

February

2015

ON SITE installer™

PROMOTING WASTEWATER TREATMENT QUALITY AND PROFESSIONAL EXCELLENCE www.onsiteinstaller.com

Avoid disaster when
moving equipment
Page 18

It's party time at
the WWETT Show
Page 24

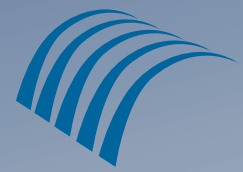
Keep mini-loaders
in tip-top shape
Page 34


wwett™
Water & Wastewater Equipment,
Treatment & Transport Show
SHOW ISSUE

Thirst For **KNOWLEDGE**

Through wastewater education and research projects, onsite specialist Sara Heger is making a difference for the environment in her home state of Minnesota and across the country
PAGE 10

Protecting the Environment with
Innovative Wastewater Treatment Solutions



INFILTRATOR®
systems inc.

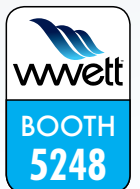


Time is Valuable

Save time with the quickest installation in the onsite industry

Infiltrator's innovative solutions offer significant advantages over traditional materials including:

- Easier, Faster, and More Cost Effective Installation
- Reduced Drainfield Footprint
- Greater Design Flexibility
- "Green" Products Made From Recycled Plastic



800-221-4436 • www.infiltratorsystems.com

Nitrogen: Friend or Foe?



Pure Advice

from the Clean Water Experts



Manufactured by
Eliminite



Nutrients are chemical substances found in living things.

Carbon, hydrogen, nitrogen, oxygen, phosphorus, and sulfur are nutrients that are life's building blocks. Earth's atmosphere is 78% nitrogen gas. Nutrients, such as nitrogen, can accumulate in the environment from plant or animal decomposition, fertilizer run-off, or effluent discharges into soil or water. Excess nitrogen or phosphorus entering water sources, such as the Chesapeake Bay, can lead to accelerated eutrophication. This can lead to algal blooms, oxygen depletion, and changes in the aquatic ecosystem such as fish loss.

One tank to do it all. The Eliminite Recirculating Biofilter features patented MetaRocks and a unique air entrainment device. Eliminite's controlled process is ideal for space constrained sites, nitrogen sensitive watersheds and highly variable conditions. Let us show you the variety of solutions Anua can provide that will help prevent excessive nitrogen from entering the environment.

How can you prevent excessive nitrogen from entering the environment?

Find out more online at www.anuainternational.com.

Or visit booth 4200 at WWETT



Call: 336-547-9338 or visit: anuainternational.com

contents

February 2015



COVER STORY

10 Thirst For Knowledge By David Steinkraus

ON THE COVER: Sara Heger, an onsite educator for the University of Minnesota's Water Resources Center, provides valuable research to improve her state's decentralized wastewater infrastructure and travels the country to give presentations that help raise industry professionalism. (Photo by Brad Stauffer)

6 Editor's Notebook: See You at the WWETT Show

Let's meet in Indy to share in many educational opportunities, onsite product demonstrations and talk about what you'd like to see in the pages of *Onsite Installer*.

By Jim Kneiszel

8 @onsiteinstaller.com

Be sure to check out our exclusive online content.

18 Basic Training: 'Tracks Up' Means Disaster

Use caution when loading and unloading excavation equipment at the job site.

By Jim Anderson and David Gustafson

20 Rules and Regs: Looking for onsite system treatment upgrades on Long Island

By Doug Day

24 WWETT 2015: On the Rise

Budding country music star Cole Swindell will headline the WWETT Industry Appreciation Party.

By Kyle Rogers

28 System Profile: Preserving a Dolphin Habitat

A complex new onsite system on two Caribbean island keys will ensure proper long-term wastewater treatment in a delicate environment.

By David Steinkraus

32 State of the State: Now Serving Massachusetts

When the regional Yankee Onsite Wastewater Association disbanded, members reorganized to address wastewater issues in one state.

By Doug Day

34 Machine Matters: Keeping On Track

Regular maintenance can keep your tracked mini-loader performing at its best, reduce downtime and provide a better return on investment when you decide to sell.

By Ed Wodalski

38 Product News

40 Industry News

42 Associations List

Coming Next Month: March 2015

ISSUE FOCUS: Pumps

- **Profile:** Missouri installer pushes carefree system maintenance
- **Editor's Notebook:** Selling the presale inspection

onsite installer

Published monthly by

COLE publishing

1720 Maple Lake Dam Rd. • PO Box 220
Three Lakes, WI 54562



Call toll free 800-257-7222;
outside of U.S. or Canada call 715-546-3346
7:30 a.m.-5 p.m. Central time, Mon.-Fri.

Website: www.onsiteinstaller.com

Email: info@onsiteinstaller.com • Fax: 715-546-3786

SUBSCRIPTIONS

A one year (12 issue) subscription to *Onsite Installer*™ in the United States or Canada is free to qualified subscribers. A qualified subscriber is any individual or company in the United States or Canada that partakes in the installation, design, maintenance, manufacture, treatment, consulting or sale of onsite wastewater treatment systems or supplies. Non-qualified subscriptions are available at a cost of \$60 per year in the United States and \$120 per year outside of the United States. To subscribe please visit onsiteinstaller.com or send company name, mailing address, phone number and check or money order (U.S. funds payable to COLE Publishing Inc.) to the address above. MasterCard, VISA and Discover are also accepted. Supply credit card information with your subscription order.

Our subscriber list is occasionally made available to carefully selected companies whose products or services may be of interest to you. Your privacy is important to us. If you prefer not to be a part of these lists, please contact Nicole at nicolel@colepublishing.com.

CLASSIFIED ADVERTISING

Minimum rate of \$25 for 20 words; \$1 per each additional word. All classified advertising must be paid in advance. DEADLINE: Classified ads must be received by the first of the month for insertion in the next month's edition. PHONE-IN ADS ARE NOT ACCEPTED. Fax to 715-546-3786 only if charging to MasterCard, VISA, Discover or AmEx. Include all credit card information and your phone number (with area code). Mail with check payable to COLE Publishing Inc. to the address above. CLASSIFIED ADVERTISING APPEARS NATIONWIDE AND ON THE INTERNET. Not responsible for errors beyond first insertion.

DISPLAY ADVERTISING

Contact Winnie May at 800-994-7990. Publisher reserves the right to reject advertising which in its opinion is misleading, unfair or incompatible with the character of the publication.



Winnie May

EDITORIAL CORRESPONDENCE

Send to Editor, *Onsite Installer*, P.O. Box 220, Three Lakes, WI, 54562 or email editor@onsiteinstaller.com.

REPRINTS AND BACK ISSUES

Visit www.onsiteinstaller.com for options and pricing. To order reprints, call Jeff Lane at 800-257-7222 (715-546-3346) or email jeffl@colepublishing.com. To order back issues, call Nicole at 800-257-7222 (715-546-3346) or email nicolel@colepublishing.com.

CIRCULATION

Circulation averages 21,954 copies per month. This figure includes both U.S. and International distribution.

© Copyright 2015 COLE Publishing Inc.

No part may be reproduced without permission of the publisher.



**WATER & WASTEWATER
EQUIPMENT, TREATMENT &
TRANSPORT SHOW**

www.wwett.com

EDUCATION DAY: Feb. 23, 2015 EXHIBITS OPEN: Feb. 24 - 26, 2015
Indiana Convention Center, Indianapolis, Indiana

Get Social with Onsite Installer



www.facebook.com/OnsiteInstaller

www.twitter.com/OnsiteInstaller

www.plus.google.com

www.youtube.com/OnsiteInstaller

www.linkedin.com/company/onsite-installer-magazine



Presby Environmental

The Next Generation of Wastewater Treatment

Advanced Enviro-Septic® (AES)

- ✓ Passive Non-Mechanical Process
- ✓ Treatment and Dispersal
- ✓ Proven and Reliable Track Record
- ✓ Affordable

"The first installation went in pretty quick,
the second was even easier,
by the third the entire crew said..."

'Don't Design Anything Else!'

After 15 years our customers are 100% satisfied."

~ Wendell Rexford and Sons Construction, Inc.



European
Conformity



SPD & CTD Models
Certified to NSF/ANSI
Standard 40, Class 1



BNO Certified:
NQ 3680-910



Find out why so many Designers and Installers rely on AES
www.PresbyEnvironmental.com • 800-473-5298

advertiserindex

FEBRUARY 2015

COMPANY PAGE

	Alita Industries, Inc.	38
Anua	.....	3
Ashland Pump	.....	15
	Bio-Microbics, Inc.	17
	Brenlin Company, Inc.	21
	Crest Precast, Inc.	27
Den Hartog Industries, Inc.	.....	19
	Eljen Corporation	21
	Fergus Power Pump, Inc.	40
Fuji Clean USA, LLC	.....	33
Hydro-Action Industries	.....	35

COMPANY PAGE

	Infiltrator Systems, Inc.	2
	Jet Inc.	13
MACBlowers	.....	43
	Norweco, Inc.	11
	Orenco Systems, Inc.	25
	Polylok, Inc. / Zabel	44
Premier Tech Aqua	.....	27
	Presby Environmental, Inc.	5
Roth Global Plastics	.....	21

COMPANY PAGE

	Salcor Inc.	9
	See Water Inc.	13
	Septic Products, Inc.	40
	Septic Services, Inc.	20
	Septronics, Inc.	27
	Sim/Tech Filter Inc.	31
	Simple Solutions Distributing	43
	SJE-Rhombus®	29

COMPANY PAGE

SludgeHammer Group, Ltd.	.....	8
	T&T Tools, Inc.	13
	The Dirty Bird	43
	Tuf-Tite Inc.	39
Water Cannon, Inc. - MWBE	.....	43
	Wieser Concrete Products, Inc.	31

Get Email
News Alerts for
onsite installer
www.onsiteinstaller.com/alerts

Feedback

Onsite Installer™ welcomes your comments, ideas and suggestions on how we can serve you better. Call 800/257-7222; fax 715/546-3786; or email editor@onsiteinstaller.com.

See You at the WWETT Show

Let's meet in Indy to share in many educational opportunities, onsite product demonstrations and talk about what you'd like to see in the pages of *Onsite Installer*

By Jim Kneiszel



Whether you're reading this issue of *Onsite Installer* in the weeks leading up to the Water & Wastewater Equipment, Treatment & Transport (WWETT) Show (Feb. 23-26) or you're walking the halls of the host Indiana Convention Center and picked up the magazine, I'd like to share what I am looking for at the wastewater industry's biggest event of the year.

The week of the WWETT Show is my best opportunity to network with readers and learn about the latest technology in onsite systems. Nothing matches the educational benefit I receive through face-to-face meetings with some of the best installers in North America or getting my hands on the latest products to serve those installers.

In short, the WWETT Show rekindles my enthusiasm for covering a dynamic industry. And here are a few things I'll be looking for as I check out the vast exhibit floor and talk to onsite wastewater professionals along the way:

Educational opportunities

As a trade journalist, one of my jobs is to keep abreast of the newest techniques installers use to solve their customers' problems. That means attending the WWETT Show's Education Day and seminars during exhibit days that follow. This year's seminars of interest to installers (check the show guide for dates and times) include:

- "Environmental Impact Study: Effects of Water Softener on Septic Tank Performance," by Eric Yeggy, director of technical affairs for the Water Quality Association.
- "A Study of Microbiological Induced Corrosion," by Claude Goguen, the National Precast Concrete Association's director of sustainability and technical education.
- "Rules and Regulations with New Technologies and Working with Regulators," by Anthony Smithson, consultant and former director of environmental health in Lake County, Ill.
- "True Crime Scene Stories: How to Inspect and Troubleshoot Suspect Onsite Systems," by Dawn Long, owner of American Septic Service.

- "OSHA Regulations and Smart Business," by Doug Lassiter, executive director and lobbyist for the North Carolina Septic Tank Association.
- "New Trends and Technology in Equipment for Excavation Safety," by Mike Ross, shoring specialist and national training director at Efficiency Production Inc.
- "System Sizing and Basic Design Principles," "Pumping to Systems," "Installations of ATUs," "Installing for Management" and "Troubleshooting Systems," by Jim Anderson, Ph.D., and Dave Gustafson, P.E.

Nothing matches the educational benefit I receive through face-to-face meetings with some of the best installers in North America or getting my hands on the latest products to serve those installers.

The latest small-scale wastewater treatment solutions

Recent years have brought an accelerated introduction of onsite technology that opens up property with substandard soils for development, cuts down on the potential for pollution for systems in sensitive environments and provides great upgrade options for smaller lots. Onsite wastewater products have never been this varied and offer effective solutions in many applications. All of these technologies will be on display at the WWETT Show with the experts who developed them on hand to answer questions. Installers have a unique opportunity to get their hands on these products and find out if they can be the answer to their customers' typical treatment issues back home. I have the good fortune to see product demonstrations and talk to contractors about the value of new system components.

Feedback from attendees

More than anything, I come to the WWETT Show to meet *Onsite Installer* readers. The guys and gals on the front lines of the onsite industry

are the lifeblood of this magazine. You provide the energy, the drive for professionalism that fuels the direction of our editorial content. I appreciate every valuable minute onsite installers give to me in talking about their work and sharing their views about the industry.

To that end, I invite you to seek me out in Indy. Tell me about your day-to-day business challenges. Show me that dream piece of equipment you're interested in on the exhibit floor. Let me know where you think the industry is headed in the next year or five years.


I rely on the *Onsite Installer* community to drive content in the coming year. There are a number of ways you can help me add value for our readers:

Suggest a system profile story. One of our most interesting and highly read stories is the System Profile, where we walk readers step-by-step through an installer's challenging project. It could be replacing a failed septic system on a postage-stamp-sized lot, building a new system on a property with challenging soils or where wetlands or extreme elevation changes cause problems. It's inspiring to hear the way designers and installers attack these challenging conditions. Tell me about your toughest job so we can all learn from it.

Talk about your favorite machine. Installers live and die with efficient, reliable equipment, from mini-excavators and skid-steers to service trucks and inspection gear. Show me the product on display that you value the most and use on a daily basis. This year we added an equipment-related feature, called either Machine Matters or Shop Talk, depending on the topic being explored. I'm looking for your feedback on the new feature and your suggestions for new topics we can explore. Are you seeking answers on a particular maintenance issue? Are you looking for a machine to perform a specific task on the job site? Share your questions and we'll answer them in an upcoming issue.

Ask the onsite experts. The WWETT Show is also a great place to meet the brightest onsite experts in the country. The team that writes our Basic Training feature, Jim Anderson and Dave Gustafson, will be on hand to conduct several training sessions. You can meet them and ask your own questions for them to address in future stories. Share your questions for Jim and Dave with me and I'll be happy to pass them along. Maybe we can even track down Jim and Dave during the show for an impromptu roundtable discussion about onsite topics.

HOW TO CONTACT ME

While at the WWETT Show, you can reach me several ways. You can use my mobile phone, 920/328-8692; drop me an email at editor@onsiteinstaller.com; or ask anyone wearing a COLE Publishing shirt to track me down. I'm looking forward to seeing you! 



Join over **8,100** of your colleagues who already get great content delivered right to their inbox with the **Installer e-newsletter**.

www.onsiteinstaller.com/newsletter



World Health Organization talk slated for WWETT Show

Since the Ebola virus outbreak in West Africa hit the headlines, many in the wastewater industry have asked about the potential for a variety of communicable diseases to spread through the pumping, transport and handling of septage and sludges containing human waste. Attendees at the 2015 Water & Wastewater Equipment, Treatment & Transport (WWETT) Show will hear the latest information on the topic from a World Health Organization official.

