Winter 2010

# ONSITE journal

NEWS FOR THE ONSITE WASTEWATER RECYCLING INDUSTRY

## Install With O and M in Mind

## Pumps & Controls

## New Approaches and Products Continue the Evolution of Onsite Wastewater Treatment

## NOWRA's Backhoe "Roe-D-Hoe" at Pumper Show

NOWRA
National Onsite Wastewater Recycling Association

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5th Annual INSTALLER ACADEMY
Presented By NOWRA
Louisville, KY • Feb. 22-23, 2010

ONSITE journal
NEWS FOR THE ONSITE WASTEWATER RECYCLING INDUSTRY
Winter 2010

# National Onsite Wastewater Recycling Association, Inc.





NOWRA
National Onsite Wastewater Recycling Association

**NOWRA HEADQUARTERS**
16 N. Carroll St., Suite 900
Madison, WI 53703
Toll Free: (800) 966-2942
Fax: (608) 251-8192
info@nowra.org

www.nowra.org
www.septiclocator.com
www.modelcode.org
www.waterforalllife.org

# MESSAGE FROM THE PRESIDENT

Winter 2010

**President**
Thomas Groves

Welcome to our winter 2010 issue of the NOWRA Onsite Journal (OSJ). I'd like to once again thank COLE Publishing for assisting NOWRA with this publication and for their continued support of our organization and the onsite industry as a whole. This is our second issue of the OSJ within the COLE Publishing Onsite Installer magazine. The NOWRA Board of Directors was very pleased with the last issue (Fall 2009) and we hope that you enjoyed it as well.

NOWRA plans to continue our partnership with COLE for 2010 by combining two of the quarterly OSJ issues with the Onsite Installer magazine. By combining these two publications, it will increase both of our circulations and exposure. If you are a NOWRA member, this is a great opportunity to be seen by a larger audience; so, make sure all of your information is current in the SepticLocator. We are very interested in your feedback on these combined publications. Please feel free to send any comments or suggestions to the NOWRA office.

The BIG news for NOWRA these days is our proposed partnership with the Water Environment Federation (WEF). WEF, based in Alexandria, VA right across the Potomac River from Washington, D.C. and the U.S. EPA Headquarters, has offered NOWRA an opportunity for an office in the D.C. area and a chance to combine forces to share our knowledge of the industry with their experience as a world-wide organization. After investigating partnership options for the past six months with other large national organizations the NOWRA Board decided that WEF provides us with the most viable option for partnership. The proposed partnership with WEF includes a three-year commitment and an office for our executive director in the DC area with access to WEF's staff to help with administrative and technical issues. This partnership will help to acknowledge the need for, and the importance of decentralized approaches in solving wastewater treatment problems where traditional sewerage is difficult and costly. Also, it will provide NOWRA the opportunity to expand our influence in the decentralized arena within the engineering community and state and federal institutions.

However, WEF's willingness to proceed with this is contingent on a show of non-binding commitments of support for 2010 from NOWRA's affiliate members. Pending these commitments, WEF's leadership will bring this proposal before their Board in December who will ultimately make the final decision on this partnership arrangement. If approved, we anticipate that NOWRA can begin to implement our office in Alexandria, VA at WEF's headquarters in January 2010. ***I should note that this proposed partnership is indeed just that – a partnership. It is not a merger, acquisition, or anything else along those lines. NOWRA and WEF will continue as separate member associations with their own dues structure, membership, benefits, etc.***

Some of the immediate benefits that the NOWRA Board sees with a proposed partnership with WEF include:

- WEF is a large, successful, organization devoted to our water environment that sees the value and importance of NOWRA, the onsite/decentralized wastewater industry, and the need for one voice for clean water.
- WEF understands the need for a national organization to represent the decentralized industry and wants to see NOWRA survive to fill this role.
- WEF has a very strong relationship with the U.S. EPA in Washington D.C. due to their location as well as their active government affairs and legislative activities.
- NOWRA would have an office location in the D.C. area with our own full-time employee serving as Executive Director.

In addition to the WEF partnership, many more things have been happening at NOWRA. NOWRA's headquarters is currently managed by the Essie-Kammer Group, based in Madison, Wisconsin. Administering two of NOWRA's WI affiliates – the Wisconsin Onsite Water Recycling Association (WOWRA) and the Wisconsin Precast Concrete Association (WPCA), Essie-Kammer will serve as NOWRA's administrator on an interim basis until early 2010. We appreciate their support and are confident that there will not be a disruption in services. Ann Gryphan of Essie-Kammer is our acting administrator and was instrumental with the smooth transition from WOSSA. I'd like to also once again thank the Washington On-Site Sewage Association (WOSSA) for their interim support of NOWRA from May through September; this temporary arrangement provided NOWRA the basic administrative support it needed.

Other important news is the upcoming Installer Academy. As you will see inside this OSJ, we have focused this issue on the NOWRA Installer Academy, held Feb. 22 and 23, 2010 immediately prior to the Pumper Show in Louisville, KY as a separate training event. As you review the January issue of COLE's Onsite Installer you'll see that it is devoted to the Pumper Show and many of the educational and exhibit opportunities. Not only will NOWRA be conducting our 5th Installer Academy prior to the Pumper Show, but NOWRA will once again conduct a six-hour training program on Wednesday, Feb. 24, 2010 as part of COLE's education day at the Pumper Show. In addition to our Installer Academy, NOWRA will hold our traditional Backhoe "Roe-D-Hoe" in the COLE exhibit hall on Thursday and Friday. All Installer Academy attendees will get one free try at the title and $1,000 first place prize. Others can sign up during the Pumper Show. Even if you are not competing in the Roe-D-Hoe, please stop by and see the action.

We hope many of you will come out a few days early, attend the Installer Academy, and stay to take in everything that the Pumper Show has to offer for the rest of the week. We understand this is a large commitment for many small businesses. Our intention is to provide enough quality training to meet all of your educational and/or certification requirements by holding all of these events during the traditional industry "slow" season.

In other developments since our last issue, NOWRA:

- Participated in the annual meeting of the U.S. EPA MOU Decentralized Partners in November in Washington, D.C.,
- Revised the Business Benefit Program for 2010 based on BBP stakeholder input,

*continued*

- Officially committed to participate in the 2011 EPA Partner Superconference in Columbus, Ohio,
- Participated in the Water Environment Research Foundation's (WERF) research needs workshop on the impacts of water softeners on onsite systems,
- Committed to hold a 2010 Annual Conference in St. Louis, Missouri in October.

There is much more detail on all of these items inside this issue of the *Onsite Journal*. So as you can see, even though NOWRA's administrative offices are in transition, NOWRA has been busier in the past 6 months than any other time in this organization's history and will continue to support the industry and your needs.

