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Combat ignorance of system effectiveness
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Casting a WIDE NET

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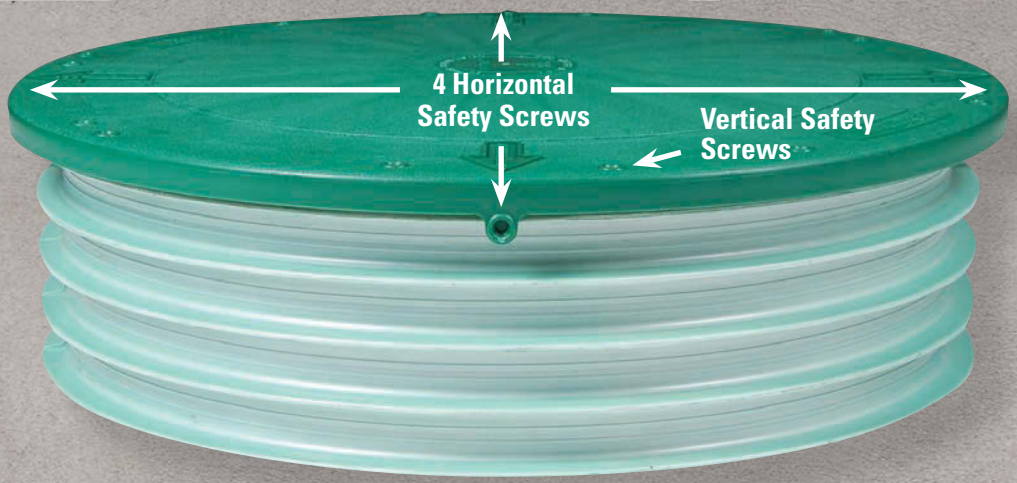

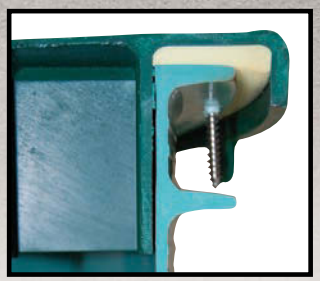

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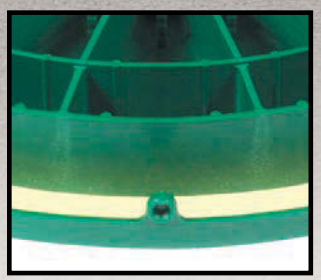

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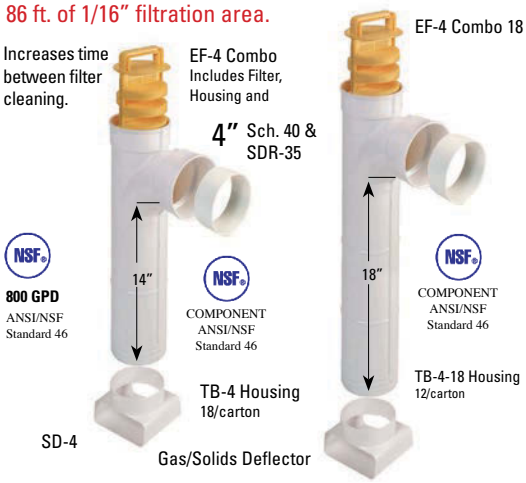

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Injection molded T-Baffle™.

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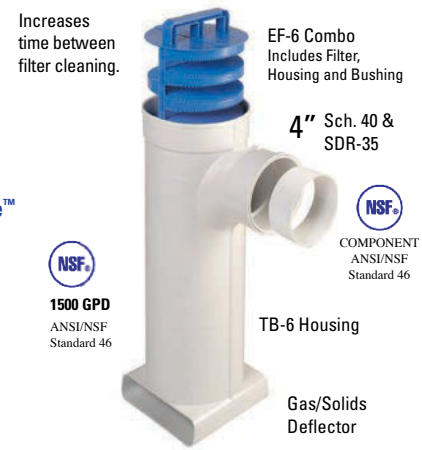

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Our Enemy is Ignorance

Installers must work to overcome misinformation, misconceptions and lingering wives' tales that unfairly knock down the onsite industry

By Jim Kneiszel

With an appropriate design and users who follow best practices for care and maintenance, onsite systems are a suitable and efficient way to handle wastewater for millions upon millions of homeowners across the country. In the industry, we all know that and take pride in offering beneficial wastewater solutions every day.

Still, people often have lingering doubts about the effectiveness of decentralized wastewater systems. Misguided consumers are the worst enemy of the onsite industry and the ever-improving technologies we promote. A few angry or ignorant homeowners talking to their neighbors or venting their frustration on a home improvement website forum can have a damaging impact on the future livelihood of installers.

I recently ran into a good example of this kind of idle squawking when reading a poll titled "Sewer or Septic?" at the website www.houzz.com, which describes itself as a "community of more than 20 million homeowners, home design enthusiasts and home improvement professionals – across the country and around the world."

I don't take issue with the folks at Houzz asking their community about its preference for waste disposal. I found it instructive to read wide-ranging posts including misinformation, misconceptions and the propagation of age-old wives' tales about proper care for septic systems. I also find it gratifying to see a handful of rational, well-informed homeowners run to the defense of onsite wastewater systems, to both refute some wild claims and promote proper system maintenance.

In the interest of knowing more about our common enemy of ignorance, I'd like to share a few of the comments posted in this "Sewer or Septic?" survey and provide my own commentary.

They're clueless:

"Please correct me if I'm wrong, but if your system is healthy and you are using it properly you don't require pumping?" And one response: "Technically you are correct. The idea of a good working septic is that the live bacteria eats through the waste so it should not require pumping."

Arghh! Wastewater professionals lose sleep at night over comments like these. Users who think this way never monitor or maintain onsite systems, and when their systems fail, they complain to anyone who will listen. The shouts of a few misguided people can overwhelm the positive messages from 100 satisfied septic system users.

They get it:

"A big part of me prefers a septic because we have to be careful. It forces you to think about the ecosystem you are destroying when you use harsh chemicals to clean and wash paint or other products down the drain. The best thing is to thoroughly read up on them and treat them like you treat your stomach - after all, they are just big digestive systems for your house. Also have them checked regularly to ensure they are healthy."

If everyone had this level of understanding about how septic systems work, fewer people would be intimidated by the technology and communities wouldn't be so quick to approve costly expansion of municipal sewer systems where it's not warranted. And existing onsite systems would last longer and perform better.

They're clueless:

"Our home has a septic system and it was completely new to me 14 years ago when we moved in. Boy have I learned a bunch about having an onsite wastewater treatment plant! We spent quite a bit of money to get the system trouble-free and up to current code. I had no idea how much work, worry and expense would go with a septic system and if I can avoid it, I will never be in this situation again."

I'll bet the poster didn't bother with a point-of-sale inspection from a certified onsite professional before buying this house. Rather than take responsibility for a mistake made during the home-buying process, the poster chooses to blame proven wastewater technology and smear the work of an entire industry. They should be embarrassed for not doing their due diligence and getting the home-seller to help foot the repair bill.

They're clueless:

"Septic is a nuisance, as you are always checking to see if it's close to being full, especially if you are getting company and they have children. It is especially troublesome if your company flushes feminine products. Pump-out fees are also getting expensive! I would never go back to septic!"

Maybe if you would get on a routine maintenance schedule – the same way you have your furnace cleaned or the oil changed in your car – you wouldn't have to worry about an overflowing septic tank. And did you ever think about asking your guests not to flush feminine products down the toilet? Foreign objects are just as troublesome for your indoor plumbing going to a sewer pipe as they are for the septic tank. As for the cost issue, see below.

They get it:

"Properly installed, [an onsite system] will work great for 20 or 30 years. Just do the math. Installation of septic tank and field lines is about the same as the connection fee to city sewage. But … the city sewage at $50 per month for 25 years = $15,000 down the drain. If for some reason you have a clogged [septic] tank, you can get it pumped out for $300."

From what I've seen over the years, most people don't put a pencil to paper and figure out the true costs of owning an onsite system or hooking up to the big pipe. As with buying an automobile these days, consumers now have a "monthly payment" mentality. They assume it's better to pay $100 per month for something than writing a one-time $5,000 check, regardless of the useful lifespan of the product.

Rather than take responsibility for a mistake made during the home-buying process, the poster chooses to blame proven wastewater technology and smear the work of an entire industry. They should be embarrassed for not doing their due diligence.

They're clueless:

"Years ago we moved into a brand-new rental home. The owner gave me a pound of hamburger and asked me to break it up and flush it to quickly build the good bacteria in the septic. I don't know how true it is, but once a year I flush a pound just for good measure."

I wish I could talk to this person directly to save them from wasting a pound of hamburger every so often. There is ample evidence that people still believe a dead chicken in the tank or a cup of yeast down the toilet is the key to having a long-lasting onsite system. It escapes me why many folks would rather trust a baseless wives' tale than listen to the tried-and-true advice of an onsite professional when it comes to protecting what might be the most expensive and most important system connected to their home.

SPREAD THE WORD

Onsite installers have done a lot to build professionalism in their ranks. Across the country, continuing education for service providers is getting better and better. Engineers and manufacturers are designing onsite systems that produce cleaner effluent and open up smaller lots and land with poorer soil quality for development. Installers can proudly say that new onsite systems can compete with public sewers for effective waste disposal.

But clearly we have a lot more work to do on the public education front. One statement from the "Sewer or Septic" debate really sums it up for me: "I have NOT had my tank here cleaned during the 10 years of using it and I keep my fingers crossed," the poster wrote.

We can't rest until we can convince people to care for and routinely maintain their onsite systems instead of simply keeping their fingers crossed that everything will be OK.