Dr. Adrianus Vlugman, senior advisor on water, sanitation and environmental health at the WHO, will speak Feb. 26 at 1 p.m. in Rooms 133-135 at the Indiana Convention Center as part of an extensive series of WWETT Show speakers and seminars. The talk on the transfer of communicable diseases is free and open to anyone.

Vlugman will provide a general overview covering the survival/life expectancy of communicable diseases in water and wastewater. Among other topics, he will cover:

- Safety precautions to consider when handling water and wastewater in developing nations.
- The likeliness of communicable diseases to be spread or passed through both centralized wastewater plants and decentralized onsite wastewater systems.
- If there is a concern for the spread of communicable diseases through land application of properly treated sewage or septage.

If you would like to attend the WHO program, fill out the online registration form at www.wwettshow.com/who.

Water & Wastewater Equipment, Treatment & Transport (WWETT) Show
Feb. 23-26, 2015 | Indiana Convention Center, Indianapolis
www.wwettshow.com

EMPOWERING NATURE IN WASTEWATER TREATMENT SYSTEMS

SLUDGEHAMMER®

Residential & Commercial



**INSTALLS
ANYWHERE.
WORKS
EVERYWHERE.**

Adaptable, modular,
energy-efficient,
affordable, certified.

Fits any existing system.
Expands to meet
future demand.

No sludge.
No clean-up.
No hassle.



Model S-400/600
Certified by NSF to
NSF/ANSI Standard #40



IAPMO STANDARD
IGC 180-2003



LLOYD'S CERTIFIED
IMO - MARPOL
MEPC-159 (55)
International



BOOTH
6169

www.sludgehammer.net ■ 800.426.3349



@onsiteinstaller.com

Visit the site daily for new, exclusive content. Read our blogs, find resources and get the most out of *Onsite Installer* magazine.

PICKING YOUR PUMP

How to Calculate Pump Size

A good designer will account for the necessary design elements and will have the "right" answer, but everyone installing a system with pumps should understand how that pump was selected. You need to understand how any changes made during the installation will affect the pump. Our experts are here to help. onsiteinstaller.com/featured



Overheard Online

"Rather than simply talking to – or at – your employees about their attitudes, you need to help them improve themselves."

–Skip the Pep Talk: Whip Those Employees Into Shape
onsiteinstaller.com/featured



DRAW THE LINE

When Are Discounts OK?

Your customers don't understand the cost of running an onsite company and may ask for unrealistic price breaks. You need to know when that may be a good business decision and when it's definitely unwise.

onsiteinstaller.com/featured

RECRUIT. RETAIN. REPEAT.

Hiring Strategy 101

High employee turnover costs you time and productivity. If talent is hard to find and costly to train, shouldn't you do all you can to retain and develop current employees? Few businesses have a formal plan for doing exactly that. Here are some tips for developing a hiring and retention strategy. onsiteinstaller.com/featured

emails and alerts



Visit OnsiteInstaller.com and sign up for newsletters and alerts. You'll get exclusive content delivered right to your inbox, and you'll stay in the loop on topics important to you!

CONNECT WITH US

want more?



Find us on Facebook at
facebook.com/OnsiteInstaller



or Twitter at
twitter.com/OnsiteInstaller

Ultraviolet Innovative Leader Since 1978

SALCOR UV ONSITE DISINFECTION

Proven Water Recovery/Reuse

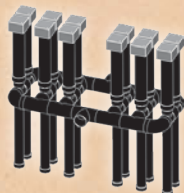


**3G UNIT
9,000 GPD**

**Gravity
Flow**




**Made in
the USA**



**Residential & Commercial
3G Arrays to 100,000 GPD**

**INACTIVATES
"SUPER BUGS"**



**Hurricanes,
Floods,
Storms**



**SURVIVES Most
Weather Disasters**

**PRESERVES
Sensitive
Environments!**



Duke's Malibu Ocean Restaurant

- Ultimate Health and Environmental Protection
 - Most Third Party Tested & Approved
 - Onsite Residential, Commercial & Municipal Uses
- Low Cost, Easy Installation & Minimal (Annual) Maintenance
 - UL Certified "Flood Proof," NEMA 6P
- NSF/Wash State 6-Month Fecal Coliform Tests with 20 ATU Models

Salcor's Market-Leading Onsite Disinfection UV Successfully Treats:

Single & Cluster Homes, Small Sewage Plants, Schools, Hospital/Nursing Homes, Churches, Restaurants, Mobile Home Parks, Campgrounds, Nurseries, Houseboats, etc.

Salcor Inc. • 760.731.0745 • F: 760.731.2405 • jsruver@aol.com

Thirst For KNOWLEDGE

Through wastewater education and research projects, onsite specialist Sara Heger is making a difference for the environment in her home state of Minnesota and across the country

By David Steinkraus

Sara Heger didn't set out to be an expert in onsite wastewater treatment. It just turned out that way. As an engineer for the University of Minnesota Onsite Sewage Treatment Program, Heger spends her time providing education at professional conferences, consulting on troubled systems and working on projects to improve the industry.

From childhood on, her experiences lined up to mostly bring her back to where she began – working the ground. She understands the industry because she lives it, and after 16 years as a wastewater engineer she has a broad insight into the issues facing the industry.

"I wanted to get away from farming," Heger recalls about her career path from higher education onward. She was interested in the environment but not in working the front lines of agriculture.

BE AN ENGINEER

While she baled hay as a teen on her family's farm in Minnesota, Heger regretted the life she was missing, all the options and activities open to girls in the cities. Her father ran the farm, first as a dairy operation and later

(continued)

Sara Heger

- POSITION:** Engineer in the Onsite Sewage Treatment Program of the Water Resources Center at the University of Minnesota
- EDUCATION:** Bachelor's degree in biosystems and agriculture from the University of Minnesota; master's degree in water resources science from the University of Minnesota
- SPECIALTIES:** Consumer outreach and education for wastewater professionals, wastewater system consulting, applied research and analysis, and troubleshooting
- AFFILIATIONS:** Minnesota Onsite Wastewater Association, National Onsite Wastewater Recycling Association, Consortium of Institutes for Decentralized Wastewater Treatment, Slow Food Twin Cities
- WEBSITE:** <http://wrc.umn.edu/people/saraheger/index.htm>



norweco[®]

*Engineering the future of water
and wastewater treatment*

Let **Team Pink** Deliver a Solution for your next onsite project

Quality and dependability are important - especially when your clients need a fast solution to fit their budget. Norweco's wastewater treatment solutions provide you with simplified installation, reduced costs and superior effluent quality. That's why septic professionals count on Norweco to deliver.

**"Norweco has certainly made a difference in our
ability to save our clients' money."**

Paul Behrens – English Sewage & Disposal

Visit **Team Pink** at the 2015 WWETT Show or contact us by phone at 800-667-9326 or 419-668-4471, email us at email@norweco.com or visit www.norweco.com for the right solution to your next project.

Sara Heger gives a presentation on subsurface sewage treatment systems at a contractor's meeting in Cologne, Minn. Topics included the permitting process, inspections and rule changes.

raising hogs and cash crops. She was the youngest of eight children. Her mother died when she was young and her older sisters helped raise her.

In her father she had a singular advantage. "My dad wanted me to be an engineer, so I was on the science track in high school. He was a strong proponent of women and girls being encouraged in that direction," Heger says. She earned an undergraduate degree in biosystems and agricultural engineering because she could learn about water and soil along with engineering.

What makes the wastewater industry so attractive is the combination of high and low technology, she says. On the high end are all the technologies and pumps to provide treatment, but on the low end everything depends on soil to passively accept large amounts of water, provide final treatment and recycle that water through the environment.

"When was the last time you spent \$5,000 to \$15,000 for a piece of equipment in or around your home and you didn't get an owner's manual? We need to have it like getting your oil changed. Why does everybody not know they need to get their tank cleaned?"

Sara Heger

Heger's first step into the industry came in her third year of college when she had an internship at Minnesota's Pollution Control Agency. "Actually, I didn't care at all what the job was there as long as it was environmentally related. I just wanted some experience," she says. She got that, but she also met Jim Anderson, then a professor at the University of Minnesota and director of its Water Resources Center. His writing is familiar to readers of this magazine. With his encouragement she entered a master's degree program in water resources science, and as she finished that degree the job she now holds became available.

She may have wanted to get away from agriculture and farming when younger, but her attitude has changed. She has great appreciation for the hard work farmers do every day and for her own past. "There's nothing to me now like the smell of a dairy barn," she says.

TRAINING AND TECHNICAL ASSISTANCE

At the University of Minnesota, Heger has two primary responsibilities. One is research and the other is education.

Education means providing training at workshops and providing technical assistance to wastewater professionals, governments and property owners in Minnesota and across the country. Heger says she enjoys

translating complex scientific information into understandable terms.

Research does not mean working in a laboratory day in and day out. "We're trying to answer questions that come up in the industry. We're not inventing new technology. We're solving problems," Heger says. This might take the form of helping a manufacturer test a new technology in the field.

At the moment she's involved with a project in Crane Lake, Minn., a town in the lake-studded wilderness and canoeing paradise that hugs the Canadian border. She has to help the community determine how to bring this environmentally sensitive area into compliance with modern wastewater standards.

In addition to doing much of the research work, Heger is also a grant

(continued)



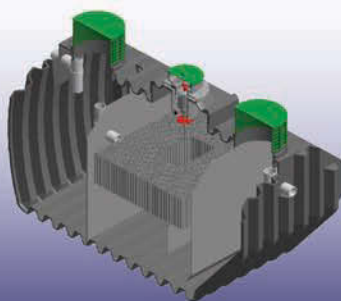


Accu-Tab® Wastewater Tablets

- U.S. made, recognized global brand with no imported ingredients
- Chlorine tablet with beveled edges to minimize wicking
- Consistent chlorine strength for reliable dosing control
- No measuring, mixing, or spilling of chemicals common with granular and liquid chlorine
- Stearate free formula with balanced pH

Illumi-Jet UV Disinfection Unit®

- UL listed as a NEMA 6p enclosure (watertight submergence test)
- Install directly in ground or in pump tank on 4" effluent line
- Complete disinfection without the use of chemicals
- Hermetically sealed electrical components
- High capacity disinfection reservoir
- Kapton® seals improve serviceability



Residential & Commercial Treatment Plants

- Concrete and rugged polyethylene material
- 500-1500 GPD Residential Systems
- 1500-300,000 GPD Commercial Systems
- Up to 800 GPD in plastic design
- A single moving part
- Innovative design for easy system servicing
- No filters to clog
- Lifetime exchange program



www.jetincorp.com • 800.321.6960 • email@jetincorp.com



Protecting the
Environment
since 1995

Your Trusted Source For Pump Control Panels



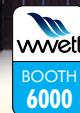
- Simplex and Duplex control systems
- On-site accessories
- Demand or Timed Dosing models
- Made in the USA



www.seewaterinc.com | Phone: 888-733-9283



T&T Tools, Inc.
800.521.6893



Hooks...

- ★ Heat treat for long life
- ★ Manhole Cover Hooks
- ★ Septic Tank Lid Hooks
- ★ Many styles available
- ★ "T" handles for two hands or compact "D" handles

Probes...

- ★ Insulated, Standard and Specialty
- ★ Metal shafts: 3/8 round or hex
- ★ Replaceable hardened tips
- ★ Optional "slide" available to make your probe a mini-slide hammer

Call for a FREE Catalog

www.MightyProbe.com

Email: sales@tandttools.com

Fax: 800.521.3260



Taking wastewater samples at a Minnesota highway rest stop are Sara Heger and a University of Minnesota civil engineering student, Mike Szmurlo.

writer, meaning she tries to keep money flowing in from various sources and makes sure projects are completed. It's a vital position because for as much as the wastewater industry depends on the expertise of the university program, it is not funded by the university or the state of Minnesota but with grants and other money.

"So the good thing is I get to do a lot of different things, and that keeps my job interesting," she says.

DISTILLING COMPLEX IDEAS

While consumer education typically brings to mind talking to a person or a group of people, in Heger's case it also means reaching people through publications. Of all the guides produced by the University of Minnesota Extension Service, the most circulated is the septic system owner's manual. To Heger, it is astonishing that people have such expensive and vital pieces of technology, yet are often not told how to take care of them.

"When was the last time you spent \$5,000 to \$15,000 for a piece of equipment in or around your home and you didn't get an owner's manual?" Heger says. "We need to have it like getting your oil changed. Why does everybody not know they need to get their tank cleaned?" Her own family was the same way when she was growing up, she says. Their tank was pumped only when backed up wastewater showed there was a problem.

The Minnesota guide is written for the Midwest and the challenges that come with operating in a cold

Rest stop research

Working in the onsite industry has taken Sara Heger beyond the normal locations of home, school and business. In her job with the University of Minnesota Onsite Sewage Treatment Program she consults on any project that is troublesome, and lately this has led her into an evaluation of state highway rest stops.

These systems operate under different and tougher conditions than most commercial or domestic wastewater systems and they are often neglected. "The people who build roads aren't thinking about protecting the soils. In fact, many of these rest stops were built in fill areas," Heger says. These soils are poor. Some locations are environmentally sensitive, and in Minnesota many of the systems are old.

So far she is doing a Minnesota-only study. It started with a call when a new engineer took over the rest stop wastewater program for the Minnesota Department of Transportation. The engineer knew the state needed to make repairs or upgrades and wanted the university's help to prioritize projects.

Aside from challenges presented by the soils at rest stops, the state had been installing low-flow toilets and automatic faucets, so the wastewater flow was small and concentrated, Heger says. Flows vary because of the seasonal and

inconsistent volume of highway traffic, and as traffic patterns change rest stops may be additionally stressed. For example, rest stops along the Interstate 94 corridor between Minneapolis and North Dakota have been under continuing strain recently because of the number people traveling to and from oilfield jobs in North Dakota boom towns.

Assessments for Minnesota's 55 rest stops, weigh scales and truck storage stations were made by the university team in 2013 and 2014. Some of the systems had not been pumped out in three years, and that's not good for a rest stop tank, Heger says.

Three people from the university do the inspections, and they are joined by people from the state transportation department. Each inspection requires about two days for the site visit and work back in the lab. As part of the research the teams grab samples from the septic tanks. Samples that are abnormally high in organic material, nitrogen or phosphorus receive a second look. Two onsite systems installed this year include monitoring wells and groundwater sensors to evaluate the treatment down-gradient and to spot pooling of water beneath the drainfield. This is a Minnesota project at the moment, but it will have implications for similar systems all across the country, Heger says.

northern climate, yet it has also inspired people in other regions to develop localized versions. Now Heger is involved in producing a national guide that can be customized for any location. This guide will not appear in a finished form. Instead it will be an online form that will work like online tax-preparation software, Heger says.

A knowledgeable system owner or a septic system professional will enter basic information about the system, or as much information as they know. The software will generate a customized maintenance guide for that type of system. It will be a simple guide, too – no 100-page monster that a customer will toss into a drawer because it's too much to read, Heger says.

However, Heger knows that manuals can take people only so far. Even if a system is maintained perfectly, there are still environmental issues because of what flows through an onsite system and what it cannot now

handle, she says. Phosphorus is a good example of an issue that needs dealing with.

TAINTING THE WATER SUPPLY

In the Midwest, a phosphorus surplus from septic systems and lawn and agricultural fertilizers has been blamed for encouraging toxic algae blooms in inland lakes and for generally reducing the amount of dissolved oxygen by encouraging the growth of all kinds of aquatic plants. There are currently no off-the-shelf products for reducing phosphorus in wastewater, but Heger believes there will be an increasing need for such technologies as regulations catch up with the environmental harm.

