

# ON SITE installer™

PROMOTING WASTEWATER TREATMENT QUALITY AND PROFESSIONAL EXCELLENCE

www.onsiteinstaller.com

**EDITOR'S NOTEBOOK:**  
Keep pushing for onsite maintenance p. 6

**SYSTEM PROFILE**  
Two drainfields better than one p. 22



## HIS AMERICAN DREAM

Fleeing Cuba as a boy, Manuel Diaz found his passion while building a successful installing business in Ohio p. 10

**PRODUCT FOCUS**  
System Inspection & Maintenance p. 28





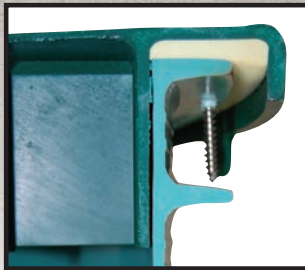
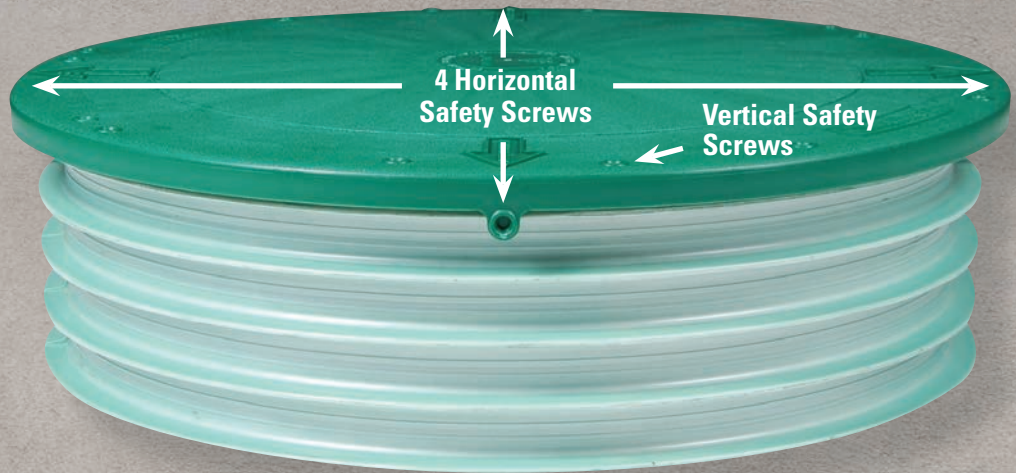
# 24" HEAVY DUTY MULTI-PURPOSE FLAT RISER LID

**FREE FREIGHT  
 on Full Cartons!**

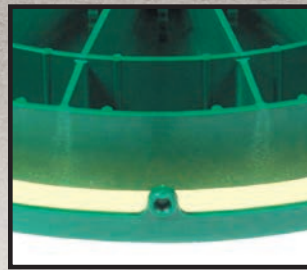
**Fits most commercially  
 available:**

- 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.

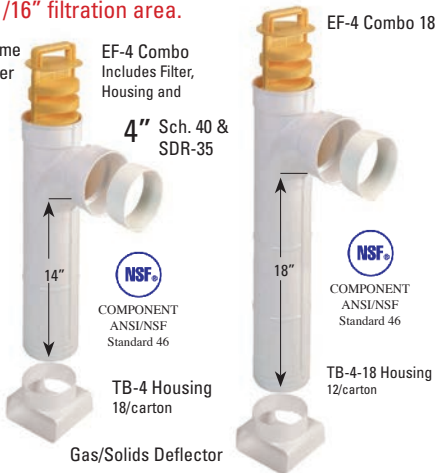


Water-TITE™ Joint Vertical and Horizontal Safety Screws

## 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

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

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





**INFILTRATOR**  
water technologies

# Working Together Side By Side



## Technical Support • Education • Training

The Infiltrator team offers a strong regional presence with extensive resources and support. Count on us as your partners in the field through your entire job. Success is our goal!

*Ask about demo opportunities in your area.*

Infiltrator Water Technologies Product Line



(800) 221-4436 • [www.infiltratorwater.com](http://www.infiltratorwater.com) • [info@infiltratorwater.com](mailto:info@infiltratorwater.com)



**INSTALLER PROFILE:**

**His American Dream** By David Steinkraus

**ON THE COVER:**

Manuel "Manny" Diaz, owner of Jack's Septic in Newark, Ohio, is shown with his wife, Kelli Diaz, and a Dodge truck outfitted with a service body. (Photo by Amy Voigt)

**6 Editor's Notebook:**

**Keep Promoting Onsite Systems. It's working.**

At one time it was difficult to get the word out about effective maintenance of onsite systems, but the media and general public are starting to take notice.

By Jim Kneiszel

**8 @onsiteinstaller.com**

Be sure to check out our exclusive online content.

**18 Basic Training:**

**Sizing Mounds for the Poorest Soils**

Infiltration rates, mound design are critical factors in designing for successful treatment in heavy clay.

By Jim Anderson and David Gustafson

**20 Rules and Regs:**

**New York County Continues to Study Bacteria Found on Long Island Beach**

By David Steinkraus

**22 System Profile:**

**Two Drainfields Are Better Than One for a New Hampshire Shelter Facility**

When the system failed at Grace House due to improper bedding sands, volunteer installing pros add a parallel Presby Enviro-Septic field as an economical and versatile solution.

By Russ Lanoie

**26 States Snapshot:**

**Bring Back Required Maintenance for Aerobic Systems**

It was a 'disaster' when the Texas Legislature eliminated mandated care for advanced systems and let homeowners take over monitoring.

**28 Product Focus:**

**System Inspection and Maintenance**

By Craig Mandli

**32 Industry News**

**32 Product News**

**34 Associations List**

Published monthly by



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](http://www.onsiteinstaller.com)

Email: [info@onsiteinstaller.com](mailto:info@onsiteinstaller.com) • Fax: 715-546-3786

**SUBSCRIPTIONS**

A one year (12 issue) subscription to *Onsite Installer™* in the United States, Canada or Mexico are free to qualified subscribers. A qualified subscriber is any individual or company in the United States, Canada or Mexico 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](http://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, Discover and American Express 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 [nicole.labeau@colepublishing.com](mailto:nicole.labeau@colepublishing.com).

**CLASSIFIED ADVERTISING**

Submit classified ads online at [www.onsiteinstaller.com/classifieds/](http://www.onsiteinstaller.com/classifieds/) place ad. 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](mailto:editor@onsiteinstaller.com).

**REPRINTS AND BACK ISSUES**

Visit [www.onsiteinstaller.com](http://www.onsiteinstaller.com) for options and pricing. To order reprints, call Jeff Lane at 800-257-7222 (715-546-3346) or email [jeff.lane@colepublishing.com](mailto:jeff.lane@colepublishing.com). To order back issues, call Nicole at 800-257-7222 (715-546-3346) or email [nicole.labeau@colepublishing.com](mailto:nicole.labeau@colepublishing.com).

**CIRCULATION**

Circulation averages 20,823 copies per month. This figure includes both U.S. and International distribution.

© Copyright 2018 COLE Publishing Inc.

No part may be reproduced without permission of the publisher.



[www.facebook.com/OnsiteInstaller](http://www.facebook.com/OnsiteInstaller)



[www.twitter.com/OnsiteInstaller](http://www.twitter.com/OnsiteInstaller)



[www.youtube.com/OnsiteInstaller](http://www.youtube.com/OnsiteInstaller)



[www.linkedin.com/company/onsite-installer-magazine](http://www.linkedin.com/company/onsite-installer-magazine)

**Coming in January 2019**

**ISSUE FOCUS:** Drainfield Media & Design

Contractor Profile: Alabama installers follow the golden rule

States Snapshot: Pennsylvania installers seek streamlined technology approvals





# Presby Environmental

The Next Generation of Wastewater Treatment Technology



The Public Health and Safety Company™



BNQ Certified  
NQ: 3680-910



Australian Standard  
QPW-2013  
LIC:SMK40495

✓ Smaller Footprints    ✓ Protects the Environment    ✓ Less Expensive

## ADVANCED ENVIRO-SEPTIC® (AES) SCALABLE FOR ANY PROJECT

✓ TREATMENT & DISPERSAL

✓ PASSIVE

✓ AFFORDABLE & RELIABLE



PresbyEnvironmental.com    800-473-5298



## ADVERTISER INDEX

December 2018

	Alita Industries, Inc. ....	19
	BioMicrobics, Inc. ....	7
	Brenlin Company, Inc. ....	21
	Crest Precast, Inc. ....	21
	Eljen Corporation ....	8
	Fergus Power Pump, Inc. ....	27
	Fuji Clean USA ....	19
	Infiltrator Water Technologies, LLC ....	3
	Jet Inc. ....	31

Kistner Concrete Products, Inc. ....	16	
Meaty-Delivery ....	35	
	National Precast Concrete Assoc. ....	9
	Netafim USA ....	17
	Norweco, Inc. ....	15
	Polylok, Inc. ....	36
	Presby Environmental Inc. (PEI) ....	5, 25
	RUGID ....	31
	SALCOR, Inc. ....	17
	Septic Products, Inc. ....	19

	Sim/Tech Filter Inc. ....	35
	Simple Solutions Distributing ....	35
	SJE-Rhombus® ....	13
	T&T Tools Inc. ....	17
	TUF-TITE, Inc. ....	2
	Water Cannon, Inc. - MWBE ....	35
	Wieser Concrete ....	27
WWETT Show ....	.....	33

### Enjoy this issue!

Established in 2004, Onsite Installer™ fosters higher professionalism and profitability for those who design and install septic systems and other onsite wastewater treatment systems.



**Jim Kneisz**



# Keep Promoting Onsite Systems. It's Working.

At one time it was difficult to get the word out about effective maintenance of onsite systems, but the media and general public are starting to take notice

In the not-so-good old days, it was difficult to get anyone in the media world to focus on the proper care of decentralized wastewater systems. If you ever saw a wastewater-related story turn up online or in a newspaper, it was typically regarding a municipal sewer system — and it was usually a pocketbook issue related to rising quarterly sewage fees.

Only a few short years ago, I could shout in this column about the need to promote septic system maintenance to save users (about a quarter of all Americans) money and headaches associated with failing septic systems. We had lobbying groups like the NOWRA - National Onsite Wastewater Recycling Association trying to raise awareness about onsite issues and funding initiatives. But few outside the sphere of local public health departments cared to listen.

But something has changed. People are waking up to the critical role played by onsite wastewater systems — both the existing systems that badly need attention and new construction and development utilizing improving technologies to build out the country. Where once we heard crickets chirping, local media across the country is spending more time promoting the work of our industry.

**Something has changed. People are waking up to the critical role played by onsite wastewater systems — both the existing systems that badly need attention and new construction and development utilizing improving technologies to build out the country.**

## **SEPTIC SMART**

Why is this happening? I would like to think installing professionals, county and statewide regulators, and active wastewater trade associations have something to do with it. First, NOWRA and our state groups are reaching out to legislators on issues like mandatory periodic system inspections that extend the life of existing systems and new technologies that improve the feasibility to build on what were once considered substandard lots.

As the year comes to a close, we look back and realize that the annual U.S. Environmental Protection Agency SepticSmart Week initiative is working. Held in September every year, SepticSmart Week gives local government agencies a push to promote gatherings where onsite maintenance is promoted. And those events typically involve members of our industry who are called on to provide expert information on care of septic systems.

