excavator used in the competition.

The OOWA Board is excited to announce that they will be holding a Service Provider training once again this year. It will take place on November 8-9, 2023, in Columbus. More information will be available soon! We have also finalized dates for the 2024 OOWA Annual Conference. The event will take place on January

10-11, 2024, at Cherry Valley Hotel in Newark.

TEXAS ONSITE WASTEWATER ASSOCIATION (TOWA)

Texas legislators meet every other year, and this year has been a very busy year at the Texas Capital. The TOWA Executive Director and the Legislative Committee have been in Austin almost constantly since our Legislative Day event on January 24 working to keep our companion bills (HB 3128 and SB 1091) moving through the house and senate committees.

The primary purpose of the bill is to create a pumper technician registration and require pumpers to be trained on proper pumping techniques of advanced technology units being installed in Texas. And most importantly the securing of the access ports upon completion of the pumping activities and documenting the OSSF is secured.

The bills also address the potential public health threat of non-permitted OSSF's on 10 acres or more. Eliminating the exemption in Counties with a population of than 40,000 or more.

TOWA is continuing to work with TCEQ staff to improve the onsite wastewater rules in Texas.

WASHINGTON ON-SITE SEWAGE ASSOCIATION (WOSSA)

SURVIVE'ing, SUSTAIN'ing, SUCCEED'ing ... Are you thriving or simply surviving? This was the theme of WOSSA's SEPTIC-CON 2023, a reflection on the unprecedented economic conditions resulting from the "New Normal" of COVID-19 and the difficult challenges it brought for nearly every business. SEPTIC-CON 2023 proved to be WOSSA's best conference to date with more than 800 total people in attendance. We cannot wait to

continued on page 8

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STATE AFFILIATE NEWS (CONTINUED)

see what SEPTIC-CON 2024 brings, and with the addition of the NOWRA Mega-Conference later in the year ... you can bet 2024 will be epic.

Last year's WOSSA Scholarship/Legislative Fundraiser set a new record for donations raising more than \$140,000 during our annual fundraising auction, a record we thought would never be broken. Well, we were wrong, through the generous donations of our exhibitors, board members, members, and other friends of WOSSA, we were able to raise \$151,000 at this year's auction. Absolutely incredible, thank you to all who donated and purchased items ... truly an example of WOSSA Members helping Member Families.

WOSSA continues to partner with organizations throughout the US, teaming up to deliver industry specific safety training for on-site professionals. Through both Federal and State grant funding sources WOSSA is often able to offer this training at no cost to attendees. Last year WOSSA was awarded its 11th safety specific training grant for workers in the on-site industry titled, Workplace Safety and Health Training on Warehousing. Funding for this grant is provided by OSHA's Susan Harwood Training Grant Program.

We are excited to continue to offer in-person on-site training across the

State. WOSSA has been delivering training in numerous regions throughout Washington with an unprecedented level of participation. We have also been working to expand and diversify our training program, adding new instructors and delivering original content. It's great to see on-site professionals dedicating time to expanding their knowledge of the profession.

WISCONSIN ONSITE WATER RECYCLING ASSOCIATION (WOWRA)

The Wisconsin Onsite Water Recycling Association held its Annual Conference earlier this year and had a significant jump in attendance and sponsorship. The winding down of the pandemic may have had an effect, but a new venue and a solid line-up of speakers, including Sara Heger, who represented NOWRA, had a lot to do with the success too.

Wisconsin is working on a new state budget and we are pushing hard for additional plan reviewers for POWTS systems or, more accurately, to have two temporary positions that expire on June 30 to be made permanent. Already, the number of plans submitted this year are up significantly, so the workload is there for the reviewers. Additionally, WOWRA is looking

to extend funding for a POWTS repair/replacement grant program for another two years with modified eligibility requirements to cover more systems and raise income limits that have not been adjusted for more than a decade.

YANKEE ONSITE WASTEWATER ASSOCIATION (YOWA)

The Yankee Onsite Wastewater Association (YOWA) is working on its next educational webinar workshop regarding "Pressure Distribution," in tandem with MASSTC, the Massachusetts Alternative Septic System Test Center. We expect this course to carry two hours of training credits. We are also working on future topics, such as on advanced soil evaluations and nitrogen remediation.

YOWA is pleased to announce two new members to our Board: John McVeigh, and Jim Healy. John has accepted the interim position of Vice President. He is the Health Agent from Millis, MA and has over 30 years in public health both at the State DPH and local levels. Jim Healy is a regional sales manager for Orenco. He will participate on YOWA's Education and Communications committees. We look forward to working with both John and Jim.



2023 National Backhoe Roe-D-Hoe Champion Crowned

The NOWRA National Backhoe Roe-D-Hoe championships were held in Indianapolis at the 2023 WWETT Show. 175 entrants tested their backhoe skills through the obstacle course of basketballs, bowling pins, and golf balls. Congratulations to Jordan Boley from Robins, Iowa, for winning first place. Congratulations also goes out to our other top finishers: 2nd place, Albert Breech, Lucasville, Ohio; 3rd place, Lawrence Triolo, Sandy, Utah; Honorable mention, Dan Shriver, Marianna, PA; Adrin Keiper, Wadsworth, OH; and Mark Shepard, Stilwell, KS.



LEGISLATIVE UPDATE

Fighting for Decentralized Wastewater Funding

By Tracy Hammond, Polsinelli

A few months into the new 118th Congress, we are getting a sense of the political dynamics that will impact NOWRA's primary legislative goals to fund decentralized grant programs at the US Environmental Protection Agency (EPA) and the US Department of Agriculture (USDA).

