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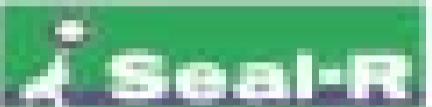










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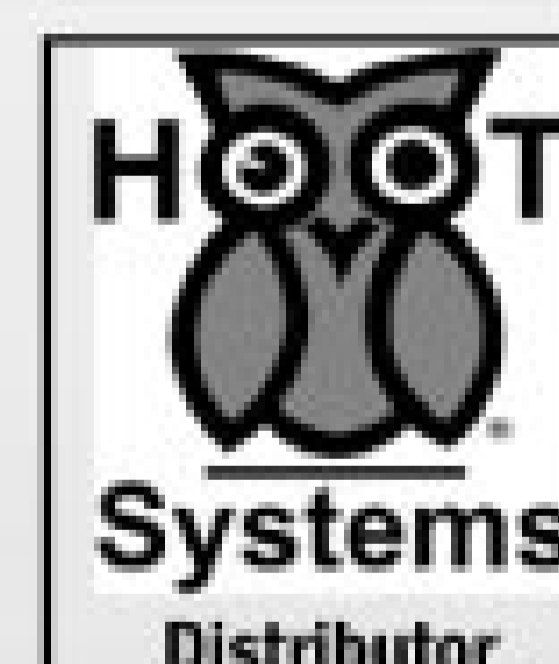
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## Be There or Stand Still

**A slow economy doesn't mean industry progress stops. If you want to stay on the leading edge, you need to keep attending your industry trade shows.**

**By Ted J. Rulseh, Editor**

**S**o business still isn't as good as you're used to, and you still need to watch expenses, and time is at a premium now more than ever.

That can only mean one thing: You need to find the money, and find the time, to attend the 2010 Pumper & Cleaner Environmental Expo International. Yes, that's right. Even if times are still hard, now is not the time to cut something so essential out of the budget. The same would be true for any high-quality industry trade show you're used to visiting.

### Count the reasons

Why is trade show attendance so important even now? Because no matter what happens to the economy, the industry doesn't stand still. Manufacturers still develop compelling new products. Contractors still find new ways to solve problems and serve customers better.

There's no better place than your industry trade show to learn about these things. Skip the show and other companies — including your competitors — make progress while you stay right where you are. Or to put it more positively, if you attend now, while your competitors stay home, you gain the edge.

Business is always tough. A competitive edge is hard to win and, once you get it, hard to keep. What you learn at a trade show like the Expo may give just the boost you need to hold on to your advantage or put another competitor or two in the dust cloud behind you.

### Remember value

Think for a moment: Why do you attend trade shows when times are good? Certainly not just because you can afford the expense. You attend because you know you get back many times what you spend — in cost-saving ideas, in

technologies that help you earn more profit, in clues to finding whole new lines of business that help you grow.

Does any of that change just because the economy isn't the same as it was two years ago? Not likely. Everything that has attracted you in the past is still there. So why even

ment, and one with a strong and reliable return. At the very least, it's something you do consistently to promote the health of your business.

In a course I once took about starting a business, I learned about the importance of having a good accountant. Few businesses, the instructor said, fail because of their

**Why do you attend trade shows when times are good? Certainly not just because you can afford the expense. You attend because you know you get back many times what you spend — in cost-saving ideas, in technologies that help you earn more profit, in clues to finding whole new lines of business that help you grow.**

consider staying home?

The 2010 Pumper & Cleaner Expo is the 30th annual show. That fact alone will help bring out some of the sharpest people in the industry. You just never know who you'll meet. Just one piece of advice or one idea can make your entire trip worthwhile.

Of course, the Expo format is designed to help you make those important connections. You can meet other professionals almost anywhere: In line for registration, around exhibitor booths, in seminar rooms, and lunch tables, and in cocktail areas with seating in the COLE Pub outside the exhibit hall.

### Wise investment

Attending a trade show is never an expense — it is always an invest-

ment, and one with a strong and reliable return. At the very least, it's something you do consistently to promote the health of your business.

There's a parallel here. Very seldom will the cost of attending an important trade show kill a business. But many businesses are damaged because they fail to keep pace with new technology and fail to keep learning new and better ways to do things. Customers outgrow them; competitors pass them by.

Don't let it happen. Visit [www.pumpershow.com](http://www.pumpershow.com) and make plans to attend the 30th Annual Pumper & Cleaner Expo. You can still save by taking advantage of early registration. Join your peers in Louisville and keep your business driving forward. ■


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*Engineered for life*

Stuart Bedard, owner of Bedard Excavating Ltd., drills orifice holes for a pressure distribution sand mound system, one of many he installs in his British Columbia territory. (Photography by Rob Siebert)

# From Mountains to Sea

**Soils and terrain helped make Stuart Bedard a specialist in advanced systems — largely sand mounds with pressure distribution**

By Doug Day

**Bedard  
Excavating Ltd.,  
Langley, B.C.**

**OWNER:** Stuart Bedard

**FOUNDED:** 1980

**EMPLOYEES:** Solo operator

**SPECIALTY:** Sand mound systems with pressure distribution

**AFFILIATIONS:** British Columbia Onsite Sewage Association, Board member of Applied Science Technologists and Technicians of B.C.



**S**tuart Bedard was planning on a career in drafting after high school, but that path took a detour, thanks to a family friend in the excavating business.

"He said if I bought a machine, he could get me lots of work, so I did," Bedard recalls. So, Bedard Excavating Ltd. was born in Langley, B.C., about four miles from the United States border with Washington and about 25 miles east of Vancouver.

A short time later, the friend recommended Bedard for a conventional septic system drainfield job. "Once I did that one, I just continued doing them," says Bedard, the owner and only employee of the company. So, onsite wastewater became his life.

"I do anything from the most basic conventional gravity-fed system up to Type 3 installations with pressure distribution sand mounds," he says. Raised sand mound systems with pressure distribution make up about 90 percent of his work. "I don't do many gravity

systems anymore," he says. "There are not many areas where they are allowed."

## Changing soils

The soils around Langley, about halfway between the Pacific Ocean and the Coast Mountains in the lush Fraser River Valley, make advanced designs necessary in many locations. Soils are mainly clay-based with about a foot to 18 inches of topsoil. Conditions can change quickly to rocky soil and steep, bedrock-lined slopes, or even areas with heavy gravel, which means fast drainage.

Closer to the ocean, Bedard has to contend with wet peat and clay-based soil with very fine sand and silt, usually only about 3 feet above sea level. Because of the high ground water table and poor soil permeability, these areas require Type 3 systems with disinfection, a sand mound, and pressure distribution.

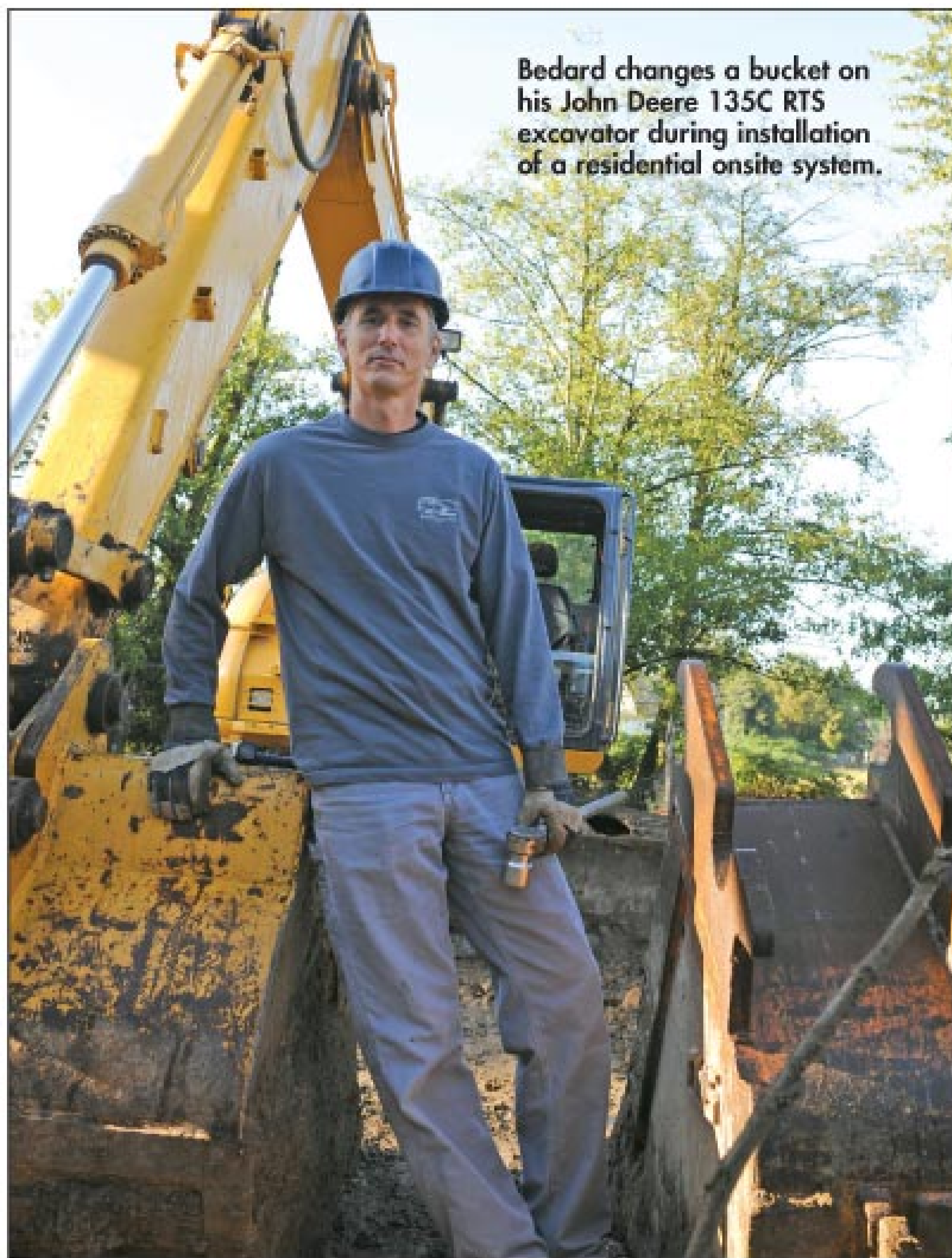
In addition, all fiberglass tanks in such soils, and even some con-

**"I worked closely with several environmental engineers ... I've maintained a good working relationship with local health inspectors over the years."**

— Stuart Bedard

crete tanks, need anti-flotation features, making design and installation all the more difficult. "You have to do it when the weather is dry, that's for sure," Bedard says. He also needs to be aware of the ocean tides: "The tides will determine when you excavate for the tank, because the ground water level is affected by the tides."

Because of the local soil conditions, Bedard sticks to tracked equipment with low ground pressure. An example is his 2004 135C RTS John Deere excavator with 28-inch shoes that apply only about 4.5-psi ground pressure. "This size of machine allows me to excavate



Bedard changes a bucket on his John Deere 135C RTS excavator during installation of a residential onsite system.

for larger tanks and have a long reach that reduces the amount of travel required for installation," he says. "I don't allow any vehicle traffic over the disposal field area before or after installation of the pipes."

On sloped sites, Bedard accesses the field only from the high side to avoid compaction of the effluent-receiving area down-slope. "It is important to construct systems only during dry conditions to avoid damaging the soil structure," he stresses.

His fleet also includes a 2001 Peterbilt gravel truck and a tri-axle tilt-bed trailer.

### Changing regulations

When he started Bedard Excavating in 1980, an installer could learn the business simply by doing installations, which is what he did. Most installations were simple 3-inch pipe-in-trench gravity systems — only a few used pumps.

"I followed the Provincial Policy Manual for onsite sewage disposal

and the B.C. sewage disposal regulations," Bedard says. "I worked closely with several environmental engineers. The local health departments would also send out newsletters explaining any guideline changes. I've maintained a good working relationship with local health inspectors over the years."

That kind of networking has helped him keep up with the many changes in technology and regulations. His industry connections also include memberships in the B.C. Wastewater Association and the B.C. Onsite Sewage Association, and membership on the board of the Applied Science Technologists and Technicians of B.C., which certifies installers in the province.

After he attended the province's first conference on small wastewater systems in 1994, he was asked to sit on a Health Department committee to design a course for the certification of installers, at the same time the province was updating its regulations.



Lisa and Stuart Bedard in front of their 2001 Peterbilt gravel truck at their property in Aldergrove, B.C.

## Boy Meets Girl

"I've maintained a good working relationship with local health inspectors over the years," says Stuart Bedard, owner of Bedard Excavating. That helped him learn the business early in his career and allowed him to keep up with changing regulations.

Besides that, he's been going home to one of those inspectors every night for two decades. "He came into the office one day," says Lisa Bedard. It was 1988 and she was a health inspector working for an environmental consulting firm. "You kind of notice somebody right from the beginning. We did design work, so we'd do site investigations. We often had Stuart help us. We'd be exploring sites together and sometimes they were pretty rough and wooded. We spent some good time together."

Not long after that first meeting, he went to watch her play in a baseball game. Then she went to see him play in a

band performing a concert in the park. They've been together ever since.

He also did system installations for the consulting firm, and part of her job was to inspect his work before the government inspection to make sure the plans were followed and the system was installed correctly. "I never rejected any of his work," she says.

Lisa left the private sector and went to work for the provincial government after their children were born. Part of her job was septic system inspection. "She was working in a region where I didn't do work," Stuart notes. She was also prohibited by the government from inspecting her husband's work.

Today, she works in the food safety program of the Fraser Health Authority, a regional health department. They have a son and two daughters and more than 20 years together — all because of onsite wastewater.

Once enacted, the stricter regulations required more engineered C-33 sand mounds with pressure distribution in place of soil fill pads to support aerobic treatment of the effluent. While these systems did a better job of protecting the environment, the change meant larger and more complex installations at the greenhouses, RV parks, institutions, and homes that make up his custo-

mer base. Instead of the 30 systems he installed every year, a normal year now sees about 15 installations.

Bedard is licensed as an installer and planner for Type 1 and Type 2 septic systems. He can also install Type 3 systems, but they have to be designed by an engineer. Bedard prefers to focus on installation, so engineers design nearly all of his projects.

## Classifying Systems

British Columbia regulations delineate three types of onsite installations:

- Type 1: Treatment by septic tank only.
- Type 2: Treatment that produces effluent consistently containing less than 45 mg/l TSS and less than 45 mg/l BOD5.
- Type 3: Treatment that produces effluent consistently containing less than 10 mg/l TSS, less than 10 mg/l BOD5, and a median fecal coliform density of less than 400 colony-forming units per 100 ml.



Ralph Giuriato (left) of Bell & Giuriato Surveying & Engineering Ltd., homeowner Brent Sands (center) and Stuart Bedard perform a squirt test on drainfield piping.

## Competitive environment

The area around Langley is urban in character, but much of the development takes place on rural properties of one or a few acres, and on small hobby farms. "There's a lot of development going on, so there are a lot of contractors," says Bedard. Since he has no employees, he often works with other installation companies.

One of these, owned by Reg McRae, almost qualifies as a partner. The two significantly work together and call on each other to



Bedard finishes installation of an effluent pump with a 2-inch Schedule 40 PVC force main exiting the pump chamber riser.

help with larger projects. "He took over from his father, so he's been doing it most of his life," says Bedard. The two offer 70 years of combined experience.

Their most recent large project was at Holiday Trails Resort, an RV park in Bridal Falls where McRae installed the original septic system more than 20 years ago. In response to extensive expansion of the park, they put in a new system this year.

The park added 60 sites with an estimated daily flow of 80 gpd per site, for a total of 4,800 gpd, including the washroom building and showers. The system has a 3,000-gallon trash tank, a 3,000-gallon flow equalization tank with duplex pumps, a Biogreen BG22-SL1 treatment unit installed in five modified 2,000-gallon concrete tanks, and a 2,000-gallon pump chamber with duplex pumps and pull-out rail system.

The raised sand mound is 56 by 210 feet with eight 101-foot laterals. "To closely monitor flows for future expansion of the park, we installed an Installer Friendly Series In-Site duplex control panel from SJE-Rhombus," says Bedard.

## Going green

The two have also worked together on greenhouse projects. Growing conditions in the area make greenhouses very common — and very large. One recent project for Bedard was Windset Greenhouse in Ladner, B.C. It has more than 400 employees: 45 full-time office and management staff and 360 people working in the greenhouse and packing plant. About 130 of those are migrant workers living on site.

Both the size and demand characteristics offer special challenges, something the installers around the area have learned to deal with. "The first greenhouse systems had on-demand dosing that would overload the distribution fields during the day," Bedard says. "Most have been changed to timed-dose pumping, and all new systems have that type of dosing."

The Windset Greenhouse started with three 200-foot sand mounds about 30-feet wide with a central pumping station for the first three phases of the greenhouse. Bedard added another mound when the greenhouse added its fourth phase, and he is now doubling the size of the distribution field to have four 140- by 35-foot sand mounds with a four-zone HydroTech valve, and a central pumping station for the worker housing units.

It also has a MicroFAST package treatment plant (Bio-Microbics Inc.) in a two-chamber concrete tank with UV disinfection. The UV equipment is installed in a separate 2,000-gallon pump chamber with Goulds duplex pumps and an Aquaworx control and alarm panel pumping to the distribution field. Bedard says more treatment plants will be installed as the housing complex for workers expands in the future.

Doing commercial projects has taught Bedard to watch for increases in flow over time. "When it happens, we usually end up upgrading the system, increasing the size of holding tanks and the distribution field," he says. "Sometimes it takes just a larger pump chamber and changing to a timed-dose instead of on-demand, especially if they have a lot of employees and use a lot of water at certain times of the day."

He tries to help customers by educating them about their systems and what it takes to keep them working right: cleaning the filters, flushing the lines, and following the maintenance plan. He finds that homeowners have not yet taken on the mindset of hiring someone to do maintenance — most prefer to do it themselves.

"Flushing lines is recommended once a year on pressure systems, and people just don't do it," Bedard says. "That's one of the main problems. Some people don't pump their tanks often enough."

Helping customers not only keeps systems working correctly —

**"Quite a bit of my work is from return calls. I rarely charge for going back to fix something the customer doesn't like, even if I feel it's not my responsibility."**

— Stuart Bedard

it builds trust. "Quite a bit of my work is from return calls," Bedard says. He recently installed a system for a customer from 14 years ago who is building a new home. "I rarely charge for going back to fix something the customer doesn't like, even if I feel it's not my responsibility."

It's a small sacrifice that leads to a stronger business in the long run. "They know you're not going to take advantage of them and charge them too much," Bedard says. "You're just going to do the job the best you can, and give them the best price you can." ■

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# Tracking Down Trouble

Many problems encountered during inspections of problem onsite systems are the result of mistakes made during installation

By Jim Anderson, Ph.D., and David Gustafson, P.E.

**D**uring our inspection workshops, we often talk about troubleshooting special problems. Some of the most common problems involve improper installation. Also, installers are often called to troubleshoot systems they did not install. Here, we describe a few common problems and how good installation techniques could have helped avoid them.

Odors are a common problem, and they often arise after new construction. Our usual line is that if they occur inside the house — they are the result of venting problems, in the realm of the plumber and not the onsite installer.

In this situation, you can have the homeowner check whether there are any pipes left open in the plumbing that would bypass water traps and therefore act as a sewer vent. Examples of this during new construction would be a hookup for dishwasher or washing machine or a basement tub for laundry left unfinished.

If you discover such a problem, you will be viewed as intelligent bordering on genius. The solution may be as simple as pouring water down to fill the trap. In older houses, ask the owners if they may have disconnected any pipes, such as a laundry tub or laundry standpipe. Also look at the seals around toilets: The wax seal may be broken, allowing odors to escape.

