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# DOWRA NEWS

Delaware On-Site Wastewater Recycling Association

Newsletter Date July 2010

## Letter From The President!

Greetings,

Well it's that time of year again where your conference committee starts to work diligently to bring together our largest yearly event. In attempt you answer some of last years requests for changes and new topics, this year we are going to try something a little different. We are making arrangements to bring NAWT to our conference for two days that will fill a single track with inspections and O&M. We are also looking into bringing back the Backhoe Rodeo. There will be a guest speaker from NOWRA for you to familiarize your selves with the organizations new approach. We are also going to follow up the conference this year with a membership meeting in November for the entire membership.

I believe these new changes will be a positive change for all and as always we are looking for new ideas and committee volunteers. If you're interested it's not too late. I look forward to seeing you all at the conference

Jim Williams

## 2010 DOWRA Annual Golf Tournament—Kevin Sockriter

On Friday, September 17<sup>th</sup>, DOWRA will be hosting its 14<sup>th</sup> annual golf tournament at Jonathan's Landing in Magnolia, DE. This has always been a very successful event and we look forward to seeing all of you there. Last year we had roughly 80 golfers and we gave away 2 golf drivers along with numerous door prizes. The money raised at the golf tournament goes to support two Delaware Technical and Community College scholarships and goes to pay for the on-site professional of the year award.

If you are a golfer or have any friends or co-workers that are golfers, you don't want to miss this event! Your entry fee also includes a steak dinner. Any questions in regarding registration please contact Kevin Sockriter @ 302-841-0957 or email [kevinncp@verizon.net](mailto:kevinncp@verizon.net). Registration forms will be sent by mail or you can also access to them on our website @ [www.dowra.org](http://www.dowra.org).

**NOWRA UPDATE— Eric Casey**

To the Membership of DOWRA,

I want to thank you again for inviting me to your monthly membership meeting on June 8. I appreciated the time you gave me to speak to you about NOWRA and how it is working on your behalf. For those unable to attend the meeting, I want to follow up with a more detailed description of what NOWRA is trying to achieve.

In the last two years, our industry has been hit hard by the global economic downturn. This in turn, created severe hardships for many members as our industry saw new installations decline sharply, causing job losses, layoffs, and an overall drop-off in business. This has been a difficult time for NOWRA as well, as it has also felt the impact of the economy. It's made it challenging for us to accomplish everything we would have liked to have done.

That said, NOWRA's goals, objectives and activities have never been more important -- and support by state organizations like DOWRA has never been more critical.

Since the association was established 20 years ago, NOWRA's mission has been to advance and grow the onsite and decentralized wastewater industry by promoting wastewater management through education and outreach. Since then, NOWRA has worked to help develop standards and practices which have been widely adopted within the industry. They have helped unlock new technologies and bring them to the field through publishing and sponsoring technology research, and using it to demonstrate to regulators that it can be used effectively in practice. They have served as a marketplace of ideas through which best practices are shared throughout the industry.

In short, NOWRA's efforts have been of benefit to everyone who works in onsite wastewater recycling today -- more business opportunities, increased professionalism, and a much better industry reputation.

I believe our industry is actually entering an exciting and promising era. Consider some of these trends:

State and local governments are strained to the limit financially. Funding to repair or expand existing waterworks and lay more pipe is much harder to come by and most people are in no mood to see their taxes go up. This is creating a growing need for the use of a wide range of decentralized wastewater systems, from single units to cluster systems to microwatershed systems. NOWRA is an active participant in the effort to promote expanded use of these systems and is working to ensure that its members capture as much of that business as possible.

New technologies continue to be developed which make onsite systems a viable alternative for an even wider range of site conditions while still meeting water quality and public health goals. NOWRA remains an active participant in moving those technologies into the field.

NOWRA has played a central role in ensuring that onsite systems are seen as smart, clean, and green. We have been at the forefront of efforts to include onsite and decentralized wastewater systems as a critical element within integrated watershed management strategies. As this environmentally friendly approach continues to gain traction among policy makers, it promises to create many more business opportunities for the industry, not only in more rural locations, but also in suburban and even urban settings.

## NOWRA UPDATE— Continued

For those of us in our industry who care about its future -- and I am sure that includes DOWRA members -- there are simply too many important issues where strength in numbers is critical for success. We can't do it individually. There is much to be gained if we work together. Without the support which it receives from its state affiliates, NOWRA cannot be successful. Strength in numbers is crucial to our mutual success.