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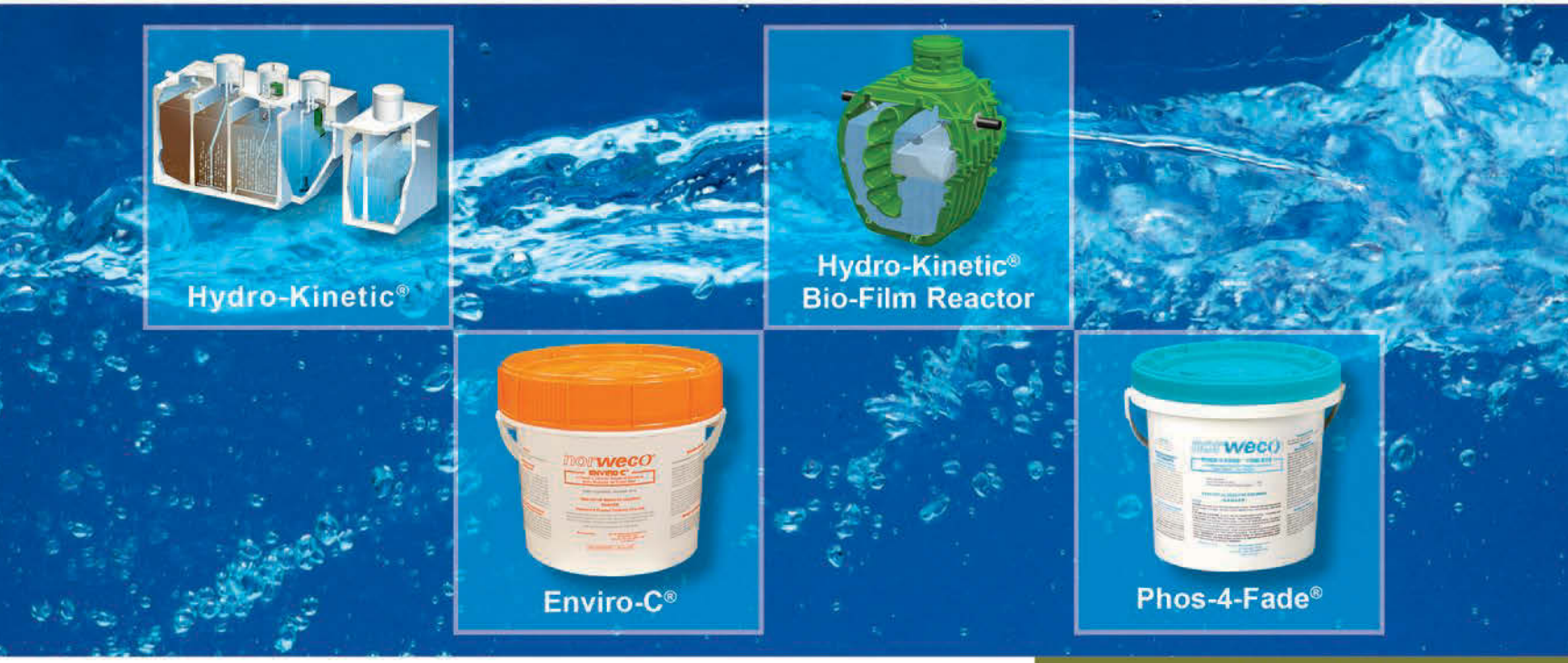

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Joe Garner, English Sewage Disposal vice president, is shown with a Norweco Singulair Green system being installed in New Jersey. (Photos by Kyle Grantham)

Casting a WIDE NET

English Sewage Disposal uses multiple media to reach all types of customers for its comprehensive offering of onsite installation and maintenance services

By Ted J. Rulseh

Phone directories, restaurant placemats, billboards and mailers no longer get the promotion job done for English Sewage Disposal in Bridgeton, N.J.

The company still uses those tools but increasingly reaches out to online oriented prospects through a sophisticated website and a large and growing presence on social media. "We know that younger people, especially those just buying homes, don't know a lot about septic systems," says Joe Garner, vice president and project manager.

"We're not going to capture [younger people] with a phone book ad or a placemat ad. They're going to use their smartphone. They're going to do something digitally. Even the older generations are getting involved with smartphones and tablets."
Joe Garner

"We're not going to capture them with a phone book ad or a placemat ad. They're going to use their smartphone. They're going to do something digitally. Even the older generations are getting involved with smartphones and tablets. We want to talk to everybody, and the only way to accomplish that is to do traditional as well as social media marketing."

It's a formula that works well for promoting diverse onsite services, including the full project management offering that clearly differentiates the company in its market area covering all of south New Jersey, from Trenton east and south. "We manage the engineering process all the way through an approved design," says Garner. "We also project manage the construction of the system, from the beginning through the final inspection by the local health department, along with frequent post-installation checks."

GREATLY EXPANDED

English Sewage Disposal began in 1970 as a septic system pumping and portable restroom company; Paul Behrens, an environmental consulting professional, bought it in 1998. He expanded both sides of the business and then moved into septic system repairs and drain cleaning. The project management specialty began when Garner came aboard in 2007.

Today, 90 percent of the business is onsite system installation and related work; the balance includes tank pumping, restroom rental and septic system inspection for real estate transfers. "We take everything one step further,"

Workers lower a Norweco Singulair Green system into the ground using a Case CX75 excavator.

says Garner. "If an inspection uncovers minor discrepancies, we are able to do those fixes. If we come across a cesspool or an unsatisfactory system, we can project manage the replacement, from design through construction and landscaping."

English installs 150 to 200 onsite systems per year with three full-time crews and one part-time crew. The company has installed only about two dozen aerobic treatment units (ATUs), but those systems are becoming more common under a new state code introduced in April 2012 – it allows ATUs as long as they have NSF certification. English installs and maintains MicroFAST systems from Bio-Microbics and Singulair and Singulair Green units from Norweco. The company also maintains ATUs installed by others. Most drainfields are stone-and-pipe, and septic tanks are mainly precast concrete, although plastic tanks (Infiltrator Systems) sometimes come into play.

The installation equipment fleet includes a 2005 John Deere 160C LC excavator, 1995 Case 9020B excavator, 2005 Case 590 AM II backhoe, 2004 JCB 214 4x4 backhoe, 1997 Komatsu D31 track loader, 2003 Freightliner SL80 tri-axle dump truck and 1988 Ford L9000 dump truck.

CHALLENGING GEOLOGY

In south Jersey, 60 to 70 percent of homeowners have onsite systems. Soils vary greatly. "Soil scientists tell me that when the glaciers came through from the Great Lakes, they did a good job of depositing a lot of junk here," Garner says. "We run the gamut from very sandy soils with high water tables, to relatively decent soils, to very heavy clay. Right down the street from where we have good sandy soils with a relatively good water table, we can encounter the worst clay you can possibly imagine.

"That makes site evaluations challenging, and that's why we hire well-qualified soil scientists to assist us. Profile pits allow them to look at the soil horizons and check for seasonally high water tables. They also take samples back to their office and do sieve analyses." Some soil conditions require 12- to 14-foot-deep excavations followed by replacement with select K4 certified fill.

For onsites with questionable soils and a relatively high water table, an ATU can be more economical than a conventional system. "Under the New Jersey code, the use of an ATU enables us to reduce the size of the drainfield by 20 or 25 percent," says Garner. "It also gives us the ability to potentially reduce a mound height by 2 to 4 feet and potentially eliminate a dosing tank. Both save money for the customer.

English Sewage Disposal, Bridgeton, N.J.

FOUNDED:	1970
OWNER:	Paul Behrens (since 1998)
EMPLOYEES:	40
SERVICE AREA:	All of south New Jersey
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BUSINESS MIX:	90 percent onsite installation and related, balance pumping/maintenance and inspection, restroom rental
ANNUAL REVENUE:	$5 million
AFFILIATIONS:	Pennsylvania Septage Management Association, National Association of Wastewater Technicians
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"Suppose we're at a job site that requires a 2- to 3-foot mound because of a seasonally high water table. If it's a three-bedroom home, they start out with an 810-square-foot drainfield and a pump station. If we introduce an ATU, sometimes we can get that mound down to ground level, eliminating the

Dominic Cornwell checks the level of a Norweco Singulair Green unit after it was lowered into the ground.

pump station, and we can reduce the drainfield to maybe 650 square feet. Under those conditions, we're almost always able to be price-competitive with an ATU. Where an ATU would be most cost-efficient to install, I work up figures for both a conventional system and an ATU, have a discussion with the customer and go over the pros and cons of both."

"One of our priorities is to educate customers on how to take care of a system — what to do and what not to do with it. Maintenance is critical to extending a system's life and keeping it working the correct way."
Joe Garner

Looking and acting the part

English Sewage Disposal prospers with help from a strong brand built around a professional image, from the way calls are handled to the appearance of people in the field.

The office is staffed seven days a week, generally from 6 a.m. to 9 or 10 p.m. Calls are answered in person at all times. "We want to be available when customers need us – not when it's convenient for us," says Joe Garner, general manager and project manager. "When somebody's system is overflowing and there's a mess in the house, the last thing they want is to wait until Monday to have the system pumped out. They may call a competitor and get an answering machine. They call us, they get somebody on the phone and generally within an hour we can have a truck on site.

"Our trucks are highly maintained. Safety is key. We want all our people to convey a professional image. We'll be implementing a uniform policy with workers wearing color coordinating pants and company shirts with their names embroidered on them. We are a professional organization, so let's look and act like it," he continues.

"The whole idea is to be more professional in how we interact with customers. We want to help raise the image of the entire industry up to a professional level."

START TO FINISH

Many of the company's installation projects begin with real estate inspections or routine maintenance visits that turn up issues with an existing system. The first step of project management is engineering. "We bundle everything together so it's convenient and a little bit cheaper for the customer," Garner says.

That bundle includes the engineering design, the backhoe to dig the profile pit, the site markout, schedule coordination, interaction with the county health department and all permit fees. The company contracts for engineering services but oversees the entire process. "We witness every profile pit, pull records from the health department and verify the number of bedrooms with the tax assessor's office," says Garner. "We compile complete information so that every question is answered. The engineers let us know when the design is ready. We pick it up, attach a check to the package and hand-deliver that to the health department so they can approve it."

Construction is a second bundle that includes tree removal, plumbing and electrical work as needed, all system components and their installation, coordination of health department inspections, and final landscaping (though some customers do that themselves). An important part of the process is a closeout session with the customer.