## Odors outside

More in the realm of installers are outside odors. One common area for tanks to vent directly is the seal around manholes and inspection pipes. Make sure the manhole cover or any manhole extensions are tight fitting and do not allow air to pass through. This can easily happen on retrofit jobs where it is hard to get the covers or the multiple extensions to fit tightly together.

Here, a simple solution may be to use weather stripping where the parts fit together. Do not use any type of permanent sealant! Remember that service providers need to be able to gain access to the tank to perform routine maintenance.

If weather stripping does not work for outside odors, suggest that the homeowner have a plumber evaluate whether the vent stack is far enough above the roofline to

prevent the wind from blowing the odors downward as they leave the stack. This can happen in hilly terrain, on roofs that are very steep, or in seasonal cabins nestled in among large trees. If the stack cannot be raised, the owner may have to install a carbon filter, which will need to be changed periodically.

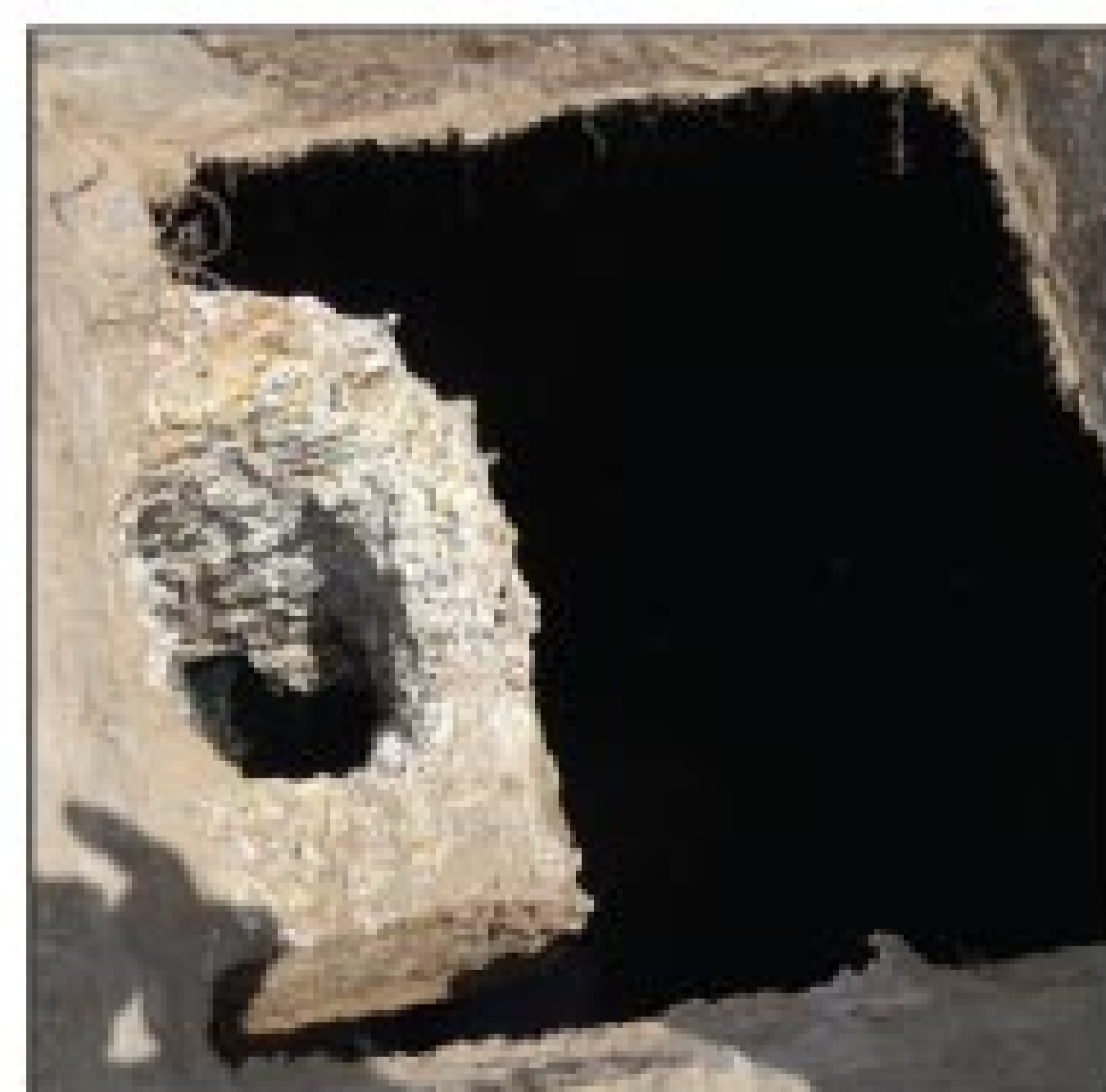
## Tank corrosion

A common problem identified by service providers is excessive corrosion in concrete tanks around the outlet baffle. The likely culprit, hydrogen sulfide, collecting at the



Two common problems with a septic system: blockage caused by the supply pipe extending too far into the baffle, and excessive corrosion that may be a sign of inadequate venting.

**A common problem identified by service providers is excessive corrosion in concrete tanks around the outlet baffle. The likely culprit, hydrogen sulfide, collecting at the outlet point of the tank — the gas is heavier than air**



A deteriorated concrete baffle, possibly caused by improper venting.

outlet point of the tank — the gas is heavier than air.

This problem is almost always related to the lack of proper venting through the tank — an installation error. The supply pipe from the house to the septic tank can be angled into the tank because of improper bedding of the pipe or improper backfilling that leaves the pipe suspended over an open area of the tank excavation.

In any case, either immediately or over time, the pipe enters the

tank at an angle and does not allow the air to escape out of the tank and vent through the roof stack. It is very important that the tank be installed level and that the pipes into and out of the tank be properly bedded and firmly supported.

This kind of installation error can cause other problems as well. In cold climates, it can allow sewage to freeze in the pipe, ultimately causing the pipe to plug and freeze shut. If the seal where the pipe enters or exits the tank is dam-

*Jim Anderson and David Gustafson are connected with the University of Minnesota onsite wastewater treatment education program. David is extension onsite sewage treatment educator. Jim is former director of the university's Water Resources Center and is now an emeritus professor, as well as education program coordinator for the National Association of Wastewater Transporters. Readers are welcome to submit questions or article suggestions to Jim and David. Write to [ander045@umn.edu](mailto:ander045@umn.edu).*

aged it provides a ready pathway for roots to enter the pipe and the tank, and that will cause all kinds of backup and plugging issues. The solution is to replace and level the pipes, seal the joints, and properly backfill around the tank and pipes.

Another issue that can cause blockages occurs when the inlet pipe is pushed too close to the inside baffle wall. When this happens, there is not enough clearance to allow sewage solids, such as toilet paper, to pass freely into the tank. They begin to hang up between the pipe and the wall, eventually causing a blockage that can cause a backup into the house. Here again the fix is to dig up and reposition the pipe.

### Root problems

If roots are present in the septic tank, pipes, drop boxes or distribution boxes, they indicate that the tank is not watertight and that the seals have been broken or compromised. Roots could also indicate a broken supply pipe resulting from poor installation or some type of traffic over the system.

In these cases, the leaky component and the point of entry need to be found. Today with inspection cameras in our tool kits, we can easily access the pipes and tank to evaluate how well the joints are sealed.

Once the problem is found, it needs to be fixed. Simply removing the roots and restoring flow is not a long-term solution. If a pipe is broken it needs to be replaced. If the tank cannot be properly sealed and made watertight, it needs to be replaced, as well.

If the roots are in the drainfield, the piping and boxes need to be opened and evaluated, again to determine where the roots are getting in. Any broken components will need to be replaced. In addition, the vegetation over the drain-



Roots in the piping due to a cracked pipe or poor connections.

field may need to be replaced with vegetation that has less invasive roots. Local plant nurseries and horticulturalists can help in the selection.

We have often seen major root problems in dry areas of the country such as the southwest. Here, plants are always searching for water and can establish very large root systems.

These are just a few examples of situations we have encountered as we troubleshoot or inspect systems. Remember that as the installer, you can prevent many of these problems by using sound installation practices. We will look at some other trouble situations in the future. ■



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**Booth 149**

"Rules and Regs" is a monthly feature in Onsite Installer. We welcome information about state or local regulations of potential broad interest to onsite contractors. Send ideas to [editor@onsiteinstaller.com](mailto:editor@onsiteinstaller.com).

# California Regulations Back on the Docket

By **Scottie Dayton**

**B**ill AB-885, which affects 1.2 million households, is again up for review, according to the State Water Resources Control Board (SWRCB). During a public comment period, Mendocino County residents sent hundreds of letters and more than 2,500 e-mails voicing concerns about cost and the practicality of what the bill requires.

The board promised to make significant changes to regulations that require septic tanks and private wells to be inspected every five years. If the Regional Water Board

found pollution in a body of water, owners of septic tanks within 600 feet of the water would see additional requirements, including hiring an inspector to determine if the system was contributing to pollution.

## Wisconsin

Proposed legislation would change the definition of plumbing to include installing systems that treat wastewater and stormwater. It also would protect the right of those with a master plumber restricted service license to install

systems that collect stormwater for subsequent uses. This item is not addressed specifically in state statutes.

## New Mexico

A proposed restoration plan by the New Mexico Environment Department would provide money for qualifying indigent homeowners in several counties to replace cesspools or failed disposal systems with a conventional or advanced treatment system. The plan also would pay for removal of cesspools or failed systems, and for all or some of the fees to connect to centralized wastewater collection systems.

## Washington

After more than two years of work, Cowlitz County commissioners approved an ordinance that provides consistent rules for septic systems. Previously, vague rules and definitions meant one inspector might approve a system while another would deny the same design. The regulations also allow homeowners to inspect their own systems instead of hiring professionals to do it every one or three years, depending on the type of sys-

tem. The county will offer classes to teach homeowners how to inspect and maintain their onsite systems. The ordinance takes effect on Jan. 1.

## Massachusetts

The Nantucket Board of Health adopted onsite regulations that limit homeowners to one bedroom and 110 gallons of effluent per 10,000 square feet of lot area. The regulations, designed to stop the area's potential buildout, will help lower the density of many lots by prohibiting homeowners from expanding existing buildings and building additional ones. ■

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# Learning the Ropes

Seminars at the 2010 Pumper & Cleaner Expo help installers improve their techniques and apply new treatment technologies

By **Scottie Dayton**



A track of seminars presented by the National Onsite Wastewater Recycling Association (NOWRA) highlights the education lineup at the 2010 Pumper & Cleaner Environmental Expo International, Feb. 24-27 in Louisville, Ky.

The NOWRA program is part of Education Day on Wednesday, Feb. 24. The complete program includes 45 seminars presented by experts across the full range of environmental service industries. Seminars also are offered on Thursday and Friday mornings.

A summary of the NOWRA program follows. The presenters are Sara Heger Christopherson, MS, onsite sewage treatment program extension specialist at the University of Minnesota, and Tom Fritts, vice president-owner of Residential Sewage Treatment Co. in Grandview, Mo. For a complete seminar schedule, see the Expo pages in this issue of *Onsite Installer*.

The NOWRA seminar track courses are:

## **Wastewater Characteristics**

*Sarah Heger Christopherson*

Christopherson will discuss the basic science behind the technology of wastewater treatment and the variable characteristics that influence the methods of treating it.

## **Soils and Site Evaluation Overview**

*Tom Fritts*

Non-soils professionals will gain a baseline understanding of soil parameters that control treatment efficacy and how to use soil morphology in designing systems. Fritts also will cover landscape description, interpretation of data, and non-soil data for onsite wastewater applications.

## **Septic Tank Overview: Function, Design, Construction, Inspection and Troubleshooting**

*Sarah Heger Christopherson*

Septic tanks provide an environ-

ment that promotes physical settling, flotation, and anaerobic digestion, storing the digested and undigested solids until they are removed. Christopherson's presentation will help practitioners make informed decisions about wastewater treatment processes, design features that improve tank function and facilitate O&M, and the importance of tank capacity and structural integrity.

## **Aerobic Treatment Units**

*Tom Fritts*

Fritts will give an overview of the biochemical oxidation of organic compounds, describe various engineered systems, and detail the operation and maintenance required to keep these systems functional.

## **Media Filters**

*Sarah Heger Christopherson*

Christopherson will highlight the principles of media filters and focus on the effluent quality parameters that may affect design and use. Attendees will learn about packed bed filters and their physical characteristics. They will become familiar with different media and understand why criteria vary with each design. The course also will cover wastewater dosing, distribution, and single-pass versus recirculating systems.

## **Pumps and Controls**

*Tom Fritts*

Pumps are the heartbeat of pressurized onsite systems. Fritts will provide details on the design, component selection, and configuration of these systems. He will

cover the different types of pumps and their associated purposes, pump selection and sizing criteria, and options for controlling pumps with floats and panels.

## **NEHA program**

The Education Day lineup also includes a track of seminars from the National Environmental Health Association (NEHA):

- Decentralized Systems – The Next Wave in Our Industry – Kevin Sherman, P.E., Ph.D., WRE, engineering director, Quanics Inc.
- Septic Tanks: A Gift That Keeps on Giving – Matthew Byers, Ph.D., onsite program manager, Zoeller Pump Co.
- Selling CIOWTS Certification to Installers and Regulators: Getting Everyone on Board – Doug Bird, director, Bremer County (Iowa) Environmental Health Department
- Softeners and Onsite Systems – Matthew Byers, Ph.D., onsite program manager, Zoeller Pump Co.
- Advanced Wastewater Treatment Systems: This is What They are and This is What They do: Kevin Sherman, P.E., Ph.D., WRE, engineering director, Quanics Inc.
- Maximize Efficiency by Working Closely with Regulators and Within the Regulatory System – Brian Scheffe, Ph.D., Front Range Precast Concrete

## **NAWT program**

Education Day seminars also

include a track from the National Association of Wastewater Transporters Inc. (NAWT):

- Sampling Protocols and Methods for Alternative Technologies – Matt Lee, general manager, Aqua Test Inc.
- Dealing with Restaurant or High-Strength Waste – Bill Stuth, founder, Aqua Test Inc.
- O & M for ATUs – David “Kit” Rosefield, president, Onsite Wastewater Management Inc.
- O & M for Drip Irrigation – Dave Gustafson, PE., onsite sewage treatment systems assistant extension engineer, University of Minnesota.
- What to Expect When the EPA Comes A-Callin’ – Tom Blankenship, owner, All Town & Country Septic Tank Service.
- A Template for Keeping Your Employees Trained – Jim Mathis, Kline’s Services.

#### Other seminars

Thursday’s program includes the all-day Onsite Installer Course, sponsored by COLE Publishing and presented by Jim Anderson, Ph.D., and Dave Gustafson, PE., from the University of Minnesota onsite program.

The Thursday and Friday education programs include these additional seminars of special interest to onsite installers, soil testers, inspectors, design engineers, and maintenance service providers:

#### Thursday, Feb. 25

- Risk Assessment for Determining Service Frequency – Colin Bishop, government relations and

business development department head, Bord na Mona

- From Theory to Reality – Roger Lacasse, PE., scientific and technical director, Premier Tech Environnement
- Timed Dosing and Controls – Mark Gross, Ph.D., PE., training manager, Orenco Systems Inc.
- Understanding the Biology and Function of an ATU – Doug Dent, international speaker on biotechnologies and biological wastewater process enhancement

#### Friday, Feb. 26

- Safety in Excavation – Gary Hooks, master trainer, Safety Corporation of America
- Comprehensive Control Panel Training – Joe Zimmerman and Scott Rietsema, regional sales managers, SJE-Rhombus
- Onsite Wastewater Effluent Disinfection – Jim Cruver, Ph.D., president, Salcor Inc.
- OSHA Procedures Regarding Confined Space – Chris Cira, president, M Tech Company
- The Role of Bacteria and Bioaugmentation in Grease Traps and Septic Systems – Clarence Baugh, Ph.D., research and applied technology director, Custom Biologicals Inc.

To find out more about the education program or any other Expo offering, visit [www.pumpershow.com](http://www.pumpershow.com). **Register online or by calling 800/257-7222.** ■

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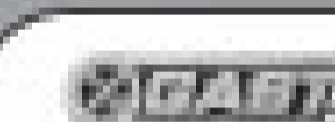
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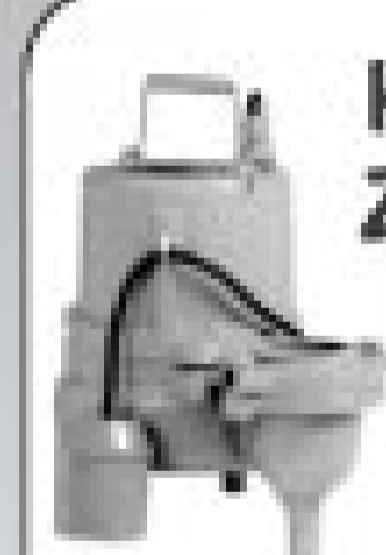
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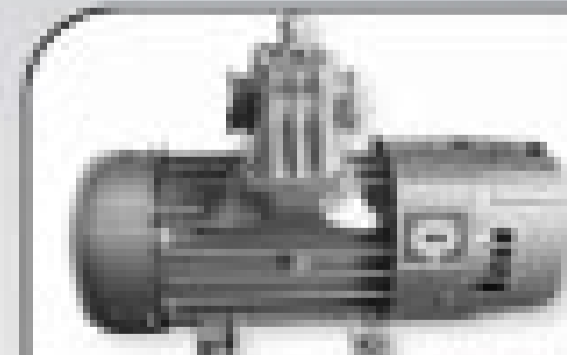
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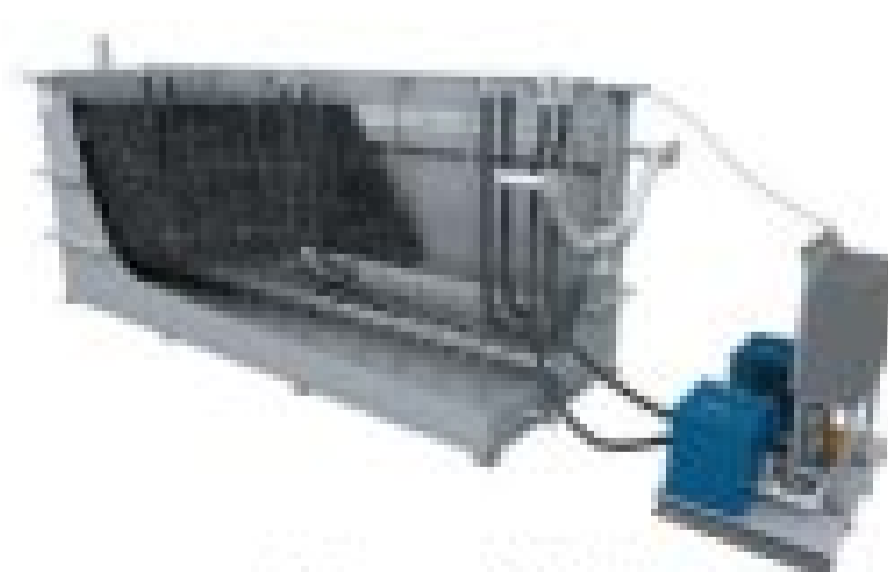
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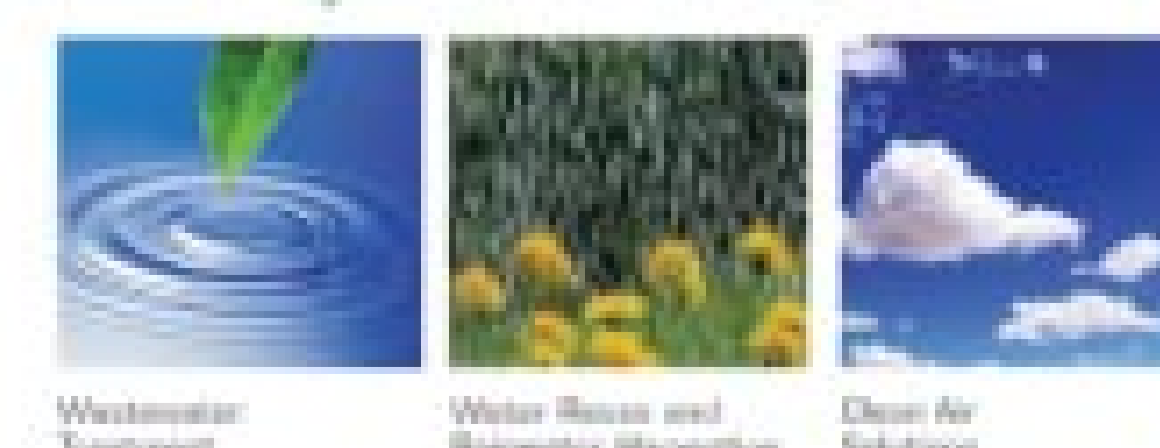
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# Two for One

**Fifth annual NOWRA Installer Academy connects with the Pumper & Cleaner Expo to offer its education sessions, Roe-D-Hoe, and NEHA certification exam**

By **Scottie Dayton**

**T**he National Onsite Wastewater Recycling Association holds its fifth annual Installer Academy and third Roe-D-Hoe Feb. 22-23 at the Kentucky Exposition Center in Louisville, Ky., just before the Pumper & Cleaner Environmental Expo International.