NOWRA's top legislative priority this year remains to secure funding for EPA's Decentralized Household Wastewater Systems Grant program created in 2021 through the bipartisan Infrastructure Investment and Jobs Act (IIJA). Congress must now appropriate funds for this and thousands of other federal programs each year. NOWRA also continues to urge Congress to increase funding for USDA's Decentralized Water Systems Grant program in the upcoming 2024 Fiscal Year.

After Republicans squeaked out a thin majority in the House of Representatives in last year's midterm election, they have called for significant spending cuts and policy changes in order to support raising the nation's debt ceiling—the amount the federal government can borrow to pay off debts it has already incurred.

House Republican leadership has repeatedly suggested returning spending to levels seen in the 2022 Fiscal Year. This would require cutting over \$100 billion from government programs. This level of funding would be problematic for NOWRA's priorities since it would essentially mean neither decentralized wastewater program at the EPA or USDA would receive any increased funding.

Government assumptions that there is an increased risk of defaults on loans made through programs like USDA's Decentralized Rural Water Systems program add more budgetary pressure to loan and grant programs overall as well. Because Congressional appropriations must incorporate these new assumptions and economic expectations, these programs in turn become more expensive for them to properly fund.

While President Biden and congressional Democrats have generally rejected Republicans' calls for dramatically reduced spending and other policy changes, negotiations are ongoing as of the writing of this article. Any budget deal that comes together to raise the nation's debt ceiling may also reduce or cap spending in the upcoming 2024 Fiscal Year. Such a deal would likely impact funding for the decentralized wastewater programs NOWRA is seeking to increase. Divided government and slim majorities in both the House and Senate will require any agreement to ultimately be bipartisan in nature, however.

In an effort to overcome these challenges and build strong bipartisan support for these important programs, NOWRA and our team in Washington have conducted several meetings with House and Senate offices urging them to prioritize funding for decentralized wastewater. We have received feedback from several offices that our requests were included in their spending priorities for the upcoming fiscal year. We have also had discussions with House and Senate Appropriations Committee staff on both sides of the aisle to educate them on the importance of funding these programs.

In addition, NOWRA worked with Representative Terri Sewell (D-AL), who led a "Dear Colleague" letter calling for full funding of EPA's Decentralized Household Wastewater Grant program. Joining Congresswoman Sewell, 33 other House Members signed on to back this request.

NOWRA also supported a second "Dear Colleague" letter from Representatives Mike Rogers (R-AL) and Sewell that called for full funding of USDA's Rural Decentralized Water Systems program with 27 other House Members adding their signatures.

Outside of Congress, NOWRA's Washington representatives have coordinated with allied stakeholders to advocate for these vital programs. As part of this effort, 44 organizations sent a letter to House and Senate appropriations leaders calling for full funding of USDA's decentralized systems program.

As always, we urge you to reach out to your Representatives and Senators and remind them of the importance of funding for these critical programs. These continue to be the only dedicated sources of federal funding for decentralized systems.

Tracy Hammond is a Senior Policy Advisor with Polsinelli's Public Policy Group in the firm's Washington Office. He advises clients on federal legislation and regulation in the areas of infrastructure, water and environmental policy and serves as one of NOWRA's lobbyists in Washington, DC.

THE TEXAS MODEL

A State Managed OSSF Research Funding Program

By the TAMU-OSSF Team

Overview

Basic scientific research drives industry advancement and progression. However, funding a strong, sustained, research program presents a significant challenge. This article describes the state managed On Site Sewage Facility (OSSF) research funding model used in Texas. The resulting works completed under this model have demonstrably helped millions of Texans who rely on OSSF to manage their wastewater needs.

Since the early 1990s, Texas A&M AgriLife Extension and the Department of Biological and Agricultural Engineering (BAEN) have successfully implemented an OSSF program providing science-based information, education, and training so Texans can make informed decisions when selecting, operating, and maintaining their onsite wastewater treatment and reuse systems. This effort included the establishment and operation of a dedicated OSSF Research Center on the RELLIS Campus at Texas A&M University (TAMU). Unfortunately, after twenty years the state model supporting research ended 2011 and OSSF programs around the state suffered, including those offered at TAMU where the OSSF Research Center fell into a state of disuse.

In 2015, the TAMU OSSF program and Research Center were rejuvenated through the combined efforts of Dr. Anish Jantrania, the Texas Onsite Wastewater Association (TOWA), and the Texas Commission on Environmental Quality (TCEQ). The effort led to legislation of a new Texas Onsite Grant Program (TOGP) which revived the Texas OSSF research funding model. Between 2019 and 2021, engineers and scientists from AgriLife Research and Extension completed three TOGP-funded projects. Again in 2021, AgriLife succeeded in obtaining TOGP

funding to carry out three additional research projects. The Texas model of TOGP-funded investigations is once again ensuring that OSSF research on pertinent topics is conducted in order to help the people of Texas address future and constantly changing onsite wastewater issues.

History

In 1989 the 71st Texas Legislature passed a bill amending Title 5, Chapter 367 of the Texas Health and Safety Code authorizing local wastewater permitting entities to “collect a \$10 fee for each on-site wastewater treatment permit application processed”. It was famously called the \$10 research fee law, which also authorized the formation of the Texas On-Site Wastewater Treatment Research Council (TOWTRC) and appointed the Texas Commission on Environmental Quality (TCEQ) as administrator of collected funds to “support applied research and demonstration projects” related to on-site sewage facility (OSSF) development and advancement. This effort marked the beginning of a sustained, state-level, OSSF research funding process intended to develop and improve alternative technologies for sites unsuitable for conventional wastewater systems. The TOWTRC, whose members were appointed by

the Texas Governor, provided guidance for the program. Based on TCEQ annual permitting records, between 1992 and 2011 approximately \$6M in permit fees was collected and used to fund numerous OSSF research and demonstration projects around the state. The TAMU OSSF Research Center (Photo 1) represents one of many projects and programs that was supported by this funding. The center was established and operated by Dr. Bruce Lesiker from 1998 until he retired in 2010.