In closing, I would just like to thank a few of NOWRA's Board members who have fulfilled their commitment as well as welcome some new faces. J.R. Inman (Service Provider) and William (Pres) Allinder (Regulator) have completed their 3-year terms as NOWRA Board members. On behalf of the Board and the membership, I'd like to wish them well and thank them for their support and contributions to NOWRA and our industry. In addition, I would also like to extend a thank you to Mike Stoll for his contributions as Chair of the Marketing and Communications Committee and for the many great ideas he is responsible for, such as the E-News and other new outreach efforts that you have been seeing from NOWRA. He will continue to participate on the committee, but his leadership will be sorely missed.

In place of these valuable individuals, we welcome two new Board members – Brent Reagor, a local regulator from Massachusetts and a past-YOWA Board member, and Doug Jatcko, a product manufacturer from Boulder, Colorado. As you may be aware, Doug served the past year on the Board at my request for a vacancy in the supplier/manufacturer category. I'm glad that he's able to join us with his own full 3-year term. In addition, I'd like to welcome Jeff Coomer as the new Chairman of the Marketing and Communications Committee.

This organization is only as strong as the members and the volunteers who run it. I am glad to welcome these gentlemen to their respective roles with NOWRA, but they are not enough. NOWRA needs YOU to become more active either through your state association, a NOWRA committee, or a position on the NOWRA Board of Directors in order to continue to grow and become respected in the industry.

Please read this issue of the *Onsite Journal* and let us know how you can help. I hope to see many of you at the Installer Academy and Roe-D-Hoe in Louisville.

*Sincerely,*

Thomas W. Groves
NOWRA President

# SEPTIC LOCATOR - Your 24/7 Internet Sales Tool

With over 60 percent of people using the internet to find a service or product provider, it is more important than ever to have a Web presence for your business. And that is why NOWRA developed "**Septic Locator**."

Septic Locator steers customers to NOWRA business members, and it is the premier resource for placing their company's onsite wastewater products and services in front of homeowners, builders, realtors, regulators, and policy officials. No other Web site offers this kind of direct access to on-site wastewater professionals and products like Septic Locator.

As a free service to all NOWRA members, Septic Locator is easy to use and offers the flexibility of being upgradeable if the member wants to have a stronger presence on the Web.

If you are a NOWRA member, just go to **www.septiclocator.com** and click on "Add My Company." Fill out the simple form, hit "submit," and you are well on your way to having your information available to anyone in your area needing assistance. There is no easier way to make your NOWRA membership work for you 24/7 than on the world's most popular site for onsite services!

If you are not a member of NOWRA, isn't this a great reason to join?

Visit us at **www.NOWRA.org**.

# LOCAL AFFILIATES' UPDATES

## AzOWRA Arizona Onsite Wastewater Recycling Association

AzOWRA has had a busy summer. The 2009 Educational Conference and Exhibition was a great learning opportunity with speakers like AZ Secretary of State, Ken Bennett discussing the State Budget, Attorney John Phillips teaching us about contracts, Jill Smith talking about the importance of Liens, sessions about system design and disposal design in difficult soils. We followed that impressive undertaking with the introduction of the Homeowners Septic System Educational Program which has been presented to three full capacity audiences. The program is expected to have additional presentations throughout the state in 2010.

The 2009 Annual Membership Dinner and Elections were held on November 13, 2009. Richard Bartholomew, PE, is the incoming President and Lou Brown will be the Vice President/President Elect. They will be supported by a dedicated Board of Directors.

The collaboration between the NAU Onsite Demonstration Site and AzOWRA has accomplished writing a draft business plan that is ready for review by AzOWRA membership and NAU. When adopted, this plan will allow for progress in developing a product testing and research site.

## Missouri Smallflows Organization (MSO)

The Missouri Smallflows Organization (MSO) is finalizing plans for their 14th Annual Conference and Exhibition to be held in Columbia, MO on Jan. 19 & 20, 2010. Seminar topics include media filters, interpreting soil reports, *E coli* issues at Lake of the Ozarks, tanks, pumps, inspection issues, and collecting from non-paying customers. The pre-conference seminar set for Monday, Jan. 18 is titled "When gravity won't work," covering all aspects of pressurized leach and their components. The expo center will have over 40 booths staffed by vendors from the onsite industry. In addition, attendees will hear updates from representatives from the EPA, the Missouri Department of Health and Senior Services, and the Missouri Department of Natural Resources.

MSO is adding two new continuing education seminars, "Aerated Treatment Units" (ATU) and "High Strength Waste" in 2010 for Missouri Onsite Professionals. These new seminars will complement the current selection of topics that include: Drip Irrigation Systems; Pumps, Panels & Electrical; Drain Fields-Water Management; Earthen Structures-Lagoons; Operation & Maintenance; Troubleshooting; and Hydraulics. More information on MSO can be found on the Web at: mosmallflows.org. David Casaletto is Executive Director of MSO.

## Wisconsin Onsite Water Recycling Association (WOWRA)

The Wisconsin Onsite Water Recycling Association will once again hold its two-day POWTS Evaluator Certification Training Course in the spring of 2010. WOWRA recently developed this two-day training course in Wisconsin for onsite professionals to learn proper techniques for conducting evaluations of existing private onsite wastewater treatment systems. This innovative two-day training class, which concludes with a certification exam, provides much-needed uniformity around the state for POWTS evaluations. The course includes both classroom instruction and field training. Some of the topics covered during the course include: WOWRA Certified Existing POWTS Evaluator ethics, policies and requirements; evaluator/client relationship and responsibilities; evaluation procedures from data collection through final reports; and procedures for evaluating recent, documented POWTS, as well as the "unknown" POWTS. People can visit the WOWRA Web site, www.wowra.com, later this winter for more details about the certification course and registration information.

## Yankee Onsite Wastewater Association (YOWA)

The Yankee Onsite Wastewater Association (YOWA) was formed in 2006 to provide an organization for wastewater professionals across the New England region. As the newest NOWRA affiliate organization, YOWA represents the states of Maine, New Hampshire, Vermont, Massachusetts, Connecticut, and Rhode Island. Our current membership stands at 89 individuals.

YOWA was proud to sponsor Mr. Bill Stuth, founder and former president of Aqua Test, Inc. of Black Diamond Washington as a featured speaker at this year's Granite State Designers and Installer's conference in New Hampshire. The 22nd annual conference was held Monday, March 23 at the Radisson Hotel in Manchester. Over 400 people were in attendance.

In August 2009, YOWA hosted its second educational program-two day-long seminars aimed at wastewater practitioners in the state of Massachusetts. The programs were held August 10 in Worcester, MA and August 24 in Bridgewater, MA. The program was titled "All You Ever Wanted to Know about Soil Absorption Systems" and reached over 180 individuals and added 18 new members to our growing membership.

YOWA will be using the support services of the New England Water Environment Association in the coming year.