"One of our priorities is to educate customers on how to take care of a system – what to do and what not to do with it," says Garner. "Maintenance is critical to extending a system's life and keeping it working the correct way. It's less aggravation for customers in the long run if their system lasts longer and they have less to worry about.

ABOVE: Gary Trull uses a John Deere 160C LC excavator to dig a drainfield for a replacement onsite system in New Jersey.

RIGHT: Technician Steven Milbourne is in the process of removing 6,000 gallons of wastewater as the English Sewage Disposal team removes a failed chamber system and prepares to install a new system at a home in New Jersey.

"At the end of a project we have a closeout form. We go over what we did during the installation. We go over the maintenance. We've developed an operation and maintenance manual that we can give to the customer every time we finish an installation or repair: This is how often to have your tank pumped out. This is how often to check your effluent filter. No garbage disposals. Don't put any wet wipes or grease down the drain."

On the maintenance side, the company sends reminders to customers when pumping is due.

English Sewage Disposal owns eight vacuum trucks, model years 1985 to 2001, with tanks from 2,200 to 4,400 gallons, mostly built by Progress Tank. They carry pumps from National Vacuum Equipment, Wittig (Gardner Denver), Masport, Moro USA and Pearson. The fleet also includes a 1987 Kenworth T80 tractor pulling a 7,000-gallon Fruehauf tank trailer.

All vacuum truck drivers are trained to teach customers the basics of system care. "We like our customers to be home so that when we pump a tank, we can show them what's going on with the system," says Garner. "Because they may forget what we told them, the next time we're out there pumping, we go over it again."

FINDING CUSTOMERS

While repeat work helps sustain the business, growth depends on new customers. Behrens, Garner and Jamie Bitzer, marketing and advertising director (also DOT administrator), handle promotion from a basic blueprint. The program includes direct mail to lists generated from sewerage authority data: "We market where their sewer customers are not," says Garner.

The company has upgraded its website to be more educational and to enable customers to order and schedule services from mobile devices. "If people see one of our QR codes on a placemat ad, I want them to be able to scan it and go right to our website," Garner says. English Sewage Disposal began experimenting with social media four years ago and now embraces it fully. Melissa Smith, construction assistant in the office, is also social media coordinator. She uses these sites:

Facebook. The company has a business page and posts regular updates along with generic information about septic systems. "Many real estate agents are on Facebook, and we're friends with a lot of them," says Garner. Posts promote a Septic 101 presentation that Garner gives at no cost to real estate agents. Posts also let municipal teams know the company is available to support them.

watch them in action

To learn more about English Sewage Disposal, check out a video interview at www.onsiteinstaller.com.

Joe Garner measures the dimensions for installation of a new drainfield for a system being installed in New Jersey.

Pinterest. Before, during and after photos of installations are posted here. "Pinterest tends to attract more women," says Garner. "Women tend to care about how it's going to look. They want to see what kind of disruption will take place on their property, and they want to know that everything will be put back in order when we're done."

"We're always looking to expand our operation and come up with new ideas. We are in-the-box doers but out-of-the-box thinkers."
Joe Garner

Twitter. This site serves as an extension of Facebook. The company posts news updates, quick-hit tips about system care and links to articles in the trade and general media that help people understand their systems and maintain them effectively. As of last June, the company had nearly 300 Twitter followers.

LinkedIn. Here the company seeks connections with real estate agents and with middle management people in commercial and industrial businesses. "We stay in touch to let them know what's going on in the industry and that we're available to support their efforts," Garner says.

KEEPING THEM HAPPY

Years of aggressive promotion have helped English Sewage Disposal build a customer database of about 17,000. An enthusiastic staff helps keep those customers happy. Besides those mentioned earlier, key team members include Harold "Rich" Hedman, lead inspector and lead field technician; Jamie Wilson, executive assistant and construction and repair coordinator; and Valerie Coslop, administrative assistant and septic inspection coordinator.

"Everybody fills multiple roles," says Garner. "They're extremely dedicated to their jobs, their customers and the industry." Many team members hold certifications from the National Association of Wastewater Technicians and the Pennsylvania Septage Management Association. The company picks up the costs of certification.

Garner serves on the PSMA education and executive committees and is a director for PSMA Region 7, which covers New Jersey. He is NAWT-certified as a system inspector and installer, has an Advanced Inspector certification from PSMA and is listed as an installer on the Pennsylvania Department of Environmental Protection website. In addition, he holds the National Environmental Health Association Certified Installer Onsite Wastewater Treatment Systems Advanced credential.

Garner attends the Water & Wastewater Equipment, Treatment & Transport Show and shares what he learns with the team. "We're always looking to expand our operation and come up with new ideas," he says. "We are in-the-box doers but out-of-the-box thinkers. We want to incorporate whatever we can to make our lives easier, make our jobs easier and make our customers happier." ☐

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Preserving Land Application

Florida wastewater professionals lobby to stop a statewide ban on landspreading septage set for 2016

By Doug Day

The Florida Onsite Wastewater Association (FOWA) has made big strides in changing attitudes as it tries to avoid a statewide ban on the landspreading of septage. Legislation in 2010 banned the practice effective in 2016. A bill delaying the ban for one year to allow more study of the issue passed the state Senate on a 37-1 vote on the last day of the 2014 legislative session, while its companion bill in the state House was not brought up for a vote.

As one legislator says, many urban lawmakers don't understand the significance of the bill – 40 percent of septage collected in Florida is currently land-applied, according to the state Department of Health.

Protecting water resources is more than a public health issue, according to Roxanne Groover, executive director of FOWA, which has about 500 members. The state's natural freshwater springs, more than 900 of them, are also an important tourist attraction and the state began a $37 million springs restoration program in 2013.

"We try to put regulatory people and onsite professionals in classes together. Getting them in the same room tends to lead to better discussions and understanding, better rules and regulations, and better installations and maintenance."
Roxanne Groover

It looked like the bill to delay the landspreading ban was going to pass. What happened?

Groover: It certainly did look that way. It was heard by committees in both the House and Senate and passed each committee. Unfortunately, politics are politics and the bill died. We're going to have to go back next session [beginning March 2015].

There were a couple of nice things that came out of it though. It's more of a positive issue than it was. Going through all those committees was a tremendous opportunity to educate the Legislature and those attending the meetings because there is so much misinformation.

We moved forward quite a bit. People generally realized that this wasn't something for a blanket rule, it was more of sitting down with counties to see what they need. What they do in Miami is very different than what we do in rural areas. Land application isn't even a discussion in some areas because there is no land available. In other areas, it's the only option. More people now realize that.

What are your feelings about achieving a delay?

Groover: I feel comfortable. The bill would have required a study on the issue and the alternatives. Even though it didn't pass, DEP is moving forward with the study and reached out to FOWA and the Department of Health for help. They realize the importance of consulting the people who are deeply involved in the process.

Is that the biggest issue on your to-do list?

Groover: The springs issue was also big this past session and will be next year. Florida's waters are very important to us and we tend to talk about the springs because they are so important. But it encompasses so much more, including desalination and surface water. We typically talk more about nitrogen here in Florida, but it's a nutrient issue. Not just onsite, but all contributors. We're going to have to stay very aggressive to make sure onsite wastewater doesn't take a larger portion of the responsibility than we should.

Landspreading and springs protection are always going to be front and center. We are very involved in the legislative process. In order to do that, we have a political action committee to raise campaign funds and our members work hard to use it properly and stay active.

FOWA is a large group. What is the history?

Groover: We started as the Florida Septic Tank Association and celebrated our 40th anniversary in 2013. There weren't strong regulations or requirements for registration for onsite providers back then. A group of contractors wanted to make sure that our industry was well-represented and that people in the industry were professionals.

We became the Florida Onsite Wastewater Association in 2002 as the industry changed. We moved away from just septic tanks and into things like portable restrooms, alternative drainfield materials and aerobic treatment units.

Our membership reflects that. We have a very diverse membership of

(continued)

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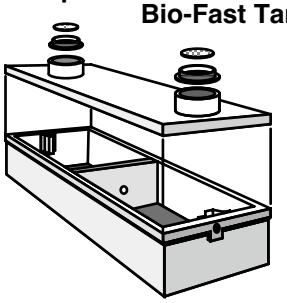

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those engaged in the manufacturing, installation, repair or maintenance of onsite sewage treatment and disposal systems, along with regulators and firms that service and supply the industry.

I've been the executive director for nine years. I'm an engineer by trade and started out with FOWA as the director of engineering and education. I take an active role in the legislation, education and public relations campaigns for the association. Sherrill Parr has been with us for 12 years and she is the director of financial and business management.

What is your role in education?

Groover: FOWA is the primary trainer of master and registered septic tank contractors and Department of Health employees. We've also seen quite a few plumbers and engineers involved in our training lately.

FOWA has had a training center since 1999 where we educate the public and professionals on water conservation and wastewater alternatives. Our new Education Building [in Lake Alfred in central Florida] was completed in 2006. It has a research facility that promotes and showcases a variety of wastewater treatment alternatives.

I also travel a lot, teaching about 50 classes on the road every year. Given today's economics it makes more sense for me to travel to an area and have 30 people come to a class than it is for them to travel a day or two to take classes in Lake Alfred.

Registered contractors in Florida are required to have 12 continuing education units a year and Masters need 18. Environmental health people need 24 CEUs every two years and we handle their onsite training. We try to put regulatory people and onsite professionals in classes together. Getting them in the same room tends to lead to better discussions and understanding, better rules and regulations, and better installations and maintenance.

In what other ways do you work with the regulators?

Groover: We provide industry experts to all the regulatory panels. We have a primary and alternate on the Research Review and Advisory Panel that has been developing strategies for nitrogen reduction. We have two people and alternates on the Technical Review and Advisory Panel that helps with decisions and rules for onsite wastewater. There is a contractor member who does work in the field and a manufacturing member.

We also have a member and two alternates on the state's Variance Review and Advisory Committee. Instead of rules being just black and white, there are options to help people move forward when permits are denied. People are very successful in getting variances. It helps that our members understand the technologies and can provide valuable insight to the committee.