In 2011 the TOWTRC sunset and was dissolved (Note: in Texas, a “sunset” provision or clause is a measure within a statute, regulation or other law that provides for the law to cease to be effective after a specified date, unless further legislative action is taken to extend it). As a result, the TCEQ discontinued the OSSF research grant program and distribution of collected funds. This effectively halted OSSF research in Texas. However, collection of the \$10 permit fee continued and from 2012 to 2018 approximately \$1.6M was collected that was not used to support OSSF research, as originally intended. The discontinuation of OSSF research funding, along with continued permit fee collection, led to concern by the Texas Onsite Wastewater Association

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Photo 1. TAMU OSSF Center on the RELLIS campus with access to the campus water and sewer lines, onsite wastewater treatment and reuse technologies, POU drinking water treatment technologies, and a field laboratory for conducting basic water quality analysis.

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(TOWA), the organization which represents onsite wastewater professionals in the state. Without leadership and funding the TAMU OSSF Center was not adequately maintained and it fell into disuse (Photo 2). The TAMU OSSF program manager, Mr. Ryan Gerlich, continued TAMU OSSF extension and education activities until Dr. Anish Jantrania joined the TAMU BAEN department in 2014.

The New Texas Onsite Grant Program (TGOP)

Beginning in 2015, Dr. Jantrania worked with TOWA, public entities, and private OSSF professionals to encourage legislators to pass House Bill 2771 in 2017. The bill required that TCEQ reinstate the OSSF research grant program using revenue generated from the \$10 fee, as originally intended. The new Texas On-Site Sewage Facility Grant Program (TOGP) was finally established in 2018 and in February 2019 issued its first request for grant applications. The funding level was set at \$422,000 with a two-year grant cycle from 2019 to 2021. The TOGP Guidance Committee, made up of TCEQ personnel, local OSSF designated representatives, and OSSF industry professionals, requested proposals addressing four research topics including:

1. Adequacy of Current Designs of Aerobic Treatment Units with Higher Strength Wastewater

2. Dosing versus Non-Dosing of Aerobic Treatment Units
3. Implementation of Low-Pressure Dose Systems with Various Configurations
4. Black Water Non-Potable Reuse

The TAMU OSSF Research Team, consisting of Dr. Anish Jantrania, Dr. June Wolfe, Dr. Gabriele Bonaiti, and Mr. Ryan Gerlich, was awarded the entire TOGP funding budget in 2019 to conduct three research projects addressing all four topics. The TAMU OSSF Research Center on the REL-LIS Campus in Bryan, Texas received several improvements and technology additions resulting from this support. A new line and pump station was installed to deliver campus wastewater from the sewer main to the research treatment trains (Photo 3). Two parallel experimental ATU systems with advanced controls were installed to investigate high-strength and dosing effects (Photo 4). A dedicated low-pressure drip field was installed complete with flexible plumbing, sampling ports, and soil moisture sensors (Photo 5). And two types of reuse technologies installed to investigate wastewater reuse options (Photo 6). Final reports with results from these studies may be found on the [TAMU OSSF Website](#).

In 2021, the TAMU OSSF Research Team once again responded to the



Photo 3. Tapping into the REL-LIS Campus sewer main to supply OSSF Research Center with raw wastewater.

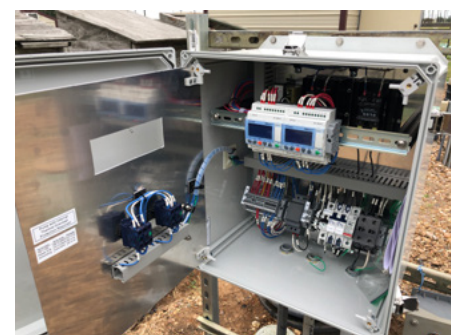


Photo 4. Parallel Aerobic Treatment Units (Clearstream N-500, top photo) with advanced flow control (JNM Technology, bottom photo) at the TAMU OSSF Research Center.



Photo 2. The TAMU OSSF Research Center in Fall of 2014. It was rejuvenated in Fall of 2015 with the support of TOWA, TCEQ, and TAMU-OSSF Team. QR Codes are linked to short films on the center conditions before and after rejuvenation process, first scan/click on the bottom left QR code and then scan/click on the top right QR code.

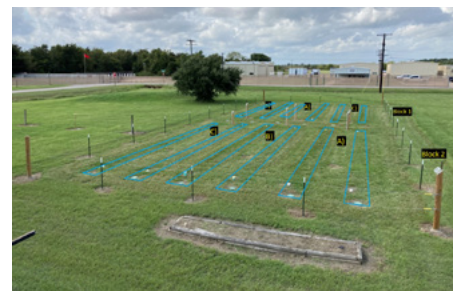


Photo 5. Dedicated low pressure drip field with configurable plumbing, sampling ports, and soil moisture sensors.



Photo 6. Reuse technologies, one with a membrane filter (BioMicrobics MBR0.5, shown on the right), and one without a membrane filter (Clearstream 500DA, shown on the left).