# 2010 NOWRA

National Onsite Wastewater Recycling Association

# INSTALLER ACADEMY TRAINING AGENDA


| Monday, February 22, 2010 | | | |
|---|---|---|---|
| **Time** | **Activity** | | **Location** |
| 7:00 - 9:00 AM | **Registration** | | Outside C101 |
| 8:00 - 9:00 AM | **General Session Welcome & Keynote Presentation** | | C101 |
| 9:00 - 9:15 AM | **Break** | | |
| **TRACKS** | **I. CIDWT Installation of Wastewater Treatment Systems** | **II. Onsite Business Strategies and Zoeller Plant Tour** | **III. Vendor Training Rooms** |
| **Time/Room** | **C101** | **C104** | **C102-103** |
| 9:15 - 10:00 AM | Intro and Business Practices, Nancy Deal | Overview of Onsite Industry, Matthew E. Byers | **Bio-Microbics, Inc.** RetroFAST ® Wastewater Treatment Systems Reza Shams (9:15 – 11:15 AM) |
| 10:00 - 11:00 AM | Soil and Site Evaluation, Randy Miles | Relationships and Health Departments, Engineers, and Local Officials, Wes Combs | |
| 11:00 - 12:00 PM | Installation Techniques and Material, Sara Heger Christopherson | Effluent Pump Sizing for Onsite Wastewater Applications, Dave Theobald | |
| 12:00 - 1:00 PM | **Lunch** | | |
| 1:00 - 2:00 PM | Installation Planning, Tom Fritts | Secondary and Advanced Treatment, Darren Meyers | **Norweco, Inc.** Troubleshooting Chlorination and Dechlorination Systems, Don Bach |
| 2:00 - 3:00 PM | Installation Safety, Nancy Deal | O&M Coordination, Business Management and You, Jason Nett | **Norweco, Inc.** Introduction to Remote Monitoring of Residential Aerobic Treatment Systems, Robert Fletcher |
| 3:00 - 3:15 PM | **Break** | | |
| 3:15 - 4:00 PM | Installation Piping, Sara Heger Christopherson | **Zoeller Plant Tour** (departs at 3:00) | **Polylok, Inc.** Selling Your Business to a Competitor, Harry Nurse & Peter Gavin |
| 4:00 - 5:00 PM | Water-tight Tanks, Randy Miles | | **Polylok, Inc.** Selling Your Business to a Competitor, Harry Nurse & Peter Gavin |

| Tuesday, February 23, 2010 | | | |
|---|---|---|---|
| **Time** | **Activity** | | **Location** |
| 7:00 - 9:00 AM | **Registration** | | Outside C101 |
| **TRACKS** | **I. CIDWT Installation of Wastewater Treatment Systems *(Continued)*** | **IV. Drip Dispersal Overview and Installation** | **V. Vendor Training Rooms *(Continued)*** |
| Time/Room | C101 | C104 | C102-103 |
| 7:00 - 8:00 AM | Optional Homework Session, Randy Miles & Tom Fritts | | |
| 8:00 - 9:00 AM | Distribution: Pressure and Gravity, Nancy Deal | Introduction to Onsite Drip Dispersal, Mike Stoll | **Bord na Mona, Inc.** Design, Installation & O&M of the Pura-Mc® (compact membrane) system, John Payne |
| 9:00 - 10:00 AM | Installing Soil Treatment Systems - Part I, Sara Heger Christopherson | Site and Soil Considerations with Drip Dispersal, David Morgan | |
| 10:00 - 10:15 AM | **Break** | | |
| 10:15 - 11:00 AM | Installing Soil Treatment Systems - Part II, Sara Heger Christopherson | General Design and Layout of Drip Dispersal, Mike Stoll | **Bio-Microbics, Inc.** Membrane Technology, Reza Shams |
| 11:00 - 12:00 PM | Installing Pumps and Controls, Tom Fritts | | |
| 12:00 - 1:00 PM | **Lunch** | | |
| 1:00 - 2:00 PM | ATU Installation, Randy Miles | Dosing and Flushing, David Morgan | **Infiltrator Systems, Inc.** Effluent Distribution, Dennis Hallahan |
| 2:00 - 3:00 PM | Media Filters, Sara Heger Christopherson | Installation Techniques for Drip Dispersal, Mike Stoll | |
| 3:00 - 3:15 PM | **Break** | | |
| 3:15 - 4:00 PM | Installing Disinfection Systems, Nancy Deal | Installation Techniques - Continued | **Infiltrator Systems, Inc.** System Malfunction Analysis and Operation And Maintenance, Dennis Hallahan |
| 4:00 - 5:00 PM | Installing Drip Systems, Tom Fritts | Operation & Maintenance, David Morgan | |
| **Thursday & Friday, February 25-26, 2010** | | | |
| NOWRA's Backhoe "Roe-D-Hoe" Competition - Pumper Show Exhibit Hall | | | |

# NOWRA Installer Academy Agenda Description

## I. CIDWT Installation of Wastewater Treatment Systems

### Day 1

**Welcome, Introduction, and Business Practices**
Course Instructor: Nancy Deal, North Carolina State University
Course Length: 0.75 hour

This session provides an overview of the Installer Training program. A professional installer must be able to effectively communicate with the facility owner, the system designer, and the regulatory community. Documentation that facilitates this effective communication will be discussed and available educational resources will be described.

**Soils and Site Evaluation Overview for Installers**
Course Instructor: Randy Miles, University of Missouri
Course Length: 1.0 hour

Part of the installation process is having a system that works within the constraints of the soil and site conditions to achieve wastewater treatment.

The installer must be able to identify and understand the soil information provided by system designers, and interpret the actual soil conditions to achieve a good installation. Processes describing water movement through soils will also be discussed.

**Installation Techniques and Material**
Course Instructor: Sara Heger Christopherson, University of Minnesota
Course Length: 1.0 hour

This presentation provides broadly applicable information describing specifications, handling, and storage of materials used in system construction to assure long-term system performance. The discussion will include matching equipment with site conditions to maintain natural soil conditions.

**Installation Planning**
Course Instructor: Tom Fritts, Residential Sewage Treatment Co.
Course Length: 1.0 hour

Planning is the first step in the installation process. A construction plan that matches the constraints of the site and the capabilities of the installer must be developed and implemented. Approaches and considerations for achieving this will be presented.

**Installation Safety**
Course Instructor: Nancy Deal, North Carolina State University
Course length: 1.0 hour
Safety is a critical consideration for any business. The process of constructing onsite wastewater treatment systems must be conducted in a safe manner. Appropriate construction practices should be followed on the job site to limit the risk of worker injuries and contractor exposure to liability. OSHA terminology and safety practices will be discussed.