It would be nice to keep areas of Florida pristine. We truly want to protect our waters but we also want to bring people to Florida. Sometimes those two conflict. One-third of the wastewater in Florida is treated by onsite systems and it gives us a tremendous responsibility that our members take very seriously every day. FOWA and its members consider themselves a valuable part of Florida. We protect the public and environmental health of the waters by staying committed to providing a safe, economical and proven means of wastewater treatment to its inhabitants. Remember, we fish, swim and play in those waters too.

Reach Roxanne Groover at 863/956-5540 or rgroover@fowaonsite.com.

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Mobile Restroom Designs
Money In Motion
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MTC
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Mud Technology International, Inc.
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Oakmont Capital Services, LLC
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Proline Group AB
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Zhejiang Danau Industries Ltd.
Zoeller Pump Company

Education Day Sessions

Monday, February 23, 2015

NAWT

National Association of Wastewater Technicians
Room 234-236

8 a.m.	Pre-Trip Inspections
9:30 a.m.	Hours of Service (HOS) Overview
11 a.m.	Roadside Inspections
1:30 p.m.	Environmental Impact Study: Effects of Water Softener on Septic Tank Performance
3 p.m.	A Study of Microbiological Induced Corrosion
4:30 p.m.	Ask the Expert Q & A

WJTA-IMCA

Water Jet Technology Association
Industrial Municipal Cleaning Association
Room 140-142

8 a.m.	Hydroexcavation – Tools to Stay Current in a Changing Marketplace
9:30 a.m.	Maximizing Productivity on Vacuum/ Air Mover Projects
11 a.m.	Waterblast Safety Can Enhance Productivity, Quality and Profits!

SSCSC

Southern Section Collection Systems Committee
Room 231-233

8 a.m.	Combination Vacuum Unit Operation Overview
9:30 a.m.	Been There, Done That, Got The T-Shirt (Small Business From a Hands-on Perspective)
11 a.m.	So You Think You Are the Best? CCTV Inspection In Its Highest Form
1:30 p.m.	Avoid the Pitfalls – Trenchless Pipeline Repair and Renewal
3 p.m.	NOZZLES, NOZZLES, NOZZLES!
4:30 p.m.	Ask the Experts Q & A

SSPMA

Sump and Sewage Pump Manufacturers Association
Room 243-245

1:30 p.m.	Sizing Guidelines for New or Replacement Sewage Pumps
3 p.m.	Backup Battery and Combination Pump Systems Evaluation and Installation
4:30 p.m.	Specifying Pumps: Why Do Pumps Fail?

NASSCO

National Association of Sewer Service Companies
Room 130-132

8 a.m.	Overview of Manhole Rehabilitation Technologies
9:30 a.m.	When, Why and How to Defeat Infiltration Cost Effectively
11 a.m.	New Opportunities in Small-Pipe Relining and Reinstatement
1:30 p.m.	Pipeline cleaning Best Practices
3 p.m.	Large-Diameter Pipe and Drain Rehabilitation Technologies
4:30 p.m.	Ask the Experts Q & A

NEHA

National Environmental Health Association
Room 237-239

8 a.m.	New Technologies for Non-Potable Water Use
9:30 a.m.	Rules & Regulations with New Technologies and Working with Regulators
11 a.m.	New Technologies for Non-Potable Water Use Part 2
1:30 p.m.	OSHA Regulations and Smart Business
3 p.m.	Sales & Marketing with New Technologies
4:30 p.m.	Ask the Experts Q & A

NOWRA

National Onsite Wastewater Recycling Association
Room 240-242

8 a.m.	Lobbying
9:30 a.m.	Field Inspections Part One
11 a.m.	Field Inspections Part Two
1:30 p.m.	Septic Tank Safety – Lethal Lids
3 p.m.	Time Dosing
4:30 p.m.	Ask the Experts Q & A

You can view the complete schedule of events along with an exhibitor list, floor plan, travel information and everything else you'll need to plan your trip to Indy at **wwett.com**

Portable Restroom Track

Beverly Lewis
Room 243-245

8 a.m.	Mastering the Busy Season
9:30 a.m.	A Great Customer Experience
11 a.m.	Employee Retention and Recruitment

Business Track

Kelly Newcomb, Ellen Rohr, Women's Roundtable
Room 136-138

8 a.m.	Grow or Go! Why Most Companies Fail to Grow Effectively and What You Can Do to Keep Your Company From Failing
9:30 a.m.	Target Marketing: How to Effectively and Efficiently Grow Your Sales
11 a.m.	Effective Branding and How it Can Help Your Business
1:30 p.m.	Business Basics 101
3 p.m.	Build the Business You REALLY Want
4:30 p.m.	Women in Wastewater Roundtable Discussion

Gil Longwell
Room 140-142

1:30 p.m.	Protecting Private Enterprise

Marketing Track

Susan Chin
Room 133-135

8 a.m.	Ladies and Gentleman: Create Your Personal Brand and Strategic Network for Success in 5 Easy Steps
9:30 a.m.	Effective Website Design and Engaging Customers in the Digital Age
11 a.m.	Tapping into the Power of Social Media and Content Marketing

Road Rules & Safety Track

John Conley
Room 133-135

1:30 p.m.	A Trucker's Guide to Washington Speak
3 p.m.	Cargo Tank Safety and Regulatory Report
4:30 p.m.	Compliance with Part 180 and Preparing for a Tank Truck CT Shop Audit

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Tuesday Sessions

Detailed session information available at: **wwett.com**

February 24, 2015

NAWT Track
Room 234-236

8 a.m.	Septage Processing Introduction: Working with an Engineer
9:30 a.m.	Analyzing Your Resources: What Goes on Around You is Important!
11 a.m.	Introduction to Odor Control

Onsite Installer Track
Room 231-233

8 a.m.	Soils, Design, O&M: What Every Installer Should Know
9:30 a.m.	Best Installation Practices for Trouble-Free Pump Controls
11 a.m.	Introduction to Effluent Filters

*MSW Track
Room 237-239

8 a.m.	Mapping Solutions for Repair and Maintenance of Water Distribution Systems
9:30 a.m.	The Shift from Reactive to Proactive Wastewater Management Best Practices
11 a.m.	Why Hasn't Your Sewer System Evaluation Survey Testing Worked?

*MSW - Municipal Sewer & Water

Treatment Plant Operator Track
Room 240-242

8 a.m.	An Emerging Technology for Lagoon-Based Nutrient Removal
9:30 a.m.	The New Wastewater: Collection System Challenges Caused by Today's Modern Trash
11 a.m.	Wastewater Microbiology

Industry Safety Track
Room 243-245

8 a.m.	New Trends and Technology in Equipment for Excavation Safety
9:30 a.m.	Best Practices: Use, Care and Repair of High-Pressure Sewer Cleaning Hose
11 a.m.	Development and Execution of a Cross-Bore Prevention Program

Business Track
Room 130-132

8 a.m.	How to Position Your Company in the Market Today
9:30 a.m.	Six Proven Tactics to Generate Leads and Turn Them Into Revenue
11 a.m.	Growth by Acquisition or Exiting Gracefully: Buying or Selling a Septic or Sewer Business

Drain Cleaning Track
Room 133-135

8 a.m.	Drain Cleaning Methods - Then and Now
9:30 a.m.	The Physics of Pipe Cleaning Tools and How I Make it Work for Me
11 a.m.	Lateral Lining – Are You Using the Right Tool?

Industry Technology Track
Room 136-138

8 a.m.	How to Manage Septic Systems using Remote Monitoring
9:30 a.m.	GPS Tracking: Hype Vs. Reality
11 a.m.	Wireless Controls in the Waterjet Industry: Sacrificing Safety for Convenience

Septic Series Track
Room 140-142

8 a.m.	True Crime Scene Stories: How to Inspect and Troubleshoot Suspect Onsite Systems
9:30 a.m.	One Man's Waste is Another Man's Treasure
11 a.m.	Dewatering Options for Roll-Off Containers

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

Wednesday Sessions

Detailed session information available at: **wwett.com**

February 25, 2015

Septic Series Track
Room 140-142

8 a.m.	Considerations in Building Your Next Vacuum Truck
9:30 a.m.	Grease Collection and Treatment: Raising the Bar Via Resource Recovery
11 a.m.	Analyzing Common Onsite Septic System Malfunctions and Options for Prevention & Correction

*MSW Case Study Track
Room 231-233

8 a.m.	Retrofit of the Lansdowne Sanitary P/S
9:30 a.m.	Huntington Beach Successfully Navigates Emergency Repair of Fragile Storm Drain
11 a.m.	Collection System Rehabilitation – Alternative Technology

*MSW Technology Track
Room 237-239

8 a.m.	Implementation of Acoustic Inspection Technology at the City of Augusta
9:30 a.m.	Highlights from the 7th Edition of Operation and Maintenance of Wastewater Collection Systems Manual
11 a.m.	Technological Advancements Fulfill the Promise of Zoom Survey Paradigm

Portable Sanitation Track
Room 136-138

8 a.m.	Portable Sanitation - Special Events
9:30 a.m.	Making Your Portable Restroom Business Lean and Mean – How to Boost Productivity and Increase Your Bottom Line
11 a.m.	T.B.D.

Treatment Plant Operator Track
Room 240-242

8 a.m.	Utility Regulation Basics for Grease Haulers
9:30 a.m.	The Waste in Our Wastewater
11 a.m.	Security Issues and Best Practices for Water/ Wastewater Facilities

Pipe Rehab Track
Room 243-245

8 a.m.	Integrating Temperature Sensor Technology within Lateral Pipeline CIPP Installations
9:30 a.m.	CIPP Calibration and Vacuuming
11 a.m.	Extending Life Expectancies with Corrosion-Resistant Coatings and Linings

Business Track
Room 133-135

8 a.m.	Team Building for Profit
9:30 a.m.	Ten Commonsense Ways to Grow and Improve Your Business
11 a.m.	Setting Expectations – The Key to Sales and Customer Satisfaction

Advanced Onsite Installer Course
Room 234-236
8 a.m. - 5 p.m.