TOGP’s call for proposals addressing four new research topics including:

1. Wastewater treatment challenges at RV parks
2. Proper dosing techniques and application rates for drip irrigation
3. Aerobic treatment units in the real world (sampling and new data)
4. Reduction of wastewater effluent from on-site sewage facilities

Funding level was set at \$428,000 and once again the TAMU OSSF Research team was awarded the entire TOGP budget to conduct three research topics addressing all four topics. The funded projects have garnered much interest from the OSSF professional

community as evident from response at the recent TOWA conference, where the team presented three papers related to the research projects. Characterizing the influent wastewater quality and quantity generated from RV parks has been of particular interest (Photo 7). Collecting real-world data from operating commercial and residential ATU systems promises to help industry professionals address management and servicing concerns (Photo 8). An installer’s manual for drip irrigation is being assembled from survey information, field experiments, and reference materials collected from other states. And finally, studies on effluent reduction using wetland/greenhouse technologies are being conducted. Interest in

any of these studies may be addressed by contacting members of the TAMU OSSF Research Team. Descriptions of these projects can be downloaded from the [website](#).

Additional SSF Research Activities at Texas A&M University

Tracking and mapping the number of on-site systems, by county, represents one of the more significant activities of the TAMU OSSF research program. Based on collected data, density maps have been prepared which show the increase in the number of OSSFs and the trend in the use of septic versus aerobic treatment systems (Figures 1 and 2). Since mid-1990s, use of ATU spray systems have become dominant in Texas. Since year 2014, consistently more permits have been issued for installation of ATUs compared to septic tank installations and permitting records obtained from TCEQ indicate that about 927,000 new permits were issued since 1990, of which about 418,000 (~45%) were for ATUs. The collection, summary, and analysis of this information has helped the TAMU OSSF Research Team identify trends and areas in need of research.

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Photo 7. Monitoring an aerobic treatment unit at a Texas RV park.



Photo 8. Collecting performance data from a residential ATU in Bryan, Texas.

In February of 2022, TAMU OSSF Team signed a two-year contract with the Texas General Land Office (GLO) to conduct a project entitled “Integrative Assessment of Bacterial Pollution along Galveston Beach”. (GLO CONTRACT NO. 21-060-025-D274). The contract specifies the following five

tasks and detailed list of deliverables under each task.

Task 1: Analyze Texas Beach Watch Enterococci Data

Task 2: Compare Enterococci Data to Environmental Data

Task 3: Compare Enterococci Data to Bacterial Pollution

Task 4: Compare Enterococci Data to Beach Attendance

Task 5: Enterococci Data and Human-Specific Fecal Pollution Analysis

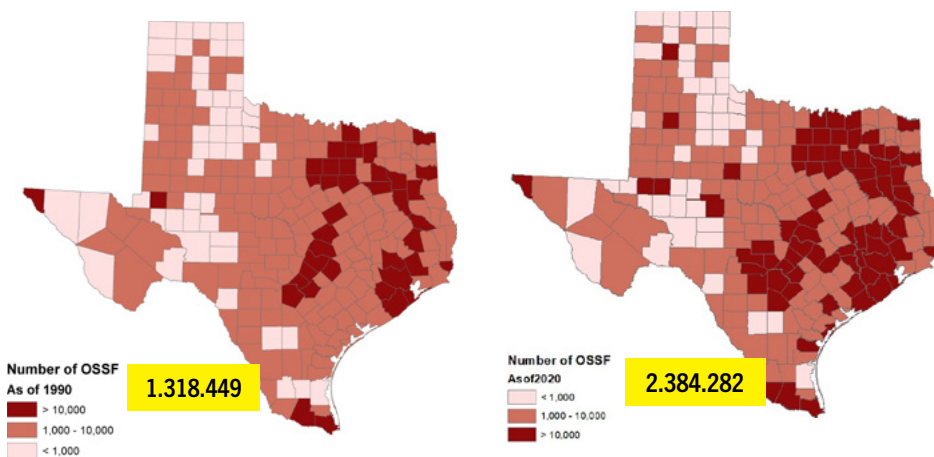


Figure 1. Texas map showing the change in total number of OSSF from 1990 to 2020. Note increase of a million total OSSFs and the change in OSSF density, by county. Link to our interactive test-map is <https://ossf.tamu.edu/test-map/>

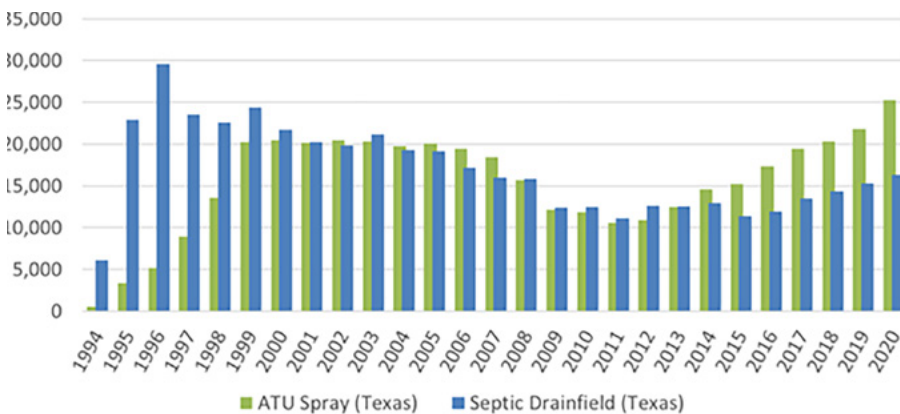


Figure 2. Number of annual permits issued in Texas since 1994 and the distribution between ATU spray and septic drainfield. Note increase in use of aerobic treatment over septic since early 2000.

Much of the work associated with Tasks 1-4 has been completed, however sample analysis for Task 5 is still underway and expected to be completed by August 2023. The TAMU-OSSF Team has partnered with [Dr. Terry Gentry](#) from TAMU’s Department of Soil and Crop Science () to conduct Task 5. Figure 3 shows an example of infographics developed to summarize results for each Task.