NOWRA joined with Expo sponsor COLE Publishing to run the two events consecutively on the same site. The arrangement enables installers to take in the Academy and the larger and more diversified Expo in a single trip.

As always, the aim of the Academy is to give installers and service providers practical information they can put right to work in the field. Basic and advanced seminars and workshops are state-approved for CEUs.

## Skills training

Practitioners will share their technical skills in design, installation, inspection, operation and maintenance. The two-day Installation of Wastewater Treatment Systems course, presented by instructors from the Consortium of Institutes for Decentralized Wastewater Treatment, will include:

- Soils and Site Evaluation, Randy Miles, University of Missouri
- Installation Techniques and Material, Sara Heger Christopherson, University of Minnesota
- Installation Planning, Tom Fritts, Residential Sewage Treatment Co.
- Installation Safety, Nancy Deal, North Carolina State University
- Piping Installation, Sara Heger Christopherson
- Watertight Tank Installation, Randy Miles
- Installing Pressure and Gravity Distribution Components, Nancy Deal
- Installing Soil Treatment Areas I and II, Sara Heger Christopherson
- Installing Pressure Dosing Systems: Pumps & Controls, Tom Fritts
- Installing Aerobic Treatment Units, Randy Miles
- Media Filter Installation, Sara Heger Christopherson
- Installing Disinfection Systems, Nancy Deal
- Installing Drip Distribution Systems, Tom Fritts

An optional one-hour presentation by Miles and Fritts will review problems and calculations to prepare those taking the NEHA Certified Installer exam.

## Business sessions

Representatives from Zoeller Co. in Louisville will host the business track. Matt Byers, onsite program manager, leads off with an overview of the onsite industry. Onsite sales manager Wes Combs discusses relationships with health departments, engineers, and local officials.

Dave Theobald, applications director, will explain effluent pump sizing for onsite applications, and Darren Meyers, applications engineer, will talk about secondary and advanced treatment. Service provider Jason Nett will conclude with O&M coordination and business management. The afternoon concludes with a two-hour tour of the Zoeller plant highlighting the various pumps, effluent screens, and decentralized technologies manufactured there.

## Vendor sessions

Vendors in training rooms will educate and certify attendees on their products. In individual sessions, Norweco Inc. sales director Don Bach and business development manager Robert Fletcher will troubleshoot chlorination and dechlorination systems and introduce remote monitoring of residential aerobic treatment systems.

Industry pioneer Harry Nurse and Peter Gavin, president and owner of Polylok Inc., will explain why septic tank filters are even more important today and describe how to sell an onsite business to a competitor.

Those interested in the design,

installation, and O&M of the Pura-Mc compact membrane system from Bord na Mona Environmental Products U.S. Inc. will find answers in John Payne's presentation.

Reza Shams will cover the installation and operation of membrane bioreactors from Bio-Microbics Inc. Sessions by Dennis Hallahan from Infiltrator Systems Inc. will investigate drainfield malfunctions and remedies, and explain effluent distribution.

## Technical and mechanical skills

A third educational track provides an in-depth look at the design, installation, and operation of drip dispersal systems. The presenters are Mike Stoll, wastewater division market manager from Netafim USA, and David Morgan, regional manager from Geoflow Subsurface Drip Systems.

Mini-excavator operators can test their skills at the Roe-D-Hoe, held indoors during the Pumper & Cleaner Expo exhibit hours (Feb. 25-27). The event pits state associations against each other in timed accuracy events. Besides a \$1,000 first place cash prize, the winning state receives a traveling World Wrestling Federation-style championship belt and buckle. Individual winners receive a commemorative reward. The event is sponsored by Jet Inc.

The Installer Academy is the place to learn about the latest onsite wastewater treatment technology and the new equipment that can install those systems. Register by calling 800/966-2942 or visiting [www.nowra.org](http://www.nowra.org). ■



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*A durable plastic septic lid that fits plastic and concrete risers*

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# An Expo Encore

On Feb. 27, country favorites from past Saturday Evening Jams will hit the stage to celebrate the 30th Pumper & Cleaner Expo

By Jim Kneiszel

Familiar and fun are words that come to mind when talking about two acts set to headline the special Saturday Evening Jam Revisited show at the 2010 Pumper & Cleaner Environmental Expo International.

Two of the most popular acts in Saturday Evening Jam history return to the stage to help celebrate the 30th Expo: Sawyer Brown (2003 and 2004), and Phil Vassar (2005). The show begins at 5 p.m., and the night of music is included in the registration price of \$30 per person (early registration until Jan. 22) or \$60 at the door.

## Sawyer Brown

Marking 29 years together, touring legends Sawyer Brown are often

**"We came out of the notion we were there to entertain people, to make sure everybody had a good time. Somebody once told me, 'If you can't have fun at a Sawyer Brown show, you can't have fun.'"**

Mark Miller  
Sawyer Brown

called the Rolling Stones of country music. Over the years, they've logged more than 3,500 live shows while churning out dozens of chart singles. Formed in Apopka, Fla., in 1981, they entered and won the 1983 *Star Search* competition.

A few years later, they produced a flurry of singles, then really hit their stride in the early 1990s, with increasing country radio airplay

and large crowds that enjoyed their energetic stage presence. Major hits for the group, named for a street near their early rehearsal studio, include "Some Girls Do," "The Dirt Road," "Hard To Say," "Step That Step," "This Time," "The Boys & Me," "Thank God For You," and "The Walk."

Sawyer Brown has put more than 50 songs on the Billboard's Hot Country Songs chart, songs that many Expo fans can sing along to. They add their take to country classics as well, with popular versions of George Jones' "The Race Is On" and Dave Dudley's "Six Days On The Road." As much as their music, the band is known for its hard-charging stage show, which features frontman Mark Miller.

"We came out of the notion we were there to entertain people, to make sure everybody had a good time," Miller says. "You're looking at a bunch of blue-collar people here, who were raised to put the work in, to make sure the people are satisfied, and who really love being on that stage and seeing the people letting it all go. Somebody once told me, 'If you can't have fun at a Sawyer Brown show, you can't have fun.'"

## Phil Vassar

Well before country piano man Phil Vassar wowed the Expo crowd five years ago, he made his name as a songwriter in Nashville with hits including "Right On The Money" for Alan Jackson, "For A Little While" and "My Next Thirty Years" for Tim McGraw, and "I'm All Right" and "Bye Bye" for Jo Dee Messina.

"Bye Bye" helped Vassar win the Songwriter of the Year Award from the American Society of

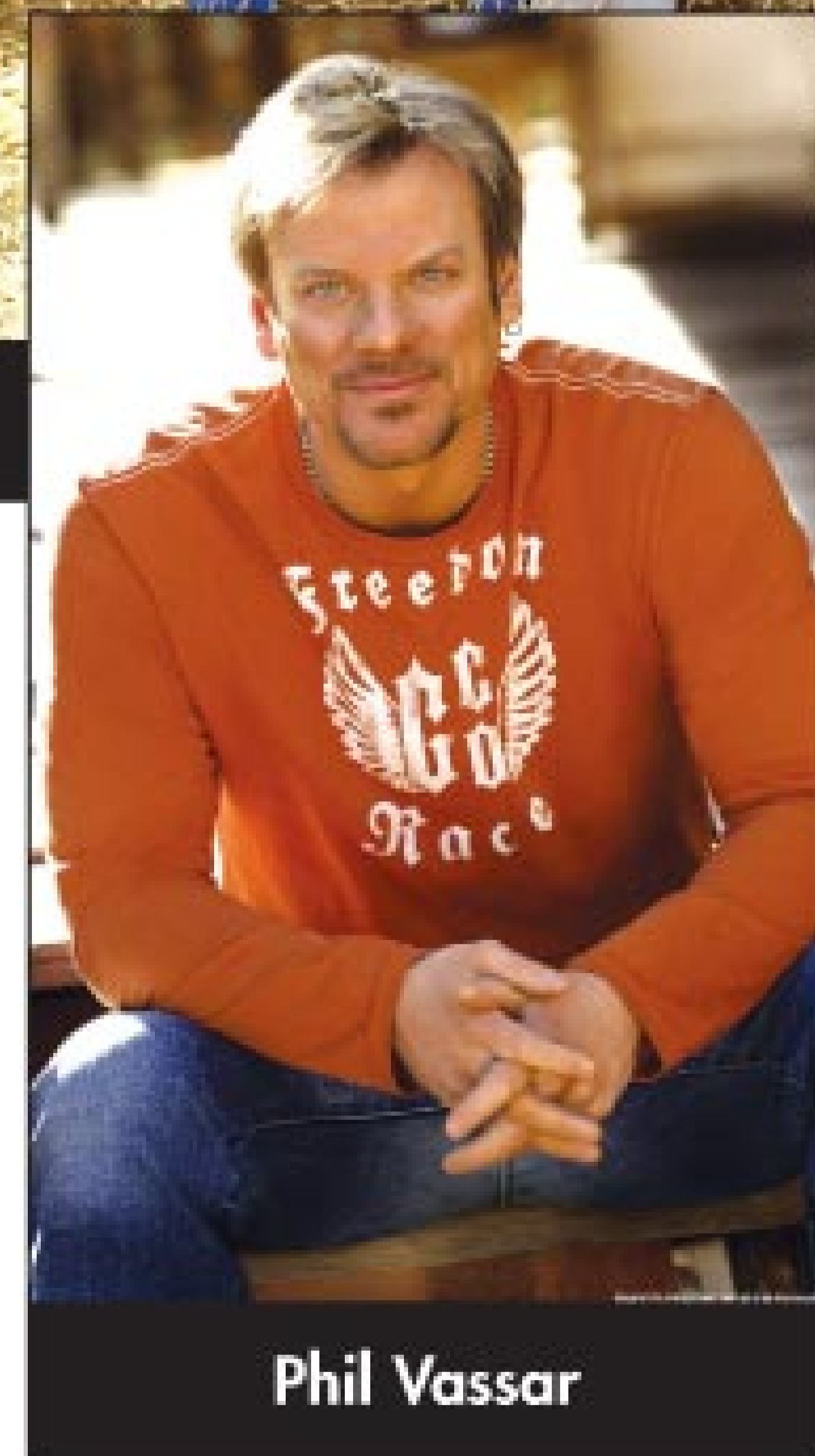


Sawyer Brown

Composers, Authors and Publishers.

Vassar then turned toward performing, recording numerous hits over five albums including "Carlene," "Six-Pack Summer," "Love is a Beautiful Thing," and the No. 1 hit, "Just Another Day In Paradise." A Virginia native, Vassar is known for connecting with his audience, especially on themes of family and an American work ethic. He is often called "the hardest working man in country music."

"People ask me why I still do so many shows, but you work your whole life just to get to the point where people want you to come play," he says. "Even today I still have that work ethic where you feel like if you don't work hard, you're not going to eat. That's something my



Phil Vassar

dad instilled in me and my sisters."

For more information on the Pumper & Cleaner Environmental Expo International, visit [www.pumpershow.com](http://www.pumpershow.com) or call 800/257-7222. ■

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- Standard and custom sizes
- All parts watertight

## Filters & Pump Vaults

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- Pumps that last for decades
- Pump vaults for any kind of tanks
- Complete pumping systems



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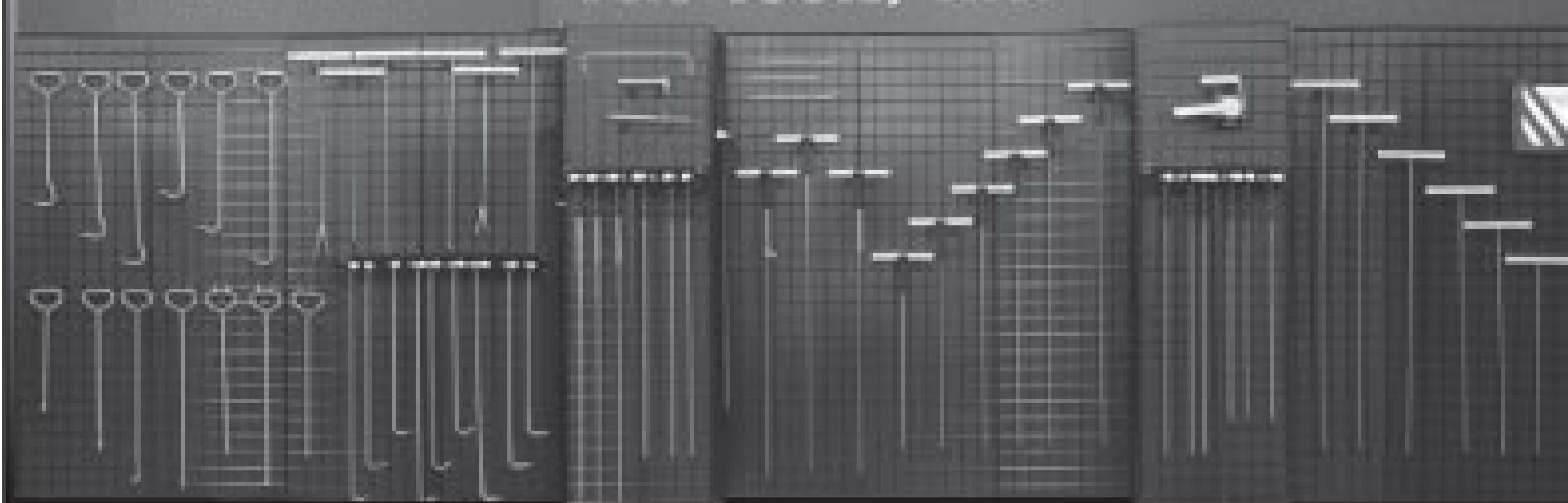


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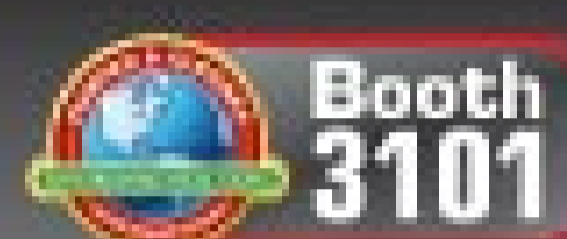
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- \* Optional "slide" available to make your probe a mini-slide hammer

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## INDUSTRY **news**

January 2010

### **Bord na Mona President Speaks at Conference; Peat Named Director**

Decentralized membrane-based treatment solutions are the key to solving future water restrictions, Shane Kearney, president of Bord na Mona Environmental Products U.S. Inc. told attendees at the WEFTEC Conference in October. "Many current municipal wastewater treatment systems are large centralized works that waste the water resource rather than reuse it and consume large amounts of energy to move wastewater from the source to the treatment plant," he said. Kearney added that there is a need for treatment solutions that deliver reduced complexity, have a small footprint and are easily constructed within buildings to minimize aesthetics and odor concerns.

Raymond Peat also has been named director of business development for Bord na Mona Environmental Products U.S. Inc.'s North American residential and commercial wastewater and water reuse treatment systems.

### **Seepex Launches Wobble Pump Shop**

The online Wobble Pump Shop from Seepex Inc. (<http://shop.seepex.com>) features the complete line of BW series Wobble Pumps. The site offers pump specifications, dimensions and performance curves as well as drive characteristics.

### **Ecoflo Biofilter Receives Top European Ranking**

The Ecoflo Biofilter by Premier Tech Environnement received a top ranking for performance and reliability from Veolia Water Testing based on three years of comparative study of onsite wastewater treatment technologies in France and Germany, with peak flow up to 240 percent of the design flow. Results were released during the October onsite and decentralized wastewater treatment annual conference in Evreux, France.

### **Bear Onsite Launches Web Site**

Bear Onsite LLC has launched a Web site for the onsite wastewater market, [www.bearonsite.com](http://www.bearonsite.com), featuring the ML3-916 and ML3-932 effluent filters.

### **SJE-Rhombus Hosts Engineers; Names Representative**

SJE-Rhombus hosted the Minnesota Chapter of the Society of Professional Engineers in October at its corporate facility in Detroit Lakes, Minn. Guests received a factory tour, were introduced to SJE's ceramic MBR technology and received training on engineered municipal control panel considerations.

SJE also has hired Snider Inc. to represent the company's control product line in North and South Carolina.

### **Wieser Schedules Septic Training Seminars**

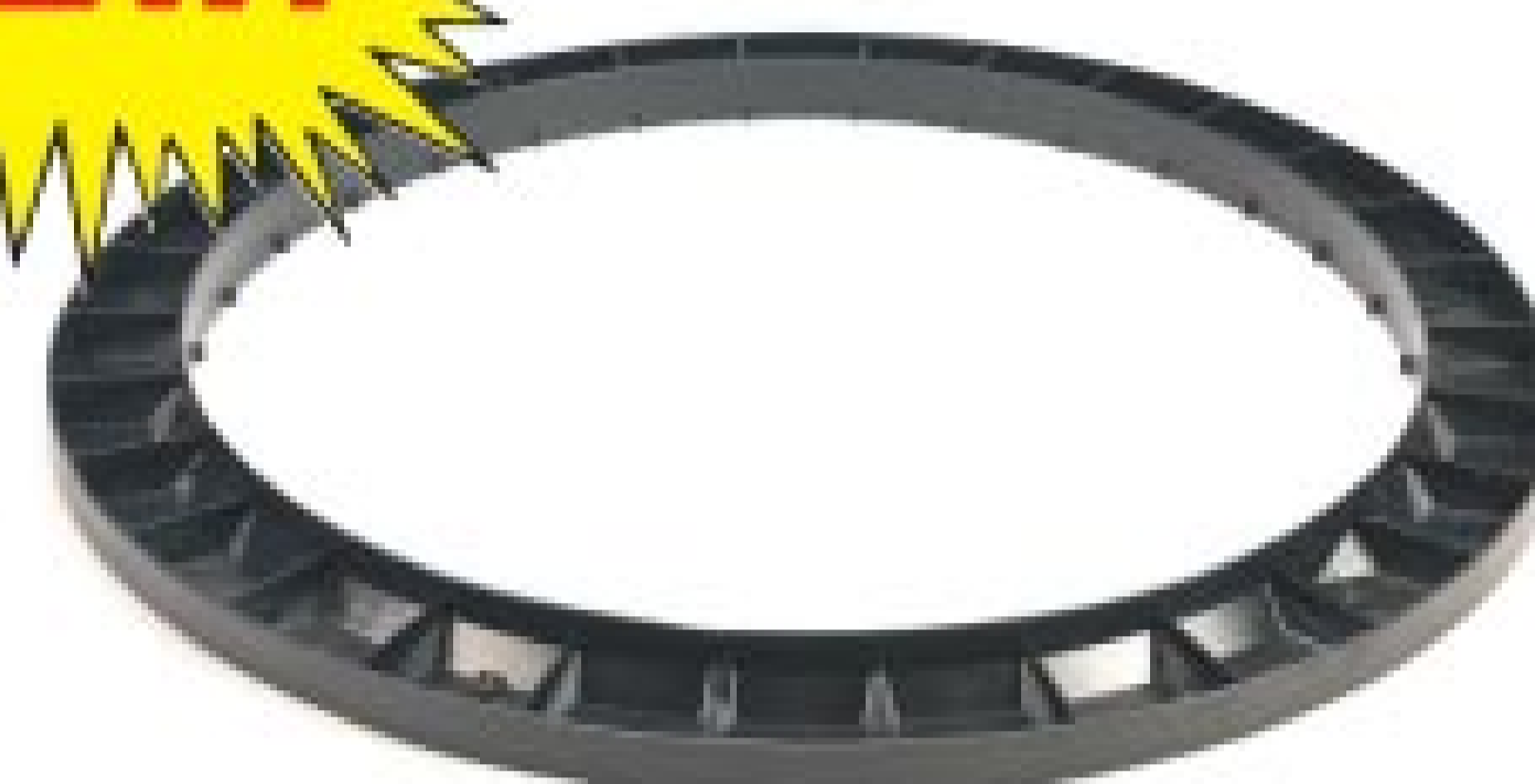
Wieser Concrete will hold five septic training seminars in Wisconsin on March 9 in Fond du Lac, March 11 in Rhinelander, March 16 in Milwaukee, March 18 in Maiden Rock and March 23 in Portage. For more information, call 800/325-8456, or visit [www.wieserconcrete.com](http://www.wieserconcrete.com).