- Introduction and Site Evaluation
- System Sizing and Basic Design Principles
- Pumping to Systems
- Installations of ATUs
- Installing for Management
- Troubleshooting Systems

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

Better Know the Subsurface Flow

Soil and landscape characteristics work together to ensure the right system is installed in the optimal location

By Jim Anderson and David Gustafson

Properly locating the soil treatment area not only involves knowing the soil characteristics (texture, structure, consistence and color) of the site, but also how the area relates to the landscape where an onsite system is being installed. Landscape – along with soil characteristics – will affect surface and subsurface flow of water into, across and out of the site.

Because of this impact, most states require identifying the hillslope position and the slope shape as a part of the site evaluation process to locate and design an individual sewage treatment system. As we have mentioned many times, an installer should take note of these characteristics, and questions about location relative to water movement should be resolved with the designer before installation begins, and probably before you bid the job!

Questions about location relative to water movement should be resolved with the designer before installation begins, and probably before you bid the job!

PROPER TERMINOLOGY

There may be some terminology relative to hillslopes and landscapes encountered in the design and system layout. This terminology originates from classic soil and geomorphic landscape studies. The terminology is explained in detail in the *Field Book For Describing and Sampling Soils* available online from the Natural Resources Conservation Service (USDA-NRCS).

There are five recognized areas along the profile of a hill. Think of them as segments of a line transect that runs up and down the slope. From the top of the hill to the bottom, these segments are the summit, shoulder, backslope, footslope and toeslope. As mentioned above, knowing the location can tell a lot about surface and subsurface drainage patterns.

Areas that are convex or linear in shape typically have good surface and subsurface drainage characteristics. On our transect, the shoulder and backslope areas have convex or linear shapes and are good places to locate the soil treatment area. Those at the bottom of the slope, footslope and toeslope would be concave in shape and are areas where water collects and causes wet soil conditions; so these would be areas to avoid.

The interpretation can go either way for summit areas. If the summit location does not have much slope and the soils are heavier in texture – clay or clay loams – internal drainage will be slow and drainage away will be slow, so an installer could expect those soils to be wet. On the other hand, if the materials are coarser in texture or there is some slope to the area, drainage can be good.

In all cases, the property that helps determine if we are in an area of wet soils is the soil color and whether the soil has redoximorphic features present. Redoximorphic features are represented by specific kinds of soil mottles caused by concentration or depletion of the soil minerals contributing to the soil color.

SLOPE DESCRIPTION

There is one more concept to consider and understand. Think of facing the vertical transect where the hillslope position (also called landscape position) has been defined and then run a line parallel to the contours across the slope. Ask yourself if this line is roughly linear, convex or concave. So each point on the side of the hill can be defined by a combination of two of the conditions. This provides nine possible combinations with the first word from the hillslope description and the second from the plane perpendicular to the slope: linear-linear; linear-convex; linear-concave; convex-linear; convex-convex; convex-concave; concave-linear; concave-convex; and concave-concave.

If the proposed soil treatment area is at the bottom of any concave type landscape, the design should take this into account by providing protection from both surface and subsurface water coming into the site. This could include the installation of swales or berms or even a curtain drain upslope from the site.

Two notes here: The soil descriptions should indicate if there is a wetness problem, so this in itself should affect the depth and type of system to be installed. Installers should check the soil report and see if it agrees with their assessment of the site. If not, this should be resolved before the installation proceeds.

Although the descriptions of hillslope and landscape were developed in the Midwest, the concepts apply everywhere – even in areas with drier climates such as the Southwest. We've seen examples where systems have been installed in landscape positions where water will collect. Everything goes fine for a number of years in these areas and then it finally rains. Rain

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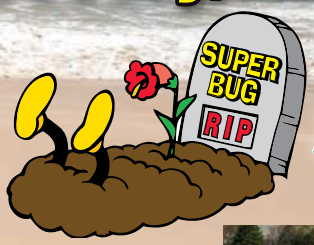

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in the summer during the monsoon period comes fast, hard and in large amounts. If the system is installed in an area with heavy water accumulation, it not only gets flooded but often gets taken right out of the ground!

KEEP IT DRY

Other aspects of the installation process can also be impacted by landscape characteristics. If wet soils are a problem, the installer may have to wait until the soil is dry enough. Remember the guiding principle of KIDD: *Keep It Dry!* Different kinds of equipment may be needed; routes into and away from the site may need to be changed, as well as where spoil piles or materials are stockpiled. Now almost everyone also needs a plan to control erosion and sediment, so there may be a need for silt fencing or other measures just due to the location of the system.

In upcoming articles, we will explore other conditions and problems relative to the landscape a system is installed on.

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Sinkhole Surprise

When the bottom fell out of a wastewater lagoon under construction at a state park, a new, expansive LPP system solved a drainfield dilemma

By David Steinkraus

In the process of updating its wastewater system, Stockton State Park in Dadeville, Mo., discovered a sinkhole the hard way, and that is why Travis Hodge helped solve the park's wastewater needs.

The park is on the edge of the Ozarks in southwestern Missouri, 254 miles southwest of St. Louis and 146 miles south of Kansas City. It had outgrown its 15-year-old system and the state began installing a new one. However the unusual geology in this part of the country put a kink in those plans. Geology provided an additional challenge for Hodge and the crew of his company, Travis Hodge Hauling, but it was a challenge they could easily meet.

THE PARK

Stockton State Park sits on the end of a peninsula surrounded by two arms of the Y-shaped Stockton Lake. The wastewater system now serves 70 campsites and five cabins, plus restrooms and the concession stand at the park's marina. It's hard to find a spot in the park more than 1,000 feet from the shore, and people are drawn to the park, its 300-slip marina and the 24,900-acre lake.

The park was developed in about 1969 when the nearby Stockton Dam began impounding water. For many years, the park's wastewater needs were met by a simple lagoon, and then by the addition of spray equipment to dispose of the effluent, according to Hodge. But park use continued to grow, and a few years ago the state began a project to expand the wastewater system. A different contractor was hired to build a new lagoon with a treatment plant and a large spray irrigation field to disperse water from the plant.

"And little did they know that particular area of land was susceptible to sinkholes," Hodge says. Sinkholes appear in Missouri. They're not common, but they're not uncommon. "When the lagoon was near completion they had a huge rain one night. It turned out there was nothing holding up the soil

SYSTEM PROFILE

Location:	Dadeville, Mo.
Facility Served:	Stockton State Park
Designer:	White River Engineering, Springfield, Mo.
Installer:	Travis Hodge Hauling
Type of system:	LPP dispersal system tying to existing treatment plant
Site conditions:	Fine soil with little structure and flinty hardpan
Hydraulic capacity:	6,300 gpd

<<Opposite Page: The new wastewater treatment plant at Stockton State Park in Missouri. At right is a stack of EZflow that became part of an LPP dispersal system. A sinkhole beneath the original system required a change of plans when work on the new system was partially complete. (Photos courtesy of Infiltrator Systems)

ABOVE: A member of the Travis Hodge Hauling crew checks a trench during installation of EZflow from Infiltrator Systems at Stockton State Park. Laterals were above the frost line, but that kept the crew from digging through the tough Missouri hardpan.

RIGHT: A main and laterals mark one of the distribution zones for wastewater at Stockton State Park in Missouri. The system used more than 10,000 feet of pipe, but it is friendly to the soil in this area prone to sinkholes.

beneath the lagoon, and they wound up with a hole about 16 feet wide and 16 feet deep."

The contractor got a change order. The hole dug for the new lagoon – and the sinkhole – was filled in and leveled off. The treatment plant remained. It consists of a 10,000-gallon septic tank and a 5,000-gallon septic tank in series for denitrification, a recirculating pea gravel filter, and ultraviolet light disinfection. A new bid went out for the dispersal method. Instead of spray irrigation, the design now called for an LPP system with a large drainfield and a hydraulic load of 0.2 gallons per square foot per day. That's where Hodge came in.

"We haven't seen anything quite like the dirt in this area. It drains so well that if it rains 2 inches on one day you can be hard at work two days later."
Travis Hodge

THE SYSTEM

The LPP solution installed by Hodge was large but simple. Water leaves the treatment plant through two force mains made of 2 1/2-inch Schedule 40 PVC. One main runs about 100 feet to one LPP field while the other main runs about 200 feet to the second field.

At the head of each field, each main enters a six-position indexing valve that mechanically doses the LPP zones. Valves are set higher than the field so they will not hold water in case of a sustained hard freeze. That is not common in this part of Missouri, and valves and the manifolds are buried above the frost line. This also kept them out of tough soil on the site.

The two dispersal fields are divided into six zones, each about 150 feet wide and 300 feet long, with six laterals per zone. The job required 10,386 feet of pipe. The mains in each field were also 2 1/2-inch pipe. Laterals were created with EZflow from Infiltrator Systems, meeting the engineer's requirement that there be no compaction of the soil, Hodge says.

Laterals within each zone were laid 5 feet on center, and the spacing between zones varied from 5 to about 30 feet. Approximately 16 to 18 inches of native topsoil covered the laterals.

An LPP system like this one is an advantage in areas prone to sinkholes because it disperses water over such a large area, Hodge says. There is little chance of soil washing away. Yet the system design takes into account the possibility of another sinkhole. If one appears under one of the new LPP fields, the operator can shut off an entire zone. The system can run properly on 10 of its 12 zones even during a time of peak use in the park. Maintenance plans also contain a protocol for fixing sinkholes. Repair begins with large stone against bedrock, and then increasingly smaller grades of stone closer to grade. A layer of filter fabric is placed on the top layer of stone, some base rock is placed on top of that and then soil is used to meet the grade.

CHALLENGES

The engineer's concern about compaction of the soil extended to equipment. "He wouldn't let me bring wheeled machines on the job site. Everything had to run on tracks," Hodge says.

Fortunately that wasn't a problem. Hodge switched to tracked equipment some time ago because it is much more stable on hillsides, and he says in his part of the country backhoes are unusual now because so many companies have changed to excavators. Hodge uses Kubota and Komatsu equipment. Most of this project was installed with a Kubota 161 tracked excavator.

The soil is unusual in this part of the country. It's a deep red color with very fine particles, not sand but still with little structure. Even when damp it's hard to compact a handful into a ball, Hodge says. "We haven't seen anything quite like the dirt in this area. It drains so well that if it rains 2 inches on one day you can be hard at work two days later."