Despite the difficulties NOWRA has faced recently, NOWRA's Board of Directors has worked hard to set the association on a solid course going forward. The recently announced partnership with the Water Environment Federation offers tremendous advantages in terms of organizational support of NOWRA and access to decision-makers in government and related organizations. At the same time, NOWRA remains completely independent in both its governance and decision-making. The only thing that has changed is our ability to do more on your behalf.

On a personal level, I am excited to serve as NOWRA's executive director. I hope to build on the important work the association has done. Among my goals are to make sure that NOWRA is more responsive to your needs -- by listening to your concerns, by communicating with you frequently, and by identifying opportunities for NOWRA to support both you and DOWRA itself. Please feel free to pick up the telephone or drop me a note. My direct dial is 703-535-5265 and my email is [ecasey@comcast.net](mailto:ecasey@comcast.net).

I hope to visit DOWRA often and I look forward to meeting each of you soon!

## NAWT Partners with DOWRA—Jim Williams

NAWT is pleased to work with the DOWRA conference planning committee to present the Operation and Maintenance Training course, as one of the educational tracks at the DOWRA annual conference. The course concentrates specifically on operation and maintenance of aerobic tanks, single-pass and re-circulating media filters as well as final treatment through chlorination or ultra violet light. Other topics to be covered include sessions on maintenance of drip irrigation systems and proper installation of pump stations. At the end of the session an exam will be given for those service providers that want to be listed as NAWT certified in Operation and Maintenance. Just as with the NAWT certified inspectors, contact information for service providers who have passed the certification exam will be posted on the NAWT website. This course also qualifies for re-certification credit for the NAWT Inspection Certification. There will be an additional charge for participants who are not NAWT members that want this certification, which is valid for two years. For NAWT members there is no additional fee, while for non-members the fee will be \$150 for two years. Instructors for this course will be the nationally recognized team of Dave Gustafson and Jim Anderson. If you have questions about the session you can contact the NAWT office at 1-800-236-6298.



National On-Site  
Wastewater Recycling  
Association  
[www.nowra.org](http://www.nowra.org)



### The SIM/TECH Story—(Submitted by Eric Valentine)

At SIM/TECH Filter, Inc. we believe in sharing our knowledge of the onsite industry to help others. Our main mission is to provide quality products that use this knowledge to protect onsite systems, make them more efficient and easier to maintain. SIM/TECH is located in Boyne City, a small town in northern Michigan. SIM/TECH evolved from a family business, Koteskey Bros Excavating, which performs installations and service on onsite systems as well as other excavation work. This background and the fact that we still are involved in this work today allows us to approach onsite problems from the perspective of an installation and service company. We use the products we make, giving us first hand feedback on their performance. This helps us to make improvements and develop new products that work well in real life situations. While SIM/TECH designs are intended to be "simple technology" we do not cut any corners and we do our best to offer unique solutions for problem jobs.

For the past 12 years Co-founders Gary and Gene Brooks have been developing products for the onsite industry through SIM/TECH Filter. Prior to SIM/TECH they had been installers and site consultants for twenty years. As installers, the frequency with which they were digging up and replacing fields on newly engineered systems was on the increase. Aware that pressure systems and new technology were the wave of the future they realized that something had to be done.

Not wanting to be left behind, they started to research the ever abundant failing pressure systems. What they found seems very evident and obvious now, but eluded the industry for years. Pressure systems have smaller discharge holes than the more traditional gravity systems. Cucumber and tomato seeds, lint, debris and biological slough from the system itself, are all capable of plugging a pressure system. It takes only a tablespoon of contaminates to close half the holes in a standard pressure system. Septic tank filters work well for gravity systems with larger holes but they do not stop all of the smaller material that can plug a pressure system.

Why were no filters engineered into pressure systems? There were none. Safe guarding components were not used or available for the new pressure type systems. This laid the foundation for SIM/TECH. After years of research, development, and testing SIM/TECH developed and manufactured the industry's first pressure system filter, the STF-100.