I'd like to share a few interesting examples of media finally giving appropriate coverage to our onsite community:

### **Dude, watch what gnarly items you toss in the toilet!**

Of all online media sites, who would have expected to read a primer on onsite system care published in *SurferToday*, a foremost publication about catching some tasty waves? It's true. In a story, "20 Things You Should Never Flush Down Your Toilet," the website stresses that caring for your onsite system is also caring for the environment and the water its readers want to enjoy. The list is quite comprehensive and one you might want to consider sharing with your customers. You can see it at [www.surfertoday.com/environment/14538-20-things-you-should-never-flush-down-your-toilet](http://www.surfertoday.com/environment/14538-20-things-you-should-never-flush-down-your-toilet).

We know most of the items on the *SurferToday* list (wipes, condoms, paper towels), but here are a few homeowners may not have considered: chewing gum, cigarette butts, hair, contact lenses and dental floss. "Dental floss is usually made of Teflon or nylon. When flushed down, it mixes with wet wipes, paper towels, hair and other items, creating huge balls that will clog pumps and sewers," the story explains.

"Remember that by adopting new behaviors, you are reducing the amount of toxic and potentially harmful objects and chemicals that interact with water and marine life," the story concludes. "We all made mistakes, and we can all change our daily habits. Even if it takes time, it is just a matter of thinking twice before flushing the toilet."

### **Rhymes for a reason**

The Chesprocott Health District in Connecticut uses some clever rhymes to help septic system owners remember the keys to maintenance. Promoting SepticSmart Week this year, the agency reminded folks that more than 1 million state residents use onsite systems to treat their waste, saying, "Subsurface sewage disposal systems provide a cost-effective long-term option for treating wastewater. When properly installed, operated and maintained, these systems help protect public health, preserve valuable water resources, and maintain a community's economic vitality."

Among the health district's tips that you can share with customers:



*Shield Your Field:* Tree and shrub roots, cars and livestock can damage your leaching system.

*Protect It and Inspect It:* Regular septic system maintenance can save homeowners thousands of dollars in repairs and protect public health.

*Don't Strain Your Drain:* Use water efficiently and stagger use of water-based appliances. Too much water use at once can overload a system that hasn't been pumped recently.

And one that doesn't rhyme, but it's maybe the most important tip.

*Pump Your Tank:* Ensure your septic tank is pumped at regular intervals as recommended by a professional and/or local permitting authority.

### We need to guard against chemical contaminants.

A recent study by the Massachusetts-based environmental research organization Silent Spring Institute shed light on the dangers of contaminants of emerging concern, or CECs, improperly disposed of in septic systems and municipal sewers. Published in the journal *Environmental Science & Technology*, the study notes that many household products and medications leached into the groundwater contain hormone disruptors, associated with the feminization of male fish and reduce fertility on other wildlife. In humans, they have been linked to thyroid disease, developmental disorders, decreased fertility and cancer.

What could be interpreted as good news for the onsite industry: The study found that conventional septic systems and municipal systems produced similar treatment results and suggested that converting private systems to public sewers may not be the right way to address the problem. An analysis found that septic systems "do a decent job at removing chemical such as acetaminophen, caffeine and alkylphenols — a common group of ingredients used in cleaning products. However they're much less effective at removing other contaminants," including an anti-epilepsy drug and an antibiotic.

Ending on a positive note for our industry, the study's lead author Laurel Schaidler says onsite system users can make a difference in protecting the groundwater and, ultimately, drinking water supplies.

"It's ... important that people follow guidelines for maintaining their septic systems and make sure they're in good working order," she says. "And avoiding household products with harmful ingredients by switching to safer alternatives can make a real difference."

### RIPPED FROM THE HEADLINES?

Have you read some positive educational coverage of the onsite industry recently? If so, please send me a link to the story at [editor@onsiteinstaller.com](mailto:editor@onsiteinstaller.com). We'll share it with readers. And keep on preaching to your customers and anyone else who will listen about the benefits and improvements in decentralized wastewater treatment.

Send your comments, questions or opinions to Jim Kneiszel at [editor@onsiteinstaller.com](mailto:editor@onsiteinstaller.com).



- Residential
- Community
- Commercial

- ✓ **Bio-Microbics FAST® System** • black & greywater treatment
- ✓ **SeptiTech® STAAR® Trickling** • water reuse & direct discharge
- ✓ **BioBarrier® MBR & HSMBR®** • large scale & specialty application
- ✓ **RollsAIR® XL & XXL System** • remediation or retrofit
- ✓ **SaniTEE® Screening Devices** • environmentally-sensitive
- ✓ **Recover® Greywater System** • highly stable denitrification
- ✓ **d-Rain Joint™ Rainwater Filter** • greywater treatment/recycling
- ✓ **BioSTORM® Treatment System** • restaurants & commercial kitchens
- distance to groundwater sources
- small/difficult lots
- drip irrigation or other reuse
- waterfront properties

## Simple, Low Cost, Robust Water, Wastewater, Greywater & Stormwater Treatment Systems



BETTER WATER. BETTER WORLD.®

[www.biomicrobics.com](http://www.biomicrobics.com)  
**800.753.FAST (3278)**  
[sales@biomicrobics.com](mailto:sales@biomicrobics.com)

© 2018 Bio-Microbics Inc.



# Season's Greetings



**eljen**  
CORPORATION

Innovative Onsite Products and Solutions Since 1970

800-444-1359 • [info@eljen.com](mailto:info@eljen.com) • [eljen.com](http://eljen.com)

## @onsiteinstaller.com

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



### DOSING ON DEMAND

#### Setting Dose Volume

How much water should a pump be set to deliver per dose? The answer depends on the pumping application. Several options are explained in this exclusive online article, whether you're pumping to a distribution box or a pretreatment unit.

[onsiteinstaller.com/featured](http://onsiteinstaller.com/featured)

### Overheard Online

"An 'About Us' page with photos and bios of your team members helps customers feel like they are dealing with real people, not some faceless corporation — and that can be a source of comfort."

— *Simple Website Updates Build Customer Trust*

[onsiteinstaller.com/featured](http://onsiteinstaller.com/featured)



### SEPTIC REPAIR

#### After the Flood

Floods can wreak havoc on septic systems, but they can often be rescued if the septic professional knows how to minimize the damage. Our experts routinely receive questions about rehabilitating systems after a flood, so we rounded up their best tips to assess and mitigate damage.

[onsiteinstaller.com/featured](http://onsiteinstaller.com/featured)



### SYSTEM DESIGN

#### Pressurized Pipes at Different Elevations

If you are designing and installing pressure laterals with PVC pipe at different elevations, there are several options to equalize the flow. If this is not done, the pipes at the lower elevations will have more pressure head on the orifices and release more effluent. Expert Sara Heger breaks down five methods to do this successfully.

[onsiteinstaller.com/featured](http://onsiteinstaller.com/featured)

**EMAILS AND ALERTS** Visit [OnsiteInstaller.com](http://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

 Find us on Facebook at [facebook.com/OnsiteInstaller](https://facebook.com/OnsiteInstaller)  
 or Twitter at [twitter.com/OnsiteInstaller](https://twitter.com/OnsiteInstaller)



# BEYOND THE BACK YARD



## ANCHORING THE NATION'S WATER INFRASTRUCTURE

Precast concrete water and wastewater systems go beyond the back yard, anchoring wastewater infrastructure with tailored community, commercial and municipal systems that collect and treat wastewater and protect our environment. Large-scale or small-scale, precast concrete provides a complete package.

Whether in the back yard, or in the community, you can count on precast concrete wastewater structures for unmatched strength, durability and service.

We're local.  
We build infrastructure.  
We're **precast proud.**

**PRECAST PROUD**



Find local precast producers at: [precast.org/find](https://www.precast.org/find)  
Learn more about precast on-site wastewater tanks at [precast.org/onsite](https://www.precast.org/onsite)



## INSTALLER PROFILE

▼ Manuel "Manny" Diaz installs a Polylok PL-525 filter. Risers are from TUF-TITE. (Photos by Amy Voigt)

# HIS AMERICAN DREAM

Fleeing Cuba as a boy, Manuel Diaz found his passion while building a successful installing business in Ohio

By David Steinkraus

“I always wanted to own my own business, even as a kid. I had no idea how. There was no master plan, but I always had that bug that I wanted to work for myself,” Manuel “Manny” Diaz says.

It took a few years, but now he does own one — Jack’s Septic of Newark, Ohio. Diaz was born in Cuba and came to freedom in the United States as a child in a large emigration of people disenchanted with the regime of Fidel Castro.

12-year-old boy named Manny Diaz.

His parents found work running a cattle ranch in Florida, and that’s where Diaz learned to handle equipment, starting with a backhoe attached to the rear of an old Ford tractor. Then he went on to work in the citrus industry. He helped developed land for citrus groves, in the process learning how to run heavy equipment. After that, he installed irrigation systems for large growers.





“The drip irrigation we used in the ’80s and ’90s is basically the same technology we use now in wastewater,” Diaz says.

He met his wife, Kelli Diaz, at a quarter-horse show. They both showed horses nationally. Together they worked for huge citrus corporations, and while the pay was good, there was still that itch to own his own business.

Kelli Diaz had grown up in Ohio, and they moved there from Florida. The plan was for Manny Diaz to take over her father’s restaurants.

“But he didn’t like being inside. It wasn’t a good fit for him,” Kelli Diaz says.

Jack, the namesake of their business, was one of her father’s friends.

“Before buying Jack’s I had never messed with wastewater. But I had installed millions of feet of irrigation pipe, so I wondered, how hard can it be?” Manny Diaz says.

## OHIO RULES

It is a bit different, and that has been changed by state rules for onsite systems. Ohio’s new rules took effect in 2015, and Diaz has seen a positive result.

“Since the rules changed and we started doing mandatory soil testing, we find a lot fewer systems failing prematurely,” he says.

About 80 percent of the systems they install now use some kind of pretreatment, typically one of the aerated systems from Jet Inc., and some kind of modified drainfield. For example, his technicians use Infiltrator Water Technologies chambers, but due to the soil’s limiting conditions, the trenches may only be in the ground 3 to 4 inches. These raised leachfields are not as involved of a design as a Wisconsin mound system, but it does mean building the drainfield above grade.

“Installing the system is only half the job. Sometimes we have to move 200 or 300 tons of topsoil to cover it,” Diaz says.

The dipline he learned to install in Florida is still used, but not often. Jack’s Septic technicians may install about a half-dozen systems per year that use it.

Although many of the company’s jobs are residential, they do take on large commercial jobs occasionally. A local private campground, for example, was expanding by 24 sites. Technicians from Jack’s Septic put in a collector system with laterals to each campsite to collect the wastewater and move it to the central treatment system.

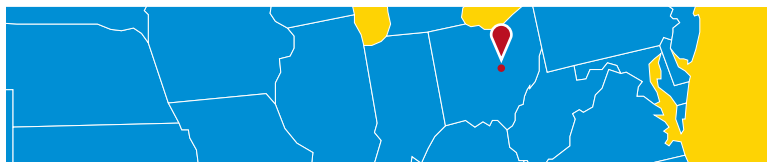


▲ The Jack’s Septic crew includes (from left) Austin Garcia, Andy Sikora, John White, Manny Diaz, Kelli Diaz, Scott Shelhorn, Gwen Blubaugh and Tim Dzierwa. In the background is an International vacuum truck from House of Imports with a steel tank and National Vacuum Equipment pump.