One sinkhole appeared during the job, but it was only 6 or 7 feet deep and about the same in diameter, Hodge says. His guys filled it in and moved on.

(continued)

"When the lagoon was near completion they had a huge rain one night. It turned out there was nothing holding up the soil beneath the lagoon, and they wound up with a hole about 16 feet wide and 16 feet deep."
Travis Hodge

LEFT: Pipe marks the locations of the LPP zones constructed at Stockton State Park in Missouri. Wastewater is dispersed in a total of 12 zones, each about 150 feet wide and 300 feet long.

ABOVE: This concrete box holds a six-position indexing valve to distribute wastewater among the LPP zones. The valves were buried above the frost line and drain when they are not active.

They were also fortunate because they didn't have to deal much with the hardpan. This is another feature of Missouri soils, Hodge says. It's a fine gravel with a large fraction of red rock. You can dig through it, but there's a great deal of flint in the rock. A broken piece of red rock can be sharp enough to cut skin, and it is not friendly to excavator teeth.

On the Stockton State Park job, the crew dug through hardpan for only 200 feet to bury the force mains. The laterals and indexing valves could be buried above the hardpan. As a result, Hodge's crew wore out only a few teeth during the job. It can be worse. On one job a few years ago, a crew went through one set of teeth for about every 100 feet of digging, he says.

The other holdup was weather. Work started in March but did not end until June because of frequent rain. During some periods the crew of three to four could work only one day in every week, Hodge says.

EXPERIENCE COUNTS

What doubtless helped him win the bid was experience, Hodge says. His company does a large amount of government work, mostly for small and large cities that are extending or replacing municipal water and wastewater systems. Travis Hodge Hauling has installed LPP systems for subdivisions, but none as large as the Stockton State Park project.

Now, with help from Hodge and his crew, Stockton State Park is ready to provide many more years of recreation with a system that won't disappear down a hole.

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Minnesota tracks onsite system permitting, promotes updated infrastructure

By Doug Day

More than 26 percent of septic systems in Minnesota have been installed in the last 12 years, according to the Minnesota Pollution Control Authority (MPCA). Of the 146,400 construction permits issued during that time, more than 72,000 were for replacement systems, accounting for about 4.96 billion gallons of sewage per year being treated by modern systems.

The MPCA reports the estimated number of compliant systems in the state increased from 334,500 in 2007 to 427,000 in 2013 according to an article in the August/September issue of the Minnesota Onsite Wastewater Association *Little Digger* newsletter. Local officials reported approximately 534,000 septic systems in Minnesota in 2013, according to the article. They reported issuing 8,911 construction permits for new and replacement systems and 296 repair permits for a grand total of 9,207 new construction permits.

"The work counties are doing to identify where septic systems are, how well they are working and the soil conditions at the sites is very important," says Jim Ziegler, manager of the MPCA Subsurface Sewage Treatment Systems (SSTS) unit. "This helps us decide where we need to focus resources to best protect human health and the environment."

HAWAII

New rules to reduce the use of cesspools is under consideration in Hawaii, the only state that still allows new cesspool construction. That would change under the proposal that would ban new cesspools and require replacement of existing cesspools with septic systems or connection to a sewer system when a property is sold.

According to *West Hawaii Today* newspaper, the 115-page water-quality plan now under consideration also includes new water-quality monitoring initiatives, reducing unpermitted underground injection wells, prioritizing impaired watersheds for restoration, and completing guidelines for treatment and reuse of recycled water.

In the cesspool section of the plan, the Department of Health states, "There are currently approximately 90,000 cesspools in the state — nearly 50,000 located on the Big Island (Hawaii), almost 14,000 on Kauai, over 12,000 on Maui, over 11,000 on Oahu and over 1,400 on Molokai. Each year an additional 800 new cesspools are approved for construction."

The Department of Health says cesspools release about 55 million gallons of untreated sewage every day across the state's islands.

State officials say the time of transfer provision would help with the transition away from cesspools. As the plan says, "Requiring cesspool upgrades when property is sold makes sense because the cost of the upgrade can be shared between the buyer and seller at a time when sellers, with proceeds from the sale, are better able to afford upgrading costs, and buyers, who are usually borrowing already for their purchase, may obtain additional financing for eliminating a cesspool."

Builders and real estate professionals are opposing the proposal. They say it could add $10,000 to the cost of new construction and make it difficult to sell existing homes.

WEST VIRGINIA

Several updates were finalized in July for general Water Pollution Control Permits for surface discharging systems by the West Virginia Department of Environmental Protection (DEP). A key change is that systems must now be tested within one year of permit issuance and meet discharge limits of their classification. If the test results are within the limits, no further monitoring is required during the five-year permit period. If a system is not in compliance, at least one sample will be collected annually until it does meet the limits. At this time, the DEP has not decided what to do with systems that continually fail the testing.

Among the other changes:

- All new systems must include flow equalization.
- Cluster systems for individual residences are not allowed.
- Effluent media filters are now required for any system that discharges to a roadside ditch.
- Those that discharge to the Chesapeake Bay drainage area must receive a waste load allocation and provide for nutrient offsets for nitrogen and phosphorus.

A new section on sludge management was also added. It requires that sludge be removed by certified haulers and that all records and reports be kept for five years.

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Learning Opportunities Await

The education offerings at WWETT 2015 provide the latest information on technology, safety and business for the liquid waste industry

By Craig Mandli

The Water & Wastewater Equipment, Treatment & Transport (WWETT) Show in Indianapolis features the newest equipment in the industry and opportunities to network with peers, but you'll also find an unmatched focus on continuing education. The 2015 show will host a series of valuable seminars to help wastewater professionals enhance their knowledge base and in turn help their businesses.

WWETT 2015 kicks off Monday, Feb. 23, with Education Day. Tracks of workshops are sponsored by a variety of professional organizations, including the National Association of Wastewater Technicians (NAWT), National Environmental Health Association (NEHA), Southern Section Collection Systems Committee (SSCSC), National Association of Sewer Service Companies (NASSCO), National Onsite Wastewater Recycling Association (NOWRA), Waterjet Technology Association/Industrial & Municipal Cleaning Association (WJTA-IMCA) and the Sump and Sewage Pump Manufacturers Association (SSPMA).

The following days will feature a variety of additional workshops and roundtable-type discussions covering a range of topics from truck inspections to grease hauling to small-business branding.

All workshops will be held at the Indiana Convention Center in meeting rooms adjacent to the exhibit hall. For more information on seminar times, locations and speakers, visit www.wwett.com.

Seminars of interest to liquid waste industry professionals include:

EDUCATION DAY, MONDAY, FEB. 23:

Environmental Impact Study: Effects of Water Softener on Septic Tank Performance, by Eric Yeggy, director of technical affairs for the Water Quality Association in Lisle, Ill. The seminar will cover recent research being conducted through the Water Quality Association on the impact of water softeners on septic tank performance.

A Study of Microbiological Induced Corrosion, by Claude Goguen, the National Precast Concrete Association's director of sustainability and technical education. Purdue University's two-year study on microbiologically induced corrosion will be discussed. Participants will look at the next steps of this initiative and what NPCA members are doing to build tanks that will withstand MIC.

Ladies and Gentlemen: Create Your Personal Brand and Strategic Network for Success in 5 Easy Steps, by Suzan Chin, founder and chief marketing officer of Creative Raven. This session is designed for seasoned business pros and startups alike. It will cover five key elements for personal branding and creating a circle of influence to build business and develop useful and mutually beneficial relationships.

Effective Website Design and Engaging Customers in the Digital Age, by Suzan Chin. Review elements to implement when designing and building a website to meet the needs of today's demanding online audience, such as developing a budget, a plan of action, strategy, timelines and content development.

Tapping into the Power of Social Media and Content Marketing, by Suzan Chin. Review the pros and cons of various social media to help department leaders perform due diligence and make good decisions for online marketing initiatives. The discussion will cover content marketing, how it works, when it should and can be used, and how to utilize it to maximize advantage.

Protecting Private Enterprise, by Gil Longwell, a Pennsylvania Department of Environmental Protection and Department of Community Affairs certified environmental trainer and a Kellogg Fellow. Discuss public policy issues associated with the wastewater management industry. Recognizing the players, becoming your legislator's behind-the-scenes expert and making your voice heard will round out the discussion.

Been There, Done That, Got The T-Shirt (Small Business From a Hands-On Perspective), by Jim Aanderud, president and owner of Innerline Engineering. Look at the financial challenges in business and discuss ways to increase volume, profit and cash flow. Also discuss the challenges of family-owned businesses, and look at ways to inspire and challenge employees to be key players in the organization.

New Technologies for Non-Potable Water Use, Part 1, by Albert Robert Rubin, senior environmental consultant and principal with A. R. Rubin and Associates. Explore standards and requirements for onsite residential and commercial water reuse treatment systems; water-quality requirements for

Education Day, slated for Monday, Feb. 23, will kick off four consecutive days of learning opportunities at the Water & Wastewater Equipment, Treatment & Transport Show.

non-potable water use; competency of personnel managing reuse systems; and using evidence-based information to communicate with the public.

New Technologies for Non-Potable Water Use, Part 2, by Albert Robert Rubin. This presentation will expand on Part 1, exploring water reuse and advanced technologies for difficult situations and retrofitting existing systems, including homes with onsite wastewater systems.

Rules and Regulations with New Technologies and Working with Regulators, by Anthony Smithson, consultant and former director of environmental health in Lake County, Ill. This session will focus on working with regulators and regulations that are outdated, inflexible and built on unfounded assumptions.

OSHA Regulations and Smart Business, by Doug Lassiter, executive director and lobbyist for the North Carolina Septic Tank Association. Learn the basics about the Occupational Safety and Health Administration (OSHA), what to keep in mind and what to keep on hand in the field.

Sales and Marketing with New Technologies, by Doug Lassiter. Learn what to keep in mind for your sales and marketing plan. Special consideration will be given to integrating new technologies and services into existing sales and marketing plans and strategies.

Sizing Guidelines for New or Replacement Sewage Pumps, by Deron Oberkorn, corporate product development manager for the Zoeller Company. This session will discuss general and technical information on the selection and sizing of effluent pumps in onsite waste treatment systems.