**Piping Installation**
Course Instructor: Sara Heger Christopherson, University of Minnesota
Course length: 0.75 hour
This presention includes descriptions of various types of pipe and pipe selection criteria, and highlights procedures for properly connecting PVC piping. The discussion will include proper pipe trench excavation, bedding, layout, sleeving, and backfilling to assure watertight piping installations.

**Watertight Tank Installation**
Course Instructor: Randy Miles, University of Missouri
Course length: 1.0 hour
Appropriate tank installation is essential for long-term performance of the wastewater treatment system. All tanks must be installed in a stable manner to achieve a watertight treatment system with adequate access for performing appropriate operation and maintenance after the installation is complete. The key steps of installation will be presented.

## Day 2

**Homework**
Course Instructor: Randy Miles, University of Missouri and Tom Fritts, Residential Sewage Treatment Co.
Course Length: 1.0 hour
In this optional presentation, the homework problems will be reviewed and calculations will be discussed. This session is a particularly useful guide for those taking the NEHA Certified Installer Exam.

**Installation of Pressure and Gravity Distribution Components**
Course Instructor: Nancy Deal, North Carolina State University
Course Length: 1.0 hour
Maximizing uniformity of effluent distribution is critical to effective wastewater treatment. The components used for pressure and gravity distribution to soil treatment areas will be discussed with respect to critical construction considerations. Topics include valves, manifolds, distribution and drop boxes, as well as parallel, serial, and sequential distribution. Providing access for operation and maintenance is emphasized.

**Installing Soil Treatment Areas I**
Course Instructor: Sara Heger Christopherson, University of Minnesota
Course Length: 1.0 hour
The soil treatment area is the final component of the onsite wastewater treatment system. The key considerations for installation of below-grade soil treatment areas will be presented with a focus on trenches and beds, including staking, excavation, placement of trench media, and final cover.

**Installing Soil Treatment Areas II**
Course Instructor: Sara Heger Christopherson, University of Minnesota
Course Length: 0.75 hour
The second part of this presentation will focus on above-grade systems including at-grades, area fill systems, mounds, and bottomless media filters. The key considerations for proper installation of above-grade soil treatment areas will be presented including vegetation removal, scarification, and fill/sand material placement.

**Installing Pressure Dosing Systems: Pumps & Controls**
Course Instructor: Tom Fritts, Residential Sewage Treatment Co.
Course Length: 1 hour
Pumps and siphons may be used to convey sewage and effluent to various components of onsite wastewater treatment systems. The different types of pumps used to convey sewage and effluent will be discussed. Proper pump selection and sizing criteria will be identified so that installers can verify system specifications. Appropriate construction methods for installation and maintenance of pumps, controls, and discharge assemblies will be presented.

**Installing Aerobic Treatment Units**
Course Instructor: Randy Miles, University of Missouri
Course Length: 1.0 hour
In this session, the components of an aerobic treatment unit (ATU) are discussed with respect to their expected operational criteria and associated installation practices. Construction techniques that facilitate system stability, accessibility for operation and maintenance, and long-term performance will be presented.

**Media Filter Installation**
Course Instructor: Sara Heger Christopherson, University of Minnesota
Course Length: 1.0 hour
In this session, media filters are discussed with respect to their expected operational criteria and associated installation practices. Critical construction practices for media filter components will be presented with respect to facilitating operation and maintenance for optimal long-term performance.

**Installing Disinfection Systems**
Course Instructor: Nancy Deal, North Carolina State University
Course Length: 0.75 hour
Disinfection is a critical part of many treatment trains located across the country. Disinfection methods and effective approaches to installing these systems with adequate access for operation and maintenance will be discussed.

**Installing Drip Distribution Systems**
Course Instructor: Tom Fritts, Residential Sewage Treatment Co.
Course Length: 1.0 hour
This session presents a discussion of drip distribution system components and potential treatment trains. Key differences between drip distribution and other pressure distribution methods will be highlighted. Simple but critical guidelines that facilitate the installation and maintenance of drip distribution systems for optimum performance will be presented.

## II. Onsite Business Strategies and Zoeller Plant Tour

**Overview of Onsite Industry**
Course Instructor: Matthew E. Byers, Ph.D. Onsite Manager
Course Length: 0.75 hour
This presentation will look at where the industry is and where it is going--how the industry stacks up, both regionally and organizationally.

**Relationships and Health Departments, Engineers, and Local Officials**
Course Instructor: Wes Combs R.S.
Course Length: 1.0 hour
This is a presentation regarding who you need to know, how to get to know them, and what to say when you get the chance. These relationships are your business "lifeline" and this presentation will give you some pointers and best practices.

**Effluent Pump Sizing for Onsite Wastewater Applications**
Course Instructor: Dave Theobald, SSPMA
Course Length: 1.0 hour
One of the keys to the sustainability of an onsite wastewater system is a properly sized and applied pump. This presentation will introduce the concepts and processes necessary in the appropriate sizing and selection of pumps for effluent applications, such as Low Pressure Pipe (LPP), Enhanced Flow, and STEP systems.

**Secondary and Advanced Treatment**
Course Instructor: Darren Meyers, P.E.
Course Length: 1.0 hour

This presentation will look at some of the more common forms of secondary and advanced treatment in use today. The discussion will include mechanisms for treatment, operation and maintenance, and sustainability considerations.

**O&M Coordination, Business Management and You**
Course Instructor: Jason Nett M.B.A.
Course Length: 1.0 hour
This presentation will discuss how to do business, improve business, and different ways to work the service side of your business.

**Zoeller Plant Tour**
Course Instructors: Dave Theobald and Darren Meyers
Course Length: 2.0 hours
This tour will highlight the various pumps, effluent screens, and decentralized technologies being manufactured at the Zoeller plant.

## III. & V. Vendor Training Rooms

**Norweco, Inc.**
**Troubleshooting Chlorination and Dechlorination Systems**
Course Instructor: Don Bach
Session length: 1.0 hour
Effective chlorination and dechlorination of wastewater depends on the knowledge and control of variables such as pH, alkalinity, ammonia and suspended solids. This session explores the potential impact of these variables and corrective actions.

**Norweco, Inc**
**Introduction to Remote Monitoring of Residential Aerobic Treatment Systems**
Course Instructor: Robert Fletcher
Session length: 1.0 hour
This course is a basic introduction to the design, operation, and troubleshooting of residential ATU's equipped with remote monitoring capability. Taught from the service technician's point of view, this course promises a wealth of valuable advice.

**Polylok, Inc.**
**Septic Tank Filters**
Course Instructor: Harry Nurse & Peter Gavin
Session length: 1.0 hour
The session will describe why in this day and age septic tank filters are more important than ever as described by one of the early pioneers of the industry. A brief overview and description of how filters work and why they are critical to every system will be provided.

**Polylok, Inc.**
**Selling Your Business to a Competitor**
Course Instructor: Harry Nurse & Peter Gavin
Session length: 1.0 hour
This session will provide a brief overview of the trials of selling your business to a competitor.