Once this current GLO contract is completed, findings related to each task will be presented in the future issue of the NOWRA Onsite Journal and at the NOWRA annual conference. GLO has expressed an interest in continuing funding TAMU-OSSF team for conducting similar work throughout the coastal zone of Texas.

Conclusion

The Texas model of state managed OSSF research programs has been and now continues to be a successful method for promoting and advancing OSSF science and technology development in the state. Research related to OSSF performance and impact are conducted at the OSSF Center on RELLIS Campus as well as in real-world where OSSFs are being used for managing residential and commercial wastewater. TAMU continues to be a leader in OSSF research and extension in the state of Texas. NOWRA invites similar articles from other states where onsite wastewater research and extension programs have been successfully funded and are still in operation.

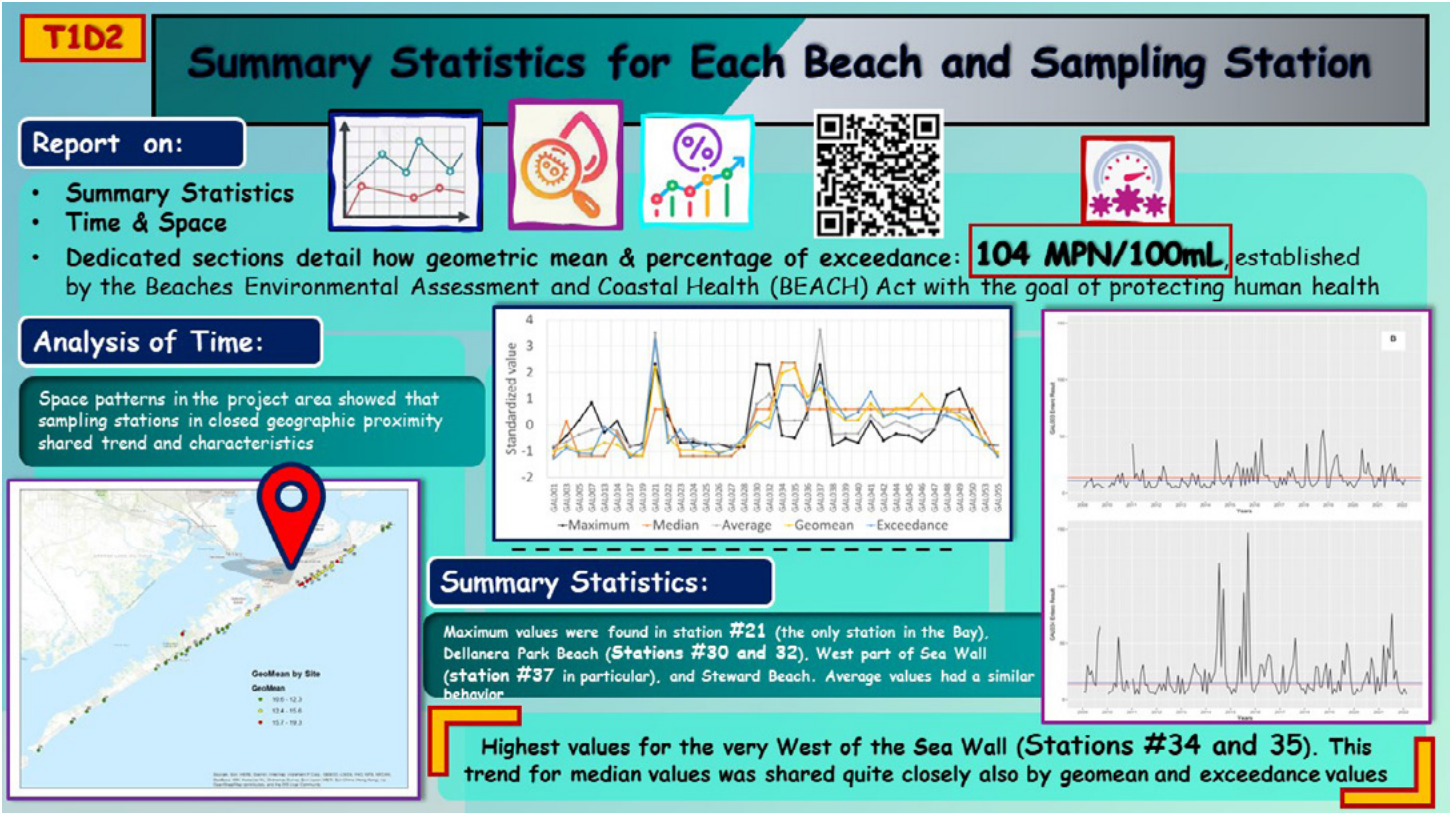


Figure 3. Infographics developed to summarize results from one of the deliverables under Task 1. Scan the QR code to see summary statistics for each beach and sampling station.

TAMU-OSSF Team Members

Dr. Anish Jantrania is an Associate Professor/Extension Specialist in the Biological & Agricultural Engineering Department at Texas A&M University, Texas. Dr. Jantrania has over 30 years of experience working in the wastewater industry, in the public and private sectors, with a focus on On-Site Sewage Facilities (OSSF/septic systems), and decentralized wastewater and water systems. His research and extension interests focus on sustainable infrastructure to ensure the availability of clean water to meet society's water demands, and to ensure safe sanitation to protect public health and environmental quality.

