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# We've Got a Lot to Talk About at the WWETT Show

Share stories of challenging system installs and your great company culture, and the topics you'd like to see covered in this magazine

By Jim Kneiszel



Welcome to the 2016 WWETT Show issue of *Onsite Installer*. If you're reading this at the Indiana Convention Center, you're among the lucky thousands of wastewater professionals enjoying the biggest trade show on the planet for your industry. It's great that you've arrived in Indianapolis, and I hope to meet you during Education Day or as you check out products in the exhibit hall.

One place we can meet up is the exciting new venue, the WWETT Show Kickoff Party, 5-8 p.m., Feb. 17 and 18, at the home of the Indianapolis Colts, Lucas Oil Stadium. Find me near the COLE Pub truck, parked at the 50-yard line, and let's talk about the industry issues you find important. Tell me about your company and the concerns you have moving into the 2016 busy season.

**We know onsite plays a pivotal role in providing a good portion of this country's wastewater treatment and that the technology is top-notch and getting better all the time. That message is a hard sell, however, in the face of bad news.**

Do you already have a backlog of work scheduled for spring? Is your crew up to speed with required training and ready to start digging in the ground? Are you finding it a challenge to keep up with ever-changing regulations regarding use of advanced technologies and inspection requirements? These are just a few things we can discuss while sharing refreshments at the Kickoff Party.

The WWETT Show is my best chance to meet installers face to face and learn about topics you would like to see covered in the magazine. I enjoy hearing about the companies you have built from the ground up and are looking to improve every day. I jot down your technical questions that I can pass along to Jim Anderson and Dave Gustafson, authors of the popular Basic Training feature. I want to hear about the onsite equipment components you're keeping an eye on at the show.

Here are a few industry topics we can discuss further at the WWETT Show:

**Focus on flushable wipes**

A Rules and Regs story in this month's issue about the U.S. Federal Trade Commission's order that manufacturer Nice-Pak Products cease

promoting its woven wet wipes "flushable" sent me looking for the company's spin on the controversy surrounding a growing clogging problem – both in septic systems and municipal wastewater systems. And spin they do at the website [www.nicepak.com](http://www.nicepak.com).

Nice-Pak deflects the blame, stating that other sources – including paper towels, feminine hygiene products and nonflushable wipes – made up about 90 percent of items found in studies of clogged pump station inlet screens. They say "flushable" wipes represent only 9 percent of the items found in the inlet screens.

Wipes considered flushable presumably break down in drainlines, like toilet paper, therefore causing no clogging issues. If that's the case, why are any of these products (much less 9 percent of the problem) being found in these inlet screens? The way Nice-Pak hedges its bets on the definition of "flushability," I'm not so sure they believe their products will do what they promise.

"Our flushable wipes are proven, when flushed one wipe at a time, to pass through a home's well-maintained toilet and drainlines or septic system without clogging," the company asserts. Think about it: If only one "flushable" wipe can be put into the system at a time, do you think it's really breaking down like toilet paper? Toilet paper of practically any amount will break down adequately to make it into the septic tank, where it will disintegrate further.

**Remain vigilant about inspections**

A recent nationwide trend toward required point-of-sale system inspections has been positive for the onsite industry on a number of fronts. So a report about a setback in this area is a source of concern for onsite installers.

Mandated real estate inspections have provided the catalyst for many installers to add inspection and maintenance services to their offerings. They raise awareness about system performance and prompt many homeowners to take better care of their ever-more-complex and costly investment in wastewater treatment.

Most importantly, point-of-sale inspections are an effective way to identify poor performing or failed systems. By region, some estimates I've

seen say as many as a quarter of onsite systems are no longer performing as intended. As is the case with much of the U.S. infrastructure of roads, bridges, water and wastewater operations, and septic systems are aging and well beyond their expected life span of 20 to 25 years. These failing systems are polluting waterways and threatening drinking water, and have the potential to spread disease.

Failing systems also reflect badly on our industry. When the public hears that untreated waste is leaking from a decentralized system and into an important watershed, it's common to hear criticism of onsite wastewater technology and a call to lay more big pipe and expand municipal treatment plants. We know onsite plays a pivotal role in providing a good portion of this country's wastewater treatment and that the technology is top-notch and getting better all the time. That message is a hard sell, however, in the face of bad news.

So I was disappointed to read that Stearns County, Minnesota, is considering eliminating a requirement for point-of-sale onsite inspections. County supervisors argue the inspections and resulting system replacements are costly for homeowners, according to an account in the *St. Cloud Times* newspaper. One other county in the state recently considered ending an inspection requirement, but kept it. This goes against the grain in Minnesota, where most counties – and the number is growing – require real estate inspections.

“Most of the time it's, ‘Should we add it or not?’” Aaron Jensen, coordinator of the Minnesota Pollution Control Agency's subsurface sewage treatment program, said about the inspections. “It's never, ‘Should we take it out?’”

I take this as a warning shot in the war over improving our infrastructure and our environment. Point-of-sale inspections are an important tool to identify failing onsite systems. Efforts like this to derail this positive inspection trend by well-meaning but ignorant local officials must be countered by the industry every time they crop up.

Some might say actions of one county in central Minnesota won't impact the wider movement. But I say we can't rest on the advances we've made so far. We always need to be educating the public about the importance of properly functioning septic systems. Our environment and our industry depend on it.

**SEE YOU IN INDY**

Let's continue the conversation at the WWETT Show. Maybe you've just completed a challenging install and you'd like to tell me about it. You may

have looked at our contractor profiles and wondered how you can see your company featured in *Onsite Installer*. Talk to me and we'll see if we can share your story and show your hardworking crew on the cover.

It's easy to reach me at the WWETT Show. Look for anyone wearing a COLE Publishing uniform shirt and ask to track me down. I'll be excited to talk to you. See you in Indy! □

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## Overheard Online

“Maintaining high standards of safety becomes even more important — and more challenging — when you have employees working in the field, going to different locations and addressing unique environmental challenges.”

- *How to Establish a Culture of Safety*

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## SEPTIC SMART Time for a Talk

Proper care of an onsite system is the most important conversation you'll ever have with your customers. Don't miss out on any opportunity to have a little one-on-one talk about their system, especially about what shouldn't go into it - like “flushable” wipes. Read up on tips for making that discussion a success.