» Technician Scott Shelhorn wires a control panel during a septic system installation.



## Jack's Septic

**Location:** Newark, Ohio

**Owner:** Manuel "Manny" Diaz

**Founded:** 1960s, Diaz bought 2001

**Employees:** 8

**Service area:** 19 counties, a 60-mile radius for installation, repair and pumping, 100-mile radius for service

**Services:** Pumping, installing, repairs, service provider

**Affiliation:** Ohio Onsite Wastewater Association

**Website:** [www.jackssepticoh.com](http://www.jackssepticoh.com)

### EQUIPMENT CORNER

Although the crew at Jack's Septic does quite a bit, they do it without a lot of equipment. The current fleet consists of:

- 2007 International vacuum truck built by House of Imports with a 2,500-gallon steel tank and National Vacuum Equipment pump
- Two track loaders: a 2014 Cat 279D and a 2017 Case TR340
- Three excavators: a 2018 Case CX57C, a 2012 Cat 305, and a 2006 Kobelco SR50
- 2016 Sure-Trac tilt trailer
- 2017 Sure-Trac tilt trailer
- 2018 CAM Superline tilt trailer
- 2015 Rice Trailer Deckover equipment trailer
- 2016 Dodge 5500 with a service body
- 2008 Dodge 3500 flatbed
- 2016 Dodge 3500
- 2016 Ford van service truck
- 1996 single-axle International dump truck.

The dump truck is mainly used on site to move material around. "I can get material hauled cheaper than if I buy it and haul it myself, so I've never been a fan of owning a bunch of trucks," Diaz says.

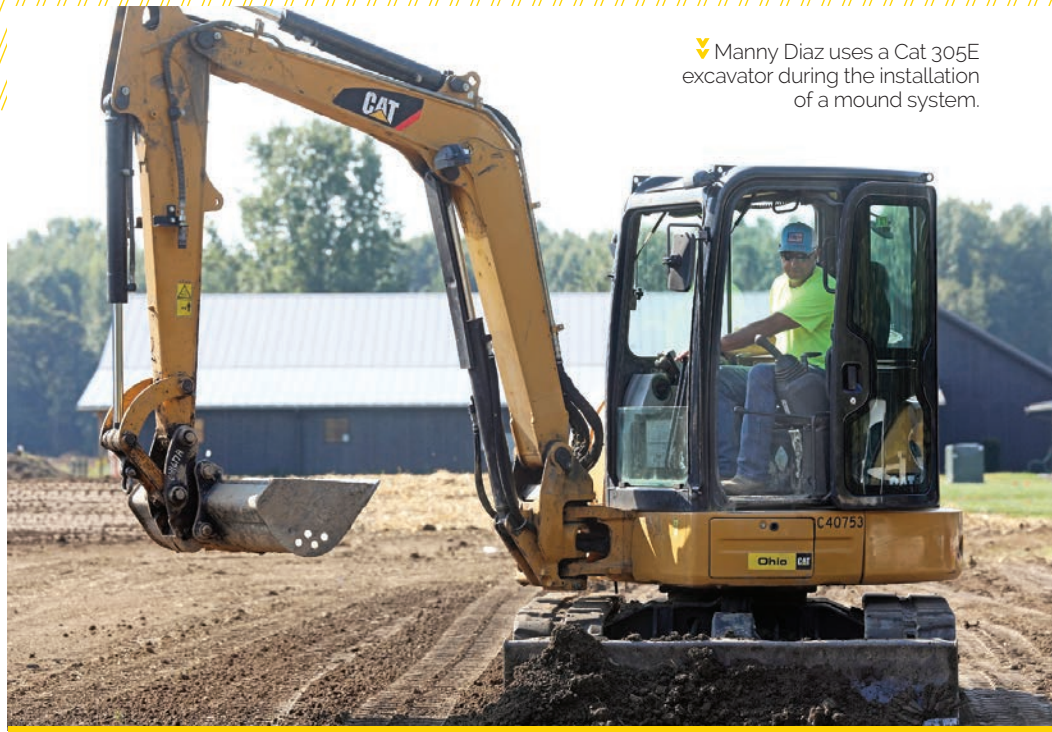
He also has a wide range of attachments for the track loaders, which are used to clear land, finish grade, and anything in between. He doesn't have a camera — yet. Cleaning drains is not something he's been interested in, but he is listening to his customers, and they have been making more requests for the service, so it's likely he will add that piece of equipment and service in the near future.

The only real obstacle for installing the system was weather. It was scheduled for a March installation, but there was so much rain that the project ran about a month behind.

"I think the most we worked in a stretch was three consecutive days. We would work, and then it would rain, and we would have to pull out and wait for the site to dry out," Diaz says.



▼ Manny Diaz uses a Cat 305E excavator during the installation of a mound system.



## PEOPLE MAKE THE DIFFERENCE

On the operating end of those machines is a crew of technicians that Diaz says is great. There is turnover in the position of vacuum truck driver because of heavy demand in his area for CDL drivers.

“There have been times we hired people without any experience, but if they have the right values and work hard, Manny will teach them what they need to know,” Kelli Diaz says.

The grandson of Jack, from whom Manny Diaz bought the company, also came in with no prior experience and now has his CDL and is operating equipment.

Employees receive a competitive wage, bonuses, paid vacation and a block of time off they can use as they wish. It’s called paid time off in many companies, and it means the time is unassigned. How it is used — whether for vacation or sickness — is up to the employee. Because they believe in family, the company will work with employees who want to meet those obligations, Kelli Diaz says.

Unlike many small companies they also offer health insurance. Diaz says it took her about a month to find a plan that worked.

“There have been times we hired people without any experience, but if they have the right values and work hard, Manny will teach them what they need to know.”

**Kelli Diaz**

## EZconnex® 4-PORT SYSTEM

### Revolutionary Float Switch Connection System

**Installation is as easy as 1, 2, 3...** Simply install the manifold, plug in the floats, and wire the manifold cable to the control panel. The color-coded cable makes for a quick, clean installation! The quick release float switch connections allow for easy maintenance and replacement of floats, saving installers time and money...up to 75%! Many float switch options and 3-port manifold available to suit your needs!

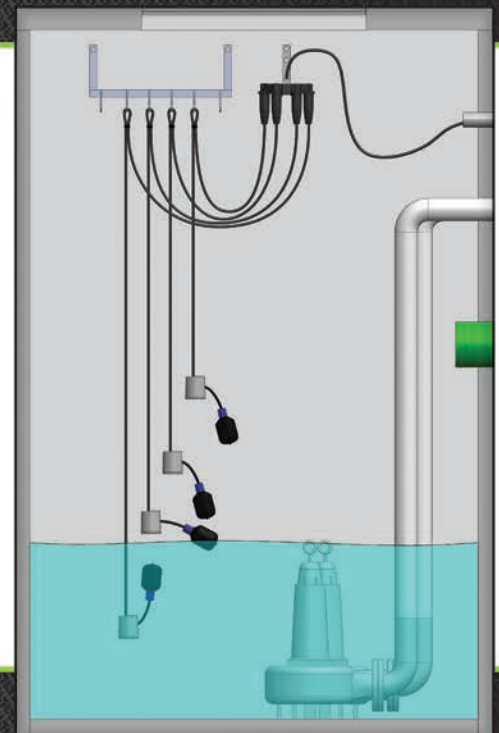


- Simple, clean installation
- Up to 4 quick release floats
- Mounts directly in riser
- Great for new and retrofit applications
- Easy maintenance

 **SJE RHOMBUS**




US Patent No.  
9,559,455 and 9,583,867  
Foreign Patents Pending



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







>> John White, Jack's Septic supervisor, uses a Cat 279 track loader with a rake to finish grading a mound while installing a septic system.

## CASH IS KING

When Manuel "Manny" Diaz looks to the future of Jack's Septic in Newark, Ohio, he sees opportunities, but he also imposes his own limits.

Trenchless technology interests him. It would be useful in installations, and it would also give the company another service and revenue stream in case onsite work slows down. But those machines cost money, and that's where his self-limiting comes in.

"The easiest thing now is to go to the bank and get another loan," he says. He doesn't want to do that. His goal is to grow at the speed of cash. He doesn't have credit cards for his business, and he doesn't carry a lot of debt.

The building boom of the early 2000s was much like now, with installers able to put in three systems a week in his part of the country. But when the recession came, it was hard to sustain that amount of work. The big companies were the first to go down because they were overextended, Diaz says.

There are other factors in his hesitation. The company is small now, and although Diaz would like to expand, he doesn't want to lose the small-company feel and advantages.

"Plus, I like to be involved too much. I love being out on the jobs, not in the office," he says.

"It is a big expense, especially because we're a small company, but health insurance is important," she says.

To keep those people working, Manny Diaz depends primarily on reputation.

"Our company has a great reputation, and I think that's what makes the phone ring," he says.

There are a lot of repeat customers and referrals. Diaz's keys to keeping that sort of customer satisfaction are simple.

"I treat everybody as I would want to be treated," he says. "Basically, you do what you say you're going to do when you say you're going to."

He's a stickler for returning phone calls on the same day they come in, but he admits this has become harder to do because the company is picking up so much work.

The last key is doing great work. It's easy to be the low bidder, he says.

"We're definitely not the cheapest. We're from the middle to the higher end of the price bracket. But when we do something, we're going to stand behind it, and you can rest assured it is done right." The company offers a five-year warranty on workmanship, but in the 17 years he has owned the company, he cannot recall a time when it was needed.

### SMALL COMPANY, BIG RESULTS

The commercial systems installed by Jack's Septic tend to be large. For example, they installed an onsite system for the Bo Jackson's Elite Sports complex in Columbus. The sports centers — named for Bo Jackson who played baseball for the Kansas City Royals and football for the Raiders — train children in athletics. While the complex in Columbus is scheduled for a sewer connection in the next few years, in the meantime it needed a system capable of handling the wastewater generated by several thousand people each week.