Backup Battery and Combination Pump Systems Evaluation and Installation, by Alan Schulman, founder and CEO of Glentronics. This presentation focuses on the value of having a backup unit for the primary sump pump. It will answer the questions associated with the available options such as battery-operated, inverter-operated or water-powered pumps.

Specifying Pumps: Why Do Pumps Fail? by Jeff Hawks, president at Champion Pump Company. Review the differences between sump, effluent and sewage pump applications, discussing various types of construction and design used such as motors, bearings, impellers, seals and cord entrances, and touch on the different types of switches used in pumping applications.

Grow or Go! Why Most Companies Fail to Grow Effectively and What You Can Do to Keep Your Company From Failing, by J. Kelly Newcomb, principal/owner of i.e.Brand and Newcomb Consulting Group. Participants will understand why 90 percent of organizations fail to realize their growth plans. By utilizing the power of the 80/20 principle and other organizational practices, companies will learn to identify and overcome obstacles to growth.

Target Marketing: How to Effectively and Efficiently Grow Your Sales, by J. Kelly Newcomb. This session will provide participants with a proven process and tools to grow sales.

Effective Branding and How It Can Help Your Business, by J. Kelly Newcomb. Participants will understand the basics of branding and how effective branding can help companies grow their sales and improve profitability.

Business Basics 101, by Ellen Rohr, business-building author and consultant. Learn how to lay claim to your financial power, and how to read and use financial reports to keep score in the game of business.

Build the Business You Really Want, by Ellen Rohr. Learn how to develop a simple strategy for a powerful business plan that will drive you toward your goals.

Women in Wastewater Roundtable Discussion, featuring Lara Mottolo, Therese E. Wheaton, Shanna Sands and Joyce Gresh. The panel of professionals from different facets of the industry will address product and service questions, the future of the industry, as well as general managerial and career building advice for those starting out in environmental services.

Lobbying, by Eric Casey, executive director of the National Onsite Wastewater Recycling Association. Participants will learn why it's important to be politically active and some of the ways to become involved.

Field Inspections, Part 1, by Scott Hetrick, vice president of sales at Norweco. This presentation will look at field testing for advanced wastewater treatment units from the manufacturer's point of view.

Field Inspections, Part 2, by James A. Bell, executive vice president of Bio-Microbics. This session continues the discussion of field testing in Part 1.

Septic Tank Safety – Lethal Lids, by Pat Mulhall, vice president of sales at Polylok. This session will focus on the often-overlooked safety component of septic tank installation and maintenance, including a discussion of available safety measures and the benefits of putting safety first.

Time Dosing, by Tom W. Ashton, an environmental health specialist, soils scientist, onsite evaluator and alternative onsite system operator in Virginia. With a concentration on smaller flows, application of system tools to mitigate various facilities, use and soil/site conditions will be reviewed, including preliminary design calculations and treatment/dispersal train configurations.

TUESDAY, FEB. 24:

Soils, Design, O&M: What Every Installer Should Know, by Brendan Cory, owner of BSC Environmental. Explore soil evaluation and water tables and how those evaluations play a role in the sizing and siting of onsite wastewater treatment systems.

Best Installation Practices for Trouble-Free Pump Controls, by Brett Wilfong, distributor sales manager, and Mark McCollum, regional sales manager for the western United States for SJE-Rhombus. This presentation will discuss the best methods for installing wastewater pump control panels and float switches, factors that can lead to premature pump system failures and troubleshooting pump systems when problems do occur.

Introduction To Effluent Filters, by Bob Smith, a systems engineer for Orenco Systems. Comparing and contrasting the four methodologies for providing sewer service: conventional gravity sewer, grinder sewer, vacuum sewer and effluent-only sewer. Advantages and disadvantages, capabilities and limitations will be discussed, as well as implications for selection of appropriate treatment technologies.

New Trends and Technology in Equipment for Excavation Safety, by Mike Ross, shoring specialist and national training director at Efficiency Production Inc. The presentation will cover current and emerging trends for excavation safety in urban, residential and congested environments; options and requirements for excavation safety, including OSHA standards; and specific new techniques, technology and safety equipment.

How to Position Your Company in the Market Today, by Mike Aguglia-ro, co-owner of Gold Medal Service and owner of the service-business mentoring firm, ServiceKey. Discuss how identifying a target audience, finding a unique selling proposition and establishing an effective marketing strategy can help strongly position a company in the market.

Six Proven Tactics to Generate Leads and Turn Them Into Revenue, by Heather McLeod, brand manager, and Dianna Worthington, franchise consultant and training manager for Mr. Rooter. This session gives straightforward advice on making the phone ring with qualified leads and tactics to turn those phone calls into viable, consistent sales dollars.

Growth by Acquisition or Exiting Gracefully: Buying or Selling a Septic or Sewer Business, by A. Rhodes Wilson, a business consultant. This session will help identify prospective buyers or sellers and make a successful approach; apply appropriate valuation factors; understand potential pitfalls of the sale and identify and understand typical sales terms and conditions; structure the deal; and know what to expect at closing and during the transition.

How to Manage Septic Systems using Remote Monitoring, by Scott Robinson, managing director of RH2O North America. Learn how advances in control systems and remote monitoring solutions can save customers and maintenance providers time and money, and protect environmental health.

True Crime Scene Stories: How to Inspect and Troubleshoot Suspect Onsite Systems, by Dawn Long, owner of American Septic Service. Through photographs, this presentation will examine crucial components of point-of-sale inspection forms that will aid inspectors and maintenance providers in correctly identifying "who done it."

WEDNESDAY, FEB. 25:

Analyzing Common Onsite Septic System Malfunctions and the Options for Prevention and Correction, by Dennis Hallahan, technical director at Infiltrator Systems. This presentation will review some malfunctions/challenges and present emerging technologies and system design strategies to address them. It will draw on two specific cases to illustrate solutions/approaches to meet the challenge of installing high-functioning systems in difficult soils.

Team Building for Profit, by Don Daub, electrical engineer, technology trainer and consultant. This seminar coaches contractors on the importance of unifying the team to meet goals. Topics include time management skills, personality types, basic group dynamics and team cohesiveness.

Ten Common-Sense Ways to Grow and Improve Your Business, by Lane Post, president and founder of Pacific Drain Service and Arrow Pipeline Repair. This talk stresses intangibles of small-business ownership, such as passion, personality and perseverance, and suggests a return to old-fashioned values aided by electronic technology.

Setting Expectations – The Key to Sales and Customer Satisfaction, by Matthew Sutton, a founder and vice president of sales and marketing at RapidView IBAK. Effectively manage expectations to build your business, make customers much happier and avoid unnecessary conflict.

Introduction and Site Evaluation, by Jim Anderson, Ph.D., Department of Soil, Water and Climate at the University of Minnesota, and Dave Gustafson, P.E., a civil engineer and trainer in the Minnesota licensing program. This session will briefly review site planning and preparation, including soils evaluation, factoring in setbacks and easements, lot elevations, lot size and system configurations and placement.

System Sizing and Basic Design Principles, by Jim Anderson, Ph.D., and Dave Gustafson, P.E. Look at the basics of design and what goes into determining system sizes and types.

Pumping to Systems, by Jim Anderson, Ph.D., and Dave Gustafson, P.E. One of the first steps to installing advanced technologies is understanding pump basics and how to pump to elevations and to pressure distribution systems. Learn to understand potential problems with pump systems, such as freezing or plugging, and how to deal with them.

Installations of ATUs, by Jim Anderson, Ph.D., and Dave Gustafson, P.E. Discuss how to approach installing an aerobic treatment unit or tank, how it is different from a septic tank and what you need to know.

Installing for Management, by Jim Anderson, Ph.D., and Dave Gustafson, P.E. With today's focus on taking care of systems for the long term, installers need to understand their role in effective operation and maintenance or system management.

Troubleshooting Systems, by Jim Anderson, Ph.D., and Dave Gustafson, P.E. Installers are often asked to inspect and repair a system that is not working properly. This session will discuss troubleshooting and working toward solutions.

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Water & Wastewater Equipment, Treatment & Transport Show

World Health Organization talk slated for WWETT Show

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

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

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

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

If you would like to attend the WHO program, fill out the online registration form at

www.wwettshow.com/who

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The Dream Garage

From durable cabinetry to timesaving tools, a well-appointed workshop for vehicle and equipment maintenance will keep your mechanics happy and your onsite business running smoothly

By Ed Wodalski

If money is no object, what are the top features you want in a dream garage? As a contractor and onsite installer, your garage needs to be a functional and comfortable space, a workshop that supports your thriving business and provides storage for your most important equipment.

Need inspiration? Roger Penske's state-of-the-art race facility in Mooresville, N.C., was built for performance and style. Two buildings totaling 424,697 square feet are built on 105 acres. One million pounds of Italian tile (250,000 pieces) provide the flooring in the administrative and NASCAR shop areas.

While your garage probably won't rival those used by NASCAR racing teams, onsite installers can take away some good ideas from the top garages in America.