The STF-100 filter provides a last line of defense for the distribution field with little head loss (.5002 ft). The unit is comprised of a stainless steel screen inside of a pressure rated filter body. The screen has .062" holes and there are currently 600 (.024"), 150-190 (.007"), and 100 (.004") micron socks available for finer filtration. Because the filter is mounted on the outlet of the pump, the filter screen or screen/sock combination are scrubbed by the vortex created during the operation of the pump. This provides for maximum maintenance intervals. The screen is able to pass 83.8 gallons per minute at 1 psi when clean and even if 95% plugged it is still able to pass 79.8 gallons per minute at 1.8 psi. For typical systems the filter should be serviced every 50,000 gallons. For larger volume systems, multiple filters can be used to increase the maintenance interval. Maintenance is a five minute job. If using only the screen, simply remove, rinse and replace. If using a sock, simply remove the old sock and replace with a new one. There are many potential pitfalls for pressurized systems

## The SIM/TECH Story—Continued

One of SIM/TECH's latest developments is a sludge sampler. The TruCore sludge sampler is a major improvement over the traditional sampler. It is a large, very accurate, user friendly sludge sampler. It allows samples to be taken quickly without creating excessive turbulence because there are no restrictions caused by valves, stoppers, flaps, etc. With an inside diameter of 1-3/8" the capacity per foot is almost 10 ounces. The unit is made of a polycarbonate sampling tube (clearly marked every foot) and pvc fittings. The TruCore comes as a single piece 8 foot unit or as two 4 foot units that slip together to form an 8 foot unit. A simple extension kit is also available. Within only a few uses of the sampler you will realize, just how inaccurate your old sampler was.

SIM/TECH developed many other products over the years such as - Orifice Shields (developed to protect discharge holes), Long Radius Clean Out Sweeps, Float Tree Brackets & Holders, Tools for servicing filters, Alarms, Risers and Lids, the list goes on and continues to grow. Today, SIM/TECH is a rapidly expanding company dedicated to the design of environmentally responsible, cost effective solutions to residential and commercial systems. Check out the SIM/TECH website at [www.simtechfilter.com](http://www.simtechfilter.com) where you can get more information on our products and see video demonstrations of how some of them work.

### 2010 BOARD of DIRECTORS

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2010 Clay PIGEON Shoot– Kevin Sockriter



On behalf of DOWRA, I would like to thank everyone that supported our 4<sup>th</sup> annual clay shoot. It was held on Wednesday, April 14<sup>th</sup> at Owens Station in Greenwood, DE. As we continue to endure these challenging economic times, it was nice to see that individual/companies would still show up and support this fun event. We had 49 shooters of all different skill levels attend this year. There was, as always, good food, plenty of drinks and a wide variety of door prizes. Because of all your support, we were able to continue to give away cash prizes, (3) firearms, and many other items during the awards banquet. A Mossburg 12ga. pump shotgun, a Savage .17 caliber rifle w/scope and a Savage .22 caliber rifle w/scope were among the door prizes that were given away.

This year we gave out 14 awards to try to capture all skill levels in attendance. Plaques were awarded to the top 3 shooters in the three different Lewis classes. In addition, we also gave awards to the highest overall shooter, the top 3 female shooters and DOWRA's traditional "The Worst Shooter".

I would like to thank all of you again for your support. All of you make this an extremely fun and friendly event. If you have never attended, you don't know what you're missing. You can come out and have a blast even if you have never shot sporting clays before. I look forward to seeing all of you there next year.

This year's winners (division, name, targets shot)

Highest Overall:	Rodney Jones	45
1 <sup>st</sup> Lewis Class	Rodney Layfield	45
	Lou Harrington	44
	Lee Collins	44
2 <sup>nd</sup> Lewis Class	Darrel Clifton	34
	Greg Collins	33
	David Grigonis	33
3 <sup>rd</sup> Lewis Class	Tommy Wright	25
	Brian Hughes	24
	Russ Garvell	24
Female	Jocelyn Robinson	28
	Carol Ohm	12
	na	0
"Worst Shooter"	Kenny Kinsell	11

Thanks to all our Sponsors

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- National Concrete Products**
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- ARM-Atlantic Resource**
- Management**
- Advantex**
- Affordable Septic**
- Zober Construction**
- S&E**
- George & Lynch**
- ECL Engineering**



## 2010 DOWRA Calendar of Events

### July

Delaware State Fair Exhibit  
July 22 thru July 31  
Grandstand, Delaware State Fair  
Harrington, DE