Most of their business comes from the four counties that contain Columbus and its suburbs. In the last three to five years, there has been a

continued >>



# ***norweco***<sup>®</sup>

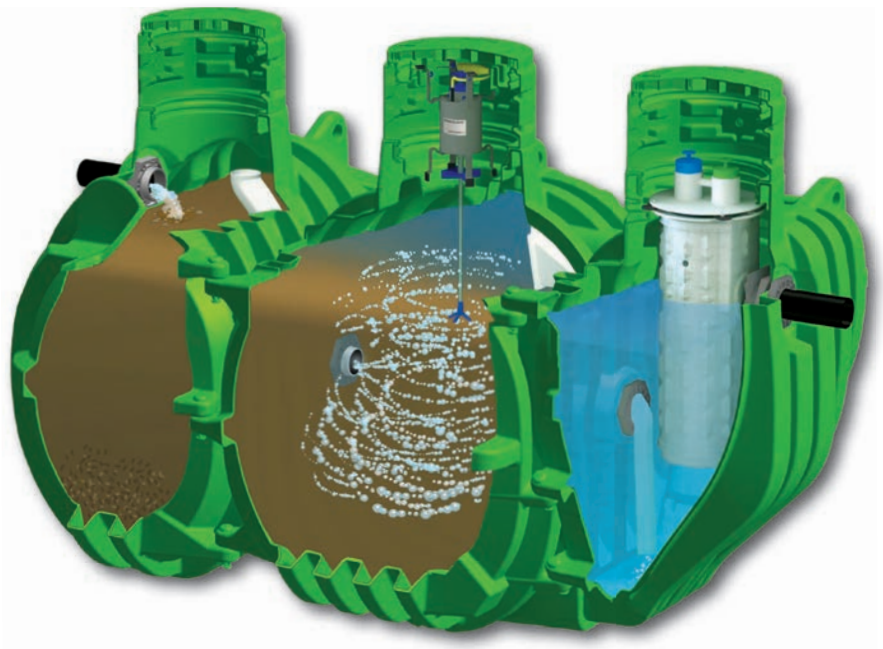
*Engineering the future of water  
and wastewater treatment*

# **SINGULAIR GREEN<sup>®</sup>**

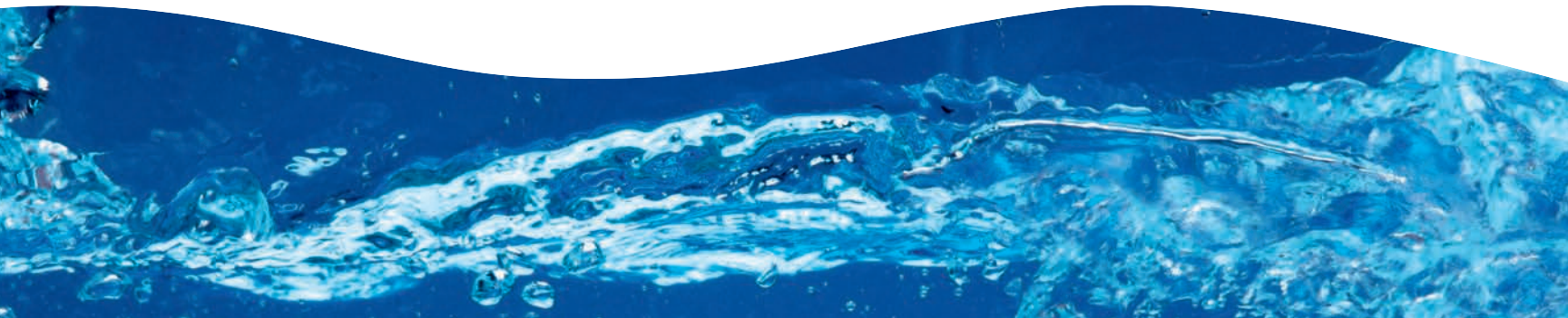


## **WHY PARTNER WITH NORWECO?**

- ◆ **SAVE TIME & MONEY:** No wait with Singulair Green; set your own schedule.
- ◆ **NEW PRODUCTS:** We think of it before you need it.
- ◆ **INTEGRITY:** Tested and certified products backed by an experienced team of experts.
- ◆ **PROFITS:** Insure your future growth and success by partnering with the proven industry leader.



1-800-NORWECO | [www.norweco.com](http://www.norweco.com) | [email@norweco.com](mailto:email@norweco.com)





“Our company has a great reputation, and I think that’s what makes the phone ring. ... I treat everybody as I would want to be treated. Basically, you do what you say you’re going to do when you say you’re going to.”

**Manuel “Manny” Diaz**

lot of commercial construction — a distribution center for Amazon, a large building for Facebook, and a large building for Victoria’s Secret. All those companies have employees whose houses may need onsite systems. About 65 percent of company business is new construction and the rest is some type of repair, he says.

In 2012 they bought the service department of another company, and that came with a database of 10,000 customers. Most of those people renew their two-year ATU maintenance contracts with Jack’s Septic.

The company installs about 125 systems annually, Kelli Diaz says. It pumps 800 to 1,000 tanks and services about 1,200 to 1,500 systems. Jack’s Septic is also a distributor and service provider for Jet Inc.



▲ Technician Austin Garcia spreads hay over a mound after seeding for ground cover.

“And that’s with two office staff, one pump truck, one service truck and one construction crew,” she says. “That just shows what great employees we have.”

When Manny and Kelli Diaz took over the business, they knew they wanted to expand it. Jack’s Septic had operated primarily in one county.

“So we bought the business not only for what he had, but what it could become,” Manny Diaz says.

Diaz thinks about the future, and he is careful about committing to too much expansion because he wants his company to survive. But the most important point about the future is that he has one. That was not necessarily true for people who did not cross the 125 miles of ocean between the Florida Keys and Mariel, Cuba, almost 40 years ago.

“I want to make sure people understand the opportunities we have in this country. I get really upset when I hear somebody bad-mouthing the United States or saying the American dream is gone. I’m living proof: If you want to work, it’s here. And this is the greatest country in the world, bar none. I don’t want to make it a political thing, but I’m a big believer in that,” Diaz says. □

## **KISTNER CONCRETE PRODUCTS Inc.**

**Commercial / Custom Sizes**

**Water Tight Construction**

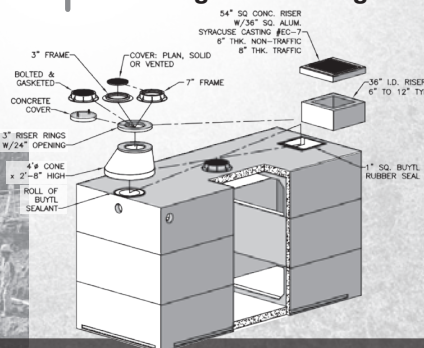
**10,000 – 26,000 Gallons +**

**Large scale connected series or parallel tank configurations for greater gallon requirements**

**Nationwide Service**

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

**Storm Water: Retention, Detention, Recharge and Storage**



**Call our engineering staff today to review your application!**

Lockport, NY • Tel: (716) 508-5550 • [www.Kistner.com](http://www.Kistner.com)

### **featured products**

**House of Imports**  
 305-691-4778  
[www.vacuumtruckusa.com](http://www.vacuumtruckusa.com)

**Infiltrator Water Technologies, LLC**  
 800-221-4436  
[www.infiltratorwater.com](http://www.infiltratorwater.com)  
 (See ad on page 3)

**Jet Inc.**  
 800-321-6960  
[www.jetincorp.com](http://www.jetincorp.com)  
 (See ad on page 31)

**National Vacuum Equipment, Inc.**  
 800-253-5500  
[www.natvac.com](http://www.natvac.com)

**Polylok, Inc.**  
 877-765-9565  
[www.polylok.com](http://www.polylok.com)  
 (See ad on page 36)

**TUF-TITE, Inc.**  
 800-382-7009  
[www.tuf-tite.com](http://www.tuf-tite.com)  
 (See ad on page 2)



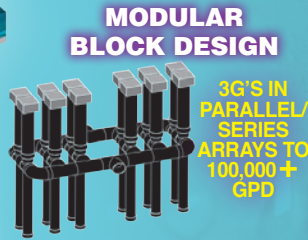
# SALCOR UV DISINFECTION



**DUKE'S OCEANFRONT RESTAURANT, Malibu, CA**  
4 UV Unit Array Discharges into Pacific Ocean Beach Sand



**NURSING HOME, OH**  
2 UV Unit Array Replaced Chlorine Chamber



**MODULAR BLOCK DESIGN**

3G'S IN PARALLEL/SERIES ARRAYS TO 100,000+ GPD



**UL & cUL LISTED**  
30-Day Underwater Proven "FLOOD-PROOF" (NEMA 6P)



**HELPS DESTROY DEADLY "SUPERBUG" CRISIS**  
**SAVES HEALTH & PRISTINE ENVIRONMENTS**  
**SURVIVES MOST WEATHER CATASTROPHES**  
**ENABLES REUSE OF DISINFECTED EFFLUENT**

- Residential/Commercial Onsite Decentralized Uses to 100,000+ GPD
- Modular System - Less Costly Reliable Performance
- Expanded Arrays Reduce Spare Parts Inventory; Increases Flow
- Originator of "Revolutionary" Foul-Resistant Teflon® Lamp Barrier
- Most 3rd Party Tested: cULus Listed; NSF/ISA State Fecal Coliform Tests, 6-Mo Each with 21 ATU's; Universities - U of Washington, Ohio State U, UC Davis, & U of Rhode Island
- Low Cost <40 Watts & Easy Install (Ground or Pump Tank) & O&M
- No Chemicals Added Allows Water Recovery/Reuse
- Reliable LED Visual Monitoring & Alarm Contacts
- 2-Year Warranty, 3G Unit & "Long-Life" Lamp

**"3G" UV ONSITE UNIT, TRUSTED WORLD LEADER FOR 21 YEARS**



**SINCE 1978**

**SALCOR**

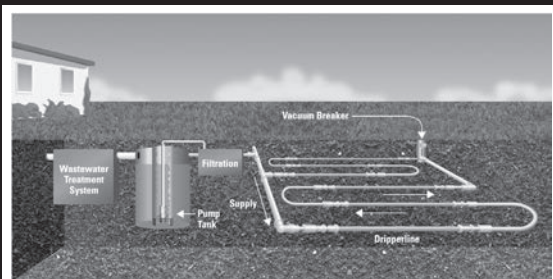
[jscraver@aol.com](mailto:jscraver@aol.com)

760.731.0745 F: 760.731.2405



## EASY TO DESIGN AND INSTALL

Drip dispersal is easy to design and easy to install when you use Netafim Bioline® Dripperline. Now with Cupron® copper oxide technology for maximum root intrusion protection.



[www.netafimusa.com/wastewater](http://www.netafimusa.com/wastewater)

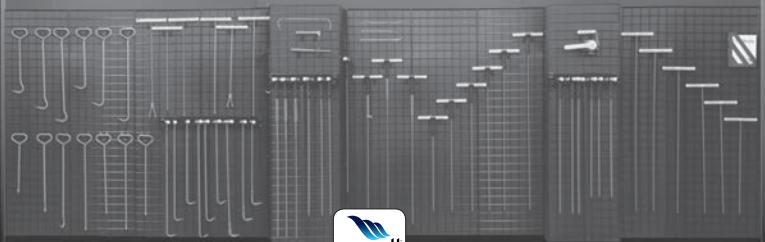


**T&T Tools, Inc.**  
**800.521.6893**

Probes & Hooks

**T&T Tools, Inc.**

Probes & Hooks



**Hooks...**

- \* Heat treated 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](http://www.mightyprobe.com)

Email: [sales@mightyprobe.com](mailto:sales@mightyprobe.com)

Fax: 800.521.3260



# Sizing Mounds for the Poorest Soils

Infiltration rates, mound design are critical factors in designing for successful treatment in heavy clay

By Jim Anderson and David Gustafson

**“W**e have really tough soils in our area so you don't understand our problems and why we do the things we do.”

Over the years we have encountered this statement every time we have gone to a new state or area. This has even happened here in Minnesota! In our recent column on design factors and how they are impacted by organic loading, we reviewed early research looking at a “tough soil” and the recommendations for design from the study.

In this case, the “tough soil” was an Ontonagon clay, which has a clay content of 65 percent or higher. The soil was initially described near the town of Ontonagon, Michigan, on the south shore of Lake Superior. We mention this because it means this soil or something very similar occurs throughout the old Lake Superior lake plain. Everyone who lives in these areas has “tough soils” that are difficult to deal with.