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# YANKEE INGENUITY

New Hampshire designer/installer Mike Carbonneau builds his business by solving tough environmental site challenges

By Scottie Dayton | Photos by Oliver Parini

A career working for the state as a vocational rehabilitation counselor didn't offer personal satisfaction for Mike Carbonneau of Littleton, New Hampshire. But subsequent employment in an uncle's excavation business was another story. That job had ignited Carbonneau's love of the outdoors, heavy equipment, and independence.

After taking engineering and wetland delineation classes at the University of New Hampshire, he received his septic installer's license from the state Department of Environmental Services in 2004 and opened Connecticut Valley Septic Design in Littleton. A year later, at age 32, Carbonneau earned his septic designer's license.

"I kept my nose to the grindstone and focused on survival for quite a while," he says. "The transition from the government sector to self-employment was tough." As the business stabilized, Carbonneau branched into presenting educational seminars and assisting clients requiring wetland and shoreland permits as part of onsite permits.

Carbonneau attributes his success to a college education and a willingness

to accept technical advancements and try new things. "My solution-based approach saves customers money and generates more jobs," he says. He also rarely advertises, relying on referrals from customers and Realtors to generate the majority of business.

**"Higher education developed my writing and organizational skills, enabling me to focus on training programs and designing systems — areas with scant competition."**

Mike Carbonneau

## GAINING A FOOTHOLD

The Littleton area has limited opportunities for employment and career paths. The main option is working as a contractor. Carbonneau chose the septic industry for its physical and environmental challenges. A friend taught him how to read soils and install systems, mostly mounds.

Carbonneau bought a Hitachi EX60 excavator, rented a bay from a friend with a large garage, and found basic excavation projects. As they increased in complexity, he sold the machine and upgraded to a Samsung SE130 LC-2 excavator. Today, his strategy is to buy used but well-kept equipment, then continue the good care.

<<OPPOSITE PAGE: The Connecticut Valley Septic Design team includes, from left, Jeff Wells, Walt Stone, Mike Carbonneau and Justin Marvin. In the background is a Chevy pickup carrying a Bibeau dump body.

“I also want everything super clean because I like to look professional when I show up,” says Carbonneau. “I take a lot of pride in doing my best in everything.”

Although being a designer and installer seemed like a foolproof business plan, it had unforeseen challenges. Local contractors no longer saw Carbonneau as the neighbor down the road. “Even though I introduced myself as a septic designer, they feared I would steal their customers,” he says. Over the years, Carbonneau has solidified his reputation for maintaining professional boundaries, and now five contractors hire him to design systems.

### COLD CALLING

Still looking to build a customer base, Carbonneau heard about Realtors who had lost sales because they didn’t have a septic permit, they didn’t understand a system evaluation, or they overlooked details needed for permit applications. “The state returned permits because they were missing a registry book and page for deeds, a tax map and lot number, or a copy of a tax map,” says Carbonneau.

One winter, he developed a PowerPoint presentation on what had to be submitted with septic designs to expedite permits. To market the program, Carbonneau walked into real estate offices within 50 miles and delivered his sales pitch. “Many took me up on it because they love to bring new things to staff meetings,” he says.



ABOVE: Mike Carbonneau at work with his Samsung SE130 LC-2 excavator.

<<LEFT: Jeff Wells, foreground, and Justin Marvin rake sand during an install job in Littleton, New Hampshire.

## Connecticut Valley Septic Design, Littleton, New Hampshire



<b>OWNER:</b>	Mike Carbonneau
<b>YEARS IN BUSINESS:</b>	12
<b>EMPLOYEES:</b>	2-4
<b>SERVICES:</b>	Onsite design, installation and troubleshooting; wetlands and shoreland act permitting
<b>TERRITORY:</b>	Northern New Hampshire and Vermont
<b>AFFILIATION:</b>	Granite State Designers and Installers of New Hampshire
<b>WEBSITE:</b>	<a href="http://www.ctvalleydesign.com">www.ctvalleydesign.com</a>



Mike Carbonneau installs a Presby Advanced Enviro-Septic drainfield line.

## Tools for efficiency

Keeping workers and equipment off backfilled leachfields during final finishing was always a challenge for Connecticut Valley Septic Design, until owner Mike Carbonneau observed other contractors using a homemade grading beam. So he made one from a 7-foot length of scrap Schedule 80 steel pipe. He marked the middle of the 8-inch pipe, then cut 2- by 3-foot-wide horizontal slits on either side, inserted a 3/4-inch-thick plate, and welded it in place. The apparatus weighs 250 to 300 pounds.

"We use the Samsung excavator to grab the plate with the bucket and thumb, then grade the loam for a smooth finish," says Carbonneau. "It's quick and we're not treading over the receiving area."

Another tool Carbonneau uses to make excavation easier is the Leica Geosystems Total Station, a theodolite with a unique in-the-field ability. After loading the septic design plan into the unit's gun, Carbonneau can stake out the precise corner locations for the structure and leachfield without tangling reel tapes in bushes or trying to measure through buildings. The station works with a Carlson MIN12 data collector.

Working in mountains means excavators frequently encounter ledges. Carbonneau has taken the guesswork out of digging by researching county websites for the locations of the best soils and house sites. "It's common to dig 8 feet, move 20 feet, and hit a ledge at 6 inches," he says. "Several times we've had to blast to set a tank. I learned to add a clause to bids that if we hit ledge or large rocks, it becomes a time and material project."

As Carbonneau learned more about what information Realtors needed, he developed a second presentation on 10 septic systems common to the area. In layman's terms, he explained components and how they worked. "Once they understood the vocabulary, septic designs no longer scared them," he says.

With encouragement from Realtors, Carbonneau expanded the programs into courses approved by New Hampshire and Vermont for continuing education credits. When the New Hampshire Shoreland Water Quality Protection Act and the Vermont Shoreland Protection Act became effective in 2014, he developed a training session on how they affected real estate and septic designs.

Teaching helps Carbonneau diversify productively. "Anybody can buy a pickup truck, a plow, and push snow around," he says. "Higher education developed my writing and organizational skills, enabling me to focus on training programs and designing systems – areas with scant competition."