**Bord na Mona Environmental Products U.S. Inc.**
**Design, Installation and Operation & Maintenance of the Pura-Mc® (compact membrane) System**
Course Instructor: John Payne
Session length: 2.0 hours
Topics covered include design guidelines, typical components of a Pura-Mc®, and installation of the system. Also covered will be expected performance of the Pura-Mc® system and on-going O&M requirements.

**Bio-Microbics, Inc.**
**Membrane Technology**
Course Instructor: Dr. Reza Shams
Session length: 2.0 hours
This short course focuses on the installation and operation for small scale applications of the Membrane Bioreactor (MBR) in decentralized wastewater applications. The unique features and challenges of this new technology for decentralized applications will be reviewed. Several examples of installations will be discussed along with detailed procedures in operation.

**Infiltrator, Inc.**
**Drainfield Malfunction Investigation and Remedies**
Course Instructor: Dennis F. Hallahan
Session length: 2.0 hours
Causes of drainfield malfunction can be numerous. This presentation will review the basic functions of each system component and methods to investigate each.

**Infiltrator, Inc.**
**Effluent Distribution**
Course Instructor: Dennis F. Hallahan
Session length: 2.0 hours
This session will present a review of gravity, pressure, and time, dosing strategies to achieve the desired goals for onsite wastewater systems. Advantages and disadvantages will be discussed for each method.

## IV. Onsite Drip Dispersal Overview, Design, Installation, and Operation

**Introduction to Onsite Drip Dispersal**
Course Instructor: Mike Stoll, Netafim USA
Course Length: 1.0 hour
This session presents how drip dispersal works. It will also describe the differences between drip dispersal and other disposal techniques, as well as provide a description of systems ranging from single family homes to municipalities.

**Soil and Site Considerations**
Course Instructor: David Morgan, Geoflow
Course Length: 1.0 hour
The importance of soil structure in determining the application rate will be discussed along with how to manage impermeable layers, compacted soils, and fill.

**General Design and Layout of Drip Dispersal Systems**
Course Instructor: Mike Stoll, Netafim USA
Course Length: 2.0 hours
An overview of the components of a drip dispersal system will be covered including the dripline, filters, valves, air-vacuum relief valves, and other components. Techniques will be presented on how to design for slopes and freezing climates. Typical designs will be provided with an emphasis on difficult or unusual conditions. There will also be discussion on how drip dispersal systems can provide beneficial reuse opportunities for the effluent, including irrigation.

**Dosing and Flushing**
Course Instructor: David Morgan, Geoflow
Course Length: 1.0 hour
This presentation will cover why timed dosing is preferable, as well as flushing of the filter and the driplines. Manual flushing vs. automatic flushing vs. continuous flushing also will be discussed.

**Installation Techniques**
Course Instructor: Mike Stoll, Netafim USA
Course Length: 2.0 hours
Various techniques, as well as tips and hints for installation techniques including shovel, trencher, vibratory plow, and custom built plows will be discussed.

**Operation & Maintenance**
Course Instructor: David Morgan, Geoflow
Course Length: 1.0 hour
Proper installation is just the beginning. This presentation will cover important information on how to get and keep the system working: system start-up, system operation, and routine maintenance.

# NOWRA 5th Annual Installer Academy – February 22-23, 2010

## Registration Form

This event, being held at the Kentucky Exposition Center in conjunction with the Pumper Expo, is worth up to 17 CEUs. If registering by mail, **please use one form per registrant** and photocopy this form for additional attendees (except spouses/guests). Please print clearly or type. If you do not receive confirmation within two weeks of submitting this form, please call NOWRA Headquarters at (800) 966-2942 or e-mail info@nowra.org. After February 15, 2010, registration forms are only accepted onsite at Installer Academy.

First Name (as it will appear on name badge) _____ Last Name _____

Title _____ Organization _____

Mailing Address _____

City _____ State/Province _____ Zip _____

Daytime Phone _____ Fax _____

E-mail _____

NOWRA Member # _____ ☐ Special needs (wheelchair accessibility, audio, _____

**Please mark one registration option below:**

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**FULL Conference Registration*** (Includes educational sessions, print materials and lunch.)

☐ $150 NOWRA Members - Early Bird Rate (By February 15) ☐ $195 NOWRA Members - (February 16 – On site Registration)
☐ $195 Non-Members - Early Bird Rate (By February 15) ☐ $245 Non-Members - (February 16 – On site Registration)

**ONE Day Training*** (Includes educational sessions, print materials and lunch.)

☐ $100 NOWRA Members - Early Bird Rate (By February 15) ☐ $125 NOWRA Members - (February 16 – On site Registration)
☐ $125 Non-Members - Early Bird Rate (By February 15) ☐ $150 Non-Members - (February 16 – On site Registration)

**Date of Attendance**

☐ Monday, February 22th ☐ Tuesday, February 23rd

**Zoeller Plant Tour (3 p.m. February 22)**

☐ Sign me up! (Free with Installer Academy registration.)

**ROE-D-HOE Competition (February 25-26-27)**

☐ Sign me up! (One free try with Installer Academy registration.) (Or stop by and check out the competition in the Pumper Show exhibit hall and sign up there)

**GRAND TOTAL $ _____**

(* Installer Academy registration fees do not include admission to Pumper Expo.)

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**Payment Options** (*Registration will not be processed unless accompanied by full payment)*

☐ Check (payable to NOWRA) ☐ Credit Card Visa /MasterCard (circle one)

Credit Card # _____ 3-Digit Security Code_____ Expiration Date _____

Name on Card _____ Signature _____

**Please mail completed registration form and payment to: Installer Academy 2010, c/o NOWRA Headquarters, 16 N. Carroll St., Suite 900, Madison WI 53703. When paying by credit card, fax registration form to (608) 251-8192.**

**Refund Policy:** Registrations will be refunded less a $50 administrative fee if written notice of cancellation is postmarked by February 15, 2010. No refunds will be provided after February 15, 2010.

# 19th Annual Technical Education Conference

***Surface Discharge: Challenges and Solutions***

## CALL FOR PAPERS

### October 25-27, 2010

The National Onsite Wastewater Recycling Association (NOWRA) welcomes abstracts for papers to be presented at the NOWRA 19th Annual Conference in St. Louis, Missouri on October 25-27, 2010. St. Louis will serve as a great location in the heart of the US on the Mississippi River, and we are pleased to have the Missouri Smallflows Organization as the Local Host for this conference. This conference will highlight issues related to surface discharges: what can be done, what are some appropriate technologies, and what are some successes as documented with case studies.

The NOWRA annual conference serves as the premier conference for the conveyance of new research, regulations and policy, and experience and practices in the decentralized wastewater industry. The traditional trade show will be taking a one-year hiatus, but will return in 2011 when NOWRA partners with NEHA and SORA for the "Super Conference."