Dr. June Wolfe III is a Research Scientist with more than 30 years of service at Texas A&M AgriLife Research - Blackland Research and Extension Center in Temple, Texas where he directs the Water Science Laboratory and conducts basic scientific research involving plant-soil-water topics assessments. He is proficient with experimental design, field sampling, laboratory techniques, and data analysis. Dr. Wolfe has more than 10 years of experience in wastewater research and currently leads two projects funded by the Texas Commission on Environmental Quality's Texas Onsite Grant Program.

Dr. Gabriele Bonaiti is an Extension Program Specialist and has been employed by Texas A&M AgriLife Extension since February 2009. In 2015 he joined the OSSF team to support various research and extension programs. He is currently supporting TCEQ's Coastal Zone Act Reauthorization Amendment projects by developing and implementing methodologies for building an inventory of OSSFs along the Texas coastal zone, the Lampasas River Watershed, and the Hidalgo and Cameron Counties. He is currently leading GLO contract activities related to data analysis, GIS mapping, and infographics development to summarize large dataset on bacteria pollution in Texas coastal water.

Mr. Ryan Gerlich is an Extension Program Specialist and the senior most member of the TAMU OSSF Team. He started working with the OSSF program in 2008 as a student worker and since then he has assisted in the North Central Texas Water Quality Project, Lake Granbury Water Quality Project, and the Rio Grande Basin Initiative. He is currently serving as the project leader for the Coastal Zone Act Reauthorization Amendment project in Brazoria and Galveston Counties. Mr. Gerlich works with numerous state and local agencies and serves on the TOWA board. He is currently supporting all the projects funded through the first and second rounds of TOGP projects and manages day-to-day operations of the OSSF Center on Texas A&M RELIS Campus.

WELCOME TO THE NEWLY FORMED NOWRA EMERGING PROFESSIONALS COMMITTEE

What does the Emerging Professionals Committee do?

The Committee is dedicated to workforce development, recruitment, and advocacy on behalf of young and early career professionals in the onsite wastewater treatment sector. In terms of workforce development, we want to see young professionals mentored by NOWRA's well-seasoned professionals. We also want to see resources routed towards young onsite professionals as they pursue their own entrepreneurial, leadership, and educational endeavors. Our hope is to get more young and early career professionals interested in the industry. A big part of that recruitment initiative is getting the

onsite sector in front of students as they are making critical career decisions. Lastly, in terms of advocacy, it is important to voice the needs and opinions of emerging professionals to NOWRA leadership to ensure that their needs are being met and that resources are being allocated towards this important part of our membership.

Why did the committee form?

If you have been to a NOWRA or affiliate member conference lately, you have probably noticed that there are very few young professionals. While this likely means that the sector is experienced, it is concerning that young people aren't funneling into

the industry. What seems to be a common theme is how hard it is to find good and dedicated workers. This is despite the sector providing well-paid, creative, and rewarding jobs. We think a big reason for the deficit of incoming talent is the lack of visibility the onsite wastewater treatment sector has, especially to students. Many traditional college civil and environmental engineering programs focus entirely on the centralized sector and often teach that onsite systems are inferior and are only utilized as temporary solutions for wastewater treatment. It is completely natural for students to get funneled by their colleges and universities into engineering for centralized facilities while harboring a

continued on page 18



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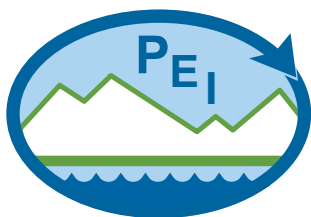
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EMERGING PROFESSIONALS COMMITTEE *(continued)*

distaste for onsite systems. Outside of engineering, most people in the industry seem to have stumbled into the sector or were roped in through family or friends. Making the sector more visible to young people will allow more people to view it as a viable, rewarding, and fulfilling career path.

How did the committee form?

During one of the NOWRA 2021 Onsite Wastewater Mega-Conference social events, a few of the young members clustered together, perhaps to shield themselves from the grey hairs in the room. The ever-gregarious Chris LeClair from the NOWRA board sat down with the group and sparked up a conversation about how excited he was to see enthusiastic and passionate young people at the conference. This group expressed interest in forming a NOWRA committee related to young professionals. Shortly after the Mega-Conference, the NOWRA Emerging Professional (EP) Committee was formed. This newly formed committee is currently comprised of folks from many different roles within the industry from academia, contractors, engineers, and government relations to marketing and sales.

What has the committee been up to?

During the 2022 Onsite Wastewater Mega-Conference, the EP Committee hosted both an oral and a poster competition to encourage more young member participation at the conference. 15 young professionals across a wide range of backgrounds engaged in these competitions. For the oral presentation competition, young professionals volunteered to give presentations at sessions throughout the conference while a judging panel, comprised of industry professionals, scored the presentations. All the presentations in the competition from these young professionals were incredible to watch and learn from. Winners of the oral competition included Elizabeth Boor, an MS student studying water resource sciences at the University of Minnesota and Amal Bakchan, PhD, postdoctoral fellow in civil engineering at the University of South Alabama. The poster competition was also a success, giving emerging professionals a chance to display their innovative research in the onsite field. The winners of this poster competition included Lilith Vasquez, EIT, a PhD student in engineering sciences at the University of California and Sand Diego State University and

Fanjiang Zeng, a PhD student in civil engineering at Stony Brook University. And a cash prize was given to these emerging professionals to help with their continued involvement in the onsite wastewater industry.

What does the future hold for the Committee?

The NOWRA EP Committee plans to continue with the oral and poster competition at the 2023 Onsite Wastewater Mega-Conference in Virginia after the great success from the previous year. The Committee also is forming an educational scholarship, aiming to provide financial support to well-qualified emerging professionals on an annual basis to support their educational pursuits and continued involvement in the onsite industry. We are also working on a few marketing initiatives to gain greater exposure of the EP Committee through social media. Social media outreach is particularly important to show young professionals the many benefits of the onsite wastewater industry. The EP Committee is also engaging with organizations such as Engineers Without Borders and Civil Conservation Corps to do projects where onsite expertise is relevant and where we can engage directly with students from across the country.