## EARLY MOUND DESIGN

Previously we said that in clay soils we are not so worried about whether the effluent gets treated — because of how slow water moves through these soils — but getting water to move into them. A typical design number in state codes for clay soils is 0.2 gallons per day per square foot (gpd/sq ft). This is a conservative design number based on research that had a clay soil design number of 0.24 gpd/sq ft, which was equivalent to a saturated hydraulic conductivity in clay soils of 1 centimeter per day. Plus, the math is easier with the 0.2 value.

Since the research we looked at was done in the early 1970s and soil treatment mounds were just coming on the scene, the system installed was two alternating seepage beds. The beds were both 15 feet by 40 feet, or 600 square feet of bottom area. The plan was to alternate the beds on an annual basis to control biomat development and provide resting time. To provide protection to the infiltrative surface of the beds, loamy sand and clean sand layers were provided before the distribution rock was placed.

Total bottom area for the two beds was 1,200 square feet. If we used the 0.24 gpd/sq ft loading rate, we would estimate the two beds would accept an average daily flow of 240 gpd/sq ft. That is less than the estimated daily flow from a three-bedroom residence of 450 gpd.

A lot went on during the three years of the study, and it was well-documented in the research paper. One of the interesting things to us was that over the period the study was conducted and using what we would recognize today as not “good” practice, the beds accepted on average 0.187 gpd/sq ft or about 224 gpd for the two beds.

This number is less than the design number found in state codes for clay soils. But it does indicate that while movement through clay soils is slow, there is movement. And if it can be defined or estimated, it can be used to size systems. In the conclusions of the study, the authors indicated that for soils such as Ontonagon clays, the design loading rate should be 0.175 gpd/sq ft.

## The plan was to alternate the beds on an annual basis to control biomat development and provide resting time.

To provide protection to the infiltrative surface of the beds, loamy sand and clean sand layers were provided before the distribution rock was placed.

## WRONG SIZING OF MOUNDS

For comparison using an estimated daily sewage flow of 450 gallons per day for a three-bedroom house and a design loading rate of 0.24 gpd/sq ft, the bottom area required to accept the effluent would be 1,875 square feet. Using the recommended 0.175 gpd/sq ft, the required area is 2,571 square feet, a difference of almost 700 square feet. The bottom line is a bottom area 37 percent larger is required to accept the average daily flow. In low-precipitation areas where seasonal water tables do not occur, these numbers may be useful to set criteria for soils high in clay content.

As indicated above, there was a lot of management including switching back and forth between the beds due to precipitation events and other occurrences. As a result, some other conclusions came from the study that are worth remembering when thinking about system design.

They attempted to drain water from around the bed area. In the heavy clay soil, this was ineffective. This is instructive for those with “tough,” slowly permeable soils high in clay content. Just as the researchers concluded, building an elevated sewage treatment mound system to get away from seasonal high water as opposed to drainage is the way to go.



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

# JOIN

THE CONVERSATION.  
 THE CAMARADERIE.  
 THE COMMUNITY.

**ONSITE installer™**

- f facebook.com/OnsiteInstaller
- t twitter.com/OnsiteInstaller
- y youtube.com/OnsiteInstaller
- in linkedin.com/company/onsite-installer-magazine

# One & Done!



**1 HOLE  
1 TANK  
1 AIR LINE**

We're hearing from contractors all over North America:  
**"Best system I've ever installed!"**

Come grow with the world's #1 onsite advanced treatment system company.

Limited U.S. distributorship opportunities available.

**FujiClean USA™**  
 Toward Clean Water...

207-406-2927 / 860-304-6110 / www.fujicleanusa.com

They suggested that the mounds be located on the crests of slopes and surface water be directed away from the system.

They also recognized when mounds were just coming onto the scene that with slow infiltration rates, the toe of the mound dikes would have to extend far enough to allow the required area to infiltrate. So choosing a longer, narrower mound over a short, square mound was preferable to help move the water away from the system. We have seen a number of cases where adequate absorption areas were not provided under the mounds, leading to surfacing around the toe of the mounds. This caused some to abandon the use of mounds all together when they were just not made large enough in the first place.

Another important recommendation from the study was that if the surface of the Ontonagon clay was left undisturbed, the absorption area needed under the mound could be determined using the 0.24 gpd/sq ft figure. This recommendation was based on the surface of the soil being permeable and, if left intact, would accept more effluent.

### GUIDING PRINCIPLES

We think you should now begin to recognize the origin of some of our guiding principles, such as "keep it shallow," "keep it dry," and "keep it natural." They are not something we made up to be amusing, but principles based on sound research projects and experience over 40 years of working with systems. □

# SPI

**SEPTIC PRODUCTS INC**

*The Most Complete Line of*  
**SYSTEM ALARMS  
 FLOAT SWITCHES  
 ON-SITE ACCESSORIES  
 CONTROL PANELS**

Call Today  
**419-282-5933**



**wwett BOOTH 1605**

Email [sales@SepticProducts.com](mailto:sales@SepticProducts.com) Website [SepticProducts.com](http://SepticProducts.com)



# New York County Continues to Study Bacteria Found on Long Island Beach

By David Steinkraus

After several years of investigations into the cause of high bacteria levels at a Long Island (New York) beach, the Nassau County Legislature is considering a treatment system for its stormwater drainage.

The latest investigation ended after the state looked at eight residential onsite systems as possible causes of the pollution. But after studying the systems for several months, the state concluded they are not sending wastewater into a stream that flows into the Long Island Sound at Glen Cove.

The state Department of Environmental Conservation has not ruled out onsite systems leaking wastewater into the groundwater, reports *Newsday*.

In the spring, the U.S. Environmental Protection Agency collected samples from stormwater and groundwater discharge pipes. A DNA analysis will tell investigators whether the coliform bacteria found at the beach is from humans or animals.

Meanwhile, the county will spend \$200,000 to study the feasibility of installing a treatment system for stormwater.

“We’re going to evaluate all kinds of remedies because obviously the (Department of Environmental Conservation) study didn’t really provide the smoking gun that we were looking for as far as the source of the contamination,” Brian Schneider, deputy county executive for parks and public works, tells *Newsday*. “We’re shifting focus more toward the treatment at the endpoint of the drainage system, before it hits the beach.”

Nassau County is on the western end of Long Island and borders New York City. To its east is Suffolk County, which last year passed a number of laws to attack nitrogen pollution in its nearshore waters.

Approximately 360,000 homes in Suffolk County rely on cesspools for wastewater disposal. That is about 75 percent of all homes in the county. In August 2017, the town of East Hampton became the first community in the state to require low-nitrogen wastewater systems for all new construction and for buildings that undergo substantial renovation. Several other communities did the same.

In December 2017, the county executive signed a law banning cesspools in all uses. Cesspools were banned for new construction in 1973, but they were still allowed to replace an older cesspool. In May 2017, the county Legislature approved a grant program to help people pay for the cost of converting their onsite systems to low-nitrogen systems.

## Michigan

The health department for Montcalm County, in the central part of the state, is proposing an update to the local sanitary code.

The department tested 20 sites along two rivers and found all were positive for *E. coli* in numbers that exceeded standards for safe swimming. To

rewrite the ordinance, the department proposes requiring discharge permits for all properties not now connected to an onsite system and requiring inspection of all systems at least every 10 years, reports the *Daily News* of Greenville.

New construction projects would receive a free discharge permit that’s good for 10 years, and then the permit could be renewed for another 10 years with an inspection. A health department officer says the county has about 40,000 septic systems. The health department also covers neighboring Gratiot and Clinton counties.

## Florida

A septic service driver is facing charges for allegedly dumping 10,000 gallons of cooking oil in a vacant lot in Davenport. Peter Rodriguez, 50, was charged with two counts of commercial dumping, reports the *Orlando Sentinel*. He was employed by Brownie’s Septic & Plumbing. A sheriff’s spokeswoman says company representatives were unsure why Rodriguez allegedly dumped the oil because the company refines waste oil and sells it.

## Pennsylvania

A septic service driver missed a turn, broke through a fence, and landed in a swimming pool, losing the load of septage he was hauling. The incident occurred in Millersville, 75 miles west of Philadelphia. At the time, the driver was trying to follow a detour. Local news reports quote Conestoga Volunteer Fire Co. Chief Larry Frankford as saying no one was injured. “You can just use your imagination,” he says, about the smell from the combination of diesel fuel, oil and septage.

## Georgia

More than 30 people attended a government meeting to object to the possible siting of a portable sanitation and wastewater processing business about a half mile from a residential neighborhood. Sam Florence, business owner, plans to dewater septage and dispose of the liquid in the city of Madison’s sewer system. Citizens say the facility would produce odors, attract vermin, increase truck traffic and could pose a risk to Morgan County’s water supply. Florence says his business would have no effect on county water. The Planning Commission tabled the plan until members could do more research.

## Idaho

A nonprofit environmental group is pushing for ordinances to protect groundwater in Bannock County in the southeastern part of the state,





GET  
EMAIL NEWS  
ALERTS FOR  
ON-SITE  
**installer**

Go to  
[onsiteinstaller.com/alerts](http://onsiteinstaller.com/alerts)  
and get started today!

including the city of Pocatello. Elevated nitrate levels have appeared in some private and municipal wells. Members of the Portneuf Resource Council, part of a larger regional nonprofit environmental organization, want rules asking for evidence that onsite systems used in new construction would not make the nitrate problem worse.

While water from the county's aquifer now meets standards, Mike Larkin, chairman of the resource council, says new ordinances would protect the water. Most cities and towns have some kind of groundwater ordinance, but Pocatello doesn't, he says, according to the *Idaho State Journal*. Sue Skinner, an advisor to the resource council, says suppliers are able to blend water from different sources to remain within legal limits, but nitrate levels are slowly increasing.

## Kansas

A pumping business labeled as a potential scam by a sheriff's department Facebook post has been damaged by the hints of illegality, say family members of the business owner.

It began with a post in May by the Pawnee County Sheriff's Office. The post says the sheriff's office had received several complaints about Septic Tanks Pumped & Serviced, the company's wastewater disposal methods were illegal, and the state attorney general's office had previously ordered the company to cease operations because of prohibited business practices. The post had a photo of the company truck and asked people who saw it to call the sheriff's department, and there was a photo of Kelly Steele, supposedly the operator of the company.

The *Great Bend Tribune* found the attorney general's office had not issued any letter about the company. Steele says he worked in the business only a few days a week, but his 88-year-old grandfather owned it. "Basically, none of the information they gave was correct at all," Steele tells the newspaper.

Pawnee County Sheriff Scott King tells the newspaper the Facebook post would come down. He says it was not a news release but the result of two complaints from people concerned about a person going from house to house. The department wanted to warn citizens of a possible scam, he says. Both King and his undersheriff say no part of the post needed correcting.

"It wasn't clarified as well as it should have been, and I'll admit that," King says. □

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

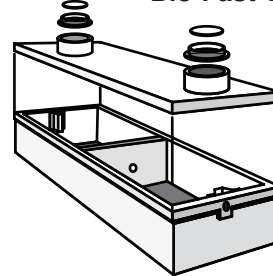
## Water Tight Structures 2 Compartment

### 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](http://www.crestprecastconcrete.com)

[info@crestprecastconcrete.com](mailto:info@crestprecastconcrete.com)



## Seal-R Lids, Rings & Hinge Systems

(Hinges Available On 24"-42")

### Customized Lids

Add Your Company Name

Get the Exact Size for Each Job!