The Onsite Sewage Treatment Program has three phosphorus projects going. One is in conjunction with a company to test some of its ideas.

"My dad wanted me to be an engineer, so I was on the science track in high school. He was a strong proponent of women and girls being encouraged in that direction."

Sara Heger



Sara Heger visits a rest area along Interstate 35 in New Market, Minn., in her continuing research on these challenging large-scale onsite systems that are often neglected. She is shown holding a Masterflex E/S portable sampler (Cole-Parmer).

DEPENDABLE EFFLUENT PUMPS

EP SERIES

- Heavy-duty cast iron construction
- Oil-filled, continuous-duty PSC motors
- Upper and lower ball bearing design
- Cast iron vortex impellers
- 3/4" solids handling

Ashland

PUMP

Honest, Professional, Dependable

1899 Cottage St. □ Ashland, OH 44805 □ 855 281-6830 □ ashlandpump.com

Visit us
at the 2015
WWETT Show!
**BOOTH
#2268**



ABOVE: Sara Heger reviews the performance of an onsite system with Onsite Sewage Treatment Program colleague David Gustafson (right) and Water Resources Center soil scientist Dan Wheeler.

LEFT: During one of her many seminar presentations, Sara Heger discusses an onsite issue with Bob Billiet, of Mid MN Septic Services, Hutchinson, Minn.



Another involves collecting wastewater from a cluster of buildings, removing the phosphorus and generating biogas for energy production. The third evaluates how much phosphorus migrates out of wastewater systems. One study evaluated cesspools, which have not been allowed in Minnesota since the early 1980s, and found a very high level of phosphorus 40 feet down-gradient, Heger says.

From her position at the university, Heger sees the need for much more consumer education. The biggest issue she and her colleagues see are toxic septic tanks – tanks where the bacteria population is unhealthy or absent because of an accumulation of home cleaning chemicals, pharmaceuticals and all the other things people shouldn't dump down their drains.

Consumers don't know enough to ask the right questions, Heger says. Because they lack knowledge of their wastewater systems, they don't think about the environmental impact of a drug that a doctor prescribes and that works its way through the patient and into the water supply. This isn't just an issue for those on septic systems, of course, but it's an important area of concern for decentralized systems.

Of all the presentations she gives, the issue of what is being flushed through wastewater systems draws the most feedback. "And this is people in the industry. I hope the information gets from their hands to their customers' hands. Our industry, not me, is doing all this education," Heger says.

INDUSTRY PROUD

It is the industry that taught her, and Heger says her most valuable connections have come through professional organizations. Early in her career she became involved with the Minnesota Onsite Wastewater Association. The membership gives constant feedback and they are great supporters, she says.

More than 10 years ago Heger became involved with the National Onsite Water Recycling Association. Through NOWRA she had the opportunity to meet professionals from across the country, plan national conferences, learn about systems and research elsewhere, and develop educational materials through the Consortium of Institutes for Decentralized Wastewater Treatment.

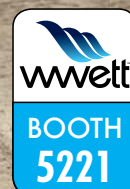
Heger does not stop learning, and in addition to her job in the onsite program, she's working on a doctorate degree in water resources science. She doesn't need it for her university job nor is she planning to leave the university for an academic job that takes her out of the field. What she's doing now is too interesting to leave, she says.

She is pursuing the degree just for herself. At the same time she's doing what the entire industry must do, because the only thing protecting the health of people and the environment is the knowledge of wastewater professionals. □

MORE INFO:

Cole-Parmer
800/323-4340
www.coleparmer.com

Simple works on any scale.



FOR THE ONSITE WASTEWATER
PROFESSIONALS

Any size project. Anywhere.

Bio-Microbics MicroFAST® and RetroFAST® systems are proven wastewater solutions. Universally adaptable, scalable, and connects people to their onsite water source whether a big project or small, we understand today's realities; and, we are ready to help.

Simple, Low Cost, Robust

www.biomicrobics.com

800-753-3278 (FAST)

sales@biomicrobics.com



© 2015 Bio-Microbics, Inc.

Jim Anderson, Ph.D., and David Gustafson, P.E., 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 Technicians. Readers are welcome to submit questions or article suggestions to Jim and David. Write to ander045@umn.edu.

'Tracks Up' Means Disaster

Use caution when loading and unloading excavation equipment at the job site

By Jim Anderson and David Gustafson

A few months ago we addressed a number of safety issues installers need to be aware of. One item we mentioned – but didn't discuss in any detail – is matching excavation equipment to the correct trailer and truck for hauling from one job site to another. One reason we didn't elaborate on equipment transport safety is that neither of us are experts on the topic. We felt giving a heads-up about the safety issue was appropriate and then encouraged our readers to seek further information.

Then, as so often happens a short time after a Basic Training article is published, we received a photo from Brian Dickey – a registered sanitarian from Chelan-Douglas Health District in East Wenatchee, Wash. – showing what happened when an installer had trouble loading a backhoe on a trailer for transport. It's disturbing to see the overturned excavator.

Fortunately no one was seriously injured. Often when we hear of these types of accidents this is not the case.

This prompted us to take a closer look at this safety issue and provide a few thoughts on avoiding this type of accident. Before we get started, we ask that you keep in mind that your state Department of Transportation sets vehicle road weight restrictions and driver requirements for commercial vehicles. This includes such items as vehicle load securement, maximum weights, seasonal usage/exemptions for road restrictions and driver's license requirements.

In Minnesota, these requirements can be found at the state's DOT website. They also offer training sessions and will answer questions. So check with your state DOT if you have any questions. Also, federal



Luckily nobody was hurt when this excavator tumbled off of a transport trailer during loading at an onsite job site. Use great caution when transporting equipment in the field to avoid a scene like this one. (Photo courtesy of Brian Dickey)

regulations need to be followed and many states have adopted these requirements. If you are attending Education Day during the 2015 Water & Wastewater Equipment, Treatment & Transport (WWETT) Show in Indianapolis (Feb. 23), sessions will address different aspects of DOT regulations. Take advantage of this opportunity to learn more about driver requirements.

TRAILER CARRYING CAPACITY

The top safety concern for trailers is ensuring adequate carrying capacity for the load and equipment being transported. The installer is responsible for following all of the requirements for these trailers. Failure to do so can result in large fines when your rigs are subject to DOT inspections. More

Ace Roto-Mold Products

STRONG SECURE SUPERIOR



critical than the fine, though, is that an undersized trailer can result in a number of safety problems. An accident could be caused due to failure of the trailer itself or the tires due to an overload. This is dangerous for the installer, but an improperly loaded trailer on the road is also a danger to the public.

The next common problem for trailers is an improperly secured load. The installer or crew members should be familiar with the equipment being hauled and how it needs to be secured to the trailer. The state DOT can provide information on how an excavator should be transported. This includes the number of tie-downs needed and weight ratings for the chains and chokers.

The driver of the truck-trailer must be familiar with and able to operate the equipment being loaded. As evidenced by the photo, loading and unloading can be dangerous and an inexperienced operator increases the likelihood of a problem during the procedure. It is important to carefully choose the site where equipment is loaded or unloaded. If there is too much slope or the ground is soft and unstable, the equipment could tip over, which looks like a contributing factor in this photo Dickey provided.

CREATE A SAFETY LOG

Any equipment – including your transport trailers – requires regular maintenance. You need to make sure all of the equipment on the trailer is in good operating condition; that the tail, backup and directional lights are all in working order. There should be a written safety log for trailers and all of your equipment to effectively track maintenance and repairs. This should be part of the driver's daily checklist whenever equipment is going to be hauled. When problems are identified, fix them before equipment goes back into service.

One of the most frequent causes of accidents is being in a hurry. It is easy to see that an accident like the one pictured could happen either by rushing to get on the job site to place a tank or at the end of the day when it is time to head back to the shop. In all cases the installer needs to take the time to do things safely. Being hasty or cutting corners usually has negative consequences.

The installer is responsible for following all of the requirements for these trailers. Failure to do so can result in large fines when your rigs are subject to DOT inspections.

Weather conditions can also impact safety. In this case it was raining at the time of the tip-over, which could make surfaces slippery. In bad weather contractors can be in a hurry to button things up, but you don't want to rush when loading or unloading equipment in potentially slippery conditions. When it is raining or snowing extra caution is in order; what is a simple task during a clear, dry day can become much more difficult.

Another contributing factor in this mishap may have been loading on a sloping site. Ideally the loading and unloading should take place on a level area, even if it's a distance from the area to be worked.

Hopefully these points provide the basis for safe equipment hauling so you can avoid a bad day like the one experienced by the installers who owned the equipment in Dickey's photo. ❑

Looking for onsite system treatment upgrades on Long Island

By Doug Day

Stony Brook University will use \$2 million in state funding as seed money to establish a program in Suffolk County (Long Island) to develop and commercialize technology to remove nitrogen from septic system and cesspool effluent (many of the septic systems utilize a cesspool). With a population of 1.5 million people, about 70 percent of homes in the county – more than 360,000 – use onsite wastewater systems. Suffolk County is also conducting a lottery to give away 19 onsite systems, including five years of monitoring and maintenance.

Idaho

Several changes are planned in the next revision of onsite wastewater regulations by the Idaho Department of Environmental Quality. According to a public notice, DEQ is considering changes to address “septic tank maintenance techniques, septic tank approval and approval transfer procedures, extra drain rock drainfields, incinerator toilets, intermittent sand filters, steep-slope systems, septic tank and dosing chamber installation, and extended treatment package systems.” The changes, it says, are designed to ensure the technical guidance manual reflects current public health standards.

British Columbia, Canada

The 46,000-square-mile Peace River Regional District is planning to build three septage receiving stations to serve rural residents and work camps. The City of Dawson Creek recently approved a \$3.5 million trucked-waste facility for its municipal wastewater treatment plant.

Unlike an existing transfer station in Dawson Creek, the new one will be staffed and will include sensors to detect hazardous materials. Contractors have been caught several times trying to dispose of diesel and fracking chemicals at the unmanned transfer station, according to *Alaska Highway News*. The City of Fort St. John recently announced it was closing its septage facility at the end of 2014 because several illegal dumping cases threatened the city's treatment system.

“The issue of waste disposal has become increasingly fraught in recent years, in part because new federal laws expose cities to more liability should waterways be contaminated with sewage,” reports the newspaper. □

“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.

Over 30 years experience
SEPTIC SERVICES, INC.
SEPTIC SYSTEM PUMPS, PARTS AND SUPPLIES STORE

TO ORDER    **SHOP ONLINE**
CALL TOLL FREE: (800) 536-5564 www.septicserv.com/store
(636) 583-5564

Introducing
Spring 2014

Model
Shown:
RA4 1.0YF

RETROAIR

Available in 4
models to match
your application

The Retro-Air provides a complete absorption field rejuvenation system that will improve flow and return a failed existing system back to optimal flow and performance. Use in systems prone to backup in the tank.

- ✓ Improve Flow
- ✓ Eliminate Clogged Absorption Field Due to Biomat
- ✓ Install in Single or Multiple Tanks

Starting at
\$564.00



2-YEAR
WARRANTY



MAXAIR500

**MAXAIR500
SUBMERSIBLE
SEPTIC AERATOR**

- Motor is fully enclosed, continuous duty
- Stainless steel motor enclosure & legs
- 15-foot power cord

\$425.00
2-YEAR WARRANTY

Replacement for Multi-Flo Aerator

All original equipment manufacturer's names, drawings, and part numbers are used for identification purposes only, and we are in no way implying that any of our products are original equipment parts. Not associated with Multi-Flo or Consolidated Treatment Systems.

vwelt
BOOTH
3118

BULLET™
HIGH HEAD
FILTERED
EFFLUENT
PUMPS

18-Month Warranty

All stainless steel
construction built
for years of
dependable
service

- 1/2 HP, 10 amp motor
- Prewired
- 15-foot power cord

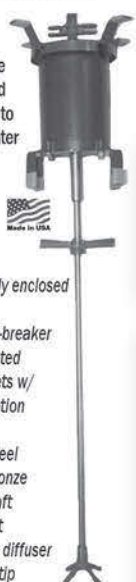


Models:
BP12 (12 gpm) ... \$280.00
BP20 (20 gpm) ... \$272.00

**FLAGG-AIR™ 340HT
AERATORS**

**Flagg-Air
New High-Torque
Performance**

We've
increased
motor torque
and adjusted
shaft length to
provide greater
aeration.



FEATURES:

- Motor is fully enclosed
- Prewired
- 7-amp mini-breaker
- Powder coated steel brackets w/ rubber vibration restrictors
- Stainless steel shaft w/ bronze counter shaft
- High impact plastic suds diffuser & aspirator tip

\$350.00
2-YEAR WARRANTY

Does not carry
the NSF seal.
Check local and
state regulations
for approval in
your area.



**Whirlwind Linear
Air Pumps**

Models:
STA60N ... \$220.00
STA80N ... \$250.00
STA100 ... \$340.00

AERATORS

Superior choice for new
installation or upgrading
existing 60/80/100 models.

2-Year Warranty



*N models include hose bib for
low pressure alarm connection.



**Whirlwind STA80AL
Linear Air Pump**

Integrated audible alarm
& warning light with toggle
testing switch. 2-Year Warranty

STA80AL ... \$320.00

**ALARMS • TIMERS
CONTROLS**



Model:
**P101FA-2
\$105.00**

- Warning light
& reset switch
- Mini-breaker



Model:
**P101-2
\$95.00**

**REGENERATIVE
BLOWERS**



**Whirlwind
R-5760 ... \$400.00**
(57 CFM)

Simple • High-Performance • Wastewater System

Eljen GSF...Your Affordable Treatment Solution For Today's Wastewater Challenges!

- Product Performance Compliant with NSF/ANSI Standard 40 Protocol.
- Dual filtration process provides the performance you require.
- Non-mechanical design means little to no maintenance.
- The most treatment area per foot in the industry.

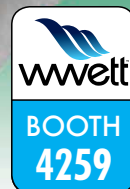


eljen
CORPORATION

Innovative Environmental Products and Solutions Since 1970

1-800-444-1359

eljen.com



**Seal it Tight! Seal it Easy!
Seal it Fast!**

Are you tired of using risers that are too tall or too short for the job you are completing?

Plastic riser pipe will give an exact height each time. Try our system and you will never have to carry concrete pipe and lids again. Save time by not having to assemble multiple sections.

- Easy 10 minute installation!
- Prevent ground water infiltration
- Secure fit for all systems!
- and save money at the same time!
- Made & sold by septic installers!

BrenLin Company, Inc
Manufacturers of Seal-R™ Products
888-606-1998 • www.seal-r.com

Seal-R™ Sizes:
12", 15", 18",
24", 30",
36", 42"

↑ RISER: Dual-wall plastic culvert pipe.

↑ Inner safety lid.

BOOTH 5100

Roth
MULTITANK

Septic Tanks • Water Cisterns
Pump Tanks • Holding Tanks
Rain Water Harvesting

Multi Usage

Multi Layer

Multi Coverage

- Inner layer of FDA approved virgin HDPE, two inside layers of PE for improved stability, plus one outer layer of black and UV-stabilized PE
- Lifetime* corrosion protection and 5 years of labor insurance
- Strongest & heaviest poly tank on the market
- No water for backfilling required
- Low profile
- 100% watertight

Our multi-layered tank construction, consisting of virgin material surrounded by 3 layers of protection.



BEST TANK. BEST WARRANTY. BEST SYSTEM.