### **Glendon Selects Aquaworx IPC Panel for Pump Control**

Glendon has selected the Aquaworx IPC panel for pump control in its up-flow biofilter systems. The biofilter treats residential strength wastewater to single-digit BOD5 and fecal coliform. The system includes septic tank, pump tank and a small pump controlled by a custom IPC Sandfilter panel set to time dose one or more units. ■

# Septic Tank Riser, Lid & Safety Pan™

**FREE FREIGHT ON  
FULL CARTONS!**



## Tank Adapter Ring

New - Horizontal Safety Screw.

Safety Pan™ to Riser attachment with 6 vertical stainless steel screws.

Riser to Riser attachment with 6 vertical stainless steel screws.

Patent Numbers  
5,617,679 &  
5,852,901; other  
pats. pending.

## Riser Lid

with Molded-in gasket.  
Available in 12", 16", 20" and 24" diameters.

Concrete Lid w/handle

## Safety Pan™

Safety Pan™ available in 16", 20" and 24" diameters.

## Riser

For septic tanks. Stackable in 6" increments. Available in 12", 16", 20" and 24" diameters.

## Tank Adapter Ring

For mounting riser flush to top of tank when casting-in is not an option.



**Available in 12", 16", 20" and 24" diameters.**

## Effluent Filters

Patent Numbers  
6,319,403; D 431,629; other  
pats. pending.

**800 GPD**  
ANSI/NSF  
Standard 46

**4" Sch. 40 &  
SDR-35**

**EF-4**  
4" Filter

**EF-6**  
6" Filter

**1500 GPD**  
ANSI/NSF  
Standard 46

**4" Sch. 40 &  
SDR-35**

**244 ft. of  
1/16" filtration  
area.**

Gas/Solids  
Deflector

## One-Piece Tank Seal

For concrete Septic tanks and D-boxes.  
Accepts pipes from 1-1/2" to 4".  
Mounts with or without concrete flash.



**Free Freight: 32¢**

Patent No's  
5,624,123  
& 5,711,536;

**TS-4-RUBBER TANK SEAL**  
(will hold 10psi)

**TS-4PRO TANK SEAL**  
(will hold 5" vacuum)



CELEBRATING **30** years 1981 - 2010

# EDUCATION DAY

Wednesday, February 24th, 2010

## SOUTHERN SECTION COLLECTION SYSTEMS COMMITTEE

### ROOM C204-C205 - SSCSC

- 8:00 - 9:00 Manhole Inspections 'The Need'
- 9:30 - 10:30 Combination Truck Maintenance and Safety, Sewer Hose Maintenance and Nozzle Technology
- 11:00 - 12:00 Jetting Nozzles - Their Design, Technology and Effective Usage
- 12:00 - 1:00 **LUNCH BREAK**
- 1:00 - 2:00 Elevating the Quality of Your CCTV Inspection Program
- 2:30 - 3:30 Critical Steps in Prioritizing Sewer Rehabilitation
- 4:00 - 5:00 Traffic Control - The Critical Factor in Pipeline Inspection

## NATIONAL ENVIRONMENTAL HEALTH ASSOCIATION

### ROOM C105-C108 - NEHA

- 8:00 - 9:00 Decentralized Systems - The Next Wave in Our Industry
- 9:30 - 10:30 Septic Tanks: A Gift That Keeps on Giving
- 11:00 - 12:00 Selling CLOWTS Certification to Installers and Regulators
- 12:00 - 1:00 **LUNCH BREAK**
- 1:00 - 2:00 Softeners and Onsite Systems
- 2:30 - 3:30 Advanced Wastewater Treatment Systems
- 4:00 - 5:00 Maximize Efficiency by Working Closely with Regulators and Within the Regulatory System

## NATIONAL ASSOCIATION OF WASTEWATER TRANSPORTERS

### ROOM B101-B102 - NAWT

- 8:00 - 9:00 Sampling Protocols and Methods for Alternative Technologies
- 9:30 - 10:30 Dealing with Restaurant or High-Strength Waste
- 11:00 - 12:00 O & M for ATUs
- 12:00 - 1:00 **LUNCH BREAK**
- 1:00 - 2:00 O & M for Drip Irrigation
- 2:30 - 3:30 What to Expect When the EPA Comes A-Callin'
- 4:00 - 5:00 A Template for Keeping Your Employees Trained

## NATIONAL ASSOCIATION OF SEWER SERVICE COMPANIES

### ROOM C101-C104 - NASSCO

- 8:00 - 9:00 Pipe Inspections without an Operator?
- 9:30 - 10:30 Ways to Increase Your Daily Sewer Cleaning Production Rates without Increasing Your Costs
- 11:00 - 12:00 Proper Preparation of the Substrate Results in Coating Longevity
- 12:00 - 1:00 **LUNCH BREAK**
- 1:00 - 2:00 Collection System Asset Management - Getting from Reactive to Proactive
- 2:30 - 3:30 Trenchless Lateral Renewal Technologies - Lessons to be Learned
- 4:00 - 5:00 Zoom Camera Technologies: The Next Level of Infrastructure Inspection

## WATERJET TECHNOLOGY ASSOCIATION

### ROOM C203 - WJTA

- 8:00 - 9:00 The Impact of OSHA's Combustible Dust National Emphasis Program on Industrial Vacuuming
- 9:30 - 10:30 Waterblast Safety
- 11:00 - 12:00 Waterjet Applications and Business and Financial Considerations

## PORTABLE SANITATION ASSOCIATION INTERNATIONAL

### ROOM C203 - PSAI

- 1:00 - 2:00 Understanding Your True Cost Analysis to Ensure Profitability - Part 1
- 2:30 - 3:30 Understanding Your True Cost Analysis to Ensure Profitability - Part 2

## LEADERS RESOURCE NETWORK

### ROOM C201-C202 - LRN

- 8:00 - 9:00 Creating Your Vision for Success
- 9:30 - 10:30 Getting Your Team On Board
- 11:00 - 12:00 Working Effectively in a Family Business Culture
- 12:00 - 1:00 **LUNCH BREAK**
- 1:00 - 2:00 Creating Your Own Competitive Edge
- 2:30 - 3:30 Winning More Sales
- 4:00 - 5:00 Women in Business: Panel Discussion

## NATIONAL ONSITE WASTEWATER RECYCLING ASSOCIATION

### ROOM B103-B104 - NOWRA

- 8:00 - 9:00 Wastewater Characteristics
- 9:30 - 10:30 Soils and Site Evaluation Overview
- 11:00 - 12:00 Septic Tank Overview: Function, Design, Construction, Inspection and Troubleshooting
- 12:00 - 1:00 **LUNCH BREAK**
- 1:00 - 2:00 Seminar on Aerobic Treatment Units
- 2:30 - 3:30 Seminar on Media Filters
- 4:00 - 5:00 Seminar on Pumps and Controls

## SCOTT HUNTER

### ROOM C109-C112

- 9:30 - 10:30 Relationship is the Key!
- 11:00 - 12:00 The Art of Customer Service
- 12:00 - 1:00 **LUNCH BREAK/BOOK SALES**
- 2:30 - 3:30 Creating an Outrageously Successful Company - Part 1
- 4:00 - 5:00 Creating an Outrageously Successful Company - Part 2

## THURSDAY

February 25th, 2010

### BUSINESS TRACK

ROOM C101-C104

- 8:00 - 9:00 New 4 P's of Marketing  
*Jerard Nighorn/Lenzyme Trap-Cleer Inc.*
- 9:30 - 10:30 Quit Learning and Start Doing  
*Bill Raymond/Nexstar Network*
- 11:00 - 12:00 5 Secrets of Winners  
*Kenny Chapman/Nexstar Network*

### INSTALLER TRACK

ROOM B102

- 8:00 - 9:00 Risk Assessment for Determining SVC Frequency  
*Colin Bishop/Bord na Mona*
- 9:30 - 10:30 From Theory to Reality  
*Roger Lacasse/Premier Tech*
- 11:00 - 12:00 Timed Dosing and Controls  
*Mark Gross/Orenco*

### LIQUID WASTE TRACK

ROOM B103

- 8:00 - 9:00 Understanding the Biology and Function of an ATU  
*Doug Dent/Ecological Laboratories*
- 9:30 - 10:30 Permit Required Confined Space  
*Ed Fitzgerald/Jack Doherty Co.*
- 11:00 - 12:00 Keep Profit Margins High  
*Joel Smith/Clear Computing Inc*

### PORTABLE TOILET TRACK

ROOM B104

- 8:00 - 9:00 Up-Selling: How to Thrive During a Recession  
*Ray Luden Jr./PolyJohn*
- 9:30 - 10:30 Portable Sanitation Business Overview  
*Deric Boggs, Phil LaRoche/Satellite*
- 11:00 - 12:00 Routing Efficiency and Analysis  
*Greg Muth/UPS Logistics Technologies*

### MUNICIPAL TRACK

ROOM C105-C108

- 8:00 - 9:00 Pipe Cleaning Tools  
*Dana Hicks/ENZ USA Inc.*
- 9:30 - 10:30 Increase Revenues Through Pipeline Laser & Sonar  
*Doc Bennet/CUES*
- 11:00 - 12:00 How to Prevent I/I in the Manhole Chimney Area  
*William Goff/Sealing Systems Inc.*

### SPANISH TRACK

ROOM C109-C112

- 8:00 - 9:00 Limpieza de Drenajes y Tuberías y la Elección de Boquillas  
*Jim Aanderud/SSCSC*
- 9:30 - 10:30 Formando un Programa Eficaz de Inspecciones CCTV  
*Jim Aanderud/SSCSC*

### WOMEN IN THE INDUSTRY

ROOM C203

- 9:00 - 12:00 The Regeneration Process: How to Re-energize, Re-purpose, Re-invent and Handle Everything!  
*Ann Fry*

## FRIDAY

February 26th, 2010

### MUNICIPAL TRACK

ROOM C105-C108

- 8:00 - 9:00 Identifying Manhole I/I Sources and Cost-Effective Repair Methods  
*Lee Haessig/Cretex Specialty Products*
- 9:30 - 10:30 Jet Up! Taking Science to the Sewer  
*Scott Paquet/NozzTeq Inc.*
- 11:00 - 12:00 Cured in Place Pipe vs. Digging and Replacing  
*Travis Bohm/Perma-Liner*

### BUSINESS TRACK

ROOM C101-C104

- 8:00 - 9:00 Quality and the True Cost of Ownership  
*Matt Sutton/Rapid View*
- 9:30 - 10:30 Vision and Direction: Leading your Service Company to Prosperity  
*Victoria Finley/One Biotechnology*
- 11:00 - 12:00 How to Shop Your Insurance Effectively  
*Mark Herring/Heffernan Insurance*

### INSTALLER TRACK

ROOM C109-C112

- 8:00 - 9:00 Safety in Excavation  
*Gary Hooks/Safety Corporation of America*
- 9:30 - 10:30 Comprehensive Control Panel Training  
*Joe Zimmerman, Scott Rietsema/SJE Rhombus*
- 11:00 - 12:00 Onsite Wastewater Effluent Disinfection  
*Jim Cruver/Salcor*

### LIQUID WASTE TRACK

ROOM B103

- 8:00 - 9:00 Dewatering Alternatives  
*Kelly Brown/BDP Industries*
- 9:30 - 10:30 Convert a Liability to an Asset  
*Emily Landsburg/Black Gold Biofuels*
- 11:00 - 12:00 The Role of Bacteria and Bioaugmentation in Grease Traps and Septic Systems  
*Dr. Clarence Baugh/Custom Biologicals*

### SEWER & DRAIN TRACK

ROOM B102

- 8:00 - 9:00 Drain Cable Technology and Their Real World Applications  
*Keith Nesky/Spartan Tool*
- 9:30 - 10:30 OSHA Procedures Regarding Confined Space  
*Chris Cira/M Tech*
- 11:00 - 12:00 Sonde and Utility Line Locating Techniques  
*Rob Trefz/RIDGID*

For detailed seminar  
information please visit  
[www.pumpershow.com](http://www.pumpershow.com)

► Many of these seminars count toward continuing education credits. Check with your local representatives to see which seminars apply.



### ONSITE INSTALLER COURSE

ROOM B101

COLE Publishing's *Onsite Installer™* Course

ALL DAY THURSDAY  
8 a.m. - 5 p.m.

Jim Anderson and  
Dave Gustafson



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## HOTELS

Louisville has many great hotels to choose from. Some hotels are in walking distance to the Expo Hall and some are a quick 10 minute drive from downtown – the choice is yours!

**Call the Louisville Housing Bureau  
for help with your reservation.**

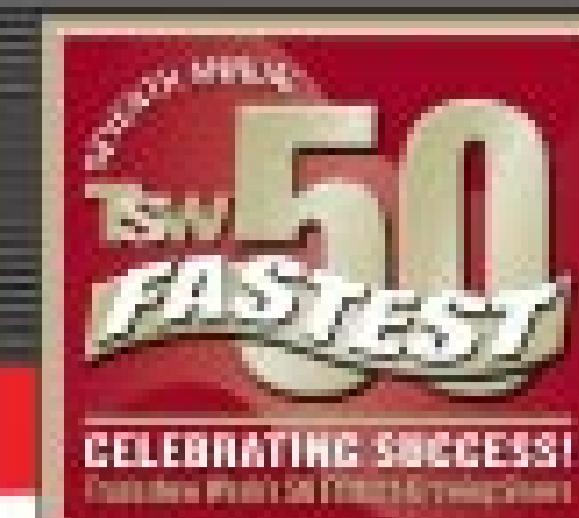
Monday - Friday 9:00 am to 5:00 pm EST

**1-800-743-3100** (toll free)

**1-502-561-3100** (international)

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► Call 1-866-933-2653 to register or to get detailed information about the 2010 Expo!



# EXHIBITOR LIST

Current list of exhibiting companies as of December 2nd, 2009.  
List subject to change without notice.

1-800-PLUMBER  
1-800-Plumbing Inc.  
27th Trucks, Inc.  
A & L Systems, Inc.  
A Corp./Rooster-Man  
A Global Chemical Co.  
A.R. North America  
A.W. Cook Cement Products  
Abbott Rubber Company  
Accent Manufacturing  
Acro Trailer  
Adler Tank Rental  
Advance Pump & Equipment  
Advanced Biological Marketing  
Advanced Containment Systems Inc.  
Advanced Drainage Systems  
Advanced Infrastructure  
Advanced Pressure Systems  
Advanced Tank Systems  
Advanced Treatment Inc.  
Aero-Stream®, LLC  
Aero-Tech  
AGCO-Ag Chem Division  
AK Industries  
All Star Equipment Sales, Inc.  
Allen J. Coleman  
Allied Forward Motion LLC  
Allied Graphics  
Allied Tank Co.  
Alpha Mobile Solutions  
Alpine Leasing, Inc.  
AlturaMats  
Ameri-Can Engineering  
Amerik Engineering  
Amthor International  
Anchor Graphics, Inc.  
AP/M Permaform  
Aqua Ben Corporation  
Aqua Blast Corporation  
Aqua Mole Technologies  
Aqua Sales, LLC  
Aqua-Zyme Disposal Systems Inc.  
Arcan Enterprises Inc.  
Aries Industries Inc.  
Arnel, Inc.  
Arthur Products  
Ashland Trap Distribution, Co.  
Asino  
Atlanta Rubber & Hydraulics Inc.  
Avanti International  
Bad Dog Tools  
Badger Truck Center/Badger VACS  
BakerCorp  
Bandlock Corporation  
BASE Engineering  
BB & T Insurance Svc. Inc.  
BDP Industries  
Bear Onsite  
Benjamin Franklin Franchising  
Best Enterprises Inc.  
Betts Industries  
Big Fish Environmental, LLC  
Bio Clean  
Bio-Microbics Inc.  
BioFuelBox Corporation  
Black Tie Manufacturing  
BlackGold Biofuels  
Blasters, Inc.  
Blue Angel Pumps  
Boatman Industries  
Boerger LLC  
Bord na Mona  
Bowman Tool Co.  
Brenlin Co., Inc.  
Bright Dyes, Division of Kingscote Chemicals  
Bright Technologies  
BS Design Corp.  
BW Technologies by Honeywell  
Cam Spray  
Camplas Industries Ltd.