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

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

**BrenLin Company, Inc**

Manufacturers of Seal-R™ Products

888-606-1998 | [www.seal-r.com](http://www.seal-r.com)





# Two Drainfields Are Better Than One for a New Hampshire Shelter Facility

When the system failed at Grace House due to improper bedding sands, volunteer installers add a parallel Presby Enviro-Septic field as an economical and versatile solution

By Russ Lanoie

**T**he director of Starting Point, an organization that operates Grace House, a shelter for victims of domestic violence in Conway, New Hampshire, called me to explain the shelter's septic system was backing up after only nine years of service. I checked it out and found the entire system of Presby Environmental Inc. (PEI) Enviro-Septic pipes was flooded. A simple test of the material surrounding the pipes using PEI's Spec-Check field test sieves quickly indicated that the sand surrounding the pipes contained an exceptionally high amount of fines, a sure

prescription for premature failure.

One option was to hook to the town sewer. This was quickly ruled out as impractical because although municipal sewer was available, it would have taken a long run across a neighbor's property to access it. A second approach would be to remove and replace the existing disposal field. While not out of the question, this solution would involve a substantial mess and the need to dispose of contaminated soil in a safe place off the site.



◀◀ From left, Scott Mahler, Greg Hill and Greg Harris use spacing jigs to simplify Presby Environmental Inc. (PEI) Enviro-Septic pipe installation. (Photos courtesy of Russ Lanoie)

▶▶ Walter Lancaster, a New Hampshire licensed septic evaluator, checks grade for Greg Hill, who is operating a Case 160 excavator.

▼ Greg Hill (right) shows Scott Mahler the fine points of plumbing the Enviro-Septic pipes from Presby Environmental Inc. (PEI).



## System Profile

**Location:** Conway, New Hampshire  
**Facility served:** Shelter for domestic violence victims  
**Designer:** Bob Tafuto of Ammonoosuc Survey  
**Installer:** Greg Hill, of Hill Excavation, supervised a team of professionals and Habitat for Humanity volunteers  
**Type of system:** Presby Environmental Inc. (PEI) Enviro-Septic  
**Site conditions:** Find sandy loam, Group 1 soils  
**Percolation rate:** 1 inch in 2 minutes

## A SECOND FIELD

I have been a supporter of leaving an existing failed system in place and adding additional disposal area off to the side if there is room. This eliminates the mess of tearing up the original system and leaving it to restore itself by resting so it could be used again in the future. This system had worked several years and could again for short times if needed. And the open-meadow location of the original disposal area was large enough to fit another similar disposal field.

The Starting Point board gave the go-ahead to put a plan together in late 2016, and I contacted Bob Tafuto, of Ammonoosuc Survey in Intervale, who had donated his services for the original design and agreed to do so for the additional field. The plan was quickly approved by the state.

PEI of nearby Whitefield donated all necessary Enviro-Septic components through their local distributor, Smithfield Supply of Bartlett. Alvin J. Coleman & Son of Albany agreed to donate the correct specification sand. I installed a diverter valve between the septic tank and the original field in preparation for the installation. In spring 2017, Greg Hill, of Hill Excavation, agreed to discount the daily rate for his 20-ton Case 160 excavator and his dump truck.

After Hill supervised the layout for the new system, I rototilled the area for the field and stripped the deep layer of topsoil to save it for covering the new system. Hill excavated the disposal area to a minimum of 6 inches below the bottom of the bed, and then placed a layer of specification sand to support the new Enviro-Septic pipes.

Five members of the Habitat for Humanity building crew were asked to help place the pipes and aid in backfilling. Smithfield Supply arrived with Enviro-Septic components, as well as donated 4-inch pipe and fittings necessary to hook everything up. Hill stayed to supervise the pipe installation, using his own experience as an installer to avoid mistakes and smooth the process. Walter Lancaster, certified septic evaluator, helped with leveling the bed bottom.

After the system was inspected, I backfilled the system with another layer of PEI spec sand and finally with some of the original sand, followed by the reserved topsoil. I used a small tractor with a front-mounted rake system I had developed for final grading.

## MONITOR THE SYSTEM

Because this system features serial distribution, I also installed two



## SYSTEM PROFILE

» The system awaiting New Hampshire Department of Environmental Services field inspector approval for backfill.

▼ A crew from Habitat for Humanity helps out placing system sand between pipes. From left are Greg Hill overseeing the project, Bob Tilney, Scott Mahler, Anthony Ruddy, Greg Harris and Steve Pirillo.



### featured products

Presby Environmental Inc.  
(PEI)  
800-473-5298  
[www.presbyeco.com](http://www.presbyeco.com)  
(See ads on pages 5, 25)

## I have been a supporter of leaving an existing failed system in place and adding additional disposal area off to the side if there is room.

This eliminates the mess of tearing up the original system and leaving it to restore itself by resting so it could be used again in the future.

monitoring points in the connecting pipes between the rows of Enviro-Septic pipes. These upward-facing capped observation tees can be used to check the flow between pipes in the future to determine how many of the system's eight rows of pipes are in use. If water shows up in the connection to the last two pipes, the time is approaching to switch back to the original system, allowing the new system to rest. Tee locations are marked with measurements on the side of the vent pipe and with chunks of iron to verify location with a metal detector.

With the diverter valve shifting all effluent flow to the new system, the

old system will enter a resting period that could mean permanent retirement or could be temporary if the new system ever proves inadequate to handle flow from the shelter. Given the old system lasted almost 10 years with inadequate bedding sand — likely the original silty sand excavated from the site and reused — and that the new system is built with sand with almost no fines, the new system should go for considerably longer.

Dual systems such as this have proven effective at providing long-term solutions for onsite disposal where one system can rest while the other is put back into use. All involved with this effort hope that this will be the case with the Grace House shelter so it can concentrate on its mission of serving the battered women of New Hampshire. □

Russ Lanoie is formerly a New Hampshire licensed designer and installer, and he served as a board member and education chairman for the Granite State Designers and Installers. He is involved with the Habitat for Humanity organization. Reach him at [russlanoie@gmail.com](mailto:russlanoie@gmail.com).



# Septic & Sewer Solutions *inc.*

**“Some days I don't know what we would do without it.  
We love using a great product from great people!”**

**Septic & Sewer Solutions, Inc (404) 316-8854 • [septicandsewersolutions.com](http://septicandsewersolutions.com)**

✓ Residential

✓ Commercial

✓ Municipality

ADVANCED



The Public Health and Safety Company™

# ENVIROSEPTIC™

**Passive/Non-Mechanical**

**Affordable**

**Wastewater Treatment System**



**PresbyEnvironmental.com • 800-473-5298**



# Bring Back Required Maintenance for Aerobic Systems

It was a 'disaster' when the Texas Legislature eliminated mandated care for advanced systems and let homeowners take over monitoring

Compiled by Betty Dageforde

*In States Snapshot, we visit with a member of a state, provincial or national trade association in the decentralized wastewater industry. This time, we learn about a member of the Texas Onsite Wastewater Association.*



## **Brian Wakefield**

**owner**

**Business:** B & J Wakefield Services, Waxahachie, Texas

**Age:** 46

**Years in the industry:** 18

### **Association involvement:**

I've been a member of the Texas Onsite Wastewater Association for about 16 years. I've been on the board for about 12 of it and have held the president position. I was also interim treasurer for a while.

### **Benefits of belonging to the association:**

Having more knowledge about the industry, getting involved with legislation, getting to know other people in the field and knowing who to call throughout the state if something comes up. We get involved with the politics side of it when we need to or when we need assistance when something arises.

### **Biggest issue facing your association right now:**

There aren't really big issues, but we work with the Texas Commission on Environmental Quality, writing new rules or adjusting the rules that are already there. They've invited us to make policy changes wherever we see fit, because we are considered the experts in the business, and then they go over our recommendations. For example, licenses for pumping technicians require background checks, but the sludge transporters who are accessing the same septic systems do not have to go through background checks. The commission basically forgot to include them. So we're going to help the commission figure out how to pull the sludge transporters in with this industry and make those changes.

### **Our crew includes:**

Holly Wakefield, my wife, is the office manager. Charla Aguilar works in the office part time. Willard Cavitt and Hermillo Aguilar are repair technicians and do installs. Chuck Vineyard inspects and maintains the aerobic septic systems. I also use a couple of part-time contract laborers, as needed. On the pumping side, we're between drivers right now, but hopefully we'll have someone starting soon. If not, I'll be driving that truck and one of the techs or laborers will assist me. It's a hard position to fill.

### **Typical day on the job:**

I get in early in the morning and give everybody their schedules, basically setting routes and assigning work. And then I go wherever I'm needed, whether it's on an install or if I need to be pumping or assisting on repairs. It's whoever needs help that day or if they need to use my brain on a more intricate job to help think it through.

### **Helping hands - Indispensable crew member:**

Cavitt has been with me the longest, four or five years. He's like my right-hand man. He can take care of things and is to the point where I don't have to worry about him.

### **The job I'll never forget:**

A couple years ago, about 1,000 immigrant children from Central America arrived at a nearby church camp. They were staying all over the place out there and using the facilities, which overloaded the system. The camp had a 50,000-gallon lift station, and all three water pumps started





# "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@prtcl.com](mailto:fpproducts@prtcl.com)  
[www.FergusPowerProducts.com](http://www.FergusPowerProducts.com)

MORE?!

More Stories at [OnsiteInstaller.com/featured](http://OnsiteInstaller.com/featured)  
*See what's not in print!*

**ONSITE installer**

clogging and went down. We had to rush out there. It was literally chaos. The news crews were there, and the police department and helicopters were out there for security. The pumps were deep in the sewer. Our sludge truck couldn't vacuum fast enough so we had to put new pumps in temporarily. That's how fast the sewage was coming in. We piped them out of the tank and over to the wastewater treatment plant directly. It took us a day or two to get that all figured out, but once we did, we got everything back to normal.

**My favorite piece of equipment:**

I like my mini-excavator (Kubota). It's a good, versatile machine. Along with our Kubota skid-steer, those two seem to work for us very well for most jobs.

**Most challenging site I've worked on:**

There was a project about 12 years ago where we had to put in an aerobic septic system on a hillside. We had to hold the retaining wall back while we put it in. You put one outrigger on the backhoe, you set one outrigger on the ground, and that's what held you. It was kind of nerve-wracking. It was actually for a home they never ended up finishing. So, we put a new system in that's never been used. It was back before the economy fell but the banks were getting skeptical. It cost so much to build a house on a hillside that the bank quit giving them money.

**The craziest question I've been asked by a customer:**

Sometimes when we get done with a job, someone will say, "Do I have to pay that?" They think just because they pay our cheapest maintenance plan where we go out and inspect the systems, that everything's covered.

**If I could change one industry regulation, it would be:**

To require mandatory maintenance on the aerobic septic systems —

## 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](http://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

Innovation, Quality and Service since 1965

WIESER CONCRETE



1-800-325-8456



again. It used to be mandatory, but a state legislator slid a bill in at the last minute changing it and allowing homeowners to do their own maintenance on their systems. A few individual counties and cities have since started requiring it, but the state does not make it mandatory. We walk into areas that don't require it that are disasters — whole neighborhoods. The homeowners don't want to spend the money. The association is working on it indirectly but it involves state legislation, and anytime you introduce a new bill, anything can change at any time. You can write a bill called A and it comes out looking like Z.