Roth Global Plastics

www.roth-america.com 866-943-7256

*see warranty for details

**GET
EMAIL NEWS
ALERTS FOR
ONSITE
installer**

Go to
onsiteinstaller.com/alerts
and get started today!



For detailed information:

wwett.com
866-933-2653

FEBRUARY 23-26, 2015 INDIANA CONVENTION CENTER

Welcome

to the 2015 WWETT Show!



View daily updates at wwett.com!

Be sure to visit wwett.com from February 23 - 26, 2015 to see live updates, videos and photos straight from the exhibit floor uploaded daily to the website and other WWETT social media outlets!



Current Exhibitor List

580 companies - list current as of January 19, 2015.

3T Equipment Company Inc.
A. Rhodes Wilson & Associates, Inc.
A.R. North America
Abbott Rubber Company, Inc.
ABCO Industries Limited
Absolute Ablutions Mobile Trailer Manufacturer
Acro Trailer
Advance Pump & Equipment
Advanced Containment Systems Inc.
Advanced Drainage Systems
Advanced Infrastructure Technologies, LLC
Advanced Pressure Systems
Advantage Funding
Aero-Tech
Airfeet
AK Industries Inc.
Alderson Industries, Inc.
All Star Sewer Equipment
Allan J. Coleman Co.
Allied Forward Motion LLC
Allied Graphics
Alpine Equipment Funding, Inc.
Aleris-SeptiCover
AlumaMATS, Inc.
Amazing Machinery, LLC.
Ameri-Con Engineering
American Express OPEN
American Melt Blown & Filtration Inc.
American Pipe & Plastics, Inc.
Amesbury / Bandlock Products
Amthor International
Anderson Metals Corp., Inc.
Anua
AP/M Permaform
Aqua Blast Corporation
Aqua Mole Technologies Inc.
AquaFlow
AquaSoles by V.P. Marketing
Arcan Enterprises Inc.
Aries Industries Inc.
Armal, Inc.
ART Company (A Restroom Trailer Company)
Arthur Custom Tank / Mid-State Tank
Arthur Products Co.
Ashland PolyTrap
Ashland Pump
Atlanta Rubber & Hydraulics Inc.
Atlas Portable Sanitation
Avanti International
B Green Group
Bad Dog Tools
BakerCorp
Ball Brass and Aluminum Foundry Inc.
Banjo Corporation
Barnett
BASE Engineering Inc.
Bayco NightStick/The Jolly Group, Inc.
BDP Industries, Inc.
Benjamin Media Inc.
Benlee, Inc.
Best Enterprises Inc.
Best Equipment Company
Betts Industries Inc.
Biffs Pathfinders, LLC
BioLyneus
Bio-Microbas Inc.
Bioatix International
Bio-Systems International
BKP Berolina Polyester GmbH & Co. KG
Black Tie Products
Blasters, Inc.
Blue Angel Pumps
bluefrog Plumbing + Drain™
BODUS GmbH
Boerger LLC
Brandenburg Liner GmbH & Co. KG
BRAWOLINER
Brenlin Company, Inc.
Bright Dyes
Bright Technologies Specialty
Div. of Seabright Products, Inc.
Brothers Equipment
Brown Bear Corporation
Buckhorn Pumps, Inc.

Bucks Fabricating
Bulk Toilet Paper
Bull Frog Industries LLC
BW Technologies by Honeywell/
Honeywell Analytics
C&E Plastics Inc.
C&H Services
C.I.Agent Solutions
Cam Spray
Canam Equipment Solutions, Inc.
Canplas Industries Ltd
Cape Cod Biochemical Co.
CAPPELLOTTI S.P.A.
Cat Pumps®
Cavallero Plastics, Inc.
CEMTEC / A.W. Cook Cement Products
Century Paper & Chemical
Champion Pump Company, Inc.
Chandler Equipment
Chesapeake Products/Div. of Parker
Chempore Corporation
Chempore Products Corp.
Cheme Industries
CIPP Services, LLC
Clayton Industries
Clear Computing
Cleartroom Wastewater Systems Inc.
Cloverleaf Tool Co.
Cobra Technologies
Columbia Tanks LLC
Comet USA, Inc.
Comforts of Home Services, Inc.
Concrete Sealants Inc.
Conegtec-Universal
Consolidated Treatment Systems, Inc.
Containment Solutions
CoreBiologic, LLC
Cotta Transmissions
Cougar Vibration, Div of Martin Engineering
COXREELS
CPACEX
Crescent Tank Manufacturing
Cretek Specialty Products
CromaFlow Inc.
Crust Busters/Schmitz Bros.
CUES
Cummins Power Products
Cusco
De Neef Construction Chemicals
Del Vel Chem Co.
Depth Ray
Ditch Witch
Harben Inc.
Hart Industries
Hathorn Corporation
Hauler Agent
HCP Pumps of America, Inc.
Hedstrom Plastics
Helix Laboratories Inc.
Hella, Inc.
Hermann Sewerin GmbH
Hermes Technologie
Hibon, Inc. (a division of Ingersoll Rand)
Hino Trucks
Hi-Vac Corporation
Hot Jet USA
Huroc Technologies Inc.
Hydro-Flex, Inc.
Hydro-Tech Pumps
Hydratron, Inc.
Hy-Flex Corporation
I.S.T. Services, Inc.
IBG HydroTech
Imperial Industries Inc.
Impreg International GmbH
IMS Robotics GmbH
In The Round Dewatering
Indiana Onsite Wastewater
Professionals Association
Infiltrator Systems Inc.
InfoSense, Inc.
Infrastructure Repair Systems, Inc.
Infrastructure Technologies - ITpipes
Innovative Equipment, LLC
InSight Mobile Data Inc.
Insight Vision Cameras

Federal Signal Environmental
Solutions Group
FerraTex
Fieldbook ERP
Fisher Labs
Five Peaks
FKC Co. Ltd.
Fleetmatics
Flo Trend Systems
FlowMark, LLC
FM Manufacturing Inc.
Forbest Products Co.
Ford Commercial Vehicles
Foremost
Forest River, Inc.
FORMADRAIN Inc.
Franklin Electric
Fruitland Manufacturing
Fuji Clean USA, LLC
Galbreath
Gamajet, part of the Alfa Laval Group
GapVox Inc.
Gardner Denver Water Jetting Systems Inc.
Gardner Denver Wittig
GE Oil & Gas - Roots Blowers
GEA Farm Technologies, Inc. (USA)
General Pipe Cleaners
General Pump
Geoflow, Inc.
German Pavilion/Federal Ministry
for Economic Affairs and Energy
GG Instrumentation, Inc.
Giant Industries
Global Vacuum Systems, Inc.
Go Green Environmental Products
Go To Parts
Godwin, a Xylem Brand
Goldak Inc.
Gorlit Sewer & Drain, Inc.
Gorman-Rupp Company
GPM Pump & Truck Parts, LLC
GPS Insight
Grease Guardian
Green Mountain International, LLC
Greener Planet Systems
GRU, LLC
H2 Technical Rescue Equipment
Hammelman Corp.
HammerHead Trenchless Equipment
Hannay Reels Inc.
Happy Feet
Harben Inc.
Hart Industries
Hathorn Corporation
Hauler Agent
HCP Pumps of America, Inc.
Hedstrom Plastics
Helix Laboratories Inc.
Hella, Inc.
Hermann Sewerin GmbH
Hermes Technologie
Hibon, Inc. (a division of Ingersoll Rand)
Hino Trucks
Hi-Vac Corporation
Hot Jet USA
Huroc Technologies Inc.
Hydro-Flex, Inc.
Hydro-Tech Pumps
Hydratron, Inc.
Hy-Flex Corporation
I.S.T. Services, Inc.
IBG HydroTech
Imperial Industries Inc.
Impreg International GmbH
IMS Robotics GmbH
In The Round Dewatering
Indiana Onsite Wastewater
Professionals Association
Infiltrator Systems Inc.
InfoSense, Inc.
Infrastructure Repair Systems, Inc.
Infrastructure Technologies - ITpipes
Innovative Equipment, LLC
InSight Mobile Data Inc.
Insight Vision Cameras

Integrated Vehicle Leasing / Financing
ITI Trailers & Truck Bodies Inc
J&J Chemical Co.
J. Hvidtved Larsen US
J.C. Gury Company, Inc.
Jack Doherty Companies
JAG Mobile Solutions
Jameson LLC
JD7
Jet Clean Tools USA Inc.
Jet Inc.
JeTech, Inc.
Jets Vacuum AS
Jetter Depot
Joe Johnson Equipment, Inc.
John Bean Jetters
Johnny's Choice by Chempcorp
Joints Couplings
KeeVac Industries Inc.
KEG Kanalreinigungstechnik GmbH
Keith Huber Corporation
Kentucky Tank, Inc.
Kewanna Screen Printing
Kifco, Inc.
Kros International USA
Kroy Industries
Kuryama of America, Inc.
LANASAS Products Mfd.
by Vanderlans & Sons, Inc.
LaPlace Equipment Co. Inc.
Lely Manufacturing, Inc.
Lenzyme/Trap-Clear Inc.
Liberty Financial Group, Inc.
Liberty Pumps
LIFTPLAQ
Linco-Precision, LLC
Liquid Environmental Solutions
Liquid Waste Industries
Liquid Waste Technology LLC
LMK Technologies
LMT Inc.
Lock America, Inc.
Loccus
Lodart Ltd.
Logan Clutch Corporation
Logiball Inc.
Longhorn Tank & Trailer
Ludwig Pfeiffer Hoch- und
Tiefbau GmbH & Co. KG
MacQueen Equipment Group
Madewell Products Corporation
Mailhot Industries
Mainline Backflow Products, Inc.
Masport Inc.
Masterliner, Inc.
Material Motion, Inc.
MaxLiner USA
McLaughlin Group, Inc.
Medit Inc.
Meese Orbitron Dunne Company
Merrell Bros., Inc.
Mid-State Tank Co., Inc.
Midwest Vac Products LLC
Miller Pipeline
Milkken
Müller-Haufen Tool Company
Milwaukee Pump
Milwaukee Rubber Products Inc.
MiFi-Machine
Mobile Hydraulic Equipment Co., LLC
Mobile Restroom Designs
Money In Motion
MONOFORM by Infrotech
Moro USA
Mr. Rooter Corp.
MTC
Mitech
Mud Technology International, Inc.
Murphy by Enovation Controls
MyTana Mfg. Co. Inc.
NASSCO, Inc.
National Joint Powers Alliance
National Precast Concrete Association
National Truck Center
National Vacuum Equipment

Nature Calls
NAWT - National Association of
Wastewater Technicians
Netafim USA
Nextstar Network, Inc.
NLB Corp.
Northeast Industrial Mfg
Norweco Inc.
NovaFlex Hose
NOWRA - National Onsite
Wastewater Recycling Association
NozzTag, Inc.
NSF International
Nu Flow
NuConcepts
Oakmont Capital Services LLC
Oceanquip Cables, LLC
Ohio Electric Control, Inc.
Omega Liquid Waste Solutions
OMSI Transmissions, Inc.
One Biotechnology
Orenco Systems, Inc.
Otto Trading Inc.
PA SpA
Parson Environmental Products Inc.
Pat's Pump & Blower
PC Scale Technologies
Peapoint/SPX
Peinemann Equipment
Penn Valley Pump Co., Inc.
Penny Pockets
Penitair
People's United Equipment Finance Corp.
Perma-Liner Industries LLC
Petersen Products
Petrofield Industries
Phoenix USA Inc.
Picote Solutions
Pik Rite Inc.
PinPoint GPS Solutions Inc.
Pipe Lining Supply, Inc.
PipeHunter, Inc.
Pipeline Analytics
Pipeline Renewal Technologies
PipeLogix Inc.
Pipenology, LLC
Pipe-Robo-Tec USA
PipeTech Software
Piranha Hose Products
PIRIT Heated Hose
Plug-It Products
Palston Applied Technologies
Poly-Flow
PolyJohn Enterprises Corp.
Polylok Inc. / Zabel
PolyPortables, LLC
Porta Pro Chemical Company
Portable Sanitation Association International
POSM Software LLC
Powertrack International Inc.
Pow-R Mole
Premier Oilfield Equipment Co.
Premier Tech Aqua
Presby Environmental, Inc.
Pressure Lift Corporation
Presvac Systems, Ltd.
PRIME DRILLING GmbH
Prime Resins, Inc.
PrimeLine Products
Progress Tank
Proline Group AB
Prandl-USA, Inc.
ProPulse, A Schieffler Company
Protective Liner Systems
PSI Pressure Systems Corp
PUMPTec
Qingdao Donghengli Industry
Equipment Co., Ltd.
Quodex / Intifit
Quick-Lining Systems, Inc.
R. Nesbit Portable Toilets
Rain for Rent
Ram Commercial
RapidView IBAK North America
Ratech Electronics, Ltd.

Rausch USA
Ravo Sweepers
RC Industries Inc.
RCS II Inc.
RecoverE
REED Manufacturing Company
Reelcraft Industries Inc.
Refractron
Reline America Inc.
Renssi
Resiplast US, Inc.
ReviewBuzz
RH20 North America Inc.
Rich Specialty Trailers
RIDGID
Ring-O-Matic
Rioned UK Limited
Ritam Technologies, LLC
RITEC GmbH
RKI Instruments, Inc.
Robinson Vacuum Tanks, Inc.
Robuschi & C.S.p.A.
Rochester Metal Products Corp
RODDIE Inc.
Roeda Signs & ScreenTech Imaging
Roll-Off Parts.com
RootX
Roth Global Plastics
ROTHENBERGER USA
RotoSolutions
RouteOptix Inc.
RS Technical Services Inc.
Rush Refuse Systems
Rush-Overland Manufacturing
Sabre Manufacturing
SAERTEK multiCom LP
Safe-T-Fresh
Safety Sewer Drain
Salcor, Inc.
Satellite Industries Inc.
Satellite Suites
Saverisen, Inc.
Savatech Corp.
Scadatar, Inc.
Scorpion Protective Coatings
Screenco Systems LLC
Sealing Systems Inc.
SECO Truck Inc.
See Water Inc.
Septic Maxx
Septic Products Inc.
Septic Services Inc.
SeptiTech
Septonics, Inc.
Service Roundtable
ServiceTitan
Sewer Equipment
Shamrock Pipe Tools Inc.
Shenzhen Schroder Industry Measure
& Control Equipment Co., Ltd.
Sherwin Williams
ShuBee
Sim/Tech Filter Inc.
SJE-Rhombus
Slewmaster Inc.
Slide-In Warehouse
SludgeHammer Group Limited
SnakeLiner
Soft-Pak
Solar LED Innovations, LLC
Sonetics Corporation
Source 1 Environmental
Southland Tool Mfg. Inc.
Spartan Tool LLC
Specialty B Sales
Splendor Fiberglass
Stamp Works
Standard Cement Materials, Inc.
Standard Equipment Company
Statewide Supply
StoneAge, Inc.
Strike Products
Sturgeon Tank & Equipment
Stutes Enterprises Systems
Subsurface Instruments

Sugino Corp.
Sunbelt Rentals
Super Products LLC
Superior Signal Company LLC
Supervac 2000
Surco Portable Sanitation Products
Supresseur 4S Inc.
SVE Portable Roadway Systems, Inc.
T & T Tools, Inc.
t4 Spatial
Tank Track LLC
Tank Transport Trader
TankTec
TCF Equipment Finance
Terydon Inc.
The Strong Company
Thieman Tailgates, Inc.
Thompson Pump
Titan Logix Corp.
Topp Industries, Inc.
Trade-Serve
Trans Lease, Inc.
Transway Systems Inc.
Trelleborg Pipe Seals
Trenchless Solutions Inc.
TRIC Tools Inc.
Trillium Industrial Services
TRY TEK Machine Works, Inc.
TSF Co. Inc.
Tsurumi Pump
TT Technologies Inc.
Tu-Tite Inc.
Turbo-Fog, Division of Kingscote Chemicals
Turtle Plastics
U.E.M.S.I.
Udor USA
UHRIG Kanaltechnik GmbH
Ultra Shore
UltraLav by Wells Cargo
Uncle Freddie's Super Gloves
Under Pressure Systems, Inc.
US Fleet Tracking
US Jetting, LLC
USA BlueBook
USB-Sewer Equipment Corporation
VAC2GO
Vaccall
Vac-Con Inc.
Vacutux Limited
Vacuum Sales, Inc.
Vacuum Truck Rental
Vacuum Trucks of Canada
Vaporooter
VAR Co.
Vermeer
Veyance Technologies, Inc.
Vivax-Metrotech Corp.
Vogelsang
VT Hackney
Vu-Rite Video Inspection Systems, LLC
W.W. Williams
Wachs Utility Products
Wager Company Inc.
Walex Products Company, Inc.
Wallenstein Vacuum Pumps -
Elmira Machine Industries
Wastequip
WasteWater Education 501(c)(3)
Water Environment Federation
Waterblasting Technologies
WC Leasing
Weber Industries, Inc. (Webtrol)
Wee Engineer Inc.
Wells Fargo Equipment Finance
Western Equipment Finance
Western Mule Cranes (D & S Sales)
Westmoor Ltd.
Whirlygig, Inc.
Wiedemann & Reichhardt GmbH
Wieser Concrete Products, Inc.
Wohler USA
Zhejiang Danau Industries Ltd.
Zoeller Pump Company

On the Rise

Budding country music star Cole Swindell will headline the WWETT Industry Appreciation Party

By Kyle Rogers

Country music singer/songwriter Cole Swindell is one of Nashville's newest stars, and he plans to make some new fans when he takes the Industry Appreciation Party stage at the Water & Wastewater Equipment, Treatment & Transport (WWETT) Show in February.