### August

August 19, 2010 DOWRA Membership Appreciation Crab Feast  
Invite Only //6:00 pm, Seafood City, Felton  
\*\* All those who attend board/membership meetings will be invited

### September

September 14, Board/Membership Meeting  
6:30 pm Pizza, 7:00 pm meeting starts  
Board Room, Exhibit Hall  
Delaware State Fairgrounds

September 17 DOWRA Annual Golf Tournament  
12:00 pm, at Jonathans Landing Golf Course (Shotgun Start)  
Magnolia

### October

October 19 - 20 Annual  
DOWRA Conference  
Location : Dover Downs

**Remember to Check us out at the  
Fair!  
We will be under the Grandstand!**

### Warren, Siegfried, and Darling Recognized at the On-Site Professional Ceremony!

Delaware's on-site professional of the year and on-site lifetime achievement winners were honored at the Delaware Technical and Community College on May 6. The awards ceremony serves to highlight the roles of on-site professionals who are protecting the environment. Winners were chosen for their outstanding technical excellence and exemplary worth ethics.

This year's On-Site Professional of the Year Award went to Hollis Warren, founder of Hollis Warran, Inc. of Wyoming. "Hollis has unselfishly shared his knowledge and experience with the industry through articles and seminars, presenting timely information on septage and grease processing and disposal," stated Steve Rhom whom nominated Hollis. Hollis has been instrumental in the development of NAWT both nationally and at the training center.

Lifetime achievement awards went to George Siegfried founder of Siegfried Machine and Supply and Kevin Darling who accepted the posthumous award for his father Kenneth Darling.

Other winners include: Robert Moore, Wastewater Operator of the Year; Ann Hobbs and Kyle Betts nominees for wastewater operator of the year; Ronald Foskey as Water Operator of the Year; and Michael Funk water operator of the year nominee.

Congratulations to all!



P.O. Box 1696  
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**Find all of our  
events on our  
website at  
[www.dowra.org](http://www.dowra.org)**

**Registration  
information is  
available for  
the golf  
tournament!**

## SOS "Save OUR Septic" Program— Benjamin Miller

The Bio-Microbics RetroFAST is known within the onsite industry for advanced wastewater treatment. In Delaware the RetroFAST system is used as an advanced treatment unit for BOD, TSS, and Nitrogen reduction; and is used to reduce disposal field sizing requirements, reduction in isolation distances, and reduced distances to the limiting zone. The RetroFAST is good for new installations, existing systems, and is utilized for the **renovation/remediation** of biologically failing disposal fields.

It has long been known that aerobic treatment and the active bacteria that are present within an aerobic system will prevent and reduce the biological build up within a wastewater disposal drain field. With that being said Freemire & Associates, Inc. would like to introduce you to a new program being sponsored by Bio-Microbics. The **Save Our Septic** program is a new program specific to biologically failing septic systems. If a RetroFAST system is installed to remediate a biologically failing septic system and the system is not rejuvenated within the first year after installation the contractor or homeowner will be reimbursed the cost of the equipment to go towards the permitting and installation of a new drain field. Yes, the contractor or homeowner will be reimbursed the cost of the equipment to go towards the permitting and the installation of a new drain field if a biologically failing septic system is not rejuvenated within the first year after installation.

The RetroFAST, as its name entails, is able to be installed within an existing septic tank as well as a new septic tank. The RetroFAST is a Fixed Activated Sludge Treatment processed that utilizes a media contained within a liner that is hung into the second compartment of a septic tank. An above ground air blower is the only working part that operates an airlift inserted down into the media to aerate and circulate the waste stream through the treatment media. The Fixed Activated Sludge Treatment systems are much less susceptible to upset caused by high flow washout and seasonal flows compared to suspended growth systems, and have much less maintenance cost requirements compared to media filters.

For **Save Our Septic** program details, specifications, door hangers, and literature contact Benjamin Miller of Freemire & Associates, Inc. at 443-827-0821 or by email at [bmiller@freemire.com](mailto:bmiller@freemire.com).

## Nitrogen Reduction through Fixed Film Media— Bob Savage

Although it sounds like an oxymoron, it is often said that you have to "nitrify to denitrify". While alternative treatment systems quite successfully use aerobic treatment to significantly reduce pathogens, the same process of using aeration to treat pathogens also converts ammonium to nitrites and nitrates in the wastewater. Nitrates can become a significant problem as they can move readily through soil, thus easily contaminating both groundwater and surface water resources. However, by combining nitrification and denitrification processes, we can significantly reduce nitrate concentrations in wastewater effluent.