**Best piece of small-business advice I've heard:**

"Stay honest." It's just something I've always heard and gone by. "Keep your business honest. That's the best policy."

**If I wasn't working in the wastewater industry, I would:**

Before I got into this business, I was a truck driver in the LTL (less than truckload) business, so that's possibly what I'd be doing. On the side, I was a real-estate inspector and learned enough about septic systems that I was able to inspect them and do maintenance, and then that business just took over.

**Crystal ball time - This is my outlook for the wastewater industry:**

Hopefully we'll eventually have more technology controlling and monitoring our systems because it is an environmental issue when these things fail. □



# System Inspection and Maintenance

By Craig Mandli

## DRAINLINE INSPECTION



### CPI Products Universal Roller Skids

Universal Roller Skids from CPI Products fit most push cameras and are designed to improve performance and protection in pipes from 3 to 16 inches in diameter. According to the manufacturer,

using a plastic roller skid can protect a push camera from debris inside pipes and keep the lens from impacting pipe walls. A properly sized and fitted roller skid also keeps the camera centered for an improved image. 413-443-0925; [www.cplproducts.com](http://www.cplproducts.com).



### CUES MPlus+ XL

The CUES MPlus+ XL push system is designed for easy operation with an all-in-one setup and flexibility by quick removal of the control unit to be used separately. It includes a coiler configuration and pan-and-tilt camera for mainline and larger pipeline applications up to 500 feet. It integrates video observation coding, observation coding interface and digital recording. The lightweight system includes large, durable wheels for portability and a

balanced footprint for stability. It is manufactured to handle rigorous field use. 800-327-7791; [www.cuesinc.com](http://www.cuesinc.com).

### Envirosight VeriSight Pro

The VeriSight Pro from Envirosight has a stainless self-leveling camera with shadowless, variable LED illumination to capture crisp video footage regardless of pipe material, according to the manufacturer. With supplied centering devices, it inspects lines 2 to 9 inches and snakes through multiple bends for maximum range. An integral tri-band sonde (33 kHz, 512 Hz, 640 Hz) works with almost any locator. Its welded steel coiler comes with 130, 200 or 330 feet of pushrod. The system runs continuously for six hours off internal rechargeable lithium-ion batteries or off main or vehicle power. Its multilanguage controller displays footage on an 8-inch thin-film-transistor LCD and captures up to 90 hours of MPEG-4 video on an SD/SDHC card or USB stick. It has 3x zoom, captures images in JPEG format from both live and recorded video, and offers a 16-page text writer with full QWERTY keyboard. 866-936-8476; [www.envirosight.com](http://www.envirosight.com).



### Forbest Products FB-PIC3188XX/4188XX

The FB-PIC3188XX/4188XX portable lay-flat camera system from Forbest Products comes with a 1-inch waterproof color camera head or 1-inch self-leveling color camera head with a built-in 512 Hz sonde transmitter, stainless steel spring kit, and bright LED lights. It comes with 130 feet of 5.3 mm or 200 feet of 6 mm fiberglass cable, with a high-resolution 7- or 10-inch color control station with USB and SD recording. Typing and editing is optional for the 10-inch multifunction control station. The lay-flat design is convenient for one user to operate the camera independently. 877-369-1199; [www.forbestusa.net](http://www.forbestusa.net).



### General Pipe Cleaners/General Wire Spring Gen-Eye X-POD

The Gen-Eye X-POD from General Pipe Cleaners/General Wire Spring offers a command module with a USB port to record on a flash drive. The lightweight unit combines camera, reel and monitor into a compact package. It comes with a 7-inch LCD color monitor, one-touch recording, digital zoom, voice-over recording, date and time stamp, and a flash drive capacity indicator. It includes a 3-foot probe rod with color camera for inspecting hard-to-reach places. The full-size unit includes a self-leveling color camera and 200 feet of Gel-Rod for inspecting 3- to 10-inch drainlines. The compact Mini-Reel carries 100 or 200 feet of Gel-Rod with mini color self-leveling camera for troubleshooting 2- and 3-inch lines. The rugged steel frames and reels include a drag brake and reel lock. The full-size reel has 10-inch wheels. 800-245-6200; [www.drainbrain.com](http://www.drainbrain.com).



### MyTana Mfg. MS11-NG2

The MS11-NG2 midsize inspection system from MyTana Mfg. has USB for recording and storage. The system is suitable for inspecting 3- to 6-inch lines with the choice of 150 or 200 feet of pushrod. The unit has a 64 GB internal drive as well as two USB ports and a 32 GB removable USB drive. The one-piece design is lightweight with a carrying handle. The color camera head is self-leveling with a built-in 512 Hz transmitter for locating trouble spots, even in cast iron pipes. 800-328-8170; [www.mytana.com](http://www.mytana.com).







### Pearpoint/SPX P342

The Pearpoint/SPX P342 with the Plumbers add-on is a combination of convenience and performance, offering users one system for confined work areas and ease of use in congested work sites. This equipment requires just one universal command module to operate and offers an option of a 1- or 2-inch camera. The 2-inch camera is self-leveling, keeping the video picture upright when navigating pipes. 800-688-8094; [www.pearpoint.com](http://www.pearpoint.com).



### Ratech Electronics Elite SD/USB Wi-Fi

The Elite SD/USB Wi-Fi pipeline inspection camera system from Ratech Electronics records pipe inspections wirelessly to an iOS or Android device and takes live video and digital still photos that can immediately be uploaded to YouTube. A smartphone app allows video to be streamed wirelessly. The Wi-Fi interface is available on any current Ratech Electronics product or existing Ratech Electronics systems in the field and is available with a sun-readable, 10-inch LCD monitor and either a self-leveling camera, small ultramicro camera, or pan-and-tilt push camera. A built-in battery is optional. Users can also record to a USB stick or SD card if Wi-Fi isn't required. Systems come in cable lengths from 100 to 400 feet. 800-461-9200; [www.ratech-electronics.com](http://www.ratech-electronics.com).

### RIDGID thermal imagers

RIDGID thermal imagers offer easy-to-use interfaces to predict problems before they happen and prevent costly downtime, including diagnosing HVAC failures, finding hidden moisture in walls, and locating pipe blockages. The product line includes four thermal imagers — RT-3, RT-5x, RT-7x and RT-9x — that range from providing 160 x 120- to 320 x 240-pixel thermal images. All models include SuperResolution that effectively doubles the resolution of the camera for saved images for greater detail to detect anomalies. Select models also show a digital camera image alongside the thermal image and include e-Assist and the RIDGID Thermal app. With e-Assist, the imager can recognize a placed reference sticker, determine emissivity and reflected temperature, and set both automatically. The app allows users to view, edit and analyze captured images from the thermal imager directly on a mobile device. 800-769-7743; [www.ridgid.com](http://www.ridgid.com).



## ELECTRONIC LOCATORS

### IDS GeoRadar Stream C

Stream C from IDS GeoRadar is a compact array solution for real-time 3D mapping of underground utilities and features. Thanks to the increased level of accuracy and efficiency provided by a massive antenna array, it can detect pipes and cables automatically with the optional automatic pipe detection software. With a roughly 3-foot-wide swath collecting data in both horizontal and vertical orientation, there is no need to grid to capture full 3D coverage. It is comprised of 32 vertical and horizontal 600 MHz antennas. The unit can be towed with an optional tow package or pushed and driven by the motorized front wheel. Data can either be viewed in OneVision acquisition software on site for instant 3D analysis or in provided GRED HD 3D post-processing software. 303-232-3047; [www.idsgeoradar.com](http://www.idsgeoradar.com).



### Spartan Tool locator

The Spartan Tool locator allows the user to locate in virtually any pipe material. Besides drainlines, the locator enables the user to map existing lines from other services to ensure safety when digging. The on-screen arrows and aural tones guide the operator to the line. Lines can be located using an inductive clamp, beacon (sonde) or passive (utility) lines. Line location can be combined with the depth estimator function to know how much digging is needed. It has a user-friendly control panel. 800-435-3866; [www.spartantool.com](http://www.spartantool.com).



### Underground Magnetics Mag 6 directional drilling guidance system

The Mag 6 directional drilling guidance system from Underground Magnetics offers multifrequency transmitter options with a data range of up to 190 feet changeable down hole. A simple graphic display makes it easy to use and set up. A dual 3D antenna is designed to overcome adverse active interference. Lithium rechargeable batteries provide up to 50 hours of life. Bore-To mode offers easy remote steering. Click one button and see information needed to accurately place a drill head where needed with speed and precision. The user can change to high power down hole when needed. It offers a sensitive pitch with 0.1 percent resolution. 913-626-7654; [www.undergroundmagnetics.com](http://www.undergroundmagnetics.com).







**Vivax-Metrotech vLoc3-Pro**

The vLoc3-Pro utility locator from Vivax-Metrotech has two sets of 3D antennas, allowing signal distortion to be easily detected and displayed on the color display. Along with classic locate screens, it offers vector locate for automatic nonwalkover locating, a transverse graph showing peak and null simultaneously providing immediate measurement of signal distortion, plan view showing the orientation of the

cable at any angle, and a graphical sonde screen with guidance arrows leading to the sonde location even when it is vertical. The user configurable locator has eight passive modes, fault-find, SD (showing direction of outgoing current), and a range of configurable frequencies from 16Hz to 200 kHz. Audio and mechanical vibration alerts can be configured by the user, providing warnings for shallow depth, overload, overhead cables and excessive swinging. 800-446-3392; [www.vxmt.com](http://www.vxmt.com).

**PORTABLE/TRUCK JETTERS**

**Amazing Machinery BossJet Pro Box Jetter**

The BossJet Pro Box Jetter from Amazing Machinery can be mounted in many configurations. It comes with a Honda or Kohler engine, a triplex plunger pump and a Hannay Reels electric hose reel. All units are encased in a high-density aluminum box frame with a side access panel for exhaust release and ease of service. It comes with 200 feet of 1/4-inch I.D. jetter hose and laser and spin jet nozzles. It is designed to clean and clear 2- to 6-inch pipes. Options include a foot pedal, trap kit, remote reel and portable restroom head attachment for the smaller lines. All units include a washdown gun and wand, four pressure-washer tips, and a chemical injector for easy cleanup. 800-504-7435; [www.amazingmachinery.com](http://www.amazingmachinery.com).



**Easy Kleen Pressure Systems Groundhog Jetter**

The Groundhog Jetter from Easy Kleen Pressure Systems is designed to clean clogged pipes with a 35 hp Vanguard engine that provides 12 gpm at 3,500 psi. It is compact and easily transported in a pickup truck or van, with trailer options available. It

includes a fully welded, powder-coated 2-inch steel tube frame, drilled and tapped, which houses the 200-gallon water tank. It comes with an accessible breather and 10-gallon fuel tank, General Pump with gearbox drive, 12-volt powered hose reel with 300 feet of 3/8-inch jetter hose, hose guides, super swivel and foot-pedal control, emergency shut-off valve, and an hour meter. Optional remote features include hose reel-in, motor off/speed control and pressure on/off. 800-315-5533; [www.easykleen.com](http://www.easykleen.com).