### UPSIZING THE BUSINESS

Like many northern contractors, Carbonneau's brief work season lasts from May through the end of November. In 2015, the state lifted the heavy-equipment road ban on May 16. Late out of the gate and with a packed service board, Carbonneau lost some basic jobs because customers believed he didn't respond fast enough.

"During the last two to three years, I've worked with more contractors and had more return customers," he says. "The problem is I risk offending clients if they have to wait too long."

*(continued)*

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Mike Carbonneau of Connecticut Valley Septic Design, on the job.

**“Contractors shy away from (delicate waterfront projects) because they don’t like dealing with so many regulatory officials. For someone like me who develops permits all day, this was opportunity knocking.”**

**Mike Carbonneau**

Part of the solution is adding more permanent staff. Currently, Carbonneau has one full-time employee, his nephew Pat Cullen. Justin Marvin joins them in summer, as does Perry Williams, a retired land surveyor who works 10 hours a week helping design systems. They produce 50 to 60 designs per year.

Over the last two years, Carbonneau prepared for expansion by buying more equipment. In late fall 2015, he built a 3,200-square-foot garage with a yard on 7 acres to store the Samsung excavator, a Volvo EC55B compact excavator, a Caterpillar 257B tracked skid-steer loader and 416C IT backhoe,

a D-3 Caterpillar bulldozer, and two dump trucks he built with Bibeau boxes, a Mack 10-wheeler and a Chevy 1-ton pickup truck. The shop, with an office, two bays, wash stall, and a car lift, provides the opportunity to hire a full-time employee and keep more staff busy in winter maintaining or repairing other contractors’ equipment.

### **WET AND WILD**

The company generates 85 percent of residential revenue from a 50/50 split between 20 new installations and replacements per year. Commercial installations comprise 15 percent of revenue. Many replacement systems are delicate waterfront projects requiring septic, shoreland and wetland permits.

“Contractors shy away from them because they don’t like dealing with so many regulatory officials,” says Carbonneau. “For someone like me who develops permits all day, this was opportunity knocking.”

The shoreland acts require developers to draw special permits if they are within a 250-foot buffer zone from the high water mark to the water. Special permits, however, also require historical data searches and mapping of endangered species and American Indian burial grounds, listed on state databases and archives.

Carbonneau must delineate wetlands 75 feet from septic systems in New Hampshire and 50 feet in Vermont. “If I had to hire a soil or wetland scientist to map wetlands for my septic designs, I’d wait 90 days or longer,” he says. “My ability to expedite all three permits for clients is a niche that protects my livelihood.”

### **REVERSE ENGINEERING**

Replacement designs are the most challenging for Carbonneau because of setbacks, permanent structures, pumping schedules for occupied homes, and rain, which stops all work because much of it is on steep slopes. A recent project involved replacing a pipe-and-stone leachfield built level on a backfilled 20 percent grade. “The system began progressive failure from day one as the backfill settled,” says Carbonneau.

The field was below the three-bedroom home and 10 feet below the area where the dump truck delivered sand and components. “Such sites require planning each step because there is no going back down,” says

Carbonneau. He began by excavating to the original grade, then backed up to prepare a terraced basal surface area. On subsequent moves back, Carbonneau cut a shelf with the excavator to create a level work surface.

After he made a small, flat ramp for foot traffic, the crew prepared the ASTM C-33 concrete sand beds for the passive Advanced Enviro-Septic (AES) drainfield from Presby Environmental. Because it is accredited as an aerobic treatment system, New Hampshire allows a 60 percent reduction in footprint over pipe-and-stone drainfields, and Vermont allows a 50 percent reduction.

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“Typically, the basal area for similar stone-and-pipe fields is 675 square feet,” says Carbonneau. “It’s only 270 square feet for an AES system, which is why they work well for replacements in our landscape and hilly terrain.”

For each row of combined treatment and dispersal pipes, the crew drove grade sticks every 5 feet in a straight line. After preparing the sand with a rake and ensuring it was firmly packed, they laid the pipes against the stakes, which prevented them from rolling downhill. When the field was backfilled, the stakes also held the pipes at the required elevation and distance between laterals.

“We saved the customer a ton of money over building a giant, flat mound against the hill,” says Carbonneau. “The terraced field also blended into the topography better than a mound.”

### ON THE HORIZON

While satisfying clients is a tremendous accomplishment, Carbonneau is proudest of making it in business and retaining employees.

“Quitting a good state job took a big leap of faith,” he says. “Now I’m ready to expand the company and add more employees. However, it’s important that what they do is an extension of the quality I expect. Finding those people will be difficult, so I’ll advance at my own pace.” □

### MORE INFO:

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# Next Big Challenge: What Tripped the Pump Alarm?

Onsite investigator diagnoses then fixes a system malfunction at a summer cottage

By Jim Anderson and David Gustafson

There is nothing like a slow pontoon boat ride around the lake on a warm, bug-free evening at the end of summer. The sunsets are beautiful and – when enjoyed with cold adult beverages – it makes for an ideal evening with your friends and neighbors.

Nothing destroys that idyllic picture faster than pulling up to the dock at the end of the ride and hearing an alarm buzzer going beep, beep, beep. Everyone wonders what that noise is, except an engineer/onsite installer and the owner of the cabin where the boat is docked. It is the tank alarm going off, indicating that the water level has risen above the normal pumpout depth, meaning there is a problem with the pump in the pump tank.

## MAKING THE DIAGNOSIS

After a night of very restricted water use in the cabin and using the neighbor's bathrooms, there was the opportunity to investigate the cause of the backup and the alarm. As is often the case when troubleshooting, more than one factor contributed to the problem.

A couple things were evident upon opening the tank and investigating the contents. First, the bottom of the tank had a sludge accumulation over 8 inches deep. This was covering the bottom of the pump. More distressing was discovering that the pump was a standard clear-water sump pump, not the appropriate pump to convey sewage effluent from the tank to the drainfield.

As pumps in our systems have become more common over the past 30 years, the first rule we highlight is that sump pumps found on local hardware store shelves are not appropriate for every job. One of the first keys to a “good” system that will last a long time is selecting the proper pump for the application.

Talking to the cabin owner, it was determined the septic tank was last pumped in 2005. That's also when the current pump was installed and some other repairs were made to the system. For the first few years after that maintenance, the cabin served as a full-time residence and since then has been used seasonally.