How can you help?

If you are an emerging professional, consider joining the committee. We have monthly committee meetings where we discuss and plan our ongoing initiatives. Every voice and perspective at those meetings is critical in determining the direction of the committee. You can do so by reaching out to the committee chair, Robert Bair at rbair@usf.edu. Even if you are only young at heart, you can help the committee grow. We always need advocates, mentors, and general supporters within the organization.

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Onsite Promoting Health & Protecting Our Resources Wastewater 2022 MEGA-CONFERENCE

NOWRA hosted the 2022 Onsite Wastewater Mega-Conference

on October 31 through November 2 at the University Plaza Hotel and Conference Center in Springfield, Missouri along with our collaborating sponsoring organizations, the National Association of Wastewater Technicians (NAWT), the State Onsite Regulators Association (SORA), and NOWRA's Missouri affiliate, the Missouri Smallflows Organization (MSO).

The Mega-Conference is the largest event of its kind and offers onsite/decentralized professionals the highest quality education and training available. With over 500 attendees in-person plus another 50 virtual attendees for the 2022 Mega-Conference, we are once again proud to call the Mega-Conference a success.

The 2022 Onsite Wastewater Mega-Conference featured technical and educational sessions, an exhibit hall with the latest in onsite technology, committee/board meetings, poster sessions, and optional field trips. There were also plenty of opportunities for attendees to network with their peers in person—something that had been missing the last few years as everything went virtual. NOWRA's Executive Director, Tom Groves stated "I was very pleased

with the outcome of the 2022 Mega-Conference. I cannot thank the volunteers enough for helping us put together this event, especially Tammy Trantham and MSO. There were some challenging logistical issues to deal with that made this conference unique, but luckily everyone persevered, and we ended up with a hugely successful event."

Over 60 technical sessions were presented as part of the Mega-Conference, which included an opening general session for all attendees and six concurrent tracks. Tracks included hot topic areas of Education, Research, Underserved Communities, Nutrient Removal, Management, High Strength Wastewater, Soil Treatment, Drip Irrigation, and a focused NAWT track. There was also an expanded poster session this year sponsored by the NOWRA Emerging

Professionals Committee with prizes awarded to the top poster and oral presentation by an Emerging (Young) Professional. Once again in 2022, we provided a limited virtual session for approximately 50 attendees who could not attend in person. All opening session talks, as well as one full conference track were provided to the virtual audience.

The opening session was facilitated by NOWRA President, Sara Heger, Ph.D. and it provided some history and thought provoking topics for attendees to contemplate with keynote presentations on Septic Systems—Looking Back and Moving Forward, by former NOWRA President Tom Fritts and Nicholas Dykes, and Lessons Learned from Horizon Scanning Focusing on Research, presented by Bryan Brooks, Ph.D., Baylor University. These presentations

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2022 MEGA-CONFERENCE WRAP-UP *(continued)*

helped set the stage for the conference and were followed by updates on policy development and federal representation with a US EPA Update by Rafael Stein, a USDA Update by Missouri State Director, Kyle Wilkens, and a presentation on How NOWRA Represents Your Interests in Washington, DC, by Tracy Hammond, Pol-sinelli, LLC.

At the conclusion of the Opening Session, President Heger announced that the 2022 Richard J. Otis Industry Achievement Award was being awarded to former NOWRA President, Jim Bell. Jim has devoted his career to the wastewater industry and has been extremely active in not only NOWRA and the Kansas state affiliate, KSFA, but also NSF, SORA, and other national groups. Bell, who is recently retired, was surprised by the award, but luckily for us his wife and many of his former co-workers



Jim Bell was presented with the Richard J. Otis Achievement Award by NOWRA's 2022 President Sara Heger.

were present to see him receive this well-deserved award.

Two successful field trips were provided as an option to over 100 attendees to learn more hands-on about drip irrigation, educational tools, and other wastewater systems in the region. Attendees of these field trips

were able to visit several sites featuring the latest in technology and to learn about how wastewater issues are handled in Missouri. Each of the tours featured some local geology educational sessions with tours of Fantastic Caverns or the Talking Rock Caverns. Thank you to MSO for coordinating such a successful day of field trips.

The exhibit hall afforded the onsite wastewater product manufacturer representatives an opportunity to meet one on one with attendees, industry representatives, regulators, and others. Exhibit hall hours were lengthened for 2022 to afford more networking time for exhibitors. There were 64 exhibit booths this year featuring 47 companies who were able to network and speak with attendees during breaks, lunches, and cocktail hour. We could not have held such a successful conference without the

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support of our exhibitors, so thank you to all who exhibited.

The highlight of the conference was the optional social event that was held at the Wire Road Brewing Company on Monday night, October 31. Thanks again to Eljen Corporation for sponsoring the annual social event. Capitalizing on the Halloween theme,

the social event consisted of a night of networking, good music, good food, and even a costume contest. And the attendees did not disappoint with some very creative costumes.

With the 2022 Onsite Wastewater Mega-Conference successfully behind us, NOWRA and our partner organizations are eagerly looking forward

to October 22–25, 2023, when we will be in Hampton, Virginia for the next Mega-Conference working closely with our Virginia affiliate, Virginia Onsite Wastewater Recycling Association. The Hampton, Virginia, location was originally the site of the 2020 Mega-Conference that had to be cancelled due to the pandemic.