NOWRA's 19th annual conference will be focusing on surface discharging issues, but abstracts covering the broad range of topics relating to onsite/decentralized wastewater treatment are encouraged. The deadline for submission of abstracts is April 15, 2010. For more information on the Call for Papers, see the NOWRA website at www.nowra.org/annual_conference.html or contact Sara Heger at heger001@umn.edu.

# Install With Operation and Maintenance in Mind

**By Nancy Deal, North Carolina State University**

All decentralized wastewater treatment systems, whether simple or complex, include components that distribute effluent to and among other elements of the system. Spreading wastewater and effluent over space and time allows physical, biological, and chemical treatment processes to effectively remove contaminants. Distribution can be accomplished using gravity, pressure, or a combination of both. Maintaining uniform distribution over the life of the system will depend upon installing a system that includes elements that facilitate operation and maintenance (O&M).

Gravity distribution is the simplest, least expensive, and perhaps most widely used means of distributing effluent. Gravity components can be successfully used on relatively deep, well-drained sites so long as there is appropriate attention to detail. D-boxes, drop boxes and stepdowns have inherent limitations relative to maximizing uniformity, so extra care should be taken when installing them to take full advantage of their capabilities. Pressure distribution is typically more expensive because a dosing tank, pump, and the associated components also must be installed. The increase in treatment potential by using pressure distribution to promote uniform application and unsaturated flow means that systems incorporating pressure distribution are often permitted for installation in areas with soil or site limitations. Such sites are inherently more risky for wastewater treatment and the results of malfunction are thus more profound. The frequency and nature of O&M activities should reflect the increased risk.

Professional installers always "install with O&M in mind", even if they will not be the primary service provider for the completed system. This includes selecting quality components that will withstand the wastewater environment; proper bedding and backfilling to ensure stability and watertightness over time; and providing adequate access to all components as necessary. For example:

Select and install valve boxes that allow the service provider to both access AND operate the valve.

Install cleanouts within an adequately-sized valve box and place the box on a bed of gravel to ensure stability and allow for regular flushing of solids.

Use sweep elbows or 2-45 degree fittings on small cleanouts to allow insertion of pressure cleaning equipment.

Compact the backfill around d-boxes, drop boxes, stepdowns, valve boxes and vaults by hand to avoid damage or shifting of the components; check the orientation frequently during backfilling to ensure proper orientation and elevation, as appropriate.

Installation professionals are aware that maximizing uniform distribution is a primary goal during installation and fundamental to achieving good treatment. Ensuring that uniform distribution continues is dependent upon careful component selection, configuration, and installation to facilitate O&M activities over the life of the system. The installer's influence on system performance continues long after the system is put into use.

# Pumps & Controls

**By Tom Fritts, Residential Sewage Treatment Co.**

One of my favorite classes will be offered at the annual NOWRA Installer Academy this year. "Pumps & Controls" is always well received and no wonder. More and more systems are being designed and installed using pumps. It is obvious that pumps are used to move wastewater to a higher elevation. But did you know they are also used to compensate for soil treatment area size, and to provide uniform distribution? They are also used to equalize flow and evenly distribute effluent over the soil treatment area. As you can see, pumps are playing a more important role in the business of onsite.

When you decide to use a pump you also have other things to consider. Should you demand dose or time dose? Both will be covered, reviewing the advantages and disadvantages of each. What kind of floats should you use? There are several choices including switches that use pressure and ultrasonic devices.

A very important decision when using a pump is the electrical requirements. What voltage and wire size should be used? It does make a big difference. Using correct and best practices when supplying power to the pump can prevent premature failures that are very difficult to troubleshoot. You will learn how to confirm equipment that is specified and how making changes in the field can affect the performance of the system.

One advantage when using a pump is the ability to know the amount of liquid that is being delivered to the soil treatment area. You will learn to calculate the pump delivery rate and use that in conjunction with elapsed time meters and cycle counters to determine if the soil treatment area is being over or under used - a great troubleshooting tool.

Finally, you will learn the best way to configure the discharge assembly of the pumping system. Many techniques and products have changed rapidly in recent years. Learn the best way to get the optimum performance from any pumping system. ●

# Construction Materials, Techniques, and Equipment

**By Sara Heger Christopherson, University of Minnesota**

At the Installer Academy, one of the most practical presentations for Installers will focus on proper installation techniques, materials, and equipment. These issues are critical during construction of onsite wastewater treatment systems to help ensure adequate treatment and acceptance of the wastewater. Installation techniques and selection of equipment are based on maintaining the natural soil conditions of the site while safely installing a system at the proper depth and elevations. Proper material selection ensures that the installed materials will function as intended by properly distributing, treating, and accepting effluent.

Often the choice of equipment for installing a system is predetermined by the equipment a company owns. It is important, however, to understand the limitations of different pieces of equipment and recognize when renting or leasing equipment will facilitate effective and efficient system installation. It is important to select the right piece of equipment for the job; the size of job and impact on the site must be considered.

When selecting material for an installation, the installer needs to be certain that it meets the approved design specifications. If the material specified in the design cannot be obtained, the installer must consult with the system designer to determine if there are equivalent material options. The installer must know what material to ask for, get documentation that the material order matches the specifications, know what it should look like when, it is delivered, and how to verify that it matches the specs.

Varying techniques are needed to deal with the many challenging site conditions an installer may encounter. Many issues will be discussed including erosion control, dewatering, avoiding compaction and smearing, proper bedding, and installing on steep slopes and in cold climates. ●

# New Approaches and Products Continue the Evolution of Onsite Wastewater Treatment

**By Dennis Hallahan, P.E., Technical Director, Infiltrator Systems Inc.**

Onsite wastewater professionals and service providers are challenged by environmental demands driving the need for new approaches to decentralized wastewater treatment applications. The industry and scientists continue to explore innovative decentralized wastewater treatment design and create better methods of testing new approaches. They are also looking carefully at the use of advanced treatment and disposal technology and decentralized treatment management strategies.

The onsite evolution is also being impacted by a barrage of new health codes that regulate onsite wastewater system design and installation. Growing awareness of nutrient loadings to the environment from nitrogen and phosphorus, aquifer protection, and the value of water as a resource have come to the forefront. These health codes continue to be amended to preserve and protect public health and natural resources.

Each year, onsite residential septic systems discharge billions of gallons of wastewater into the ground. Homeowners, regulators, and the community at large depend on these underground systems to do one specific thing for them – work. In fact, everyone involved with a residential onsite system, from the homeowner to those at the state level, depend on these "hidden" systems to work well. They also expect them to perform for periods of 30 or more years with routine maintenance and inspection, little cost, and preferably, no expensive repairs or replacement.