These circumstances make the case that both the septic and pump tanks need to be checked on a regular basis, and certainly the septic tank needs to be pumped on a greater than 10-year frequency. It was interesting it had gone that long because the county has a program where septic tanks

should be checked if not cleaned every three years. If this had actually been done, at least the problem with the sludge could have been avoided.

## FIXING IT RIGHT

The first order of business was to get a service provider to pump both tanks, then remove and replace the pump. Since the pump in this case moves effluent to the drainfield where it then flows by gravity, a single-stage low-head effluent pump was installed. The only critical requirement is that it be able to deliver flow faster than water from the household appliances enters the tank; so it must deliver more than 10 gallons per minute.

The new pump was set on concrete blocks in the bottom of the tank to raise the pump intake off the bottom and away from solids that may make their way into the pump tank.

Back at the outlet of the septic tank, an effluent screen was placed to keep any of the larger solids from entering the pump tank. Effluent screens are now required by the county where this system is located.

One more correction was made to the existing installation. The power connection for the pump was located outside the pump tank in a 4-inch PVC pipe, but it was just a normal indoor receptacle dangling inside the pipe. This was a sure way to experience problems. And upon investigation, the sump pump failure also took out the circuit the pump was hooked to. Wiring to the pump tank needed replacement before the unit was operational.

## ANOTHER DAY IN PARADISE

Something we stress all the time is to install electrical connections outside the tank in an above-ground weatherproof box or in the house or the garage. All connections in the tank should be watertight or soldered, and no plugs or sockets should be located inside the tank where they will quickly corrode and be rendered useless.

After just “another day in paradise,” it was interesting to reflect on a couple of things. First, all of the problems could have been avoided if good installation practices were used. Second, those practices have been known for a long time and true professionals should be using them. Third, the situation is a reminder that just about the time you think you no longer need to cover very basic information, along comes something to prove you wrong!





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# Onsite Technology Saves the Day

Membrane bioreactor system allows the transformation of a scarred strip mining operation into the thriving Giant Goose Ranch resort

By David Steinkraus

**A**s if the number of systems wasn't enough, there were the mixed-up soils. Together, those two factors added up to a challenge, but one that New Excavating Technology Inc. of St. Anne, Illinois, was prepared to handle.

Start with the size of the project. Giant Goose Ranch covers 828 acres in Canton, Illinois, about 150 miles southwest of Chicago and not too far

from Peoria. In the 1930s and 1940s the land was a strip mine. After the coal was extracted, the 60- to 80-foot-deep pits were left to fill with water and become a network of small lakes that squiggle all over this part of Illinois. In 1954 the property was reclaimed and developed into a campground. In 2013 the present owners purchased the property and began rehabilitating it.

This is where Ray Tebo entered the picture. The owner of New Excavating Technology was asked to design a wastewater solution for the campground and recreational complex that would ultimately house hundreds of people and include swimming beaches with bathhouses, and a banquet facility.

## SYSTEM PROFILE

<b>Location:</b>	Canton, Illinois
<b>Facility served:</b>	Giant Goose Ranch
<b>Designer:</b>	New Excavating Technology Inc., St. Anne, Illinois
<b>Installer:</b>	New Excavating Technology Inc., St. Anne, Illinois
<b>Type of system:</b>	17 Bio-Microbics BioBarrier membrane systems and EZFlow fields
<b>Site conditions:</b>	Reclaimed strip mine soils
<b>Hydraulic capacity:</b>	1,000 gpd per MBR

## INITIAL WORK

Tebo saw only two possible solutions: an NPDES permit for discharge to surface waters, or a membrane bioreactor (MBR) system to put recycled water into the soil. Because the soils were so variable, he had an engineer test them. "I have 90 pages of soil reports. Go 10 feet one way and the soils were good. Go 10 feet the other way and they were bad." Infiltration tests showed that the worst absorption rate was about 1/4 inch of water per hour (KSAT value). This is not suitable for normal septic systems, according to state code.

The topography was another impediment. "Everywhere you turn there are lakes. Everywhere you turn there's elevation. I would say the bigger challenge was elevation, because with MBRs we can put the field right up to the water. You drive up and down 30, 40, 50 feet all over out there. Fulton

<<OPPOSITE PAGE: Equipment operator Wayne Street uses a Bobcat E85 excavator to dig a hole for a tank from Infiltrator Water Technologies. Shown in the foreground is a Spectra Precision GL-412 laser level.

BELOW: Each absorption field at Giant Goose Ranch consists of 300 feet of EZflow laterals fed by 4-inch pipe, and most fields start a few feet away from the BioBarrier MBRs.

>>RIGHT: With a tank in place, the crew gets out the Bobcat E85 excavator to finish another system at Giant Goose Ranch in Illinois. The 4-inch U-shaped pipe vents air pressure out of the MBRs. (Photos courtesy of Ray Tebo)



County is like that. A large portion is lakes and hunting property.”

Campgrounds at Giant Goose Ranch follow the wandering borders of the lakes. Each campsite is a bed of crushed stone that can hold an RV or a cabin built to the customer’s specifications and mounted on skids, and each site has a standpipe to accept wastewater.

The surface discharge option failed because U.S. Environmental Protection Agency regulations won’t allow it if water can be infiltrated somehow, Tebo says. And he figured out how. With the soils so variable, a membrane bioreactor was the best solution but Tebo knew it would not be economically feasible to have one MBR per site. He talked to the owners about combining flows from several sites and leading their wastewater to a local treatment system. In total, this initial phase of the project required 17 separate systems. The owners agreed.



All Giant Goose Ranch systems are built to the same capacity with the same parts to make field repairs easier. Wastewater flows first into a 1,000-gallon Infiltrator Water Technologies tank (foreground) that serves as a settling and primary treatment tank, and then by gravity into an Infiltrator Water Technologies 1,500-gallon tank equipped with membrane bioreactors from Bio-Microbics.

### UNIFORM SYSTEMS

Each campsite has a 4-inch standpipe, and the pipes from a cluster of sites lead into a 4-inch main. The mains flow to a 1,000-gallon tank from Infiltrator Water Technologies. This not only collects trash but also functions as a septic tank for primary treatment. From the trash tank, wastewater flows by gravity through a Bio-Microbics SaniTEE and into a 1,500-gallon Infiltrator Water Technologies tank fitted with two 500 gpd BioBarrier MBRs

(Bio-Microbics). Recycled water flows only a short distance to the absorption fields, usually about 10 feet. “With recycled water you don’t look for the best soil. You look for where you can put it close to the units,” Tebo says. This saves on materials and labor.