Cape Cod Biochemical Co.  
Capital Partners  
Capital Rubber Corp.  
CAT PUMPS  
Center Capital Corporation  
Century Chemical Corporation  
Century Paper & Chemical  
Champion Pump Company, Inc.  
Chandler Equipment Inc.  
Chelsea Products/Div. of Parker  
Chempore Corporation  
Chempore Products Corp.  
Chemie Industries Inc.  
Clear Computing  
Clearstream Waste Water Systems Inc.  
Cloverleaf Tool Co.  
Cobra Technologies  
Comforts of Home  
Consolidated Treatment  
Containment Solutions Inc.  
Contractors Outlet Group  
Cook Compression  
Coon Manufacturing, Inc.  
Cosmic Tophat LLC  
Cough Industries Inc.  
Cox Research  
Coxreels  
Crane Pumps & Systems  
Creteco Specialty Products  
Cross Bore Safety Association  
Crest Buster/Schmitz Bros.  
CUES Inc.  
Custom Biologicals Inc.  
Cydaps Electronics, Inc.  
D&W Diesel, Inc.  
Dable USA  
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Deal Associates  
DekaRRe Products  
Del Vel Chemical Co.  
Delta Environmental  
Den Hartog Industries, Inc.  
DesertMicro  
Ditch Witch  
Doug Meadows Co. LLC  
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Dragon Products  
Drainables Direct  
Dresser Roots Blower  
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Durable Manufacturing  
Durand-Wayland, Inc.  
Dyna Flex Inc.  
Dyna-Vac Equipment  
E.H. Wachs Company  
Earth Friendly Chemicals, Inc.  
Easy Liner  
ECA-SSI  
Ecological Laboratories Inc.  
Ecological Tanks, Inc.  
Elastic/American Marine  
Electric Eel Mfg. Co. Inc.  
Eljen Corporation  
Engle Fabrication, LLC  
Enviro-Care  
Environmental Products and Access  
EnviroSight LLC  
Enz USA Inc.  
EPA-MOU Partners  
Explorer Trailers  
EZ Trakr  
Fabco Automotive Corp.  
Fabulous Fungi The Waste Decomposer  
FamHest Hosed Applications  
Federal Signal Environmental Solutions Group  
Fergus Power Pump Inc.  
Financial Federal Credit Inc.  
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Goritz Sewer & Drain, Inc.  
Goulds Pumps/ITT Industries  
Granite Leasing Company  
Green Leaf Inc.  
Hackney - Division SVC  
Hammelmenn Corp.  
HammerHead, An Earth Tool Company  
Hannay Reels  
Happy Feet by V.P. Marketing LLC  
Harben Inc.  
Hathorn Corporation  
Hedstrom Plastics  
Hoffman Insurance Brokers  
Heritage Truck Equipment Inc.  
Hi-Vac Corporation  
Hibon, Inc./Div. of Ingersoll Rand  
High Pressure Equipment Company  
Highland Tank & Manufacturing  
Horizon Information Systems, Inc.  
House of Imports  
Hur Chemical Manufacturing  
Hurco Technologies Inc.  
Hydro-Tech Pumps  
IHl Compact Excavator Sales  
Imperial Industries Inc.  
Industrial Diversified Products  
Industrial Magnetics, Inc.  
Infiltrator Systems Inc.  
Infrastructure Repair Systems, Inc.  
Infrastructure Technologies  
Infrotech  
Insight Vision  
International Pipelining Technologies, Inc.  
ITI Trailers & Truck Bodies Inc  
J&J Chemical Company  
Jack Doherty Supplies Inc.  
Jag Mobile Solutions  
Jameson LLC  
Jet Inc.  
JETTECH, Inc.  
Johnny's Choice by Chemcorp Industries Inc.  
Juggler by Labrie  
KeeVac Industries Inc.  
KEG Technologies, Inc.  
Keith Huber, Inc.  
Kentucky Onsite Wastewater Association  
Kentucky Tank, Inc.  
Kewanee Screen Printing  
Keystone Plastics Inc.  
KMH Equipment Company  
KMT Aqua-Dyne Inc.  
Kroy Industries  
Kuriyama of America Inc.  
L.C. Tanks  
L.M.T.

La Place Equipment Co Inc.  
Lenses Vanderlans & Sons Inc.  
Leaders Resource Network  
Lely Manufacturing  
Lenzyme Incorporated  
Liberty Financial  
Liberty Pumps  
Liquid Environmental Solutions  
Liquid Waste Industries  
Liquid Waste Technology  
Little Giant DBA Franklin Electric  
LMK Enterprises Inc.  
Lock America, Inc.  
Loder  
Logiball Inc.  
Loughran Tank & Trailer  
M.A.R.S. Workwear  
Madewell Products Corp.  
Manhole Guard  
Masport Incorporated  
Matrix Payment Systems  
Max-Life Mfg.  
MaxLiner  
Meese Orbitron Dunne Company  
Mid-State Tank Co., Inc.  
Milwaukee Electric Tool  
Milwaukee Rubber Products Inc.  
Mody Pumps, Inc.  
Mongoose Jetters  
More USA  
Mosmatic Corporation  
Mr. Manhole  
Mr. Rooster Corp.  
Mr. Sewer  
MTC  
MTech  
Muncie Power Products  
MWT Corporation  
Myers-Aplex/Pentair Water  
Myers-Seth Pump Inc.  
MyTono Mfg. Company Inc.  
M40, Inc.  
NASSCO  
National Oilwell Varco  
National Vacuum Equipment  
NAWT Inc.  
Netafin USA  
NewTech Inc.  
Nexstor  
NHLor Inc.  
NLB Corp.  
Non Stop Hydrex Excavating Ltd.  
Noren Products  
Northwind Air Systems  
Norweco Inc.  
NovaFlex Hose  
NOWRA  
NozzTeq™ Inc.  
NSF International  
Nu Flow Technologies Inc.  
Nuhn Industries Ltd  
Ohio Electric Control, Inc.  
SealGuard  
OMSI Transmissions Inc.  
One Biotechnology  
Orenco Systems, Inc.  
Parker Hannifin Corp. Energy Products Division  
Parson Environmental Products Inc.  
Pot's Pump & Blower  
Pearpoint, Inc.  
Peinemann Equipment  
Pelican Worldwide  
Pentair Water  
Perma-Liner Industries, Inc.  
Peterson Products  
PHOENIX Process Equipment  
Piccadilly Concepts  
Pik Rite Inc.  
Pinnacle Manufacturing  
Pipe Genie Mfg. Inc.  
Pipehunter

PipeLogix Inc.  
PipeMedic by QuakeWrap Inc.  
PipeTech Software  
Piranha Hese  
Plug-In Products  
Pollardwater.com  
Poly-Flow  
Poly-Klyn, S.L.  
Poly-Triplex  
PolyJohn Enterprises Corp.  
Polylok/Zabel  
PolyPortables Inc.  
Portable Restroom Trailers, LLC  
Portable Sanitation Assoc. Int'l.  
POSM Soft LLC  
Pow-R Mole  
Powertrack International Inc.  
Premier Tech Environment  
Presby Environmental, Inc.  
Presvac Systems, Ltd.  
Prime Resins, Inc.  
Prime Solution, Inc.  
ProClean by Durable Mfg.  
ProSept Protection Plan  
Prototek  
PUMPTec  
Rubco  
Rainbow Pumping Systems  
RapidView IBAK North America  
Rotech Electronics, Ltd.  
Roush Electronics USA LLC  
RC Industries Inc.  
Real-Tite Plugs, Inc.  
REED Manufacturing Company  
Reelcraft Industries Inc.  
Reline America Inc.  
Rich Specialty Trailers  
RIDGID  
Ritam Technologies, LP  
RJN Group  
Robuschi & C.S.p.A.  
Roebic Laboratories, Inc.  
RootX  
Roth Global Plastics  
Rothenberger USA  
Roto-Rooter Corporation  
RotoSolutions  
RouteOptix Inc.  
RR USA, Inc.  
RS Technical Services Inc.  
Rush Refuse Systems  
Rush Sales  
Safety Corporation of America  
Salar, Inc.  
Salem Republic Rubber Co.  
Satellite Industries Inc.  
Saverisen, Inc.  
Savatech Corp.  
Schier Products  
ScreenTech Imaging/Div. of Rooda Signs Inc.  
SEACON Brantner & Assoc. Inc.  
SealGuard  
Sealing Systems Inc.  
Sema Tank/Baker Equipment Company  
Septic Drainer  
Septic Services Inc.  
SeptiTech  
Sepronics  
Sewer Equipment Co. of America  
Shamrock Pipe Tools Inc.  
Sherwin Williams  
ShuBee  
SIM/TECH Filters  
Simple Solutions Dist. LLC  
SJE-Rhombus  
SludgeHammer Group Limited  
Smithco Manufacturing  
Snyder Industries  
Somerset Welding & Steel  
Spartan Tool LLC

Specialty B Sales  
Spir Star Inc.  
Sprayraq Inc.  
Stamp Works  
Standard Equipment  
Stellar Industries Inc.  
Stephens Technologies  
Ste-Away Power Cranes Inc.  
StoneAge, Inc.  
Subsurface Instruments  
Sunbelt Rentals  
Sunrise Environmental  
Super Products LLC  
Superior Signal Company  
SuperVac 2000  
SVE Portable Roadway Systems, Inc.  
T & T Tools Inc.  
Tank Technologies & Supply Co., LLC  
TCF Equipment Finance  
The Bosworth Co.  
The Service Program  
The Strong Company  
Thompson Pump  
Toko Industries  
Tracker Solutions  
TransLease  
Transway Systems Inc.  
Trench Grader  
Trenchless Technology Magazine  
Tri State Tank LLC  
TRIC Tools Inc.  
Trident Insurance/Septicover/  
Waste Insurance Program  
Triple R Specialty  
Tristor Capital LLC  
TRY TEK Machine Works, Inc.  
TSF Co. Inc.  
TSI Tank Services Inc.  
TT Technologies Inc.  
Tuf-Tite Inc.  
Turbo-Fog, Division of Kingscote Ind.  
U.E.M.S.I.  
Udon USA  
UltraLiner, Inc.  
Under Pressure Systems, Inc.  
UPS Logistics Technologies  
US Jetting, LLC  
USA BlueBook  
USB-Sewer Equipment Corporation  
Vac-Con Inc.  
VacAll  
Vacutrax Limited  
Vacuum Truck Rental  
Vaporooter  
VAR Co.  
VE Enterprises, Inc.  
Vermoor  
Vivox Corp.  
Wale Environmental Products  
Walex Products Co.  
Wallenstein Vacuum Pumps  
Wastequip  
Water Environment Federation  
Water Jet Technology Association  
Weber Industries, Inc. (Webtrol)  
Wells Cargo Inc.  
Wells Fargo Equipment Finance  
Western Mule Cranes  
Westmoor Ltd.  
Wieser Concrete Products Inc.  
Wilco Supply  
Wolf Creek Company, Inc.  
Xerxes Corporation  
Zoeller Pump Company

**Additional companies  
are being added daily.  
Please check on-line  
for a current list.**

## SO MUCH TO SEE!

PUMPER & CLEANER ENVIRONMENTAL EXPO EXHIBITORS OFFER A SNEAK PEEK AT THEIR LATEST TECHNOLOGY AND SERVICES

By Ed Wodalski

Anyone who has been to the Pumper & Cleaner Environmental Expo will tell you there's just so much to see. From time-tested products to cutting-edge technology, the challenge is to see it all.

To make sure you don't miss out on any of the new breakthroughs at the Kentucky Exposition Center, show sponsor COLE Inc. has dedicated an area exclusively to new products. The display opens on Wednesday, Feb. 24, for a pre-show sneak peek and will remain open during regular show hours. There's also an interactive floor plan at [www.pumpershow.com](http://www.pumpershow.com) to help you pre-plan your visit.

Here's a look at some of the products and services being featured at the 30th Annual Expo.

### TREATMENT SYSTEMS

#### 1 BIO-MICROBICS INC.

The RetroFAST wastewater treatment system from Bio-Microbics is designed for the renovation of failed septic systems in single-family homes as well as preventing clogging layers from forming in new construction by reducing the concentration of high strength waste. 800/753-3278; [www.biomicrobics.com](http://www.biomicrobics.com); Expo booth 149.

#### 2 PREMIER TECH AQUA

The Ecoflow Biofilter passive residential septic system from Premier Tech Aqua requires no electromechanical parts. The filter is recyclable, entirely self-contained, adaptable to any type of lot and made of 100 percent natural fiber. 800/632-6354; [www.ptenv.com](http://www.ptenv.com); Expo booth 9123.

#### 3 ORENCO SYSTEMS INC.

The AdvanTex AX20RT pre-packaged wastewater treatment system from Orenco Systems Inc. installs like an ATU and performs like a media filter. The system uses AdvanTex textile media hanging inside a multipurpose tank that works as a treatment, recirculating and dosing tank. All interior components are installed and adjusted at the factory. The shallow-bury, NSF-approved system is designed for all applications. 800/348-9843; [www.orenco.com](http://www.orenco.com); Expo booth 6115.

#### 4 BORD NA MONA

The Purafla biofiltration system from Bord na Mona uses biofibrous peat to treat domestic strength septic tank wastewater. The peat fiber filters the wastewater and promotes the growth of microorganisms that naturally treat septic tank effluent. The biofilter provides a filtration option where conventional septic systems are restricted due to high water tables, restrictive layers, poor soil conditions or other site concerns. It can be used to repair or replace failing conventional systems. Designed for homes, businesses and residential developments where central sewerage is unavailable, it also can be designed for use in decentralized or cluster-type community systems. 336/547-9338; [www.bnm-us.com](http://www.bnm-us.com); Expo booth 4124.

#### 5 PRESBY ENVIRONMENTAL INC.

Advanced Enviro-Septic from Presby Environmental Inc. is a NSF-40 Class I certified onsite system that combines treatment and dispersal into one unit without the need for replacement media or special maintenance. The passive, non-mechanical system can be installed on virtually any site. 800/473-5298; [www.presbyenvironmental.com](http://www.presbyenvironmental.com); Expo booth 114.

#### 6 ZOELLER PUMP CO.

The Fusion Series wastewater treatment system from Zoeller Pump Co. combines anaerobic and aerobic zones in a "drop-in" tank, eliminating the need for a preceding septic tank and enabling it to occupy a small footprint. The polypropylene media never needs to be removed or replaced. A portion of the treated water is recirculated with an

automatic backwash cycle, returning sludge to the head of the system. The processes are oxygen driven by a programmable compressor. All models are NSF/ANSI Standard 40 Class 1 systems and approved for most areas. 502/778-2731; [www.zoeller.com](http://www.zoeller.com); Expo booth 87.

#### 7 NORWECO INC.

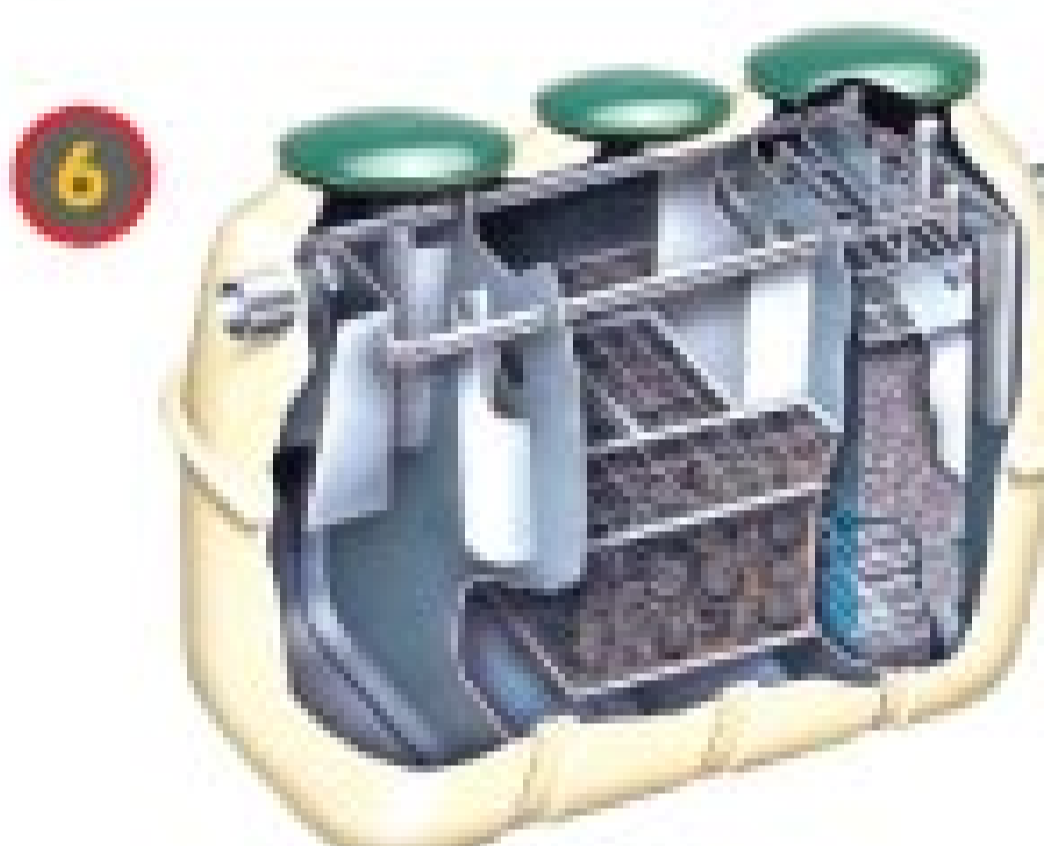
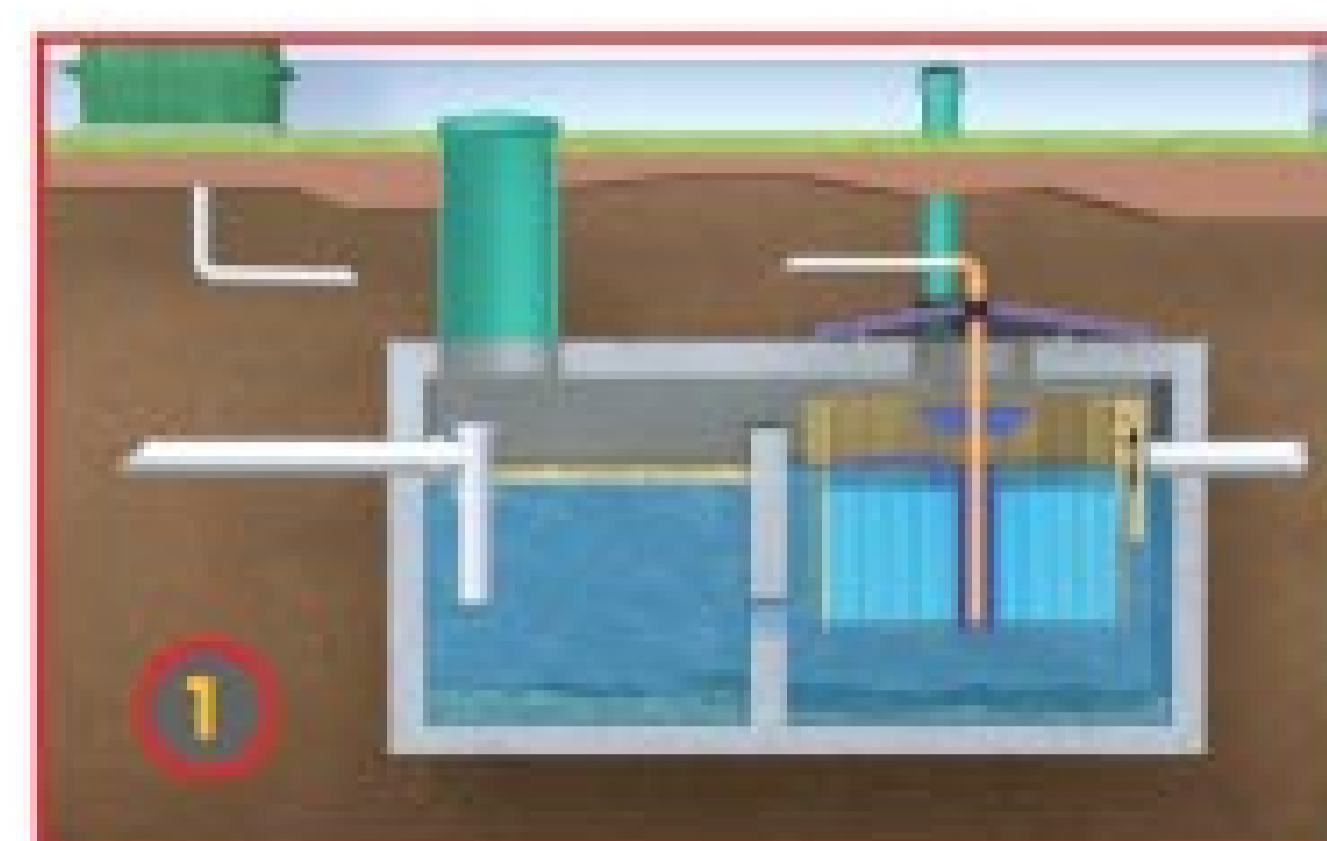
The four-step Singulair Green aerobic wastewater treatment system from Norweco Inc. combines an advanced aerobic treatment process in a watertight, rotationally molded polyethylene tank. Designed to turn domestic wastewater into clean, odorless effluent in less than 24 hours, the system can be installed by two individuals and a backhoe. 419/668-4471; [www.norweco.com](http://www.norweco.com); Expo booth 9135.