The 31-year-old didn't gain prominence — or a record deal for that matter — until his independently released debut single, "Chillin' It," started climbing the charts in 2013. It eventually reached the top spot on the *Billboard* Hot Country Songs chart, but Swindell knows there's a good chance some people in the audience will be unfamiliar with his material. And he's fine with that.

"Sometimes it's good to get in front of a new crowd that might not know a lot about you," Swindell says. "You get to try to make them a fan by the end of the night. I love challenges like that."

"I'm going to get up there and do what I do. I'm looking forward to it."

LESSONS FROM A FELLOW GEORGIAN

Though still a newcomer to the country music scene, Swindell knows what it takes to put on a good show. He went on tour with Luke Bryan in 2014 and prior to that spent a considerable amount of time on the road with him, selling merchandise and writing songs for his fellow fraternity brother from Georgia Southern University as Bryan evolved into a country music star.

"For however long he's out there on stage, he's going to give it all he's got. That's something I've learned," Swindell says. "People spend their hard-

earned money and their time to come see us, so you want to give them the best show you can."

He says Bryan was also a big influence on his decision to launch a career in country music in the first place.

"The first time I heard his music was over 10 years ago, and I thought he had it," Swindell says. "Even then I was like, 'This guy is going to be huge.' He's from the same part of Georgia but I didn't know him until I had gotten to college and he had already moved to Nashville. Having a guy from just a few minutes from where I grew up writing songs I thought were amazing, that gave me the confidence. 'Hey, if he can do it, maybe I can do this.' It really gave me the confidence to go after it and just focus and work hard."

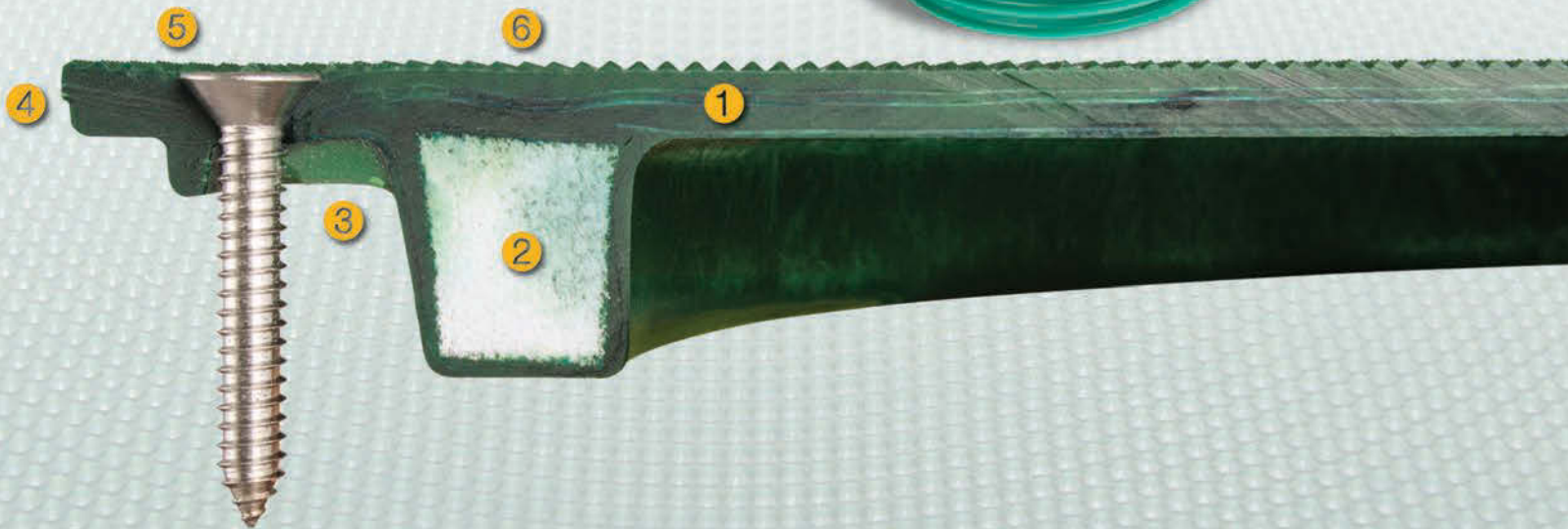
(continued)



Cole Swindell will headline the annual Industry Appreciation Party on Wednesday, Feb. 25, in the Indiana Convention Center's Sagamore Ballroom.

Introducing ... **Orenco® DuraFiber™ Lids**

Fits PVC and HDPE Pipe



1 **Solid Fiberglass Construction**

- Stronger, tougher materials
- More damage resistance
- Exceptional breaking strength

2 **Tapered Centering Ring**

- Aligns lid onto riser
- Slides into "out-of-round" risers
- Creates snug fit
- Features structural foam core

3 **Urethane Gasket**

- Robust gasket helps provide a watertight seal

4 **Flat-Style Flange**

- Allows flush-to-grade installation
- Easier access for maintenance

5 **Tapered Hole**

- Accepts standard flat-head lid screw

6 **New Non-Skid Surface**

- Better grip and aesthetics
- Molded-in caution statement
- Center area for customer logo

Visit us at **WWETT 2015**
Booth 5231

★ **24- and 30-inch lids**
★ **Insulated lids available**
★ **Call your Orenco Distributor to order**

Orenco®

Orenco Systems®, Incorporated

814 Airway Ave., Sutherlin, OR 97479 USA

1-800-348-9843 • 1-541-459-4449

www.orenco.com

FROM SONGWRITING TO THE STAGE

Swindell says he has been a fan of country music all his life, but he didn't start singing until he was in college and began playing the local bars. After receiving the merchandise sales gig on Bryan's team after graduation, Swindell started to get into songwriting. He wrote Bryan's "Just a Sip," "Beer in the Headlights," "Roller Coaster," "Out Like That," "I'm Hungover," "I'm in Love with the Girl," "Love in a College Town," "Shore Thing," "Shake the Sand" and "The Sand I Brought to the Beach." He's also written songs for Craig Campbell, Thomas Rhett, Scotty McCreery and Florida Georgia Line.

Following the success of "Chillin' It," Swindell received a record deal. The first single off his debut album, "Hope You Get Lonely Tonight," which was co-written with Florida Georgia Line, also became a hit. It reached No. 1 on the *Billboard* Country Airplay chart.

"I didn't even have a record deal when we wrote that song," Swindell says. "I always thought they were going to record it. The second they said it was cool that I recorded it, I told them, 'This will be a single for me one day if y'all let me record it.' The writing process was fun. They're good friends of mine and I'm so proud of all their success. It's cool to get to have a little bit of each other's success."

"People spend their hard-earned money and their time to come see us, so you want to give them the best show you can."

Cole Swindell

With his first two singles each topping the charts, Swindell says there's pressure to continue the trend. But he doesn't mind.

"You come out with a No. 1 single and then you have to follow that up and you get fortunate and have two No. 1's. Then you have to follow that up. But I think that's a good thing, you know? The streak's not going to go on forever and I'm realistic, but we're going to try. I want to give the fans and radio the best songs I can, and I think [reaching No. 1] is a good goal. If you don't reach the No. 1 spot, at least you gave it a shot."

THE YEAR AHEAD

His debut album, two straight No. 1 singles and a nomination in the Best New Artist of the Year category at the Country Music Association Awards have made the past year quite the start to Swindell's country music career. For the coming year, he's already scheduled to join Jason Aldean for the second leg of the "Burn It Down" tour beginning in February.

"Jason is another huge influence and there's another Georgia boy so, man, I couldn't have picked anyone better to go on tour with. That's going to be an awesome way to start off 2015," Swindell says.

That same month he will be taking a break from the tour to play the more intimate Sagamore Ballroom venue at the Indiana Convention Center for WWETT attendees. Swindell hopes to add a little "pleasure" to the "business" that will undoubtedly be a primary focus for many trade show attendees.



THIS PARTY AIN'T NO ONE-TRICK PONY

Cole Swindell may be the big draw at the WWETT Show's Industry Appreciation Party on Wednesday, Feb. 25, but he won't be the only highlight that night.

It all begins at 5 p.m. when the doors open to the party's new venue, the Sagamore Ballroom on the second floor of the Indiana Convention Center, and the 25-cent tap beers start flowing. The evening's first musical act, Blackjack Billy, will take the stage an hour later. The four-member Nashville-based band is best known for their 2013 debut single "The Booze Cruise."

The winner of the WWETT truck giveaway will be announced shortly after Blackjack Billy's set, at approximately 7 p.m. All registered WWETT attendees are automatically entered into the contest for the tricked-out 2014 Chevrolet Silverado 1500 4x4 Extended Cab, or alternately \$35,000 cash, being given away in celebration of the show's 35th anniversary. Twelve contestants will be randomly selected beforehand and invited to participate in the event that will determine a winner.

The party will conclude with a performance from Swindell, who is set to take the stage at 7:30 p.m.

"They could've picked a lot of people [to play the Industry Appreciation Party] and for me to get to do it, that's cool," says Swindell. "It's a different setting [than a tour stop] and there will be business folks in there, but I want to let them have a little fun that night. That's going to be my goal — make sure they have a good time." ■



WATER & WASTEWATER EQUIPMENT, TREATMENT & TRANSPORT SHOW

EDUCATION DAY: Feb. 23, 2015 | EXHIBITS OPEN: Feb. 24 - 26, 2015 | Indiana Convention Center

WWW.WWETT.COM

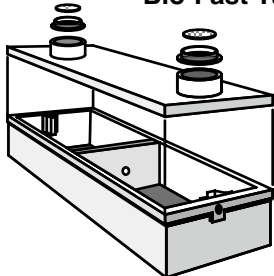
Water Tight Structures 2 Compartment

Commercial Sizes - Gallons

2,000 - 3,000 - 5,000 - 6,000 - 8,000
10,000 - 12,000 - 15,000 - 18,000
20,000 - 25,000 - 30,000 - 38,000 - 40,000

Water Tight Construction
Tanks meet ASTM C1227 and C913

Septic Tanks - Sand Filters - Grease Interceptors
Bio-Fast Tanks - Nibbler Tanks



Nationwide Service

CREST Precast, Inc.
PCI & NPCA Certified Plant
1-800-658-9045

www.crestprecastconcrete.com info@crestprecastconcrete.com

Ecoflo[®] Coco Filter Septic System

20
year
WITH YOU

**WATER IS LIFE,
ECOFLO HELPS PRESERVE IT!**

- ✓ No energy for the treatment
- ✓ Compact, sustainable and permanent solution
- ✓ For new construction, repairs, secondary residences and system upgrades
- ✓ 100,000 systems installed worldwide



Onsite projects



Commercial projects



**THE MOST COMPLETE
PRODUCT LINE SUITABLE
FOR ALL SOIL CONDITIONS**

Contact our experts!

1 800 632-6356 | PREMIERTECHAQUA.COM

**PREMIER TECH
AQUA**



COME AND SEE US! **BOOTH 4118**

Junction Boxes, Alarms, Pedestals, & Pump Controls

Septronics[®] Inc.

2015
Make it Your Record Year
Septronics Will Help



wvett **BOOTH 2371**



- Exterior Pump Controls w/Exterior Alarms
— Pedestal Mount or Wall Mounted
- Exterior Pump Controls w/Interior Alarms
— Pedestal Mount or Wall Mounted
- Controls w/ Event Counters & Circuit Breakers
- Exterior & Interior Alarms
— Single, Dual, or Auxiliary Options
- Mechanical Float Switches
— Heavy or Standard Duty, Filter, Vertical, Hi Temp

www.septronicsinc.com

Ph: 262.567.9030 • Email: susan@septronicsinc.com

The island of Roatan is along the top of the photo, and near the center are the headquarter buildings and docks of Anthony's Key Resort. Most divers stay in cabins on Anthony's Key, the small island at left. At right is Bailey's Key with the dolphin pens clearly shown. (Photos courtesy of Acme Environmental Solutions)

Preserving a Dolphin Habitat

A complex new onsite system on two Caribbean island keys will ensure proper long-term wastewater treatment in a delicate environment

By David Steinkraus

Divers have been coming to the Caribbean island of Roatan for decades, and no wonder. The island is surrounded by a coral reef that in some places is so close you can wade to it from shore. The reef is home to hundreds of species of fish, and that makes for spectacular scuba diving in the bathtub-warm sea. As time passed, however, this ideal place developed problems. Samir Galindo could see them. He is general manager of Anthony's

"We pretty much nailed a rock that acted as a plug for the Caribbean Sea. We jackhammered the rest underwater. So it was a whole dive operation right in that hole."

Samuel Rivera

Key Resort, which has been around for about 40 years and is one of the oldest dive operations on the island. In 20 years Galindo has seen changes in the environment, but what prompted the resort to call in Acme Environmental Solutions were the dolphins.

SYSTEM PROFILE

Location:	Anthony's Key, Roatan, Honduras
Facility served:	Anthony's Key Resort
Designer:	Acme Environmental Solutions
Installer:	Acme Environmental Solutions
Type of system:	Domestic and light commercial wastewater with anaerobic collection and Bio-Microbics aerobic system with drip irrigation
Site conditions:	2 to 40 inches of sand over coral
Hydraulic capacity:	Anthony's Key: 9,000 gpd; Bailey's Key: 750 gpd; Roatan: High strength 9,000 gpd

RIGHT: The finished Bio-Microbics plant is buried only a couple of feet on Anthony's Key because the island's base is hard coral. The plant is built of cement blocks coated with repello, a fine outer skin of cement to provide a smooth, waterproof finish.