A pair of custom-made stainless steel marine pumps from Bio-Microbics draw water out of the MBR at a rate of about 1/2 gallon per minute. This water is sent through a 2-inch pipe that transitions to the 4-inch Schedule 40 pipe that feeds 300 feet of EZflow by Infiltrator laterals. The MBRs are controlled by a panel from Bio-Microbics. Information comes to the panel from transducers instead of floats.

**“I can tell you when people have a party, and this knowledge allows me to reprogram the panel to more closely match how the system will be used.”**

**Ray Tebo**

Because of the elevation changes, Tebo had to install lift stations at some points to feed wastewater to the trash tanks or recycled water to the EZflow fields. Duplex pumps from Champion Pump Company and duplex control panels from Aquaworx by Infiltrator are used where lift stations are needed. He built all the stations in the same way to make field repairs or replacements easy.

He started with a 540-gallon Infiltrator Water Technologies tank. Each tank has either a trash grinder pump if it handles wastewater from sites or a standard pump if it handles recycled water from an MBR. All the lift stations and MBR assemblies were built in Tebo’s shop using heavy-duty pressure fittings and stainless steel components for easy parts replacement. When each unit was finished, a worker vacuumed it completely to remove any shavings.

Two-inch pipe comes out of the pumps and moves the water as far as necessary, 300 to 400 feet in some cases. All the pipes are buried below the frost line and accompanied by tracer wires.

Ray Tebo, right, and Tayler Layne, of New Excavating Technology Inc., finish installing one of the Aquaworx panels for a lift station and a Bio-Microbics panel that controls the MBR systems at Giant Goose Ranch. Each panel can download data to a USB drive, allowing periodic readjustment of the system to more closely match demand.

**"I have 90 pages of soil reports. Go 10 feet one way and the soils were good. Go 10 feet the other way and they were bad."**

**Ray Tebo**

Tebo's shop is set up so every piece is cut on stands, and all the pieces are laid out and categorized on benches. All parts are cut to length with guides and de-burred for precision. This makes repairs simple because workers make spares, label all parts and place them in cabinets.

### CONTINUOUS ADJUSTMENT

A nice feature of the Aquaworx and Bio-Microbics panels is that all data in them can be downloaded onto a USB drive, Tebo says. "I can tell you when people have a party, and this knowledge allows me to reprogram the panel to more closely match how the system will be used." Every three months he will look at data from all the MBRs and adjust them accordingly.



A 2-inch pipe brings water from the MBR to the absorption field where it transitions to the 4-inch pipe that feeds EZflow laterals. Notice that pipes are also paired with a tracer wire to make locating easier.

For this installation, MBRs are perfect because there are a variety of sources feeding wastewater at different rates. For initial startup, mixed liquor was hauled from a nearby wastewater treatment plant to seed the MBRs with the necessary microbes. For winter, the systems are shutdown but the airflow is left on to keep the microbes alive and active. In the spring, each MBR will be reseeded with more mixed liquor.

There is more development to come and more work, but Tebo knows only part of it. Each beach bathhouse will have a 1,000 gpd system like those for the campsites. There will be a store building, but he doesn't know yet how large that will be so he hasn't designed that system. He has designed the system for the 200-person banquet hall. That will be a 3,000 gpd system consisting of a large tank with several manholes, each capable of holding an MBR unit. Not all the slots will be filled at first, and this will save his customers money because it will lower their initial cost. If more capacity is needed later, Tebo will drop another MBR into the tank.

When the project began, there was about a year of preliminary work and education. Because the BioBarrier falls under the NSF 350 water rules, it was outside the State of Illinois septic code. Tebo had to obtain permits from state and local health authorities, and as part of the process he participated in workshops with local health officials and representatives from Bio-Microbics who explained their technology. Once they had that information, public health officials were on board with the project, Tebo says.

With advanced treatment technology at his disposal, Tebo helped turn an old eyesore into a modern and clean recreational destination. □

### MORE INFO:

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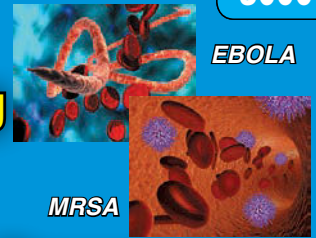