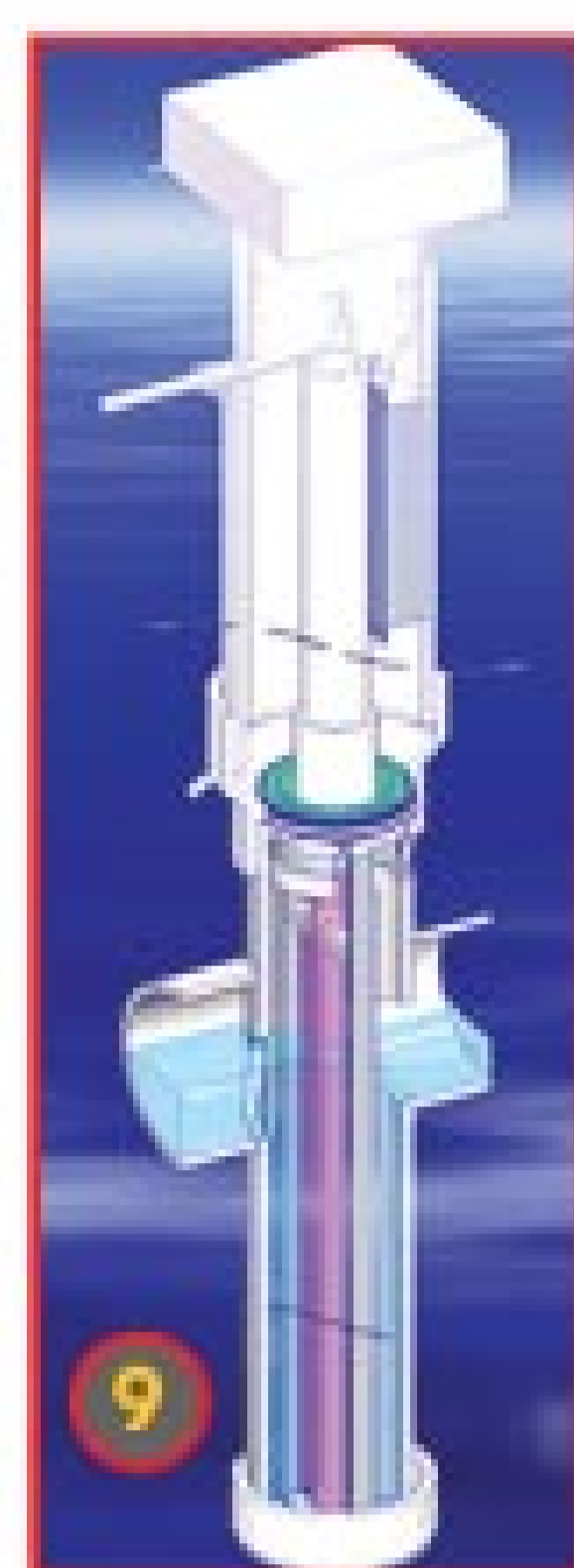
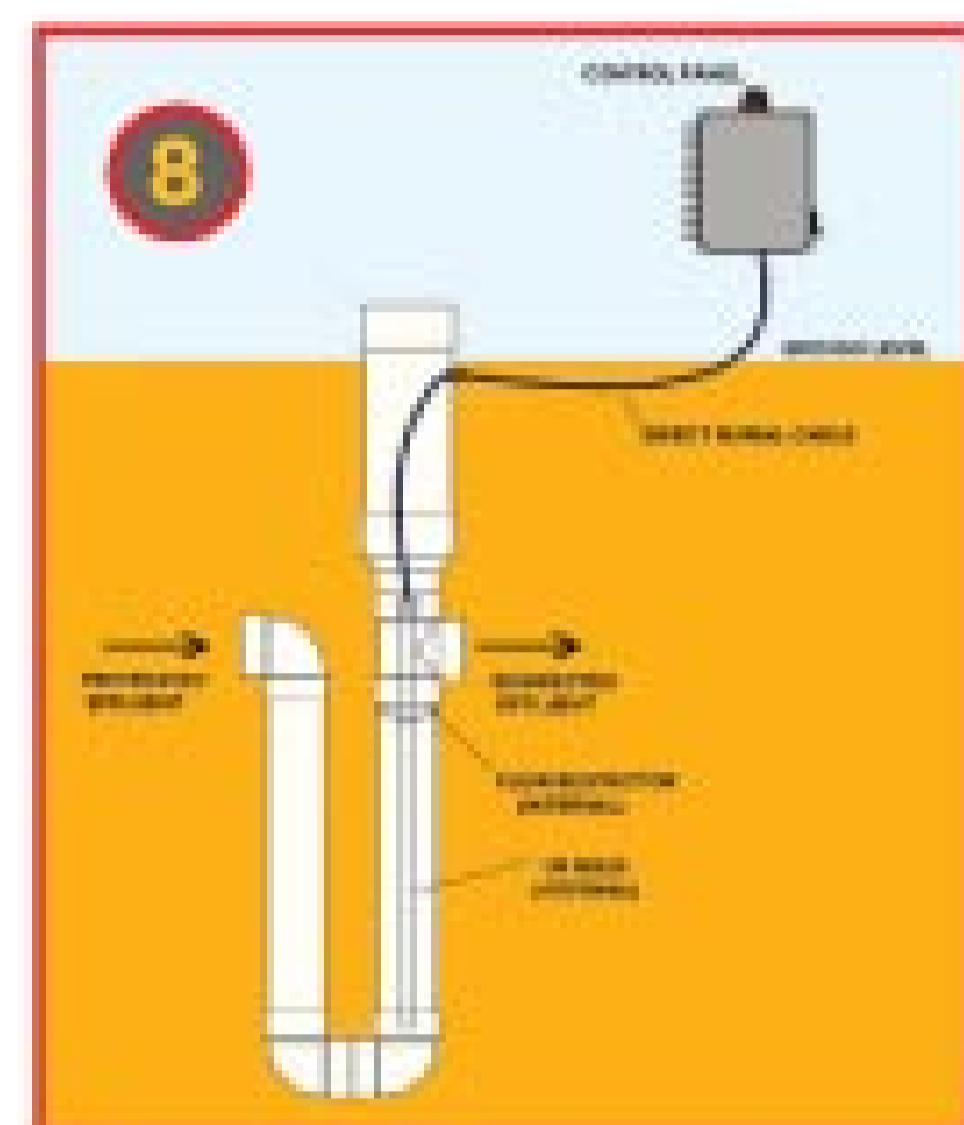
#### 8 ECOLOGICAL TANKS INC.

The UV Disinfector from Ecological Tanks Inc. is designed to disinfect pre-treated effluent by exposing it to ultraviolet light. A control panel is provided and equipped with an audible/visible alarm that activates if the bulb fails or the UV current drops below a minimum level. 800/277-8179; [www.etiaquasafe.com](http://www.etiaquasafe.com); Expo booth 6055.

#### 9 SALCOR INC.

The Model 3G UV onsite wastewater disinfection unit from Salcor Inc. has a two-year lamp life and features increased protection against the effects of flooding. Other features include fouling-resistant Teflon, quick installation and minimum annual maintenance. 760/731-0745; Expo booth 9049.





## 10 ELJEN CORP.

The GSF Geotextile sand filter from Eljen Corp. is a state-approved, passive advanced onsite wastewater treatment system. 800/444-1359; [www.eljen.com](http://www.eljen.com); Expo booth 4144.

## 11 PRO-SEPT PROTECTION PLAN

The Pro-Sept Protection plan provides up to \$25,000 for the repair or replacement of a residential septic system due to malfunction. The plan provides three years of coverage for existing systems and five years for new systems. 888/354-0677; [www.powderhornagency.com](http://www.powderhornagency.com); Expo booth 9158.

## TANKS AND ACCESSORIES

## 12 ROTH GLOBAL PLASTICS INC.

MultiTank from Roth Global Plastics Inc. is made for water cistern, pump, holding, rainwater or septic tank usage. Its multi-layered construction features an inner layer of virgin HDPE, two layers of polyethylene for stability and an outer layer of black, UV-stabilized polyethylene. Other features include watertight threaded access riser, connection gaskets and threaded manhole covers. No water is required during backfilling. 866/943-7256; [www.roth-global.net](http://www.roth-global.net); Expo booth 9148.

## 13 SJE-RHOMBUS

EZ Series Simplex panels from SJE-Rhombus are designed to control one single-phase pump in water and sewage installations. The panel features a digital display on the inside of the front cover for programming the pump control and system monitoring. It can be converted to demand or timed dose in the field. Options

such as duo alarms are available to meet local code requirements. The optional mounting post has a removable access door for wiring. 888/342-5753; [www.sjerhombus.com](http://www.sjerhombus.com); Expo booth 6069.

## 14 TUF-TITE INC.

The 24-inch, Heavy Duty Flat lid from Tuf-Tite Inc. fits most risers and corrugated pipe. For added safety, the center of the lid is designed to hold 70 pounds of concrete. It also has a molded-in, permanent polyurethane gasket for an air/water-tight fit. The riser lid comes with six vertical and two horizontal safety screws for secure installation. 800/382-7009; [www.tuf-tite.com](http://www.tuf-tite.com); Expo booth 1218.

## 15 SEPTIC SERVICES INC.

Whirlwind STA-60 (500-gpd) and STA-80 (750-gpd) series linear compressors from Septic Services Inc. feature quiet, oil-free operation. No tools are needed to replace the filter. The compact units have a 6-foot, pre-wired cord and outlet pipe threaded on the inside. The STA-80 also has an oversized, thicker diaphragm and larger shuttle. 800/536-5564; [www.septicserv.com](http://www.septicserv.com); Expo booth 6095.

## 16 CRANE PUMPS & SYSTEMS

The Barnes SH Series non-clog pump from Crane Pumps & Systems is made to handle up to 3-inch solids, including panty hose, rags, towels and rope. The pump has quick-connect cables, Class H insulation, explosion-proof motors, oil-filled stators, tandem silicon carbide seals and painted surface. 937/778-8947; [www.cranepumps.com](http://www.cranepumps.com); Expo booth 6129.

## 17 WEBER INDUSTRIES INC.

Webtrol wastewater pumps from Weber Industries Inc., designed for residential and commercial use, feature a recessed impeller, made to reduce the load on the bearing and prevent clogging for extended pump life. Potted cord seals protect the motor from moisture, with silicon carbide mechanical seals and secondary lip seals offering added protection. 800/769-7867; [www.webtrol.com](http://www.webtrol.com); Expo booth 4087.

## ADDITIVES

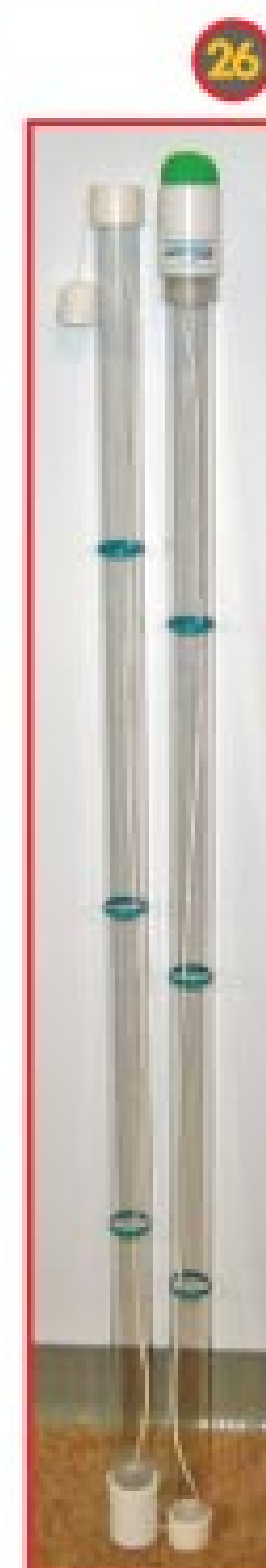
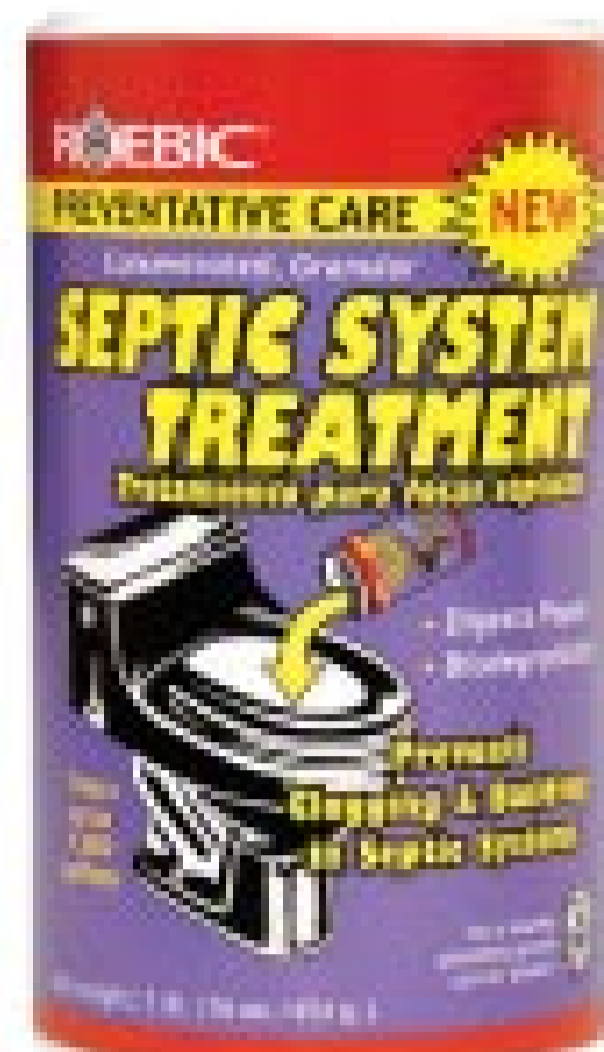
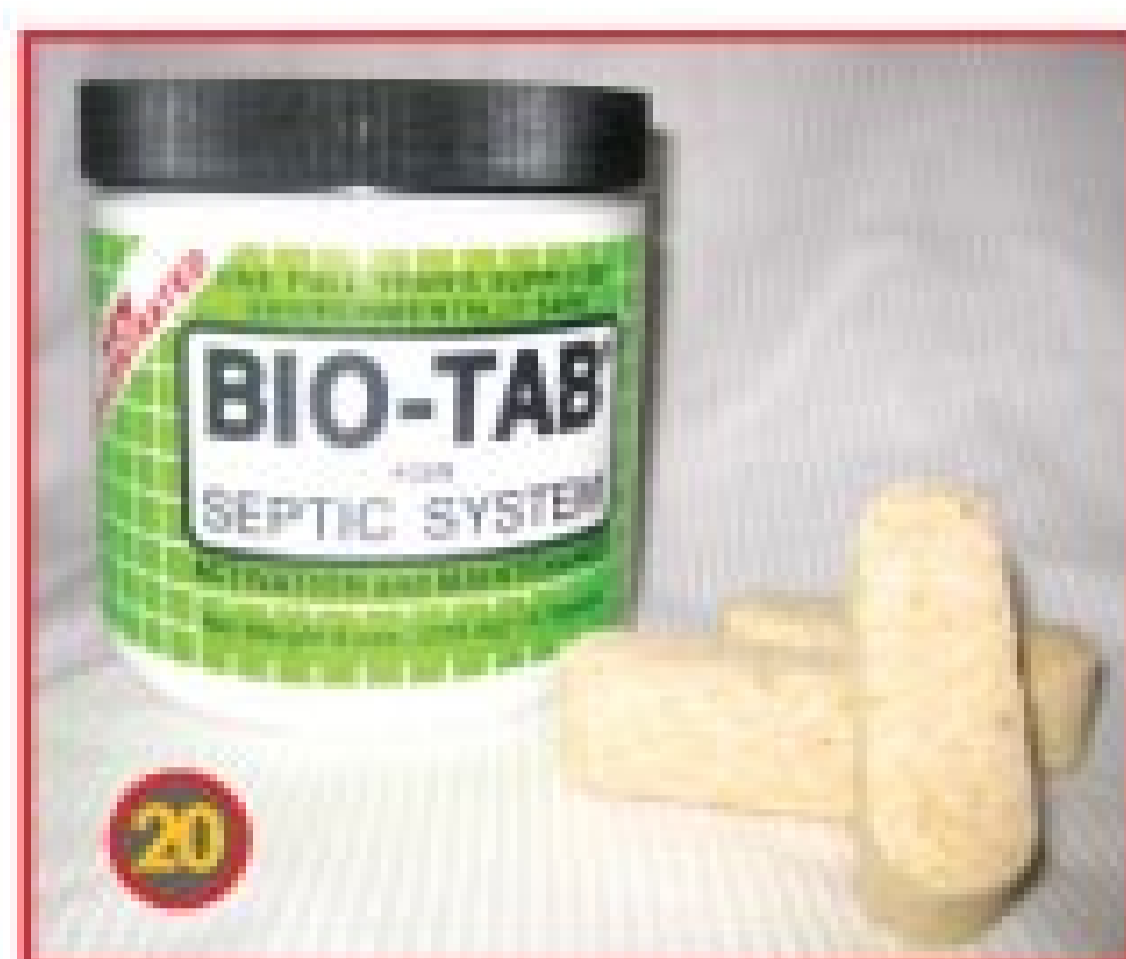
## 18 CAPE COD BIOCHEMICAL CO.

AfterShock drainage restorative from Cape Cod Biochemical Co. is a blend of Bio-Rem E-D, high-count bacteria, enhanced by oxidizers, designed to help degrade the sulfides that build up in the drainfield and accelerate the activity of bacteria present. 800/759-2257; <http://septiconline.com>; Expo booth 3201.

## 19 ONE BIOTECHNOLOGY

BioOne biological drain, septic and drainfield maintainer/rejuvenator from One Biotechnology has natural, live vegetative microbes with the ability to degrade fat, oil and grease. The stabilized liquid formula has no emulsifiers, added enzymes or surfactants. It is acceptable in most municipalities and is recognized by the U.S. Environmental Protection Agency's Design for the Environment program. Residential and commercial sizes are available. 800/951-4246; [www.1biotechnology.com](http://www.1biotechnology.com); Expo booth 4040.

CELEBRATING **30** years 1981 - 2010



**arcan**

**20 CENTURY CHEMICAL CORP.**  
BIO-TAB septic system additive from Century Chemical Corp. is a concentrated tablet of both aerobic and anaerobic bacteria and enzymes designed to work as a biological activator. One jar contains a full year's supply. 800/348-3505; [www.centurychemical.com](http://www.centurychemical.com); Expo booth 124.

**21 CUSTOM BIOLOGICALS INC.**  
DrainLine Fizzytabs from Custom Biologicals Inc. are designed to open slow drains, prevent future buildup and eliminate odors. Made for drains, toilets, garbage disposals and septic systems, the effervescent tablet contains natural bacteria enzymes that biodegrade soap scum, fats, oils, grease and minerals. 561/998-1699; [www.custombio.com](http://www.custombio.com); Expo booth 163.

**22 ROEBIC LABORATORIES INC.**  
The Roebic Granular Septic System Treatment from Roebic Laboratories Inc. is a concentrated blend of eight strains of specialized bacteria, consisting of six strains of RoeTech Bacillus bacteria and two strains of Pseudomonas that degrades standard sewage components as well as surfactants, tissue, hydrocarbons and household cleaning chemicals. The powdered treatment works in a pH range of 6-10 and is buffered to help maintain a favorable pH. 518/762-8030; [www.roebic.com](http://www.roebic.com); Expo booth 9233.

**23 ARCAN ENTERPRISES INC.**  
Septic-Scrub drainfield flow restorer from Arcan Enterprises Inc. is designed to help restore flow in the soil absorption area by adding oxygen to the system. The chemical treatment oxidizes sulfides and releases oxygen into the drainfield. 888/352-7226; [www.arcan.com](http://www.arcan.com); Expo booth 4074.