We hope you will join us then!

ANOTHER SUCCESSFUL MEGA-CONFERENCE!



NOWRA's Executive Committee getting into the Halloween spirit.



Field trips featured a tour of some famous Missouri caverns.



An instructor discussing technology on one of the field trips.



Attendees listening to an overview at one of the sites on the field trip.



Septic Sam, a.k.a. NOWRA Past President Carl Thompson.



Conference Committee Chair Tammy Trantham and NOWRA Executive Director Tom Groves enjoying a successful event.



A League of Their Own team by the Infiltrator Water Technology staff.

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ONSITE A TO Z

An overview of onsite wastewater treatment provides a foundation of relevant courses for many professionals. Topics include onsite wastewater basics, O&M, and soil evaluation and treatment. Ideal for new employees, regulatory professionals and students.

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TROUBLESHOOTING

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more! No matter what our role is in the decentralized industry, we are sometimes faced with systems experiencing problems or out of ordinary situations. This course walks through a typical treatment train starting with the flow coming from the structure and then walks through component troubleshooting including septic tanks, pumps and controls, soils, media filters, aerobic treatment units and finally soil treatment units.

DESIGN COURSE

NOWRA has developed seven courses in the critical area of design of decentralized systems. These courses lay the groundwork for design and will be expanded over the next several years. This

course includes modules on topics such as aerobic treatment units, soil properties, soil water movement, making infiltrative decisions, and pressure distribution.

MEGA MODULES

NOWRA has developed 12 courses from presentations at the 2020 Virtual Onsite Mega-Conference. These courses cover a wide variety of topics and were selected due to their continued relevancy to the decentralized industry. Modules include topics such as planning for sustainability, research updates, reuse, brewery waste treatment, nitrogen balance, urine diversion, and more.

Participants can select class length based on continuing education requirements, the subject matter, or how much time they have to commit to training.



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INDUSTRY NEWS

Anua International LLC (Anua) has acquired all GAG Sim/Tech Filters, Inc. assets. Sim/Tech will continue to operate as usual in Boyne City, Michigan. Anua is anticipating a seamless customer experience during the transition. All current staff are being retained, including Darrell Maves, Operations Manager, and Chris Jones, Plant Manager.

The asset purchase was completed on April 18, 2023. The acquisition includes all Sim/Tech Filter technologies, all regulatory approvals, all testing data, patents, trademarks, intellectual property, website domain, and other assets. Sim/Tech Filter manufacturing will be under the direction of Marcelo Cassani, Chief Operating Officer, and will continue operations in Boyne City, Michigan.

BioMicrobics hosted its hugely successful tri-annual Distributor Conference on 24-26 April, welcoming over 70 regional distributors to network with each other and with the staffs of BioMicrobics and its subsidiaries, SeptiTech (land-based wastewater treatment), SciencoFAST (marine-based sanitation) and InTank (marine-based ballast water treatment). Each distributor departed invigorated to sell, armed with new knowledge and a bottle of local rye or vodka.

Delta Treatment Systems is pleased to release the ECOPOD-NR, a recirculating fixed film treatment system that achieves enhanced levels of nitrogen reduction. NSF/ANSI 245 certification testing demonstrated the ability of the ECOPOD-NR to reduce influent total nitrogen by more than 68%.

Infiltrator Water Technologies announces the release of the Quick5 Standard Chamber - the first of the new Quick5 brand of chambers to be introduced by Infiltrator. It is five feet long and 36 inches wide supporting a wheel load of 16,000 lbs/axle with 12 inches of cover. It features the patent-pending Contour Swivel Connection™ which permits turns up to 10° right or left allowing for greater design and installation flexibility. The Quick5 chamber brand is Infiltrator's ninth-generation chamber.

Longwave UV—Since 1997, manufacturers of treatment units have tested, trusted, and partnered with Salcor and James (Jim) Cruver, Ph.D. Unfortunately, in 2022, Jim Cruver unexpectedly passed away. The company has since been purchased and rebranded as Longwave UV, Inc. Longwave will continue to manufacture all products to Jim's specifications and carry on his commitment to producing the highest quality UV Disinfection Unit.

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Corporate Membership in NOWRA is an investment that enhances your business marketing efforts while showing your support of our mission to advance and grow the Onsite and Decentralized Wastewater Industry.

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- *Onsite Journal* Advertising Discounts
- Individual NOWRA Memberships
- Recognition in the Industry
- Federal Advocacy on Your Behalf

Advocacy Successes

1. NOWRA worked with Congress on the Infrastructure Investment and Jobs Act (H.R. 3684) that was signed into law by President Biden on November 15, 2021. The water infrastructure bill creates a Decentralized Wastewater Grant Program for the repair or replacement of failing or non-existent septic systems owned by low-income homeowners. The Act authorizes \$50 million of funding for each of the Fiscal Years 2022 – 2026, for a total of \$250 million.
2. NOWRA is working with EPA on implementation of legislation we sponsored which was passed into law as part of the 2018 Water Bill (America's Water Infrastructure Act of 2018) requiring EPA to create a Decentralized Technology Clearinghouse and to share information about the cost-effectiveness of decentralized systems with local governments and other groups. EPA must regularly report back to Congress about how they are supporting the increased use of decentralized systems.
3. NOWRA is monitoring the U.S. Census Bureau's efforts to include a "sewer or septic" question added to the Annual American Community Survey (ACS). This question was removed from the decennial Census after 1990. NOWRA worked with EPA to get them to submit a request to have this question included on the survey. In October 2018 the U.S. Census Bureau accepted the EPA proposal and the question is moving forward to the next stage of cognitive and field testing. This is on track for addition to 2026 ACS.

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