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Electric Eel Mfg. Co., Inc.  
Elite Equipment Rental  
Eljen Corporation  
Emagineered Solutions, Inc.  
Endura Point  
Engineered Software, Inc.  
Enviro-Tech of America, Inc.  
Environment One Corporation  
EnviroSight  
Enz USA, Inc.  
Epps Products  
Equipment Sales, LLC  
Equipump Inc.  
Exact Pipe Tools, Inc.  
Explorer Trailers - McKee Technologies  
Extrutech Plastics, Inc.  
F.M. Manufacturing, Inc.  
FacilityDude  
Famohst  
Federal Signal Environmental Solutions Group  
Fergus Power Pump, Inc.  
Ferratec, Inc.  
Fisher Labs  
Five Peaks  
Five Star Products, Inc.  
FKC Co., Ltd.  
Fleetmatics  
Flo Tent Systems  
FlowMark Vacuum Trucks  
FNA Group  
Forbest Products Co.  
Ford Commercial Vehicles  
Foremost  
Forest River, Inc.  
Formadrain, Inc.  
Franklin Electric  
Franklin Fibre-Lamitex Corp.  
Fruitland Manufacturing  
FS Solutions  
Fuji Clean USA  
Galbreath  
GapVox, Inc.  
Gardner Denver Industrial Group  
Gardner Denver Waterjetting Systems, Inc.  
Gas Clip Technologies  
GEA  
General Pipe Cleaners  
General Pump  
GEOFLOW, INC.  
GfG Instrumentation, Inc.  
GI Industries Inc.  
Giant Industries  
Global Pump Company  
Global Vacuum Systems, Inc.  
Go Green Environmental Products  
Go To Parts  
Godwin, a Xylem brand  
Goldak, Inc.  
Goritz Sewer & Drain, Inc.  
Gorman-Rupp Company  
GPS Fleet Consulting  
Green Leaf, Inc.  
Green Mountain International, LLC  
Greener Planet Systems  
GS Global Resources, Inc.  
Guzzler Manufacturing  
H2TR  
Hackney  
Hamburg Messe und Congress GmbH  
Hammelmann Corp.  
HammerHead Trenchless Equipment  
Hannay Reels  
Happy Feet  
Harben, Inc.  
Hathorn Corporation  
Hazel Grain Holdings  
Hedstrom Plastics  
Helix Laboratories, Inc.  
Hella, Inc.  
HGACBuy Cooperative Purchasing Program  
Hi-Vac Corporation  
Hibon Inc. (a division of Ingersoll Rand)  
Hino Trucks  
HIPPO Multipower  
Hot Jet USA  
Howden Roots  
Hurco Technologies, Inc.  
Hy-Flex Corporation  
Hydro-Flex, Inc.  
Hydro-Tech Pumps  
I.S.T. Services, Inc.  
IBG HydroTech GmbH  
ID-TEC  
Imperial Industries, Inc.  
Impreg International GmbH  
IMS Robotics GmbH  
Insight Vision Cameras  
Integrated Chassis Solutions LLC  
Integrated Vehicle Leasing/Financing  
IOWPA - Indiana Onsite Wastewater Professionals Association  
IPEX America LLC  
ITI Trailers & Truck Bodies, Inc.  
ITpipes  
J & J Chemical Co.  
J. Hvidved Larsen US, Inc.  
J.C. Gury Co., Inc.  
Jack Daheny Companies  
JAG Mobile Solutions, Inc.  
Jet Clean Tools USA Inc.  
Jet Inc.  
Jets Vacuum AS/AM5 Global  
Jetstream of Houston  
Jetter Depot  
Joe Johnson Equipment, Inc.  
John Bean Jetters  
Johnny's Choice by Chemcorp  
KeeVac Industries, Inc.  
KEG Technologies, Inc.  
Keith Huber Corporation  
Kentucky Tank, Inc.  
Kifco, Inc.  
Kinetics Engineering  
Klear it Kone  
Kroy Industries  
Kuriyama of America, Inc.  
LADTECH, Inc.  
Lakeside Equipment Corporation  
Lamor  
Lansas Products Mfd. by Vanderlans & Sons, Inc.  
LaPlace Equipment Co. Inc.  
LegalShield  
Lely Tank & Waste Solutions, LLC  
Lenzyme Trap-Clear Inc.  
Liberty Financial Group, Inc.  
Liberty Pumps  
Liquid Environmental Solutions  
Liquid Waste Industries, Inc.  
Liquid Waste Technology, LLC  
LMK Technologies  
LMT Inc.  
LobePro Rotary Pumps  
Lock America, Inc.  
Lodar USA  
Logan Clutch Corporation  
Logiball, Inc.  
Longhorn Tank & Trailer, Inc.

# Welcome

## to the 2016 Water & Wastewater Equipment, Treatment & Transport Show

595 companies - list current as of Jan. 4, 2016.