**24 LENZYME INC.**  
A year's supply of educational brochures and calendar reminder stickers have been added to each case of powder biological waste treatment products from Lenzyme Inc. Private-label powder packets also feature the educational brochures and reminder stickers. 800/223-3083; [www.lenzyme.com](http://www.lenzyme.com); Expo booth 6151.

## MAINTENANCE

**25 HURCO TECHNOLOGIES INC.**  
The Power Smoker 2 from Hurco Technologies Inc. is designed to find leaks in plumbing systems, sewer odor in structures and diagnose problems with septic systems. The unit features non-staining LiquiSmoke. 605/743-2466; [www.gethurco.com](http://www.gethurco.com); Expo booth 41.

**26 SIM/TECH FILTER INC.**  
The TruCore sludge sampler from Sim/Tech Filter Inc. enables samples to be taken without creating excessive turbulence. It has an inside diameter of 1 3/8 inches and 10-ounce-per-foot capacity. The unit is made of polycarbonate sampling tube (marked at every foot) and PVC fittings. It comes as a single, 8-foot piece or as two 4-foot units. An extension kit is available. 888/999-3290; [www.simtechfilter.com](http://www.simtechfilter.com); Expo booth 4176.

**27 SVE PORTABLE ROADWAY SYSTEMS**  
The TrakMat ground cover mat system from SVE Portable Roadway Systems Inc. is designed for moving vehicles across lawns, golf courses, special events, and other areas. Made of 100 percent recycled polyethylene plastic, the standard mat

is light green in color to prevent it from getting hot and damaging turf. Traction nubs on both sides provide grip. Black mats are available where heat is not a concern. 800/762-8267; [www.trakmats.com](http://www.trakmats.com); Expo booth 6189.

**28 ALTURNAMATS INC.**  
Ground protection mats from AlturnaMATS Inc. are made of 1/2-inch thick polyethylene and designed to withstand 60-ton loads. The mats are available in various treads and sizes. Its Mobile Matt has a bold "M" tread with gripping studs on the underside. Hand slots on each side make for easy handling. 888/544-6287; [www.alturnamats.com](http://www.alturnamats.com); Expo booth 7102.

**29 USA BLUEBOOK**  
Turbo-charged, truck-mounted CIC Powerboxes from USA BlueBook provide on-site power without using your truck battery. The units supply up to six hours of working power, recharging off your alternator. It can run power saws, grinders, drills, impact wrenches and air tools. Or use it to inflate tires. The DC output can power winches or boost-start backhoes, tractors and bulldozers. Models are available with built-in hydraulic power. The units deliver up to 4,000 watts, supplying 2,000 watts of continuous power, 100-psi air power and 2,100 cranking amps of emergency power. Boxes feature built-in lights and are available with radio, CD, TV and DVD options. 800/548-1234; [www.usabluebook.com](http://www.usabluebook.com); Expo booth 9161.

# ONSITE<sub>journal</sub>

Winter 2010

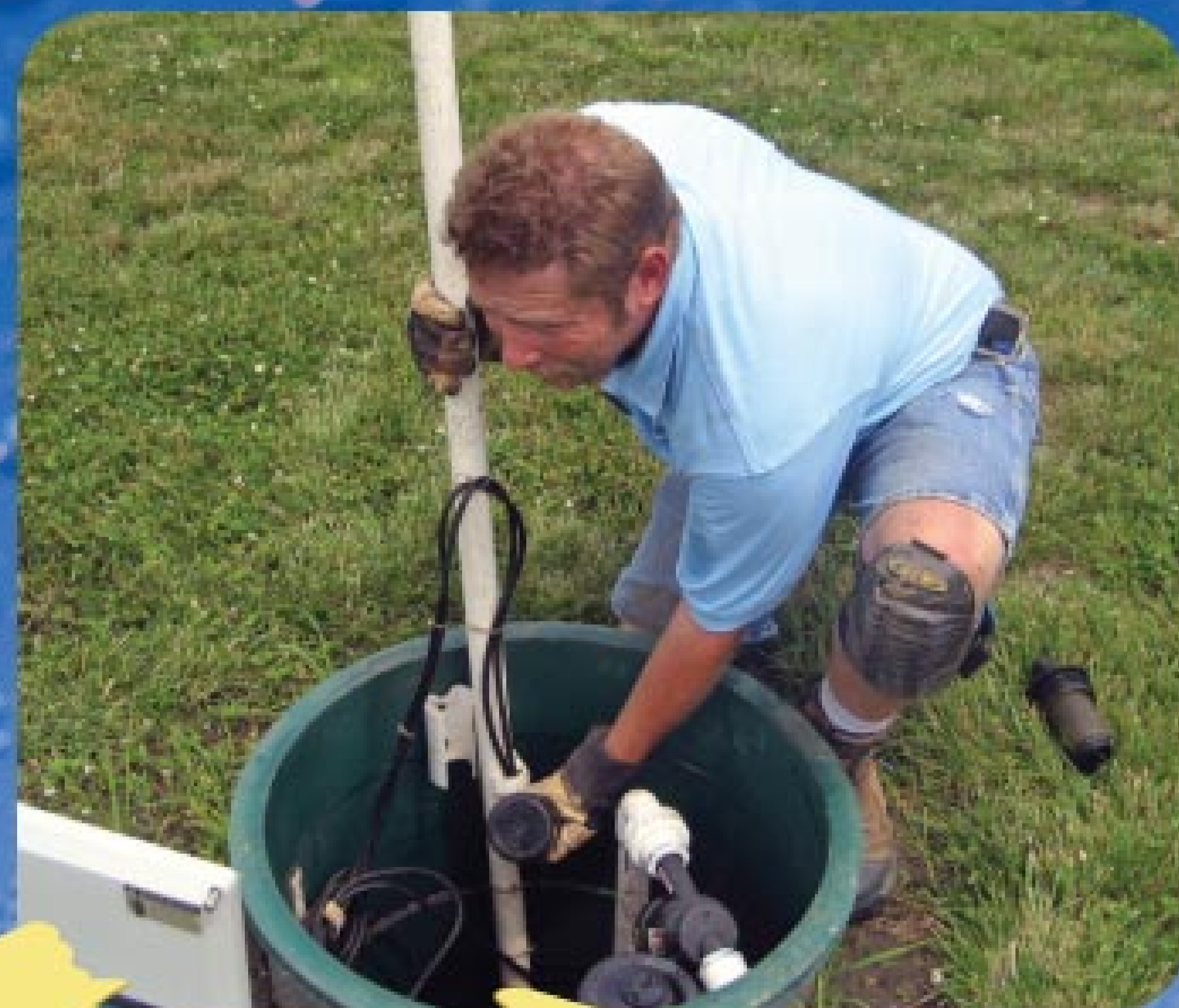
NEWS FOR THE ONSITE WASTEWATER RECYCLING INDUSTRY

**Install With O and M in Mind**

**Pumps & Controls**

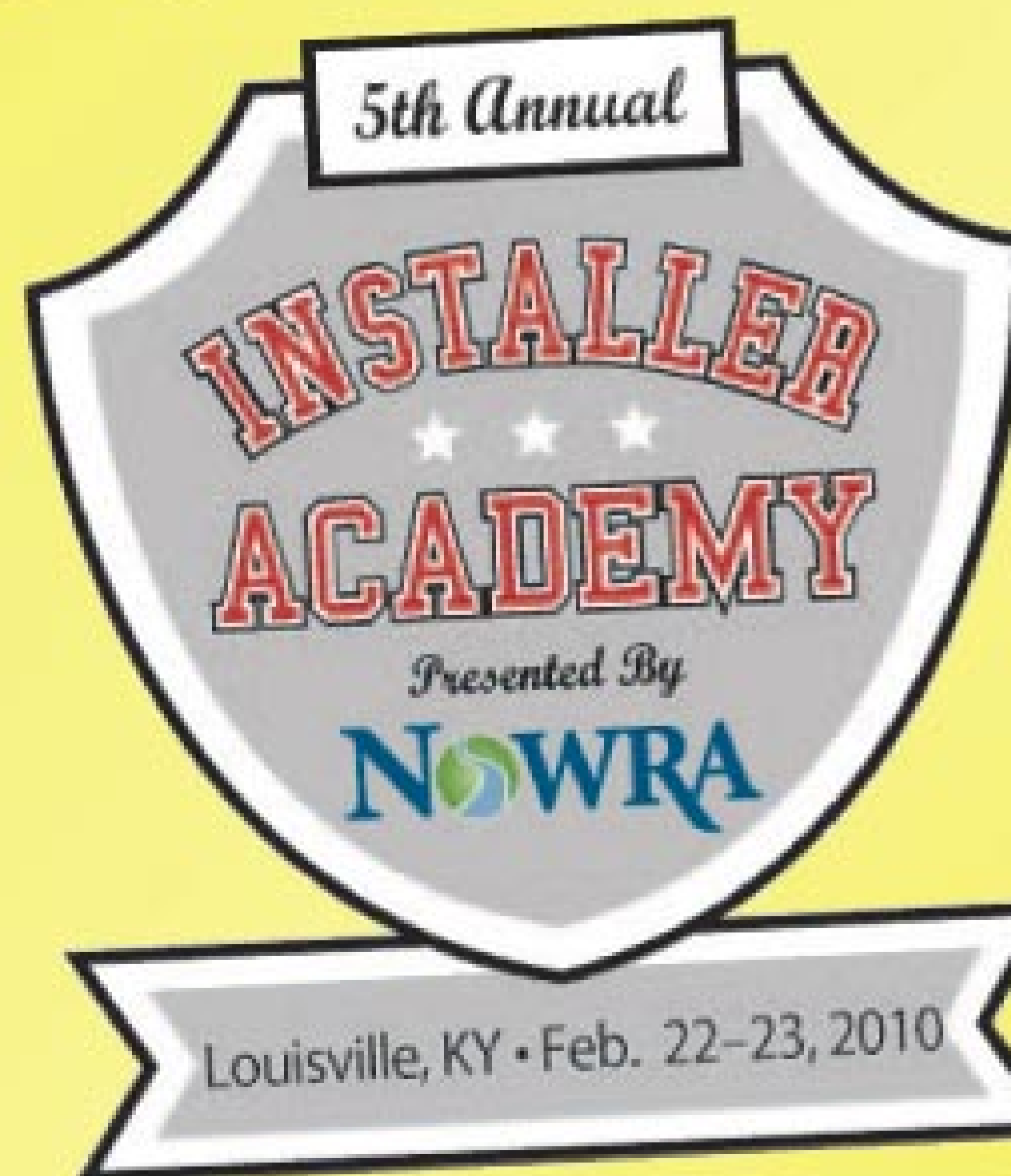
**New Approaches and Products  
Continue the Evolution of Onsite  
Wastewater Treatment**

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



**NOWRA**  
National Onsite Wastewater  
Recycling Association

*Don't miss it!*



# ONSITE journal



NEWS FOR THE ONSITE WASTEWATER RECYCLING INDUSTRY

Winter 2010

## National Onsite Wastewater Recycling Association, Inc.

### EXECUTIVE COMMITTEE

**President** - Thomas Groves  
**Vice President** - Richard Otis  
**Past President** - Jerry Stonebridge  
**Secretary/Treasurer** - Brian McQuestion

### BOARD OF DIRECTORS

#### 2008-2010 Directors

*(Terms Expire December 2010)*

**Supplier/Vendor** - E. Craig Jowett  
**Installer/Contractor** - Peter Balas  
**Engineer/Designer** - Rodney Ruskin  
**Academic/Research** - Judith Sims

#### 2009-2011 Directors

*(Terms Expire December 2011)*

**Engineer/Designer** - Craig Gilbertson  
**Service Provider** - Tom Fritts  
**Regulator** - Ed Corriveau  
**Academic/Research** - Randall Miles  
**Supplier/Vendor** - Greg Graves

#### 2010-2012 Directors

*(Terms Expire December 2012)*

**Supplier/Vendor** - Doug Jatchko  
**Regulator** - Brent Reagor  
**Service Provider** - vacant

### COMMITTEE CHAIRPERSONS

**Executive Committee** - Thomas Groves  
**Marketing /Communications** - Jeff Coomer  
**Conference Committee** - Randy Miles & Janet Murray  
**Education Committee** - Sara Heger  
**External Affairs** - Mary Clark  
**Finance Committee** - Greg Graves  
**Government Relations** - Mark Hooks  
**Governance Committee** - Vacant  
**Local Affiliate Leaders** - Brian Scheffee  
**Model Code Committee** - Tony Smithson  
**Technical Practices** - Allison Blodig  
**Website Committee** - Ron Suchecki  
**OSJ Editorial Board** - Matt Byers  
**Installer Academy** - Tom Fritts

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### NOWRA HEADQUARTERS

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 Madison, WI 53703  
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 info@nowra.org

[www.nowra.org](http://www.nowra.org)

[www.septiclocator.com](http://www.septiclocator.com)

[www.modelcode.org](http://www.modelcode.org)

[www.waterforalllife.org](http://www.waterforalllife.org)



**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 Super-conference 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](http://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](http://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](http://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](http://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. ●



# 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 <i>(Continued)</i>	IV. Drip Dispersal Overview and Installation	V. Vendor Training Rooms <i>(Continued)</i>
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	<b>Bord na Mona, Inc.</b> 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	<b>Bio-Microbics, Inc.</b> 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	<b>Infiltrator Systems, Inc.</b> 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	<b>Infiltrator Systems, Inc.</b> 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 informa-

tion 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 presentation 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 technol-

ogy 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 5<sup>th</sup> 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](mailto: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:**

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

- |   |   |
|---|---|
| <input type="checkbox"/> \$150 NOWRA Members - Early Bird Rate (By February 15) | <input type="checkbox"/> \$195 NOWRA Members - (February 16 – On site Registration) |
| <input type="checkbox"/> \$195 Non-Members - Early Bird Rate (By February 15)   | <input type="checkbox"/> \$245 Non-Members - (February 16 – On site Registration)   |

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

- |   |   |
|---|---|
| <input type="checkbox"/> \$100 NOWRA Members - Early Bird Rate (By February 15) | <input type="checkbox"/> \$125 NOWRA Members - (February 16 – On site Registration) |
| <input type="checkbox"/> \$125 Non-Members - Early Bird Rate (By February 15)   | <input type="checkbox"/> \$150 Non-Members - (February 16 – On site Registration)   |

**Date of Attendance**

- ☐ Monday, February 22<sup>th</sup>      ☐ Tuesday, February 23<sup>rd</sup>

**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.



## CALL FOR PAPERS

### October 25-27, 2010

**T**he 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](http://www.nowra.org/annual_conference.html) or contact Sara Heger at [heger001@umn.edu](mailto:heger001@umn.edu). ●

## Install With Operation and Maintenance in Mind

By Nancy Deal, North Carolina State University

**A**ll 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 Mona 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](mailto: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.

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 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](mailto:Albert_royster@doh.state.fl.us).



**Doctor Septic and Snoopy**  
Albert Royster



## BUSINESS BENEFIT PROGRAM MEMBERS FOR 2009

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**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

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

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

### **SILVER**

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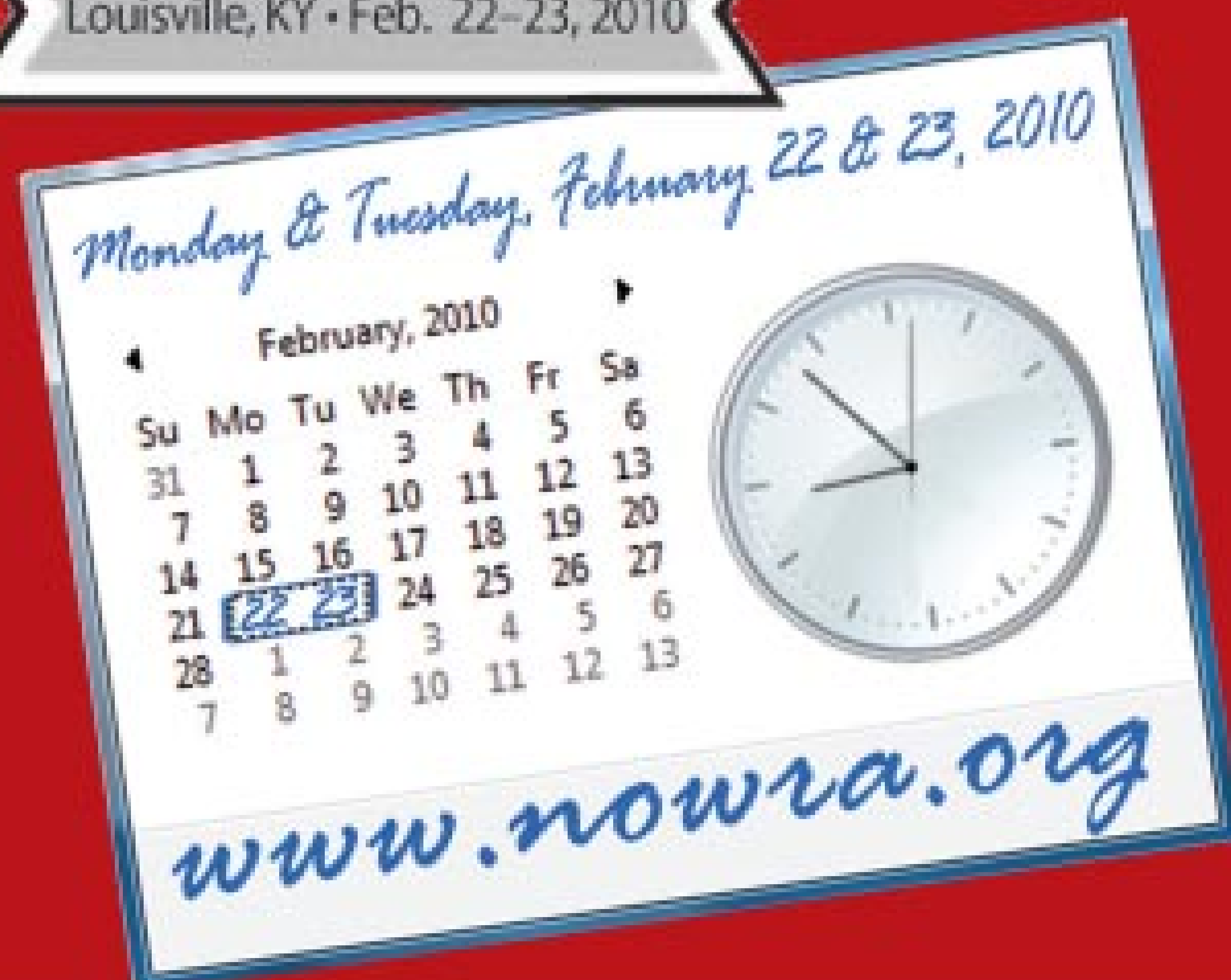
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For information on the benefits, or how to become a 2010 NOWRA Business Benefit Program member, check out our Web page at [www.nowra.org/bbp.html](http://www.nowra.org/bbp.html) or call the NOWRA offices at 800-966-2942. Many new benefits were added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



Louisville, KY • Feb. 22-23, 2010



# SAVE THE DATE

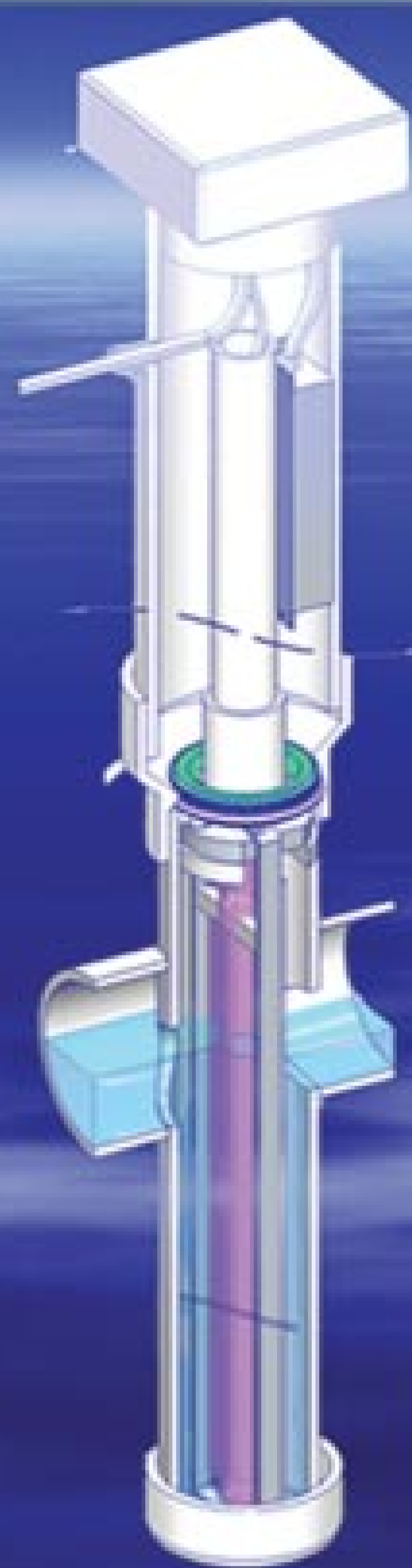


## Roe-D-Hoe Competition

Feb. 25, 26, 27, 2010 Louisville, KY

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January 2010



## Cultec Offers Recharger, Contactor Underground Chambers

The high-profile, high-capacity Recharger 150, 180, 280 and 330XL underground septic chambers from Cultec offer a wastewater management alternative to concrete galleries and conventional pipe and stone systems. The Contactor EZ-24, 100 and 125 Field Drain C-4 models offer a lower profile, lower capacity chamber for septic installations with depth restrictions. 800/428-5832; [www.cultec.com](http://www.cultec.com).