**PRESSURE WASHER AND SPRAYER**

**Water Cannon pressure washers**

Pressure washers from Water Cannon Inc. - MWBE feature a recirculation module that cools water when the trigger gun is closed. The triplex ceramic plunger pump is designed for commercial and professional daily use. To protect wear parts, it includes an overheat safety valve that will open and close automatically to allow the recirculating higher-temperature water to be released, allowing cool water to replace it. 800-333-9274; [www.watercannon.com](http://www.watercannon.com).



**SLUDGE SAMPLING EQUIPMENT**

**Sim/Tech Filter TruCore**

The TruCore from Sim/Tech Filter is a large-diameter, accurate, user-friendly sludge sampler that's designed for use in the thicker sludge common to septic tanks. It allows samples to be taken quickly without creating excessive turbulence, as there are no restrictions caused by valves, stoppers or flaps. With a 1 3/8-inch I.D., the capacity per foot is almost 10 ounces. The straight-through design allows the sample to be effortlessly returned to the tank. The unit is made of a polycarbonate sampling tube (marked every foot) and PVC fittings. It comes as a single-piece, 8-foot unit or as two 4-foot units that slip together. Custom sizes and configurations are also available. A simple and customizable extension kit is available for deeply buried tanks. 888-999-3290; [www.simtechfilter.com](http://www.simtechfilter.com).



**SMOKE LOCATOR**

**Superior Signal 5E Electric Smoker**

The 5E Electric Smoker from Superior Signal is designed to connect to any clean-out or inspection port to smoke test an entire system in a few minutes. Smoke testing can be effective for finding the sources of odors and many other faults throughout a building's plumbing, laterals, septic system and leachfield. The unit gently pushes smoke throughout the system to find cracks and leaks and quickly identify problems. The unit comes with an 8-foot, industrial-grade flex hose. 800-945-8378; [www.superiorsignal.com](http://www.superiorsignal.com). □

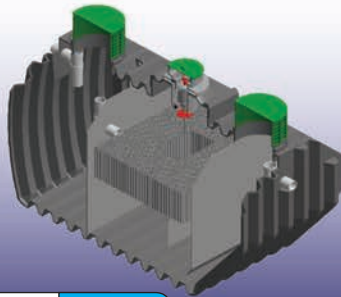




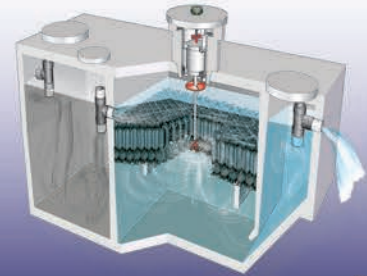


- Accu-Tab® Wastewater Tablets**
- U.S. made, recognized global brand with no imported ingredients
  - Chlorine tablet with beveled edges to minimize wicking
  - Consistent chlorine strength for reliable dosing control
  - No measuring, mixing, or spilling of chemicals common with granular and liquid 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



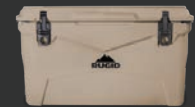
**HE DOESN'T  
STAND DOWN.  
NEITHER DO YOU.**



**Durable Gear for Extreme Conditions**



20 QT - \$149.99



45 QT - \$199.99



60 QT - \$239.99



75 QT - \$299.99



100%  
REPLACEABLE  
PARTS



5 YEAR  
WARRANTY



MAXIMUM  
ICE  
RETENTION



SNOW



SAND



SURF

COLOR OPTIONS



833-777-8443  
RUGIDGear.com





## PRODUCT NEWS



### Reelcraft Industries cable welding reels

WCH7000 and WCH80001 spring-retractable cable welding reels from Reelcraft Industries are designed for electric welding applications. The reels have a current path through a continuous 700-amp, 90-volt DC maximum rated enclosed slip ring. The WCH7000 can hold up to 50 feet of #3/0 or #4/0 work lead or electrode lead, and the WCH80001 can hold up to 75 feet. 800-444-3134; [www.reelcraft.com](http://www.reelcraft.com).

### Water Cannon flat-surface-mount pressure washer

The 100- to 300-foot hose reel flat-surface-mount pressure washer from Water Cannon Inc. - MWBE is made from heavy-gauge steel and has a powder-coat finish. It is available with several mounting options including a hose guide welded to the hose reel frame, making it stronger and eliminating the extra load to the bushings, decreasing wear over time. An improved hose coupling allows for straight in-hose attachment, removing difficult installations and possible kinking. The reels come completely assembled in the box. 800-333-9274; [www.watercannon.com](http://www.watercannon.com). □



## INDUSTRY NEWS

### John Deere and Wacker Neuson enter into supplier agreement

John Deere announced a strategic supplier agreement with Wacker Neuson to initially provide compact excavators in China, Southeast Asia and Oceania. The models will range from 1.7 to 7.5 tons and are designed and manufactured for customers in the growing Asia-Pacific markets.

### Custom Truck One Source releases acquisition news

Custom Truck One Source announced the acquisition of Great Pacific Equipment, a distributor of construction and utility equipment serving the Southwest U.S. With offices in Fontana and Bakersfield, California, Great Pacific Equipment's existing management will partner with Custom Truck One Source to grow the business in the region. This is the ninth acquisition under the Custom Truck One Source brand since its formation in February 2015. □

**CHECK OUT PRODUCT & CONTRACTOR VIDEOS ONLINE!**

[www.onsiteinstaller.com/video](http://www.onsiteinstaller.com/video)

*Warm winter wishes  
for an enchanted  
holiday season.*



YOUR FRIENDS AT COLE PUBLISHING



**THIS IS WHAT IT WOULD LOOK LIKE IF WE PRINTED ONSITEINSTALLER.COM  
— THOUSANDS OF STORIES, PRODUCTS AND IDEAS**

**ONSITE  
installer™**

GET ACCESS TO EVERYTHING WE CAN'T FIT IN THE MAGAZINE.  
ADDITIONAL STORIES, VIDEOS, NEWS BRIEFS AND OTHER GREAT  
INFORMATION THAT LETS YOU GET THE MOST OUT OF *ONSITE INSTALLER*.

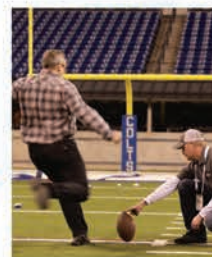
[WWW.ONSITEINSTALLER.COM](http://WWW.ONSITEINSTALLER.COM)





# INDUSTRY MARKETPLACE

With 600 exhibitors and 350,000 sf of exhibit space, the WWETT Show is THE marketplace for the wastewater and environmental services industry. See the new product launches, get hands-on with equipment, and make your purchases. The WWETT Show Marketplace is WHERE DEALS GET DONE!



## WHY SHOULD YOU ATTEND?

- ✓ **Explore the Marketplace** for tools and resources you need for your business
- ✓ **CEUs** from some of the best and brightest speakers in the industry
- ✓ **Events** to network with your peers - or just kick back with friends.

# wwett<sup>™</sup>19

CONFERENCE: FEBRUARY 20-22  
MARKETPLACE: FEBRUARY 21-23  
INDIANA CONVENTION CENTER

MORE INFORMATION AT [WWW.WWETTSHOW.COM](http://WWW.WWETTSHOW.COM)





# 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; 706-407-2552

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.org

## **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.maine.com

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

## **MARYLAND**

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

## **MASSACHUSETTS**

Yankee Onsite Wastewater Association;  
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

## **MISSISSIPPI**

Mississippi Pumpers Association;  
www.mspumpersassociation.com; 601-249-2066

## **MISSOURI**

Missouri Smallflows Organization;  
www.mosmallflows.org; 417-631-4027

## **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; 888-294-0084

## **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.psmna.net; 717-763-7762

**TENNESSEE**

Tennessee Onsite Wastewater Association; www.tnonsite.org

**TEXAS**

Texas On-Site Wastewater Association; www.txowa.org; 409-718-0645

Education 4 Onsite Wastewater Management; www.e4owm.com; 713-774-6694

**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; 888-782-6815

Wisconsin Liquid Waste Carriers Association; www.wlwca.com; 888-782-6815

**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**

British Columbia Onsite Wastewater Association; www.bcossa.org; 778-432-2120

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

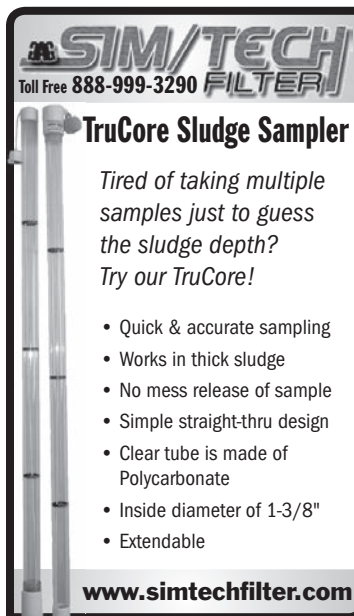
Ontario Association of Sewage Industry Services; www.oasisontario.on.ca; 877-202-0082

**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



**SIM/TECH FILTER**  
Toll Free 888-999-3290

**TruCore Sludge Sampler**

*Tired of taking multiple samples just to guess the sludge depth? Try our TruCore!*

- Quick & accurate sampling
- Works in thick sludge
- No mess release of sample
- Simple straight-thru design
- Clear tube is made of Polycarbonate
- Inside diameter of 1-3/8"
- Extendable

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



**RUGID**

**+ MEAT**

**= Thank You!**

Hand-selected Wisconsin sausage and jerky delivered in a 20-qt. **RUGID** cooler.

**\$199.99** Delivered

*Meaty-Delivery™*

[meaty-delivery.com](http://meaty-delivery.com)  
**833-777-8443**

**UNDERCARRIAGE Cleaner Mosmatic**



**WATER CANNON** | **35**  
CELEBRATING 35 YEARS

[WaterCannon.com](http://WaterCannon.com)  
**800.333.9274**



**WOLVERINE BRAND**  
ACTIVATION CARBON FILTERS  
CELEBRATING 15 YEARS 1993-2008

PATENT #US 8,273,162

**IndustrialOdorControl.com**  
A Broad and Economical Range of Odor Control Solutions

- Manhole Odor Inserts
- Pollution Control Barrels
- Activated Carbon
- Lift Station Odor Control
- Septic Vent Filters
- Custom Solutions

Simple Solutions (866-667-8465)  
DISTRIBUTING LLC 973-846-7817 in NJ  
Makers of the Wolverine Brand of Odor Control Solutions

**Durable Gear for Extreme Conditions**



Computer Cases

**RUGID**

**833-777-8443**  
[RUGIDGear.com](http://RUGIDGear.com)

- WATER PROOF
- DUST PROOF
- SUBMERGE PROOF
- FLOATS

VETERAN OWNED



# POLYLOK™ Inc.

Innovations in Precast, Drainage & Wastewater Products



## PROVEN TECHNOLOGY

Polylok, Inc. is recognized as the industry leader in onsite wastewater technology. With our proven track record, you can't go wrong. We offer three unique filter lines: **Polylok**, **Zabel** and **Best**. We also carry a complete line of septic tank risers and safety devices.



1-877-765-9565 / [www.polylok.com](http://www.polylok.com)

Photo by:  
Jane Zima