MacQueen Group Rentals  
Madewell Products Corporation  
Mailhot Industries  
Mainline Backflow Products, Inc.  
Marengo Fabricated Steel, Ltd.  
Masport, Inc.  
Material Motion, Inc.  
MaxLiner USA  
McLaughlin  
Medit Inc.  
Merrell Bros., Inc.  
Mi-T-Machine  
Mid-Continent Truck Sales  
Mid-State Tank/Arthur Custom Tank  
Miller Pipeline  
Millner-Haufen Tool Company  
Milwaukee Pump  
Milwaukee Rubber Products, Inc.  
MODRoto  
Money In Motion Inc.  
Mongoose Jetters by Sewer Equipment  
MONOFORM by Hydro-Klean  
Moro USA, Inc.  
MTC  
MTech  
Mud Technology International, Inc.  
Multi-Cast LLC  
My Service Depot  
Mytana Mfg. Company, Inc.  
NASSCO, Inc.  
National Joint Powers Alliance  
National Precast Concrete Assoc.  
National Vacuum Equipment, Inc.  
NAWT - National Association of Wastewater Technicians  
Netafim USA  
Nightstick by Bayco Products, Inc.  
NLB Corp.  
Norweco, Inc.  
NovaFlex Hose  
NOWRA - National Onsite Wastewater Recycling Association  
Nozzleg, Inc.  
NSF International  
Nu Flow  
NuConcepts  
O'Brien Mfg., A Product of Hi-Vac Corporation  
Oakmont Capital Services, LLC  
Oceanquip Cables, LLC  
Ohio Electric Control, Inc.  
OMSI Transmissions, Inc.  
One Biotechnology  
Oranco Systems, Inc.  
Otto Trading Inc.  
PA S.p.A.  
Parson Environmental Products, Inc.  
Pat's Pump & Blower  
PC Scale, Inc. (A division of AMCS Group)  
Peinemann Equipment  
Pelsco Company  
Penny Pockets  
Pentair Flow Technologies  
People's United Equipment  
Finance Corp.  
Perma-Liner Industries, LLC  
Peterson Products Co.  
Petrofield Industries  
Phoenix USA Inc.  
Picote Solutions  
Pik Rite, Inc.  
Pipe-Lining Supply, Inc.  
Pipe-Robo-Tec USA  
PipeHunter, Inc.  
Pipeline Analytics  
Pipeline Renewal Technologies  
PipeLogix, Inc.  
Pipenology, LLC  
PipeTech Software  
Piranha Hose Products  
Plug-It Products  
Pluto Urinal - ATLAS Sanitation Products B.V.  
Point-of-Rental Software  
Polston Applied Technologies  
Poly Flow, LLC  
Poly-Ease  
PolyJohn Enterprises, Inc.  
Polylok, Inc. / Zabel  
PolyPortables, LLC  
Porta Pro Chem Co.  
Portable Sanitation Association  
Power Mole Sales LLC  
Precision Plumbing Products, JL Industries  
Premier  
Premier Tech Aqua  
Presby Environmental  
Pressure Lift Corporation  
Presvac Systems  
Prime Resins  
PRIME-GPT GmbH  
PrimeLine Products, Inc.  
Process Engineered Water Equipment LLC  
Progress Tank  
Prona-HUSA, Inc.  
ProPulse, a Schieffler Company  
ProShot Concrete  
Protective Liner Systems  
PSI Pressure Systems Corp  
Pumptec Inc.  
Qingdao Donghengli Industry Equipment Co., Ltd.  
Qualex  
Quality Leasing Co., Inc.  
Quik-Lining Systems, Inc.  
R.S. Technical Services, Inc.  
Radingler primus line GmbH  
RAE Systems / Honeywell  
Ram Commercial  
Ramvac by Sewer Equipment  
RapidView IBAK North America  
Ratch Electronics, Ltd.  
RauschUSA  
Raven Lining Systems  
Ravo Sweepers  
RC Industries, Inc.  
RCS II, Inc.  
Real Green Systems  
RecoverE  
RedVector  
Reed Manufacturing Co.  
Reelcraft Industries, Inc.  
ReLine America, Inc.  
Renssi  
Reschwitzer Saugbagger Produktions  
Rescue Response Group  
Resipal US, Inc.  
Rich Specialty Trailers  
RIDGID  
Ring-O-Matic, Inc.  
Rior B.V. / Rioned  
Ritum Technologies, LLC  
Ritec GmbH  
RKI Instruments, Inc.  
Robinson Vacuum Tanks  
ROBUSCHI USA  
RODDIE, Inc.  
Roeda Signs & ScreenTech Imaging  
Root Rat  
RootX  
Roth Global Plastics  
ROTENBERGER USA  
Roto-Rooter Corporation  
RotoSolutions, Inc.  
RotoOptix Inc.  
Rush Refuse Systems  
Rush-Overland Manufacturing  
SARTEK-multiCom  
Safe-T-Fresh  
Salcor Inc.  
Sani Paper  
Sansom Industries LLC  
Satellite Industries  
Satellite Suites  
Sovereisen, Inc.  
Sovatech Corp.  
Scaneco  
SchellVac Equipment Inc.  
Screeno Systems LLC  
Sealing Systems, Inc.  
See Water Inc.  
Septic Maxx, LLC  
Septic Products, Inc.  
Septic Services, Inc.  
SeptiTech, a subsidiary of Bio-Microbics, Inc.  
Septonics Inc.  
Service Roundtable  
ServiceTitan  
Sewer Equipment  
Sewer Equipment Co. of America  
SEWER PRO SHOP  
SEWERIN (Hermann Sewerin GmbH)  
Sherwin-Williams  
Shimmywa  
Shubee @  
Sim/Tech Filter Inc.  
SJE-Rhombus @  
SkyBiz Local Fleets  
Slew Master, Inc.  
Smart-Dig Hydro Excavators  
Smith Industries  
Soft-Pak  
Solar LED Innovations  
Sonicics  
Sourthe One Environmental  
Southland Tool Mfg. Inc.  
Spartan Tool, LLC  
Specialty B Sales  
Stamp Works Magnets  
Standard Cement Materials, Inc.  
Standa Equipment Company  
Stonage, Inc.  
Strike Products  
Subsite Electronics  
SubSurface Instruments, Inc.  
Sunbelt Rentals  
Super Products LLC  
Superior Signal Company LLC  
Supervac 2000  
Surco © Portable Sanitation Products  
Supresser 4S Inc.  
Sutter America  
SVE Portable Roadway Systems, Inc.  
T&T Tools, Inc.  
T.S.F. Company, Inc.  
T4 Spatial  
TankTec  
TCF Equipment Finance  
Tecnova Electronics  
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Terydon Inc.  
The Plug Hug  
The Strong Company  
Thieman Tailgates, Inc.  
Thompson Pump and Manufacturing Co. Inc.  
Titan Logix Corp.  
TomTom Telematics  
TOPP Industries, Inc.  
Trade-Serve  
Trailer Transit, Inc.  
Tran Lease, Inc.  
Transway Systems Inc.  
Transwest - Oilfield Truck Equipment  
Trelleborg Pipe Seals  
TRIC Tools, Inc.  
Trident Processes LLC  
Trillium Industrial Services  
Truck City of Gary  
Truck Express by Satellite  
TRY TEK Machine Works, Inc.  
Tsurumi Pump  
TT Technologies, Inc.  
Tuf-Tite Inc.  
TURBO FOG Division of Kingscote Chemicals  
Turtle Plastics  
UDOR U.S.A.  
UEHMSI - HTV  
UHMIG Kanalttechnik GmbH  
Ultra Shore  
UltraLav by Wells Cargo  
UltraVac, a division of Hi-Vac Corporation  
Uncle Freddie's LLC  
Under Pressure Systems, Inc.  
URACA GmbH & Co. KG  
US Fleet Tracking  
US Jetting, LLC  
USA - Sewer Equipment Corporation  
Hi-Vac Corporation  
Vac-Iron Equipment  
Vac2Go, LLC  
Vaccall - Graddall Industries  
Vector Manufacturing  
Vexatoux Limited  
Vacuum Sales, Inc.  
Vacuum Truck & Trailer  
Vacuum Truck Rentals  
Vanair Manufacturing  
Vanguard Pathogen Defense Systems  
Vantage Trailers, Inc.  
Vaporator  
VarioCo  
Vehicle Inspection Systems (VIS)  
Vehicle Tracking Solutions  
Vivax-Metrotech Corp.  
Voegelsang  
W.W. Williams  
Wachs Utility Products  
Wager Company Inc.  
Walex Products Company, Inc.  
Walla Walla Environmental  
Wallenstein Vacuum Pumps - Elmira Machine Industries  
Warren Environmental  
Wastequip  
WasteWater Education 501 (c)3  
Water Environment Federation  
WC Leasing  
Webtrol Pumps  
We Engineer, Inc.  
Wells Fargo Equipment Finance  
WENCO (Walter E. Nelson Company)  
Western Equipment Finance  
Western Mole Cranes (D&S Sales)  
Westmoor Ltd.  
Wiedemann Enviro Tec  
Wieser Concrete  
Wohler USA, Inc.  
WRM  
X-Vac, A Product of Hi-Vac Corporation  
Zhejiang Danau Industries Co., Ltd.  
Zia Systems LLC  
Zoeller Company  
Zoom Drain & Sewer Service