The nitrification process involves complex bio-chemical reactions which rely on dissolved oxygen and alkalinity within the wastewater to nitrify the septic tank effluent. Once nitrification has occurred, then denitrifying bacteria living within an anaerobic environment convert nitrates to harmless nitrogen gas by using the oxygen molecule from the nitrate compound in



## Nitrogen Reduction through Fixed Film Media— Bob Savage



Fixed film media filters operate with less energy and maintenance requirements than suspended growth activated sludge (ATU) treatment systems as well as offer better recovery from periods of peak loading and from extended periods of inactivity as common with seasonal use properties. By providing constant air flow, usually accomplished through a passive air vent, fixed film systems provide a stable aerobic environment for nitrification to occur and by recirculating the nitrified effluent back through the anoxic environment of the septic tank, denitrification can be accomplished.

With the recent requirement for innovative and alternative treatment systems to meet a Performance Standard Nitrogen level 3 (PSN3) within the Indian River, Indian River Bay, Rehoboth Bay and Little Assawoman Bay watersheds, more and more homeowners and developers are faced with the need for a proven nitrogen reduction technology that is ideally suited for both seasonal and full-time residences. Fixed film media combined with recirculation can provide the solution to achieving PSN3 or better nitrogen reduction utilizing a stable treatment platform.

The ratio of recirculation can vary between nitrogen reduction system manufacturers, however, theoretically a recirculation rate of 80% can produce the highest level of nitrate conversion to nitrogen gas. Recirculation can be accomplished through a variety of recirculation devices, using either pressure or gravity flow. Quanics® provides several different models of recirculation devices with their AeroCell® and Bio-COIR® Fixed Film Media Advanced Treatment Systems. Their 100/80/20 gravity recirculation device provides 80% recirculation back to the septic tank, 20% for final disposal, and during periods of intermittent use, is capable of overriding the 4/1 split and recirculates 100%. 100% recirculation helps maintain minimal bio-chemical activity during periods of intermittent use to allow for quicker recovery. Quanics' also offers a 4/1 pressure splitter that operates off the orifice principle. The larger orifice device (80%) can be attached to the 4" sewer line or installed inside the inlet of the septic tank. The smaller orifice device (20%) can be installed inside a distribution box or connected to a pressure manifold for LPP applications. The 4/1 pressure splitter allows Quanics' AeroCell and Bio-COIR systems to be buried or remotely located from the septic tank where gravity recirculation back to the septic tank may be prohibitive or impractical. However, for intermittent use properties, the 4/1 pressure splitter does not offer the benefit of 100% recirculation.

In addition to recirculation, an often overlooked component of many fixed film media systems is the effluent filter installed in the outlet of the septic tank. While most people would correctly assume that the effluent filter helps keep suspended solids and other suspended particulate matter from clogging or interfering with the attached growth treatment media, they often do not realize the importance of the effluent filter in the nitrogen reduction process. Since denitrifying bacteria rely on carbon as an energy source, it is important to keep as much carbon as possible inside the septic tank. While the effluent filter helps keep suspended particles out of the treatment media, it also helps prevent carbon sources from exiting the septic tank, thus allowing this carbon to be utilized by the denitrifying bacteria.

In summary, recirculating fixed film media systems offer a very stable, viable option where nitrogen reduction technology is needed for residential applications. While this article simply skims the surface of nitrogen reduction principles as applied to smaller residential home systems utilizing recirculating fixed film media technology, the same principles and technologies can be applied to larger decentralized systems as well. Quanics has just completed the largest fixed film wastewater treatment system in the country with a combined treatment capacity of over 220,000 gallons per day! For more information on this system please feel free to read about the system online in *Water & Wastes Digest*: [www.wwdmag.com/Building-Better-article11725](http://www.wwdmag.com/Building-Better-article11725). For more information on nitrogen reduction technology or on Quanics' nitrogen reduction systems, please feel free to visit Affordable Septic Solutions, Inc. online at [www.affordablesepticssolutions.com](http://www.affordablesepticssolutions.com) or call us toll free at 1-866-802-3455.