The explanations of "working well and must perform" do not stop with simply discharging wastewater to the soil for treatment for all those years. These septic systems must maintain their structural integrity and storage capacity in order to "work" for the long term. Companies that manufacture integral components for these systems (tanks, distribution boxes, leachfield chambers, piping) design and engineer each component to last numerous years under various conditions with the goal of ensuring the best performance possible. It all begins with the installation and placement of the system itself, which is a key factor in each systems, potential lifespan. Manufacturers also specify how a system should be cared for and properly maintained with routine inspections by qualified contractors.

Although the recent decrease in housing starts may have tempered the growth of the decentralized market for the short term, the predicted increase in U.S. population to 419 million persons in 2050 bodes well for the long-term prognosis of the decentralized wastewater treatment industry. This means that we must continue to develop and install the best products in system designs that protect public health and the environment.

# Effluent Pump Sizing for Onsite Wastewater Applications

**By Dave Theobald**
**Sump and Sewage Pump Manufacturer's Association**

Are you tired of having your relationships with pumps fail after only two or three years? Tired of continually having to trade in your pump for a newer model? Pumps, like mates, should be selected not simply because of their availability but because of their suitability...and their curves.

Some installers select pumps using a single criterion – horsepower. They assume that a ½-horsepower pump will work in most applications and if a particular site or project is slightly more involved, they may request a ¾-or 1-horsepower pump or "whatever you've got in stock" from their supplier. Because they are not properly sized, these pumps typically fail within a short period of time. Truly professional contractors move beyond this simplistic guesswork and select their pumps based on a number of important criteria.

Proper selection begins with recognizing the solids handling requirements of the system and capabilities of the pump. Next, it is crucial to consider the Total Dynamic Head (TDH) of the pump system. TDH is comprised of three pressure elements: Static Head (the vertical distance the water is to be pumped), Friction Head (the friction loss incurred through fittings and over a horizontal pipe run), and Operating Head (the residual pressures that must be overcome, such as squirt height). The system may also have a flow requirement, usually given in gallons per minute (GPM). This is usually dictated either by the inflow or by the flow requirements of the pressurized distribution system.

The relationship between the GPM that a pump can produce and the TDH of the system is charted in a manufacturer's published pump performance curve. Conscientious contractors always consult curves when choosing pumps.

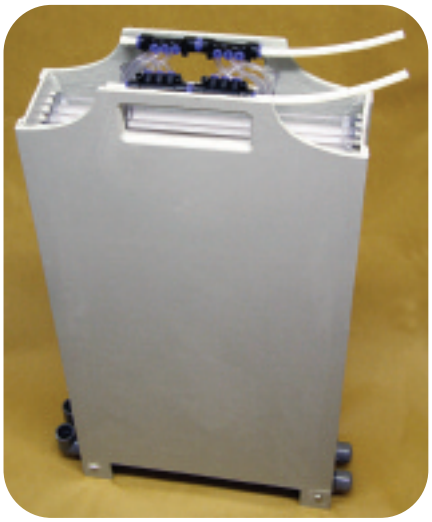
The professionals who attend the Sump and Sewage Pump Manufacturer's Association's (SSPMA's) presentation of *Effluent Pump Sizing for Onsite Wastewater Applications* at the 2010 NOWRA Installer's Academy will understand these and other important concepts, acquire pump sizing and selection skills, and be well on the way to lasting and fulfilling relationships with their effluent pumps.

# Membranes for Residential Wastewater Reuse

**John Payne, Bord na Mona Environmental Products U.S. Inc.**

One of the greatest challenges that the United States faces over the next decade will be ensuring an ample supply of fresh water. Potable water is currently used for non-potable needs, placing a heavy burden on existing water treatment infrastructure. Typical potable water demands which could be accomplished with non-potable water (recycled water and rainwater harvesting) include landscape irrigation, toilet flushing, vehicle washing, laundry washing, pool and artificial lake filling.

It can be anticipated that the introduction of reuse regulations in the United States, government incentives, and periods of water shortages will heighten public awareness towards all methods of water conservation including reuse and strengthen the perception that all water sources are a resource. Water recycling has proven to be effective and successful in creating a new and reliable water supply, without compromising public health. Non-potable reuse is a widely accepted practice that will continue to grow.



Initiatives such as LEED certification and the National Association of Homebuilders "National Green Building Standard" are being promoted to rate buildings on their water conservation credentials. With the support of these and other regulatory initiatives, the future for water reuse systems is predicted to expand significantly, driven by the concerns on water supply and the growing demand for sustainability.

A new generation of innovative technologies is being developed to meet these demands with residential scale membrane treatment units leading the way where water reuse or high nitrogen performance standards are specified.

Bord na Móna Environmental Products U.S. Inc have researched and developed the Pura-Mc® Compact Membrane Bioreactor system that achieves high quality effluent in a very small footprint which meets water reuse and stringent Total Nitrogen standards. The Pura-Mc® is a pre-engineered solution designed specifically for the residential market that provides greater reliability, reduced operational input, ease of maintenance, and less complexity than other comparable membrane systems. Pura-Mc® is based on flat plate membrane technology assembled into small modular cassettes. The cassette consists of an integral dedicated air diffuser assembly that eliminates the need for back-pulsing or frequent chemical cleaning.

The Pura-Mc® system uses ultra-filtration membranes to separate activated sludge from treated effluent, eliminating the need for final clarification. The biological process removes constituents such as BOD, nitrogen and phosphorus, while the membranes, submerged in the biological reactor, provide a physical barrier that rejects pathogens and other suspended solids. The nature of the activated sludge floc, combined with continuous air scouring by aeration bubbles created by a carefully designed aeration grid, ensures consistently high removal efficiency without membrane fouling.

Nitrification is facilitated by the long sludge age while denitrification can be incorporated as part of Bord na Mona's Pura-Mc® designs, with nitrogen effluent levels of 10 mg/l or 5 mg/l TN depending upon permit requirements.

This highly treated recycled wastewater is essentially pathogen free, sparkling clear and can safely be re-used for such purposes as irrigation, vehicle washing, and toilet flushing.

# Technical Guidelines Available from NOWRA's Tech Practices Committee

The Technical Practices Committee has been busy on several fronts. We released two documents in 2009 for NOWRA members to utilize. The first was a homeowner guidance document for the use of water softeners with onsite wastewater systems. This document was put together by a task force and was a collaborative effort between the Water Quality Association and NOWRA. It can be found on the NOWRA Web site on the News Release page. While it doesn't answer all the questions, it at least gives the end user some direction when they need or want to use both of these products at their home. The effort that we put into this cause has not gone unnoticed. The Water Environment Research Foundation (WERF) contacted our task group so they could conduct a workshop to determine what further research is needed to answer concerns on water softener discharges to onsite wastewater systems. EPA was also involved with co-sponsoring this workshop which was held in Alexandria, VA, November 2-3, 2009.