BELOW: Workers for Acme Environmental Solutions unload material at Anthony's Key in Roatan, Honduras. Everything for a complete wastewater system had to be transported by boat or barge, including bagged sand, gravel and cement for the concrete plant and collection boxes.



The resort occupies a spot on the north shore of Roatan and includes two smaller islands (keys in Caribbean terminology) that create a partially sheltered bay. One of these smaller islands is Anthony's Key, which holds most of the cabins for visiting divers. The other is Bailey's Key and is home to dolphins, the stars of dolphin encounters at Anthony's Key Resort and at the Mahogany Bay cruise port on the south shore of the island.

Performing dolphins live at the port where they entertain cruise ship passengers. Bailey's Key has pens for pregnant and nursing females, but the dolphins were not as healthy as they could be. Resort staff and the resident biologist consulted with experts at aquariums elsewhere in the world, and the experts concluded currents were not flushing the area thoroughly and contamination from untreated wastewater was making the dolphins ill.



The resort took a bold step and updated the wastewater systems for its entire complex.

Typically the resort runs at 80 percent capacity with about 100 guests present every day during the height of the season. Guests dive twice a day and shower after each dive to wash off the sea salt. Anthony's Key was originally equipped with septic tanks. "Some were good. Some were bad, but all of them were causing algae blooms on the edge of the island," says engineer Samuel Rivera, operations manager and head of Acme's projects division.

SELF-CONTAINED SOLUTION

For the key, a rough triangle about 1,200 feet along its base and 800 feet from base to tip, Acme designed a 9,000 gpd system using a Bio-Microbics

ONSITE CONTROLS

No matter the application, we've got it under control, from float switches to event monitoring control panels, and everything in between. Now backed by our industry-leading five-year limited warranty!



SJE Rhombus

www.sjerrhombus.com



WWETT Booth 2305 - Indianapolis - Feb. 24-26, 2015



New & Improved PS Patrol® System

The newly enhanced PS Patrol® system features a sleek angled clear enclosure with a removable cover for easy access for field wiring. All components are sealed within the cover for protection from the elements. Red LEDs illuminate cover for 360° visual of alarm condition.



IFS Panels with C-Level™ Sensor

C-Level™ sensor detects the liquid level in the tank and sends a signal to the IFS panel. Pump activation and alarm levels are adjusted on the panel touch pad, eliminating the need to go into the tank. One C-Level™ sensor simulates up to four (float) levels.



Tank Alert® EZ Alarm System

This new alarm is all about making installations easier! It features an innovative enclosure which integrates the red LED beacon, external mounting tabs for quick installation and a removable cover which allows greater access for easier field wiring.

MicroFAST plant fed by a series of collection tanks.

From each cabin, wastewater flows by gravity 60 to 70 feet through 3-inch pipes buried 10 inches beneath the ground. Pipes are pitched 0.5 to 1.5 percent. "Gravity is a bit of a problem because the whole key is as flat as a pancake," Rivera says. Ideally there would be a vacuum system to pull waste through the pipes, but it wasn't doable. Pipes flow into one of five collection tanks that are 4 feet wide, 8 feet long and 4 feet high. Some were new. Others were reused septic tanks. Each tank has a lift station equipped with an Orenco ProSTEP pump package to feed wastewater to the Bio-Microbics plant through about 600 feet of 2-inch HDPE pipe. There is one more lift station. It serves the bar and pool area near the center of the key, and this station is equipped with a small trap to catch cherry stems, lime rinds and other light kitchen waste.

The Bio-Microbics plant has three chambers, one each for settling, aerobic treatment and clarification. Wastewater in the aerobic portion is pumped up by air to a sprayer dosing two 4,500 gpd units housing bacterial media. Treated water then flows to a dosing tank run by an Orenco panel that discharges it through 1,200 feet of Netafim underground tubing to irrigate a huge tropical plant garden that benefits from both the water and the extra nitrogen.

CONSTRUCTION CHALLENGES

Behind a camouflaging wall of plants the Bio-Microbics system is 8 feet tall, 10 feet wide and 22 feet long, and it needs the vegetation because it is sunk only 2 feet into the island. The collection tanks are likewise shallowly set by typical measures. At most they're 2 or 3 inches below grade. Some show a few inches above grade. Shallow excavation is the rule here because of the nature of the island: It is 2 to 40 inches of sand on top of coral. "The key is old coral. It's as hard as steel," Rivera says.

Work was done in the fall during the rainy season. In the tropics this means every few hours the clouds spill water like a fire hose before the small storm cell blows off over the ocean. Some cabins for the divers stand on stilts,

so plumbers worked in the ocean in their bathing suits as they replaced sagging, thin-walled wastewater pipes with modern pipe and traps.

It was water from below that proved the real challenge on one collection tank excavation. Jackhammers broke about every hour on the iron-hard coral, Rivera says. Workers floated a skid-steer with a big hammer to the key. Because the key is a few hundred feet from the main island, all the equipment, workers and material had to fit on boats or barges.

The skid-steer hammer broke. They got bigger hammers. Then they made progress until one day, "We pretty much nailed a rock that acted as a plug for the Caribbean Sea," Rivera says. Water flowed in fast, and the crew



The base for the treatment tank is laid out on Anthony's Key. Because of the expense and difficulty of getting any sort of finished building material to Roatan, most structures are built of concrete, cement and sand, which are shipped in bulk. Tanks like this are constructed from cement blocks molded on Roatan.

fought back with pumps. They started with a couple of 2-inch bilge pumps. They added a 4-inch pump. The sea kept coming. "We jackhammered the rest underwater. So it was a whole dive operation right in that hole," Rivera says. They poured concrete for the tank underwater as well.

READY FOR STORMS

Acme has emergency plans for this system in the event a major storm sweeps across the Caribbean. The surface of the key is only a few feet above

"The primary goal of this effort was to reduce the water pollution to protect the dolphins and the reef while cleaning up the resort environment. The secondary goal was to reduce the maintenance costs for the resort. Pumping the tanks will require putting a vacuum truck on a barge and hauling it to the island, so we want to do that as infrequently as possible."

Dan Taylor

sea level, so waves from a strong storm can wash all the way across the key and flood the collection tanks, Rivera says. In that event, the plan is to pull salt water out of the collection tanks with a bilge pump and send it to small tanks on a barge. The barge would haul the saltwater-contaminated wastewater to shore where a vacuum truck would take it away for treatment.

Work on the key was not the only renovation Acme performed. At the resort headquarters on the main island the company put in a HighStrengthFAST system from Bio-Microbics along with Goulds pumps and other gear to handle the waste from the kitchen, laundry, offices, clinic, dive shop and the building where raw fish are prepared to feed the dolphins.



Gravity sewer taking wastewater from divers' cabins to collection tanks had to be routed around the palm trees that dot Anthony's Key. Below the sand, sometimes only a couple of inches, is old coral so hard it will break jackhammer bits.

BUILD STRONG - BUILD SAFE

WITH PRECAST TANKS TO 40,000 GALLONS

♦ Septic, Grease Interceptors, Aeration, Holding Tanks

♦ Available in Sizes 750 to 40,000 Gallon

♦ Extra Heavy Duty Tanks — HS20 Loading

♦ Fast, Efficient Settings



Visit us on the Web: www.wieserconcrete.com

♦ Vacuum-Tested, Water Tight Structures

♦ Tanks for Bio-Microbics and Nibblers, Sand Filters

♦ Custom Sizes Available to Fit Your Needs

♦ National Delivery and Setting



WIESER CONCRETE
Innovation, Quality
and Service since 1965

1-800-325-8456

Bailey's Key, the dolphin island, also received a new system, a scaled-down version of the Anthony's Key installation to handle the small amount of wastewater from the dolphin staff and visiting tourists.

Experience so far shows tanks on the island are not accumulating sludge rapidly. That was the plan, says Dan Taylor, general manager and managing partner of Acme. The system was designed with more capacity and retention time than usual in order to reduce solids. The goal is to reduce the maintenance costs for the resort.

"The primary goal of this effort was to reduce the water pollution to protect the dolphins and the reef while cleaning up the resort environment. The secondary goal was to reduce the maintenance costs for the resort. Pumping the tanks will require putting a vacuum truck on a barge and hauling it to the island, so we want to do that as infrequently as possible," Taylor says.

More than in many places, the people at Anthony's Key Resort see the connection between proper wastewater systems and the environment. Without a clean environment their livelihood is not sustainable, and their investment in modern wastewater equipment ensures the sustainability of this life, these people and the island for years to come. □

MORE INFO:

Bio-Microbics, Inc.
800/753-3278
www.biomicrobics.com
(See ad page 17)

Goulds Water Technology
- a xylem brand
866/325-4210
www.goulds.com

Netafim USA
888/638-2346
www.netafimusa.com

Orenco Systems, Inc.
800/348-9843
www.orenco.com
(See ad page 25)



The Last Line of Defense for Pressurized Distribution Systems



NO VAULT PUMP FILTER

- » 41% open area (139 square inches of open area on the 6" x 18" screen model)
- » Fits most turbine pumps (also known as deep well pumps)
- » Adds only 1/4" of height to pump making it easy to retrofit to existing systems
- » Has 3" sludge shield at the bottom of the filter
- » Disassembles for thorough cleaning if needed
- » Easy to clean surface
- » Made of PVC plastic so will not corrode
- » Self adjusting seal
- » Very light in weight so it does not make pump insertion or removal difficult
- » Screen available from 18" to 42" long
- » Also available with 316L stainless steel screen



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)
- » Protect with low head-loss (.5002 ft)
- » Extend the life of the distribution field
- » Filter to .062", .024", .007", or .004"
- » Pass up to 83.8 gallons per minute @ 1PSI
- » Allow for easy installation and service
- » Protect from improper system maintenance
- » Protect from system abuse
- » Satisfy your customers



The 7" filter in a 5" square concrete baffle

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 4" filter in a 4" Tee. Patent# 6,811,692



ORIFICE SHIELDS

- » The Original Orifice Protector
- » Sturdy design for all applications
- » Easy to position
- » Will not fill with gravel in any position
- » Large discharge area that does not clog
- » Large open area
- » No moving parts to stick
- » Will remain in place, even without glue

FLOAT TREE ACCESSORIES

- » Easy adjustments
- » No tangled wires
- » No float hang-ups
- » No straps to break
- » No entering tank
- » Easy pump repairs
- » Very affordable



Check Out Our Other Quality Solutions!
Risers, Security Nets, Clean-Out Sweeps, etc.

gag-simtech.com
888-888-3280



Now Serving Massachusetts

When the regional Yankee Onsite Wastewater Association disbanded, members reorganized to address wastewater issues in one state

By Doug Day

The Yankee Onsite Wastewater Association once represented onsite professionals across six New England states. Yankee no longer exists, but the Massachusetts Association of Onsite Wastewater Professionals (MAOWP) has emerged to focus its efforts on a single state. A member of the six-state group, Russell Martin, P.E., of Maine, is acting president of the new group until a new slate of officers can be elected.

Made up of onsite contractors, designers, regulators and equipment suppliers, MAOWP is ready to begin expanding from its current 51 members and is preparing to offer more services for those members.

How did this all come about?

Martin: The Yankee Onsite Wastewater Association formed in 2006. At the time the thinking was that there wasn't enough interest in any one state to form an affiliate with the National Onsite Wastewater Recycling Association (NOWRA), but there would be if the six states bonded together. It never really got a lot of traction except in Massachusetts, and we still have a few members from Rhode Island. [The other states were New Hampshire, Connecticut, Vermont and Maine.]

"Someday maybe we'll have a Facebook page or Twitter account. Those seem to be the types of things people want, and groups need to be aware of that. It seems that the younger members, particularly, want to interact that way."

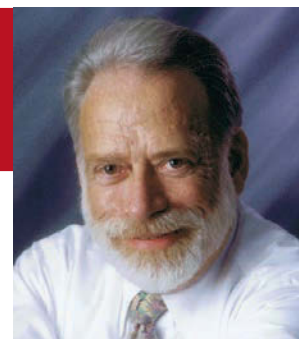
Russell Martin

In late 2012 the incoming president and vice president decided they just had too many other commitments and couldn't serve, so that triggered discussion about being a Massachusetts organization since that is where the bulk of our members are. Of the 51 members, 41 are from Massachusetts.

We reformed in early 2013 as MAOWP. I was the president of the Yankee group in 2010 and 2011, so I've been serving as the acting president until the organization can get its feet on the ground and someone from Massachusetts can take over.

Russell Martin, P.E.,
massonsiteassociation@gmail.com
or 781/939-5710

MAOWP



As a new organization, what is your primary area of focus?

Martin: We are trying to develop a system to train and certify onsite installers in the state. The way it works now, every community has a board of health that is responsible for dealing with onsite wastewater systems. Each one deals with them a little differently; generally each has its own requirements if you want to be an installer. You have to get licensed in each community and most of them have their own exam. We're trying to come up with a standardized program that all the communities will buy into.

Right now we're discussing if we want to have an exam specific to Massachusetts or use the National Environmental Health Association exam. We've been soliciting input from the health officers around the state about what they think is best and how we can implement this to help them. I'm hoping the initial training can be done by spring 2015.

How have local officials reacted to the idea?

Martin: It's been pretty positive; they like the idea. I think they'd like to see an exam more specific to our state regulations in Massachusetts that define how to design systems, how big they have to be, how they are constructed and so forth. Any exam, to be worthwhile, would have to test people's knowledge of how to construct a system.

Last fall we went to the Massachusetts Health Officers Association meeting and gave a presentation. The response was pretty positive. They envision it as making their job a little easier if they can rely on a common exam. As we've proposed it, MAOWP would develop the exam, administer it and keep the records.

How about the state?

Martin: They've been very open to the idea of working with us and

helping us develop the program. They don't really have a role in licensing installers at this time. Massachusetts certifies soil evaluators [SE] and system inspectors [SI]. All SEs and most SIs have to pass certifying exams.

I think what would happen over time, if this idea catches on and more and more communities adopt it, the state at some point might say there should be a statewide license. I don't see it being a state program now, maybe some time in the future.

Licensing generally involves continuing education.

How is that handled now?

Martin: Both SE and SI certifications are renewed on a three-year basis. For the first renewal, no continuing education hours are required. Each subsequent renewal requires 10 hours of preapproved training. This process is managed by the New England Interstate Water Pollution Control Commission [formed in 1947 to coordinate water-related needs in Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont].

There is no certification or licensing requirement for installers at this time. That's one reason we thought this would be a good idea. If you have the requirement for one class of professionals, you really should have it for all. I think our members are in favor of it.

We live in a changing world; new things are always coming along. You have to try to keep up with things.

What are the key issues in Massachusetts?

Martin: There are parts of the state where nitrogen is a big concern, generally the coastal areas. Around the inland lakes, of course, the concern tends to be more about phosphorus. Generally, we are concerned about how to make sure systems are built and inspected properly.

We've tried to offer training courses a couple of times a year, but we didn't in 2014. We did put together a summary document explaining the 2014 changes to the state regulations. That's available on our website.

We are a co-sponsor of the New England Short Course, which is a three-day exhibition and educational conference, including field trips, offered every three or four years with experts from around the country speaking about onsite wastewater issues. The last one was in 2012 in Rhode Island and it was held in Connecticut a couple of times before that. We're planning to do another one, probably in 2016. It takes a couple of years to organize something like that.

Your membership is mainly installers, designers and equipment suppliers. What about pumpers, cleaners and other onsite professionals?