## Bord na Mona Introduces RainSava Rainwater Harvesting Solutions

RainSava rainwater harvesting solutions from Bord na Mona Environmental Products U.S. Inc. are designed for residential and commercial applications, providing an alternative to the use of potable drinking water for non-drinking water needs. The system collects and filters natural rainwater, incorporating a filter that can be located in each downpipe or in the combined rainwater pipe after it goes underground. The filter ensures that debris and leaves are removed from the water. 336/547-9338; [www.bnm-us.com](http://www.bnm-us.com); Expo booth 4124.

## Salcor Offers Model 3G UV Disinfection Unit

The 2010 version 3G ultraviolet disinfection unit from Salcor Inc. offers speedy installation, two-year lamp life, increased protection against flooding and foul-resistant Teflon. 760/731-0745; Expo booth 9049.

## Hartford Offers Insurance for Septic Installers

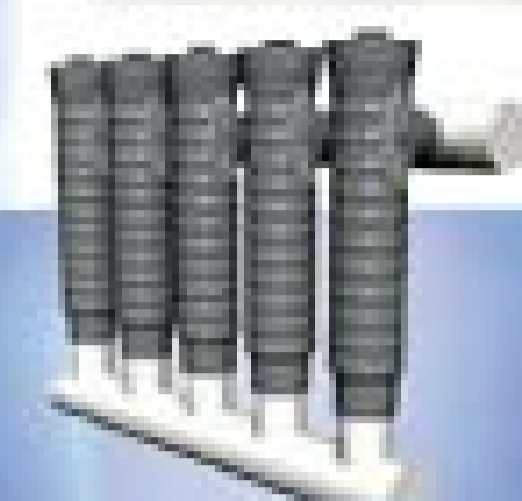
Hartford Financial Service Group Inc. has introduced a comprehensive insurance program for septic installers. The program offers comprehensive property, general liability, commercial auto, workers' compensation and umbrella coverage. Specialized coverage options include design and installation errors and omissions; inspection service errors and omissions to protect installers who inspect and certify systems, often as a condition of a home sale; extra expense coverage for unintentional handling of hazardous waste; mechanical breakdown to protect against loss to property caused by fire or explosion, and auto pollution endorsement coverage for septic pumping or portable restroom cleaning. 800/533-7824; [www.thehartford.com/program-business](http://www.thehartford.com/program-business). ■

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## The Last Line of Defense for Pressurized Distribution Systems

# SIM/TECH FILTER



Can be used in a manifold to handle almost any flow-rate

US Patent# 5,885,452  
CAN Patent# 2,237,751

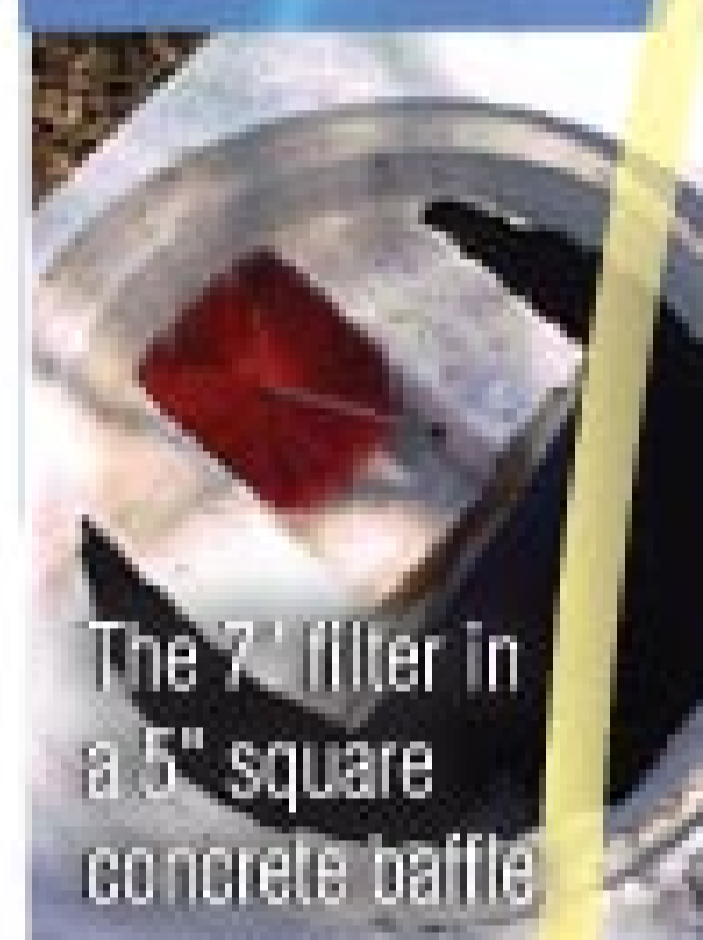


### The STF-100 series pressure filter will:

- » Lower total suspended solids (TSS)
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- » Extend the life of the distribution field
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- » Protect from system abuse
- » Satisfy your customers

### Gravity Flow Bristle Filters for residential or commercial systems, septic tanks, onsite systems, or even your pond!

Very effective at filtering tissue, hair, lint, and other solids common to waste water. And flexible enough to fit just about anywhere, most common applications are standard "tees" and square concrete baffles as shown below.



The 7" filter in a 5" square concrete baffle



The 4" filter in a 4" Tee.



Sizes Available:  
4" yellow  
6" white  
7" red  
8" blue

Patent# 6,811,882



### Polycarbonate Covers

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- » Available with self locking web
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Patent# 5,167,914

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## Colorado Prepares Model Regulatory Framework

Colorado Professionals in Onsite Wastewater (CPOW) has worked to create model regulatory documents using the NOWRA Model Code and U.S. EPA Voluntary Guidelines. The regulatory framework, applicable for all sites, matches appropriate technology, design/engineering requirements, maintenance requirements, and credential requirements to perceive human and environmental health risks.

As a stakeholder in the Colorado Department of Public Health and Environment process to revise the state onsite regulations, CPOW is working with the department to incorporate as much of the model documents as possible into the draft regulation. CPOW president Brian Scheffe stated that using the NOWRA Model Code gave the documents powerful third party credibility by representing best practice concepts from many of the brightest minds in the industry.

## Tire chip system update

In 2008, the Indiana Onsite Wastewater Professionals Association (IOWPA) replaced an onsite system using tire chips in the drainfield and perimeter drain. Installer Dick Blazer reports in the organization's 2009 fall newsletter that during the wet spring, the monitoring wells had no standing water and the system looked great.

"One concern was the spongy feeling of walking over the tire chips," says Blazer. "Now that the site is backfilled and seeded, I can't tell any difference between walking on a stone or chip drainfield."

Soil judging is the state's largest invitational competitive collegiate event, and IOWPA partnered with the sponsors and host Purdue University to excavate 20 pits at 10 locations for the students' practice session and actual contest. Finalists advance to the state level. To learn more about soil judging or the Purdue Soils Team, call head coach Gary Steinhardt at 765/494-8063 or e-mail [gsteinhardt@purdue.edu](mailto:gsteinhardt@purdue.edu).

The association also awarded its first Ralph Reed Memorial Scholarship to Abbey Hudson, majoring in nursing at Purdue University.

## Looking ahead

"Twenty Years of Professional Excellence ... Into the Next Generation" is the theme of the North Carolina Septic Tank Association 20th Annual Convention and Expo at the Metro Convention Center in Hickory on Jan. 28-30. Continuing education credits will be available for installers, inspectors, and pumpers involved in septage management and land application. Call 336/416-3564 or visit [www.ncsta.net](http://www.ncsta.net).

## Pygmy goats

An article in the Oregon Onsite Wastewater Association summer newsletter alerts onsite professionals to be wary of pygmy goats. Author Kim Aldrich, Yamhill County regulator, reports being charged by cattle, spit at by llamas, and her hair nibbled on by horses while doing soil evaluations, but her most interesting experience was with Spike, the pygmy goat.

Throughout the site evaluation, the animal butted the back of her legs. When finished, Aldrich opened her truck door, then turned to talk to the homeowner. Spike jumped into the truck and, within two minutes, ate Aldrich's paperwork and took a bite out of the passenger seat. Linn County regulator Brittany Steele reports being terrorized by the miniature goats. Both sexes have a tendency to become aggressive and difficult to handle as they reach adulthood.

## Venus waters lawn

BioKube, a Danish company, is bringing the BioKube Venus to California. The biological treatment system passes residential wastewater through several bioblocks housing bacteria. The purified effluent is then suitable for irrigation.

The average home uses 400 gallons of water per day, but sprinkles 15,000 gallons of water per year on

the lawn, says a BioKube representative. The 6-foot-tall, 4-foot-diameter Venus handles two gallons every 15 minutes to exceed those irrigation demands. BioKube chose California because the state faces severe water shortages and will require the replacement or renovation of 1.2 million onsite systems to comply with new regulations.

## CALENDAR OF EVENTS

### Jan. 11-12

Wisconsin Precast Concrete Association Winter Convention, Holiday Inn and Suites, Madison. Call 608/256-7701.

### Jan. 12-14

Michigan Onsite Wastewater Conference, Kellogg Hotel and Conference Center, East Lansing. Call Chanin Frank at 989/773-6985 ext. 258 or visit [www.mowra.org](http://www.mowra.org).

### Jan. 13-14

Iowa Onsite Waste Water Association Conference, Polk County Convention Complex, Des Moines. Call Alice Vinsand at 515/225-1051 or visit [www.iowwa.com](http://www.iowwa.com).

### Jan. 19-20

Ohio Onsite Wastewater Association Conference and Trade Show, Ramada Plaza Hotel and Conference Center, Columbus. Call 866/843-4429 or visit [www.ohioonsite.org](http://www.ohioonsite.org).

### Jan. 19-20

Missouri Smallflows Organization Conference and Exhibition, Holiday Inn Select, Columbia. Call 417/739-4100 or visit [www.mosmallflows.org](http://www.mosmallflows.org).

### Jan. 24-26

Pennsylvania Decentralized Wastewater Conference and Trade Show, Lancaster County Convention Center, Lancaster. Call the Pennsylvania Septage Management Association at 717/763-7762 or visit [www.pasma.net](http://www.pasma.net).

### Jan. 25-26

Indiana Onsite Wastewater

Professional Association Annual Convention, Indianapolis. Call 317/889-2382 or visit [www.iowpa.org](http://www.iowpa.org).

### Jan. 27-28

Arizona County Directors of Environmental Health Services Association Inc. Southwest Onsite Wastewater Conference, Riverside Hotel and Casino, Laughlin, Nev. Visit [www.wastewater2010.wordpress.com](http://www.wastewater2010.wordpress.com).

### Jan. 27-29

Kansas Small Flows Association Conference and Trade Show, Prairie Band Casino and Resort, Topeka. Call Dale Hayse at 620/548-2369 or visit [www.ksfa.org](http://www.ksfa.org).

### Jan. 28-29

Colorado Professionals in Onsite Wastewater Conference and Roe-d-Hoe, PPA Event Center, Denver. Call Becky Roland at 303/551-3266 or visit [www.cpow.net](http://www.cpow.net).

### Jan. 28-30

Wisconsin Onsite Water Recycling Association/Wisconsin Liquid Waste Carriers Association Winter Convention, Holiday Inn Hotel and Conference Center, Stevens Point. Call 800/377-6672 or visit [www.wowra.com](http://www.wowra.com).

### Jan. 28-30

North Carolina Septic Tank Association Convention, Hickory Metro Convention Center, Hickory. Call 336/416-3564 or visit [www.ncsta.net](http://www.ncsta.net).

### Jan. 29-30

Washington Onsite Sewage Association Conference, Redlion Convention Center, Yakima. Call 253/770-6594 or visit [www.wossa.org](http://www.wossa.org).

### Feb. 4-5

Ohio Water Quality and Waste Management Conference, University Plaza Hotel, Columbus. Call Karen Mancl at 614/292-4505 or visit <http://setll.osu.edu>.

### Feb. 4-6

Alberta Onsite Wastewater Management Association Convention

and Trade Show, River Cree Casino, Edmonton. Call 780/489-7471 or visit [www.aowma.com](http://www.aowma.com).

#### Feb. 17-18

Nebraska On-Site Waste Water Association Conference, Embassy Suites Hotel, Lincoln. Call 402/476-0162 or visit [www.nowwa.org](http://www.nowwa.org).

#### Feb. 24-27

Pumper & Cleaner Environmental Expo International, Kentucky Exposition Center, Louisville, Ky. Call 800/257-7222 or visit [www.pumpershow.com](http://www.pumpershow.com).

### TRAINING & EDUCATION

#### NAWT

The National Association of Wastewater Transporters has these sessions:

- Feb. 13-14 – Onsite Inspector Training, Georgetown, Del.
- Feb. 13-14 – Operation and Maintenance Training, Georgetown, Del.
- Feb. 22-23 – Onsite Inspector Training, Louisville, Ky.
- Feb. 22-23 – Onsite

Operation and Maintenance, Louisville, Ky.

- Feb. 23 – Vacuum Truck Technician Training, Louisville, Ky.

Call NAWT at 800/236-6298 or visit [www.nawt.org](http://www.nawt.org). For Delaware courses, call Jerry Williams at 302/855-5904.

#### Minnesota

The University of Minnesota Extension has these classes:

- Feb. 9-11 – Maintaining Onsite Systems, Hinckley
  - Feb. 16-17 – General Continuing Education, Hinckley
  - March 8-10 – Introduction to Onsite Systems, St. Cloud
  - March 11-12 – Installing Onsite Systems, St. Cloud
  - March 18-19 – Installer Continuing Education, Sauk Centre
  - March 19 – Pipelayer Certification, Sauk Centre
  - March 30-April 1 – Advanced Design and Inspection of Onsite Systems, Part 1, Mankato
- Call Nick Haig at 800/322-8642

(612/625-9797) or visit <http://septic.umn.edu>.

#### New York

The New York Onsite Wastewater Treatment Training Network Inc. is offering certified courses at the Columbia County Health Department in Hudson.

- Feb. 24 – Fundamentals and Soil Analysis for Onsite Wastewater Treatment Systems
- Feb. 25 – Soil Analysis

Call SUNY Delhi at 800/963-3544 or visit [www.delhi.edu/bcs/otn\\_wastewater](http://www.delhi.edu/bcs/otn_wastewater).

#### Pennsylvania

The Pennsylvania Septage Management Association is offering an Inspector Certification course on March 30-31 at Reading. Call 717/763-7762 or visit [www.pasma.net](http://www.pasma.net).

#### Washington State

The Washington Onsite Sewage Association and Washington State Department of Health in cooperation with Washington State University are offering these certification courses at the training center in Puyallup unless stated otherwise:

- Feb. 11 – Pump Review for Designers
  - Feb. 16-17 – Wiring Electrical Panels
  - Feb. 24 – Soils, Moses Lake
  - March 11 – Design Siting
  - March 17 – Subsurface Drip Design, Moses Lake
  - March 24-25 – Exam Review
- Call WOSSA at 253/770-6594 or visit [www.wossa.org](http://www.wossa.org). ■



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### BLOWERS

**VFC200P-5T, FUJI** Pumps, Regenerative Blowers, Ring Compressors. All models, accessories. Authorized distributor. Authorized parts and repair center. Call 888-227-9822. www.carymfg.com (IBM)

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**TERRALIFT 2000:** 2002 model year, 228 hours, excellent condition. \$22,500. 574-256-1465 or 574-532-3559. (P1)

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**Crust Busters** - Portable, lightweight machine guaranteed to mix up septic tanks and grease traps! Save time and money! **www.crustbusters.com**, 1-888-878-2296. (IM)

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| <input type="checkbox"/> Levels & Transits           | <input type="checkbox"/> Trailers-Vacuum/Tanker   |
| <input type="checkbox"/> Locators                    | <input type="checkbox"/> Trucks (dump/misc.)      |
| <input type="checkbox"/> Miscellaneous               | <input type="checkbox"/> TV Inspection            |
| <input type="checkbox"/> Parts & Components          | <input type="checkbox"/> Vacuum Loaders           |
| <input type="checkbox"/> Pipeline Rehabilitation     | <input type="checkbox"/> Vanes                    |
| <input type="checkbox"/> Portable Toilets            | <input type="checkbox"/> Vehicle Tracking         |
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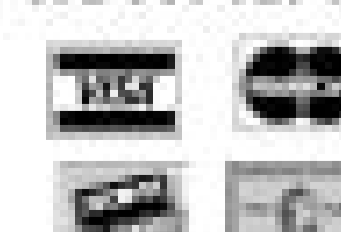
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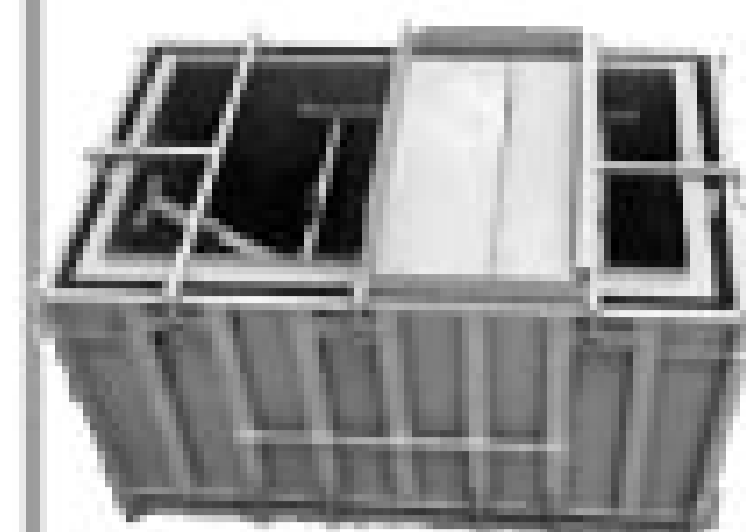




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