The committee also released a whitepaper entitled: "Does Your Community Need a Sewer System?" This paper gives direction to community leaders on how to select a designer for their small community wastewater treatment needs. It can also be found on the NOWRA website on the News Release page.

We have also looked into the LEED issue to see how we may be able to help our manufacturer members get specified for LEED projects. One of our members, Jill Hass with Clearford Industries, wrote a very informative and helpful article for the last NOWRA Onsite Journal. We have also been working to update NOWRA's "Homeowner's Guide to Septic Systems" folder. This project is ongoing today.

The TPC is always open for suggested topics to look into that are pertinent to our industry. Please contact the TPC Chair, Allison Blodig at ablodig@biomicrobics.com with any ideas.

# NOWRA Member Takes it Upon Himself to Promote Onsite Education

In my years of training citizens about caring for their septic systems, I am frequently asked about the things that can be done to increase the life of a septic system and the basics of what to do to keep a system functional. Most septic system users are interested in these key factors that I focus on in my seminars. Building off of this concept, I created the characters Doctor Septic and his loyal companion Snoopy as educational proponents for septic systems.

Doctor Septic and Snoopy have appeared in area schools, community presentations, and industry trade shows around the state of Florida to help get the word out on how to care for their septic system. In area schools, discussions focus on nonpoint and point source pollution, reuse and recycling, land application, septage treatment and utilization, and topics pertaining to land, pollutions and soils. These topics are beneficial to school curriculum standards. Sewage treatment processes, collection systems, and sanitary sewer overflows are other topics of interest in the curriculum. In Florida, the Sunshine State Standards require this information to be taught in high school agricultural classes. When Doctor Septic and Snoopy arrive, a detailed lesson plan is provided to the classroom teacher. The classroom teacher knows in advance what to expect and the plan is attached to the daily planner for administrative review. There may be a request to focus the teaching on drinking water systems and wastewater treatment. Pollution Prevention should be part of state curriculum. Adapting the presentations to meet state curriculum guidelines provides opportunity for teachers to benefit from the training.

**Doctor Septic and Snoopy**
Albert Royster

To be specific about expanding the opportunities to share the message to more people, it is essential that a national training program be adopted. Some local water management districts allow volunteers to participate in teaching students about pollution control, i.e. point and non-point source pollution. If the curriculum is approved statewide, perhaps a program in your state could be adapted via a grant to fund education in public schools. An EPA Grant or Section 319 grant to fund these endeavors would make the program possible. Your state should have a nonpoint source management program through its Natural Resources or Environmental Protection agencies. The Section 319 Grant Program should be linked to the program.

**Septic system installers have an opportunity to educate and possibly increase their customer base.** When I am asked to offer a talk to industry professionals on wastewater treatment or something related that would be interesting to a homeowner, I invite homeowners to sit in and ask questions. What is asked is really what the septic tank contractor should be listening to. These questions reflect what is *not* covered when system care is discussed in a normal setting when the system is being repaired or serviced. The contractor should be available to answer questions and to consult with the system user. A positive relationship with the client can provide opportunity for continued service in years to come. Offering the full story on a system diagnosis can alert the client about issues to be warned about.

When there is a comment on effluent filters and the homeowner asks why their system does not have such a device to trap suspended solids, there is an opportunity for the contractor to plan and arrange for the system to be serviced. After the septic tank is serviced and the system is diagnosed for any possible problem, it is important to discuss the findings of the diagnosis of the system. This provides opportunity for your client to be clear about what you are relaying about the septic system.

I have has addressed pertinent wastewater issues to many audiences across the country. Offering training to onsite septic professionals, realtors, builders, businesses, septic tank contractors, and certified plumbers has been a rewarding challenge. Those that attend these sessions ask questions that the local regulators and professionals in the trade would be entertained to respond to. The concepts conveyed by your client to interpret how a system operates may be amazing and sometimes disturbing.

There are instances those attending the class may not know if they have a septic system or where it is located. This implies the system probably has been neglected.

This same theme should be carried when training your client about system care. There is a demand to train those that use these systems. There are a lot of septic tank contractors missing the chance to train their client base. Providing training at a school, convention, public workshop, and where the material may be viewed if taped are examples on how a training program and use of a grant would allow an opportunity for others to learn about managing and caring for a septic system. Guest speakers have a unique way to emphasize the message being driven to system users. The material should be relayed in a fashion that refreshes the message being given, not repeating the same content over and over. The meeting may include a product demonstration or cover a technique to demonstrate proper installation, design, and siting.

Video taping of various segments of given presentations (to view at various sites or via cable television system) would allow many others to learn about the message being conveyed. Often if a presentation is given, the material is currently being updated. For your client to view a presentation and for a guest professional to moderate and take questions would provide a learning opportunity. Your company could promote or sponsor the event and benefit from potential sales in educating your clients. TV spots and industry news features could be relayed to offer public awareness of issues within the septic trade.

There is a true need to better educate the people served by onsite wastewater treatment systems. Such training will provide options to better manage and maintain the septic system. A training program would provide the opportunity for others to better understand the need for proper management of such systems that provide effective treatment and pollution control.

Albert offers seminars on topics concerning key management program concepts for any wastewater professional. He is an Environmental Specialist for Volusia County Health Department in Deland, Florida, and can be reached at 386-822-6250 or e-mail Albert_royster@doh.state.fl.us.

NOWRA
National Onsite Wastewater Recycling Association

# BUSINESS BENEFIT PROGRAM MEMBERS FOR 2009

## GOLD

**Infiltrator Systems, Inc.**
www.infiltratorsystems.com

**Ezflow by Infiltrator**
www.ezflowlp.com

**Bio-Microbics, Inc.**
www.biomicrobics.com

**Zoeller Pump Company**
www.zoeller.com

**Premier Tech Environnement**
www.premiertech.com

**Advanced Drainage System**
www.ads-pipe.com

**Bord na Mona**
www.bnm-usa.com

## BRONZE

**NORWECO**
www.norweco.com

**Netafim USA**
www.netafimusa.com

**Adenus Technologies, LLC**
www.adenus.com

**Front Range Precast Concrete, Inc.**
www.flxx.com

**Waterloo Biofilter Systems, Inc.**
www.waterloo-biofilter.com

## SILVER

**Delta Environmental Products**
www.deltaenvironmental.com

**Xerxes Company**
www.xerxescorp.com

**Salcor Inc.**

**Wieser Concrete Products, Inc.**
www.wieserconcrete.com

## LOYAL SUPPORTER

**Arcan Enterprises, Inc.**
www.arcan.com

**SJE-Rhombus**
www.sjerhombus.com

For information on the benefits, or how to become a 2010 NOWRA Business Benefit Program member, check out our Web page at www.nowra.org/bbp.html or call the NOWRA offices at 800-966-2942. Many new benefits were added to the program for 2010, so act now and don't miss out!