Martin: They are certainly welcome to join. We haven't had much involvement from them, not that we wouldn't welcome it. We're fairly small so we've been busy getting organized, writing new bylaws and getting reincorporated.

What do you see for MAOWP in the next five years?

Martin: I hope the membership will increase significantly. As that happens we can do more things. Hopefully the certification idea takes off; I can see that developing into a pretty significant program. The sky is the limit; it depends on who becomes actively involved.

Times are changing in all groups like this. There are a lot of factors; the economy obviously has something to do with it. Every professional association is going through declining membership and changing interests in how people want to interact. People don't want to just go to the traditional meeting.

As we grow we've tried to expand our website. Someday maybe we'll have a Facebook page or Twitter account. Those seem to be the types of things people want, and groups need to be aware of that. It seems that the younger members, particularly, want to interact that way. So how do you reach them, get them involved and meet their needs? □

Get more news,
information,
and features with
our exclusive online content.
www.onsiteinstaller.com/online_exclusives



Let's go with a Fuji Clean

Not the most expensive. Just the best.

wvett
BOOTH
1426

FujiClean USA
World's #1 onsite treatment system.

U.S. distributor opportunities available. Call 207-406-2927 or 860-304-6110
41-2 Greenwood Road • Brunswick, Maine • www.fujicleanusa.com

Keeping On Track

Regular maintenance can keep your tracked mini-loader performing at its best, reduce downtime and provide a better return on investment when you decide to sell

By Ed Wodalski

Mini track loaders are versatile, easily maneuverable machines that can be a valuable asset for any installer, especially when putting in onsite systems in tight spaces and when you need equipment to tread lightly. When properly cared for, these workhorse machines can provide many years of trouble-free use.

Steve Van Vonderen, owner of Steve Van Vonderen Excavating in De Pere, Wis., says lubrication tops his service list. He finds multiple uses for his two Bobcat mini-loaders every week and keeps them busy all summer.

"The main thing is to keep your pins greased all the time because it keeps the machine tight and it responds better to your commands," he says. "No. 2 is the track." Proper tension is vital to optimal performance.

"If you run them too loose you're going to have tracks coming off all the time, which leads to a lot of downtime on the job site. And if you run them too tight you're going to wear tracks out prematurely along with the components that go with them, such as the front and rear idlers and weight-carrying idlers in the center."

"If you run them too loose you're going to have tracks coming off all the time, which leads to a lot of downtime on the job site. And if you run them too tight you're going to wear tracks out prematurely along with the components that go with them."

Steve Van Vonderen

And keep the undercarriage clean, especially during the colder months, he says. Van Vonderen takes 10 to 15 minutes at the end of the day looking for dirt and debris that might have become lodged between the tracks. "If you don't, the next morning it will cost you hours of time trying to get that machine moving again," he says.

Van Vonderen follows a daily inspection regimen for his loaders, checking the engine oil, hydraulic fluid and radiator. Every 90 days he brings the machines into the shop for closer inspection.

"We have a pit and check the hoses and couplings; give it a good pressure wash and regrease it," he says. Van Vonderen also keeps a paper

(continued)



ABOVE: Steve Van Vonderen checks the engine oil, hydraulic fluid and radiator fluid each day. (Photo by Jim Kneiszel)



RIGHT: Ditch Witch's SK850 model loader includes service intervals on the LCD display.

Clean Solutions, Clear Results



- NSF Standard 40/245 Certified
- Perfect for substandard soils
- Minimal operating cost
- Easy installation and maintenance
- Five year limited transferable warranty
- Over thirty years of manufacturing experience



1-800-370-3749 • www.hydro-action.com



ABOVE: An air restriction indicator mounted to the air filter indicates when servicing is due.

RIGHT: Ditch Witch recommends checking engine oil level, air filter service indicator, engine coolant level and hydraulic fluid level at startup and every 10 hours.



file on each machine he owns, recording its service history, noting the day and hours on the machine when parts are changed out.

"That way we can get a feel for how many hours we're putting on the machine in a year," he says.

Scratches and rust spots are touched up as well.

"We try to keep our name and graphics looking good so people can see it. We've got the phone number on there too so people can give us a call."

Living in a northern climate, Van Vonderen adds an anti-gel supplement to the diesel fuel and stores the machine in the shop at night when possible.

To ensure the fuel line stays clean, Van Vonderen installs a clear, glass-body prefilter where the fuel comes out of the tank. "That way we can watch for any algae buildup in our tanks," he says. "We feel that helps with the regular fuel filter life on these machines."

Chris Austinson, Bobcat product specialist for mini-loaders, says it's important to follow the owner's manual on all service intervals.

Bobcat recommends checking oil level and air filters every 10 hours, as well as cleaning debris from the radiator and oil cooler areas; draining water and sediment from the fuel filter; checking hydraulic levels; and lubricating lift arms, cylinders, pivot pins, wedges, rollers and idlers with a multipurpose lithium-based grease. It's also recommended operators check the parking brake, indicators and lights to ensure they are functioning properly.

Every 50 hours, Bobcat recommends checking hydraulic hoses and the tube line for damage and leaks, as well as the undercarriage for loose bolts and nuts and adjusting track tension as needed.

When changing fluids in your machine, Austinson says it's important to stay within the manufacturer's guidelines.

"I know at job sites people have a tendency to want to change brands, but one of the big things from an OEM standpoint is there has been a lot of tests on those fluids to understand what they do to the components," he says. "Everything is not created the same. A lot of chemistry goes into those fluids."

Bobcat recommends changing engine oil and filter every 100 hours, as well as the battery and drive. Every 250 hours or once a year replace the fuel filter and check the lift arm lockout manual bypass control.

Austinson is also an advocate of documenting service and repairs.

"Personally, I think that's a big value. When you go back to sell the machine to a second or third owner, it gives that owner some confidence that the machine has been taken care of, the service has been done," he says. "It's also a good example of what the running costs are for that machine."

Nick Crossley, Ditch Witch's product support specialist, trencher and compact utility equipment, cautions not to overlook attachments and hydraulic systems in the maintenance program.

"We have in our operator's manual instructions on how to check the fittings and your hydraulic line wearing gloves and using a piece of cardboard," he says. "While the unit is running at a low idle, you run the cardboard up and down your hoses, looking for any leaks or pinholes that may cause you problems."

As a helpful reminder, Ditch Witch's latest model, the SK850, includes service intervals in the LCD display. "We tried to take some of the guesswork out of that by having it right there on the machine," says Andrew Schuermann, product manager for trenchers and compact utility equipment.

Ditch Witch also uses Gar-Max-style bushings to eliminate the need for daily maintenance.

Kent Van Kooten, training and development specialist with Vermeer, suggests checking safety equipment, such as the neutral start interlock and operator presence systems, every 100 to 200 hours.

"The more maintenance you do, the better," Van Kooten says. "The machine's going to last longer for you and be a better return on investment. A well-maintained machine also is a safer machine. Listen for unusual squeaks or noises and fix them before they become a major problem." ▣

Extra!
Extra!

Want More Stories?

Get more news,
information,
and features
with our
exclusive
online content.

Check out

Online Exclusives

at

www.onsiteinstaller.com/online_exclusives

ONSITE
installer

Featured In An Article?

We provide reprint options



Sizes: 24" x 30" & 36" x 45"

POSTERS
Starting At
\$35

**LASER
REPRINTS**
Starting At
\$10

**ELECTRONIC
REPRINTS**
Starting At
\$25



A Way to Do It Better

By Scottie Dayton | Cover Story | March 2013

0 Comments

View in E-Zine

Order Reprints

Order through our website

www.onsiteinstaller.com

Ditch Witch SK850 mini skid-steer

The SK850 mini skid-steer from Ditch Witch has a 37 hp Tier 4 Yanmar diesel engine, accepts attachments for a variety of underground construction tasks and has a 74-square-inch operator's platform. Dual-lever ground drive controls are standard with single-lever joystick available. An auxiliary-control foot pedal helps operators maintain hydraulic flow to the attachment while freeing hands to control depth and ground speed. The unit has an 860-pound-rated operating capacity, 83-inch hinge-pin height and 42-inch or 36-inch-wide tracks. 800/654-6481; www.ditchwitch.com.



See Water pump control, alarm panels

SIM-A pump control and alarm panels from See Water warn of high liquid levels and control 120/208/240V single-phase or 208/240/480V three-phase pumps in dewatering, sewerage and wastewater applications. The simplex panels include integrated electronic pump control and alarm circuitry, IEC motor contactor and three floats: pump on, pump off and high-liquid alarm. 888/733-9283; www.seewaterinc.com.



KENCO concrete barrier lift

The barrier lift from KENCO Corp. can be used on any concrete median barriers, sound walls, curbing and piling. Fully automatic grab-and-release action allows for hands-free operation. The 6- by 36-inch elastomer pads grip sidewalls, even in wet conditions. Pad angles swivel to match the slope of the wall to be lifted. Capacities range from 1,500 to 40,000 pounds. Self-aligning guides are available. 800/653-6069; www.kenco.com.



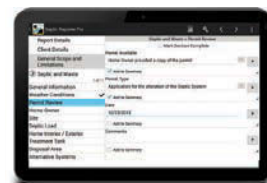
Water Cannon virus killer pressure washer

The 17M95 electric-powered portable pressure washer from Water Cannon delivers 180-degree hot water (hot-water heater required at source) or ambient temperature water injected with 5.25 percent sodium hypochlorite (household bleach) and calcium hypochlorite (bleach powder). The application for 10 minutes on concrete, brick, stone or metal surfaces will kill viruses. Accessories include 50-foot hose, trigger gun and wand, low-pressure wide-fan bleach, chemical or soap injector, four color-coded spray nozzles and color-coded chemical nozzle. 800/333-9274; www.watercannon.com.



NoticeWare mobile onsite reporting application

The Septic Reporter Pro onsite reporting app from NoticeWare enables users to inspect, capture, document and produce onsite inspection reports for wastewater treatment systems. Reports can be sent to the client or cloud using services including Dropbox and Google Drive. 613/663-5418; www.noticewarereporter.com.



FotoIN cloud-based documentation

Cloud-based photo documentation and reporting from FotoIN Mobile Corp. includes new photo and report filing that can be configured to the operator's needs using custom logic and filing rules. Flexible photo and report tagging can be used to optimize filing. Expanded tagging enables users to apply multiple tag values within the same category. Other features include workflow automation from rules-based filing in combination with automated notifications by cloud storage services Citrix, ShareFile, Egnyte and Box. www.fotoin.com.



SJE-Rhombus pedestal-style alarm system

The redesigned PS Patrol outdoor pedestal-style alarm system from SJE-Rhombus features a high-water alarm with automatic reset, green power-on indicator, flush-mount horn silence/alarm test switch, easy-access wiring and receptacle that accepts a 120-volt pump and piggyback pump switch. The angled design of the secured clear enclosure includes a removable cover for wiring access. Internal components are sealed within the cover for Type 3R weather protection. 888/342-5753; www.sjerrhombus.com.



AlturnaMats clear ground protection

The clear ground protection mat from AlturnaMats lets sunlight pass through to reduce grass burn where landscape needs to be kept pristine. The mats have a 120-ton rating. 888/544-6287; www.alturnamats.com.



Like what you are reading? Onsite Installer is Free!
Keep it coming at www.onsiteinstaller.com



ALITA® LINEAR AIR PUMP

- ✓ Full range of efficient and reliable aeration pumps for Aerobic Treatment Unit
- ✓ Low energy cost and quiet operation
- ✓ 3 Years Manufacturer Limited Warranty
- ✓ Parts and repair available for variety of brands of linear air pumps

Call 626-962-2116 for more information



ALITA INDUSTRIES, INC.
P.O. Box 660923, Arcadia, CA 91066-0923, USA
phone: (626) 962-2116 fax: (626) 962-2177
on-line: www.alita.com e-mail: sales@alita.com

UL certified in compliance to USA and Canada safety standards for outdoor air compressors

24" HEAVY DUTY MULTI-PURPOSE FLAT RISER LID

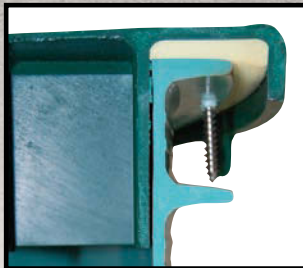
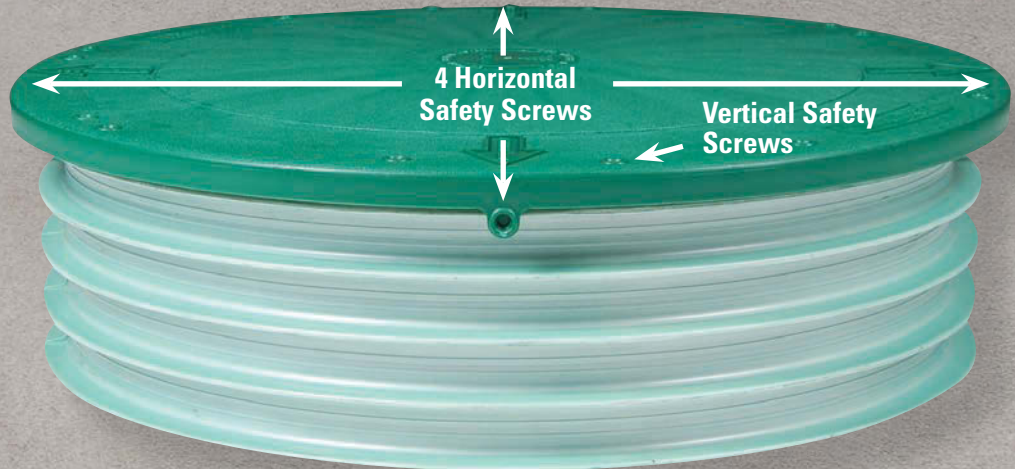


FREE FREIGHT
 on Full Cartons!

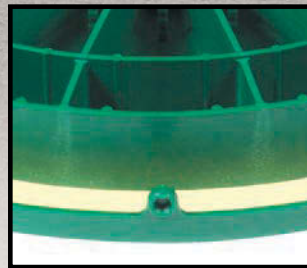
**Fits most commercially
 available:**

- Risers
- IPEX PVC Ribbed Pipe
- Corrugated Pipe

**LID MAY BE USED WITH OR
 WITHOUT CONCRETE CENTER**



Secured by 6 Vertical and 4 Horizontal Safety Screws. Screws Included.



Foamed-in Permanent Polyurethane Gasket.



Holds up to 70 lbs of Concrete for Added Safety.

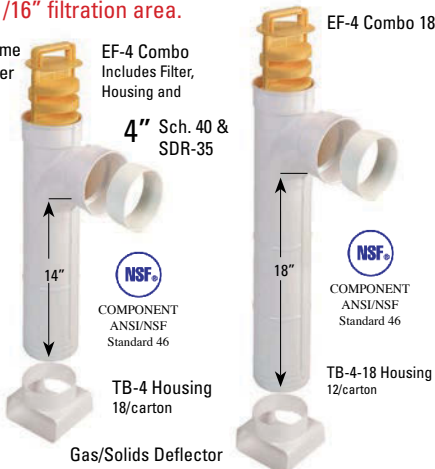


Water-TITE™ Joint Vertical and Horizontal Safety Screws

4" Effluent Filter and 4" T-Baffle™

86 ft. of 1/16" filtration area.

Increases time between filter cleaning.



EF-4 Combo Includes Filter, Housing and

4" Sch. 40 & SDR-35

NSF®
 800 GPD
 ANSI/NSF
 Standard 46

COMPONENT
 ANSI/NSF
 Standard 46

TB-4 Housing
 18/carton

Gas/Solids Deflector

4" Effluent Filter EF-4

One-piece effluent filter fits in 4" Sanitary Tee.