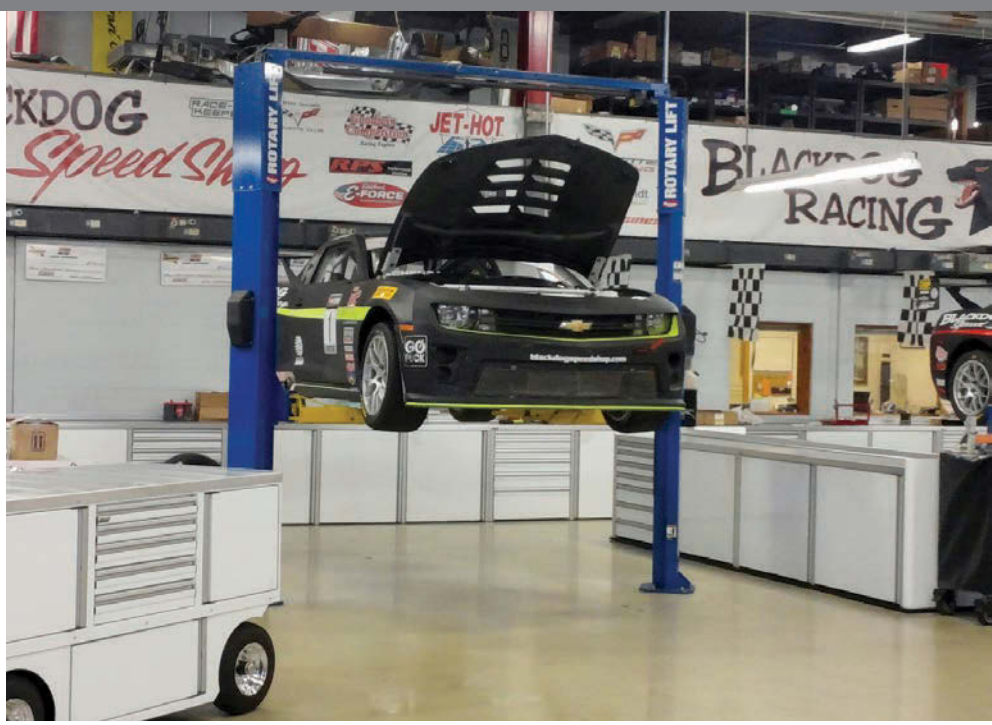
Doors and drawers: Nate Birkenmeier with CTech Manufacturing in Weston, Wis., designer of aluminum cabinets, tool drawers, pit carts and other storage devices for the U.S. military and motorsports teams, says the key to a good garage is organization.

"Racers are constantly looking for ways of improving the performance of their car; being organized at the track, garage or shop is the key to staying focused," he says. Birkenmeier suggests paper towel racks, aerosol can holders, battery-charging stations and fold-down workbenches for optimal organization.

"The perfect shop would consist of premium, all-aluminum cabinets," he says. "Aluminum far exceeds steel or wood. It resists weather, won't mold or invite pests."

Floors and coatings: Tom Hennessy, president of CD Products in Appleton, Wis., provider of industrial flooring and coatings, says there are four levels of flooring to consider for your dream garage.

"Among other things, you want to have the concrete made impervious to grease and oil stains, gasoline spills. You can start with a clear sealer; epoxy or urethane would be a very good choice," he says. "A step up from that would be the same idea in a color. Of course the product would have to have chemical resistance to automobile fluids. Once that's determined, it's a matter of product choice."



ABOVE: A lift makes quick work of many difficult jobs.
BELOW: A heated concrete floor adds comfort and class. (Photos courtesy of CTech Manufacturing)

Good lighting is important for any garage along with easy access to air lines.

A multilayer chip or flake-type floor with a speckled look is another option. "Now we're getting into the designer-type colors where you want it to accent or contrast with the walls," Hennessy says. "Again, you want to be sure the materials you used were resistant to automobile liquids." For "wow" appeal, consider a quartz floor, made by blending colored sands with epoxy or urethane topcoats.

"Racers are constantly looking for ways of improving the performance of their car; being organized at the track, garage or shop is the key to staying focused."
Nate Birkenmeier

A bright idea: Lighting is a key feature for any busy small-business garage, and today's LED technology offers optimal quality at a price that keeps coming down. NASCAR legend Richard Petty realized a 50 percent reduction in energy use after retrofitting his 100,000-square-foot garage with 700 LED lights.

Elevation: Five-time NASCAR winner Dave Marcis, of Arden, N.C., says a dream garage will have a lift or lifts for better access when vehicle repairs are needed. "I would have two lifts," he says. "I'd have one where you put the car on with wheels and have one where you could put the car on a frame."

Air to spare: Marcis says a dream garage also needs easy access to air lines for powering drills, sanders, ratchets, paint sprayers, die grinders, hammer/chisels, impact wrenches and reciprocating saws, as well as for inflating tires and cleaning debris out of hard-to-reach places. "Have stuff close together along the wall so you don't have to run cords that you're tripping over."

Heated floors: "I think the stuff with the tubing in, the heated floors; again depending on what part of the country you're in – down here not necessary but in Wisconsin you need it," Marcis says. "Those floors are cold in the winter. If you can keep your feet warm it's a lot nicer working."

Welding and grinding: You might also have an area for welding and grinding with a vacuum system to collect the filings, Marcis says. Having a spacious and safe work area makes welding bent forks, blades and buckets a breeze. Grinders give repairs a finished look and have unlimited uses, from cutting bolts to removing rust.

Keeping clean: While cost conscious, Marcis says two things he won't do without are a restroom and shower. "Yes, definitely," he says. "A good place to clean up, because a lot of nights we worked until 1, 2 o'clock in the morning, certainly midnight a lot of times; it was always nice to take a shower before you hit the road."

Wash bay: Marcis says a dedicated area for cleaning vehicles is a must. "It's nice to have a place for pressure washing the [vehicles] inside and out and a steam cleaner all in one bay," he says. "Have it big enough where you can pull your truck or equipment in there and clean it."

Eyes on the outside: As with any investment, security is a must. Consider video cameras, motion detectors and alarms for your garage and surrounding yard. You might even include a wet/dry fire suppression system.

Personality: "I think what makes a great garage is not how much money you put into it or how different your cabinets look or how ostentatious it is, but how it reflects the personality of the owner or the company," says Chad Haas, founder of Vault, designer and outfitter of custom dream garages in Beaverton, Ore. "If you're passionate about Ferraris, have Ferrari red on the walls and a Ferrari neon sign. The garage should exude personality."

SEND US A PHOTO

What's in your dream garage? Send us a snapshot at editor@onsiteinstaller.com. We'll share photos and your ideas for a top-notch small-business garage in a future issue of the magazine.

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The PTX44 ride-on service plow from Vermeer is designed for the installation of fiber-optic cables, electrical and gas services, and irrigation systems. Powered by a 46.8 hp Kubota water-cooled gasoline engine, the plow delivers 88.7 ft-lbs of torque and features a dedicated plow with the option to utilize a forward-mounted trencher and/or bore attachment. The plow has a maximum installation depth of 24 inches. The optional trencher attachment has a maximum trenching depth of 42 inches and width of 6 inches. The optional bore attachment has a rotational torque of 620 ft-lbs. 641/628-3141; www.vermeer.com.

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Pressure washers from Water Cannon meet or exceed 2014 U.S. Environmental Protection Agency and California regulations relating to fuel tanks, vents and carbon canisters. The pressure washers feature low-permeation fuel tanks and fuel lines. Fuel caps vent to the engine's air cleaner instead of the atmosphere. Model 17H85 has a Honda GX 690 electric start engine, 15-gallon fuel tank, roll cage protection and a TSP General triplex plunger pump that delivers 4 gpm and 7,000 psi. 800/333-9274; www.watercannon.com.

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

industrynews

Manitou Americas names skid-loader sweepstakes winner

Manitou Americas named Beth Hodges of Indian Trail, N.C., as winner of the Gehl R190 throwback skid-loader, custom painted in the original maize and blaze color scheme from 1973. The skid-loader was created to recognize the 40th anniversary of Gehl skid-loaders.

NESC publishes septic education article

The National Environmental Services Center published "Maintaining Septic Systems Can Help Community Residents Save Money and Protect Local Waters and Public Health," an article describing resources and strategies local officials can use to educate residents about caring for and maintaining their septic systems. The article can be accessed at www.nesc.wvu.edu/waterwedrink/articles/septic_maintenance.cfm.

SJE-Rhombus appoints board member

Lenny Newman

SJE-Rhombus appointed Lenny Newman to its board of directors. Newman is the chief financial officer for East View Information Services, provider of native and translated foreign language information products and services.

Infiltrator acquires leaching device patent

Infiltrator Systems acquired a leaching system (U.S. patent 7,351,005) from David Potts and Geomatrix for undisclosed terms. The slotted leaching device minimizes passage of soil through the sidewall of the chamber with openings in the top to allow oxygen transfer. ◻

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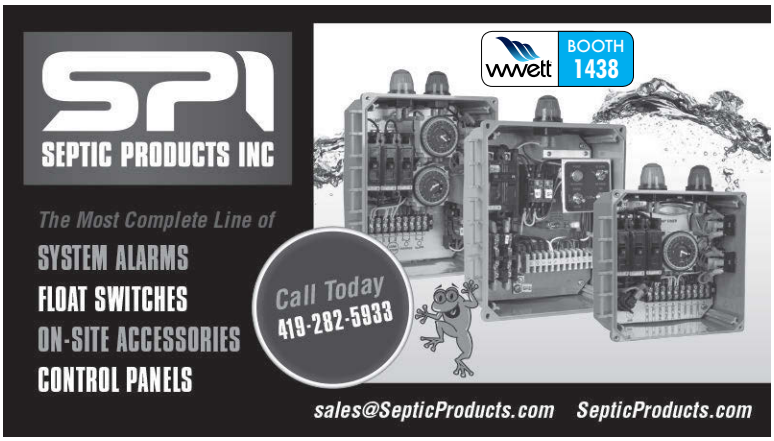
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If you would like your wastewater trade association added to this list, send contact information to editor@onsiteinstaller.com.

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; 678/646-0379

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

Idaho

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

Illinois

Onsite Wastewater Professionals of Illinois; www.owpi.net

Indiana

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

Iowa

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

Kansas

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

Kentucky

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

Maine

Maine Association of Site Evaluators; www.mainese.com

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

Maryland

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

Massachusetts

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

Michigan

Michigan Onsite Wastewater Recycling Association; www.mowra.org

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

Minnesota

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

Missouri

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

Nebraska

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

New Hampshire

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

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

New Mexico

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

New York

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

North Carolina

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

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

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

Ohio

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

Oregon

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

Pennsylvania

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

Pennsylvania Onsite Wastewater Recycling Association; www.powra.org

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

Tennessee

Tennessee Onsite Wastewater Association; www.tnonsite.org

Texas

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

Virginia

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

Washington

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

Wisconsin

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

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

NATIONAL

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

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

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

CANADA

Alberta

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

British Columbia

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

Manitoba

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

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

New Brunswick

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

Nova Scotia

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

Ontario

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

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

Saskatchewan

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

Canadian Regional

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

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