- Injection molded PolyPro
- Simple to install - Easy to clean

4" Sanitary Inlet/Outlet T-Baffle™

Injection molded T-Baffle™.

- Injection molded T-Baffle
- Fits 4" Sch. 40 and SDR-35 pipe
- Simple to install
- May also be used as Inlet & Outlet Tee

6" Effluent Filter and 6" T-Baffle™

244 ft. of 1/16" filtration area.

Increases time between filter cleaning.



EF-6 Combo Includes Filter, Housing and Bushing

4" Sch. 40 & SDR-35

NSF®
 1500 GPD
 ANSI/NSF
 Standard 46

COMPONENT
 ANSI/NSF
 Standard 46

TB-6 Housing

Gas/Solids Deflector

6" Effluent Filter EF-6

One-piece effluent filter fits in 6" T-Baffle™.

- Injection molded PolyPro
- Simple to install
- Easy to clean

6" Sanitary T-Baffle™

Injection molded T-Baffle™.

- Injection molded
- Fits 4" Sch. 40 and SDR-35 pipe
- Simple to install
- May also be used as Outlet Tee with Solids Deflector

AERATORS

We sell Flagg-Air 340, Secoh, Gast and Medo Linear, FPZ and Gast Regenerative, Thomas and Gast Rotary Vane aerators, rebuild kits and alarms at wholesale prices. Septic Services, Inc. www.septicserv.com. 1-800-536-5564 (IM)

Blue Diamond Aerators, 60-120 liters, in stock, low cost. Free next-day shipping. 866-631-5124 (IM)

BACTERIA/CHEMICALS

Become a Septic Maxx distributor today and earn up to an extra \$150 in profit on every service call selling a quality product. Private labeling which means free advertising. Call today for opportunities. Top bacteria/enzyme product on the market. Don't be fooled by competitors. We beat any quoted price with a better product. Don't believe in bacteria additives? We love non-believers! www.septicmaxx.com 855-203-1682, or Adam@septicmaxx.com (P02)

DRAINFIELD RESTORATION

Soil Shaker 2000. Universal skid steer attachment for drainfield restoration. Buy factory direct. \$6,250. Check us out on YouTube or call 320-293-6644. (PBM)

New and used terralifts for sale starting at \$20,000 used and \$38,000 new. Financing available. Call Dick Crane 800-223-2256. (PBM)

HAND TOOLS

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

PUMPS

Hydromatic, Zoeller, Liberty, ABS, Myers, grinder and effluent pumps. Lift station packages and high water alarms are also available. Septic Services, Inc. www.septicserv.com, 1-800-536-5564 (IM)

ITT's Goulds Pumps hosts World of Pumps Quiz

ITT Corp.'s Goulds Pumps brand's fourth annual World of Pumps Quiz runs until midnight, March 29, on www.worldofpumpsquiz.com. The quiz offers new sets of basic and expert level questions on a biweekly basis. The quiz features interactive elements, including videos, infographics and product simulations. Question topics range from pump history and operational facts to pump design and best maintenance practices. The quiz is a kickoff to the annual Pump Appreciation Day, observed the second Tuesday of April. □

SOLD

Sell your equipment in
Onsite Installer classifieds

Reach over 21,000 potential buyers each month when you list your equipment in the classified section. Plus, your listing is placed automatically online at the *Onsite Installer* website.

That's two ways to move your equipment out of the yard!

Why wait?

Go to
OnsiteInstaller.com/classifieds/place_ad



Scan the code with your smartphone.



"Duel Power Lid"

Plugs, Lids & Adaptor Rings

Sizes Available: 18", 24", 30" & 36"



Fergus Power Products
Providing "Environmental Products"

The Company who maintains a pulse on the environment!

Toll Free 1-800-243-7584
E-mail fpproducts@prtel.com
www.FergusPowerProducts.com



SP1 SEPTIC PRODUCTS INC

The Most Complete Line of

**SYSTEM ALARMS
FLOAT SWITCHES
ON-SITE ACCESSORIES
CONTROL PANELS**



Call Today 419-282-5933

sales@SepticProducts.com SepticProducts.com

BOOTH 1438

Pumper & Cleaner **PROFIT** *Series*

3 DAYS OF HANDS-ON BUSINESS BUILDING & NETWORKING

ORLANDO, FLORIDA • GAYLORD PALMS
MARCH 25-27, 2015

WWW.PUMPERPROFIT.COM
866-933-2653

DAY 1 & 2 - ELLEN ROHR

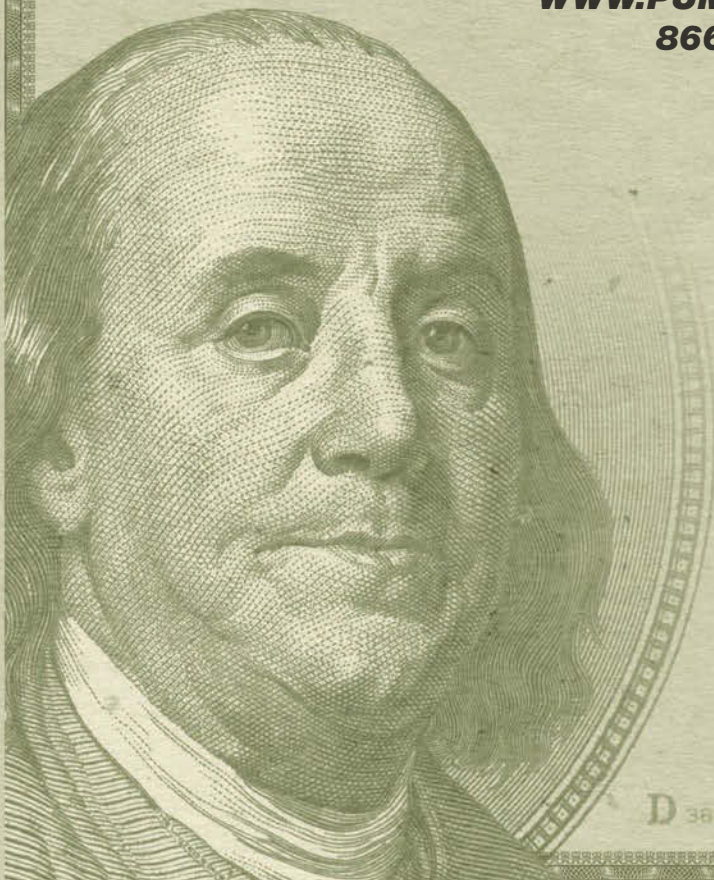
- **WHERE DID THE MONEY GO?**
- **HOW MUCH SHOULD I CHARGE?**
- **REWARD THE RIGHT STUFF**
- **BUYING, SELLING AND GETTING OUT**

DAY 3 - JEFF BRUSS

- **HOW TO USE AND UNDERSTAND SOCIAL MEDIA, E-MAIL AND THE INTERNET AS A BUSINESS TOOL**

SMALL BUSINESS BREAK-OUTS

- **MARKETING**
- **EMPLOYEE RETENTION AND HIRING**
- **SALES AND PRICING STRATEGIES**
- **BUYING OR SELLING A BUSINESS**
- **PROFITABLE IDEAS**



Serving the Industry

Visit your state and provincial trade associations

Alabama

Alabama Onsite Wastewater Association;
www.aowainfo.org;
334/396-3434

Arizona

Arizona Onsite Wastewater Recycling Association;
www.azowra.org; 928/443-0333

Arkansas

Arkansas Onsite Wastewater Association;
www.arkowa.com

California

California Onsite Wastewater Association;
www.cowa.org; 530/513-6658

Colorado

Colorado Professionals in Onsite Wastewater;
www.cpow.net; 720/626-8989

Connecticut

Connecticut Onsite Wastewater Recycling Association;
www.cowra-online.org;
860/267-1057

Delaware

Delaware On-Site Wastewater Recycling Association;
www.dowra.org

Florida

Florida Onsite Wastewater Association;
www.fowaonsite.com;
321/363-1590

Georgia

Georgia Onsite Wastewater Association;
www.onsitewastewater.org;
678/646-0379

Georgia F.O.G. Alliance;
www.georgiafog.com

Idaho

Onsite Wastewater Association of Idaho;
www.owaidaho.org;
208/664-2133

Illinois

Onsite Wastewater Professionals of Illinois;
www.owpi.net

Indiana

Indiana Onsite Waste Water Professionals Association;
www.iowpa.org; 317/889-2382

Iowa

Iowa Onsite Waste Water Association;
www.iowwa.com; 515/225-1051

Kansas

Kansas Small Flows Association;
www.ksfa.org; 913/594-1472

Kentucky

Kentucky Onsite Wastewater Association;
www.kentuckyonsite.org;
855/818-5692

Maine

Maine Association of Site Evaluators;
www.maineese.com

Maine Association of Professional Soil Scientists;
www.mapss.org

Maryland

Maryland Onsite Wastewater Professionals Association;
www.mowpa.org; 443/570-2029

Massachusetts

Massachusetts Association of Onsite Wastewater Professionals;
www.maowp.org; 781/939-5710

Michigan

Michigan Onsite Wastewater Recycling Association;
www.mowra.org

Michigan Septic Tank Association;
www.msta.biz; 989/808-8648

Minnesota

Minnesota Onsite Wastewater Association;
www.mowa-mn.com;
888/810-4178

Missouri

Missouri Smallflows Organization;
www.mosmallflows.org;
417/739-4100

Nebraska

Nebraska On-site Waste Water Association;
www.nowwa.org; 402/476-0162

New Hampshire

New Hampshire Association of Septage Haulers;
www.nhash.com; 603/831-8670

Granite State Designers and Installers Association;
www.gsdia.org; 603/228-1231

New Mexico

Professional Onsite Wastewater Reuse Association of New Mexico;
www.powranm.org;
505/989-7676

New York

Long Island Liquid Waste Association, Inc.;
www.lilwa.org; 631/585-0448

North Carolina

North Carolina Septic Tank Association;
www.ncsta.net; 336/416-3564

North Carolina Portable Toilet Group;
www.ncportabletoiletgroup.org;
252/249-1097

North Carolina Pumper Group;
www.ncpumpergroup.org;
252/249-1097

Ohio

Ohio Onsite Wastewater Association;
www.ohioonsite.org;
866/843-4429

Oregon

Oregon Onsite Wastewater Association;
www.o2wa.org; 541/389-6692

Pennsylvania

Pennsylvania Association of Sewage Enforcement Officers;
www.pa-seo.org; 717/761-8648

Pennsylvania Onsite Wastewater Recycling Association;
www.powra.org

Pennsylvania Septage Management Association;
www.psmma.net; 717/763-7762

Tennessee

Tennessee Onsite Wastewater Association;
www.tnonsite.org

Texas

Texas On-Site Wastewater Association;
www.txowa.org; 888/398-7188

Virginia

Virginia Onsite Wastewater Recycling Association;
www.vowra.org; 540/377-9830

Washington

Washington On-Site Sewage Association;
www.wossa.org; 253/770-6594

Wisconsin

Wisconsin Onsite Water Recycling Association;
www.wowra.com; 608/441-1436

Wisconsin Liquid Waste Carriers Association;
www.wlwca.com; 608/441-1436

NATIONAL

Water Environment Federation;
www.wef.org; 800/666-0206

National Onsite Wastewater Recycling Association;
www.nowra.org; 800/966-2942

National Association of Wastewater Technicians;
www.nawt.org; 800/236-6298

CANADA

Alberta

Alberta Onsite Wastewater Management Association;
www.aowma.com; 877/489-7471

British Columbia

WCOWMA Onsite Wastewater Management of B.C.;
www.wcowma-bc.com;
877/489-7471

Manitoba

Manitoba Onsite Wastewater Management Association;
www.mowma.org; 877/489-7471

Onsite Wastewater Systems Installers of Manitoba, Inc.;
www.owsim.com; 204/771-0455

New Brunswick

New Brunswick Association of Onsite Wastewater Professionals;
www.nbaowp.ca; 506/455-5477

Nova Scotia

Waste Water Nova Scotia;
www.wwns.ca; 902/246-2131

Ontario

Ontario Onsite Wastewater Association;
www.oowa.org; 855/905-6692

Ontario Association of Sewage Industry Services;
www.oasisontario.on.ca;
877/202-0082

Saskatchewan

Saskatchewan Onsite Wastewater Management Association;
www.sowma.ca; 877/489-7471

Canadian Regional

Western Canada Onsite Wastewater Management Association;
www.wcowma.com;
877/489-7471 □

Breakthrough Blower Technology!

Lower operating temperature extends life of wearable parts. Best-in-class power efficiency. Highest quality product and warranty at highly competitive wholesale pricing.



844-468-1344 (toll free)
www.macblowers.com

MACBlowers

by FujiClean
of Japan

THE DIRTY BIRD
Septic Vent Concealer

Converts your ugly septic vent into an attractive pedestal/bird bath and controls odor too!

866.968.9668 781.806.0797
Reps & Distributors Wanted www.thedirtybird.com

WIN
the toughest
TRUCK
in water & wastewater!

Register Today!
wwett.com

Complete contest details
and rules at: wwett.com/rules

wwett
February 23-26, 2015
INDIANAPOLIS

HONDA 4200 PSI JETTER



Water Cannon,
Un contacto
en Español:
llama al:

**WATER
CANNON**
.com

1.800.333.9274

Wolverine Brand
Septic Vent Filters
We Stop the Stink!



Patent #US 8,273,162

More Carbon than other filters
Patented Cross Flow Design
Wicks Away Moisture

IndustrialOdorControl.com

866-NO-STINK (667-8465)
973-846-7817

Simple Solutions
DISTRIBUTING LLC



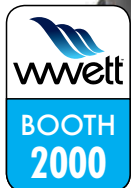
- BECOME MORE PROFITABLE
- NETWORK WITH PEERS
- WORK SMARTER, NOT HARDER

Pumper & Cleaner
PROFIT
Series

3 DAYS OF HANDS-ON
BUSINESS BUILDING &
NETWORKING

ORLANDO, FLORIDA
GAYLORD PALMS
MARCH 25-27, 2015

WWW.PUMPERPROFIT.COM
866-933-2653



24" PIPE RING - (3008-CPA)

Polylok's newest product to be released is the versatile 24" Pipe Ring for 24" corrugated, 24" ribbed, and 24" smooth wall pipe. The 24" Pipe Ring can be directly cast into a concrete slab (3" - 6") or retrofitted to a variety of 24" Polylok products. Polylok makes it simple to bring your access port to grade by using the 24" Pipe Ring.



PL-68 PL-122 PL525/625 GF-10 12x20 4x22 4x18

EFFLUENT FILTERS

HEAVY DUTY GRATES ARE ALSO AVAILABLE!

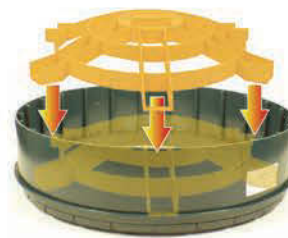


HEAVY DUTY COVERS - (12", 15", 18", 24" & 30")

SAFETY PRODUCTS



Universal Safety Screen
3008-RSSCONC / 3008-RSSPIPE



Riser Safety Screen
3017-SS / 3009-SS / 3008-SS



Riser Safety Pan
3009-RP / 3008-RP



Dual Safety Screen
3009-KYDC / 3009-JD



20" & 24" Lid-Lok
3009-LOK / 3008-LOK



Polylok, Zabel & Best filters accept the SmartFilter® switch & alarm

1-855-893-5461
www.polylok.com