# Education Day Sessions

Wednesday, February 17, 2016

## NAWT

National Association of Wastewater Technicians  
Rooms 234-236

- 8 a.m. Basics of Septic System Control Panels
- 9:30 a.m. Using Septic Control Panels to Troubleshoot Systems
- 11 a.m. Inspecting Concrete Sewage Tanks
- 1:30 p.m. An Exercise in Septic System Troubleshooting
- 3 p.m. The Basics of Inspecting Drip Systems
- 4:30 p.m. NAWT Ask the Experts Panel Discussion

## SSPMA

Sump and Sewage Pump Manufacturers Association  
Rooms 133-135

- 8 a.m. Understanding Pumps and Common Pumping Issues
- 9:30 a.m. Evaluation and Installation of Backup Pump Systems
- 11 a.m. Best Installation Practices for Trouble-Free Pump Controls
- 1:30 p.m. Troubleshooting Pumps, Panels and Switches with Digital Multimeters
- 3 p.m. Sizing Guidelines for Sump, Sewage and Grinder Pumps
- 4:30 p.m. SSPMA Ask the Experts Panel Discussion

## Business Strategies

Rooms 140-142

- 8 a.m. How Much Should I Charge?
- 9:30 a.m. Business Game Changers: Top 5 Secret Strategies for Massive Growth in Your Service Business
- 11 a.m. The Un-Business Plan – Making Your Business Less Complicated But More Profitable
- 1:30 p.m. How to Use Superior Customer Service to Increase Sales
- 3 p.m. Reward the Right Stuff: Finding, Training and Keeping Great Team Members
- 4:30 p.m. Is Your Business Prepared for a Crisis?

## Industry Safety

Rooms 237-239

- 8 a.m. Pre-Engineered Shoring Systems for Cross-Trench Utility Challenges
- 9:30 a.m. Excavation Safety
- 11 a.m. OSHA Confined Space, Air Monitoring and Fall Protection Explained

## SSCSC

Southern Section Collection Systems Committee  
Rooms 231-233

- 8 a.m. Positioning Yourself for Promotion and Succession Planning
- 9:30 a.m. Step Up Your Game! Taking Current CCTV Inspection Technology to the Next Level
- 11 a.m. Trailer Jetting – Getting the Most Out of Your Equipment
- 1:30 p.m. Vacuuming: the Other Half of the Combination Unit
- 3 p.m. Sewer System Maintenance – Challenges and Solutions
- 4:30 p.m. SSCSC Ask the Experts Panel Discussion

## NOWRA

National Onsite Wastewater Recycling Association  
Rooms 240-242

- 8 a.m. Introduction to Soils
- 9:30 a.m. Onsite Septic System Loading Rates and Site Layout
- 11 a.m. Making Infiltration Decisions – Understanding Soil Surface Design
- 1:30 p.m. Soil Dispersal Comparison
- 3 p.m. Introduction to the Elements of Onsite System Design and Regulations
- 4:30 p.m. Onsite Septic System Hydraulics and Pump Design

## Portable Sanitation

Rooms 136-138

- 1:30 p.m. Marketing Basics: How to Effectively and Efficiently Grow Your Portable Sanitation Sales
- 3 p.m. Trust – How to Build it and Use it to Grow Your Portable Sanitation Business
- 4:30 p.m. Portable Sanitation Forum: Current and Future Critical Issues Affecting the Industry Discussion

## NASSCO

National Association of Sewer Service Companies  
Rooms 130-132

- 8 a.m. Cleaning Nozzle Technology
- 9:30 a.m. Large vs. Small-Diameter Pipe Cleaning
- 11 a.m. The Lower Lateral – The New Frontier in Sewer Rehab
- 1:30 p.m. Chemical Grouting Technologies
- 3 p.m. The Growth of the UV Cured CIPP Process
- 4:30 p.m. NASSCO Ask the Experts Panel Discussion

## Treatment Plant Operator

Rooms 243-245

- 8 a.m. Effective Strategies for Collections System Management
- 9:30 a.m. Sustainable Innovation in Biosolids Management
- 11 a.m. Pretreatment and Wastewater Lagoon Management
- 1:30 p.m. Septage Collection and Treatment
- 3 p.m. Large Scale FOG/Septage Receiving Station – Lantern Environmental Project Case History
- 4:30 p.m. Progress in Electrochemical Water Treatment in Last Century

## WJTA-IMCA

Water Jet Technology Assoc. - Industrial Municipal Cleaning Assoc.  
Rooms 237-239

- 1:30 p.m. Proper Industrial Truck Maintenance Can More Than Pay for Itself in Productivity and Safety
- 3 p.m. Air Conveyance Through an Industrial Vacuum Truck
- 4:30 p.m. Vacuum Excavation Applications and Opportunities

## Women in Business

Rooms 136-138

- 8 a.m. Marketing to Women
- 9:30 a.m. Women of Wastewater: Building a Community of Allies
- 11 a.m. Women in Wastewater Roundtable

## Vacuum Truck Equipment and Operation Training

presented by **NAWT** National Association of Wastewater Technicians

**Rooms 109-110** 8 a.m. - 5 p.m.

This day-long session will discuss in detail the equipment on vacuum trucks and how to operate them. Pumping terms will be covered, as will safety principles, materials often encountered on the job and government regulations.





WATER & WASTEWATER EQUIPMENT,  
TREATMENT & TRANSPORT SHOW

INDIANA CONVENTION CENTER

FEB. 17, 2016 - Education Day

FEB. 18-20, 2016 - Exhibit Hall Open

# Time to Unwind

Country music singer Jerrod Niemann ready to give WWETT Show attendees, exhibitors a great show

By Cory Dellenbach

**I**t doesn't matter if you're a country music fan. Jerrod Niemann is going to draw you in when he hits the Industry Appreciation Party stage Feb. 19.

"You have to be aware of what you're around," says Niemann, country music star and entertainer for the party. "If you're doing your own show or people are there just because of you it's one thing. If you are part of a party that has already existed for many years, we try to be a chameleon of sorts. We'll do our own songs, but we'll also throw in a couple different ones, too, from rock and blues and everything."

No matter what he sings, Niemann promises a fun time for everyone at the Indiana Convention Center's Sagamore Ballroom.

"There's just something to be said about being around people who are pretty much just like you — hardworking, small-town Americans," Niemann says. "For me, I love being out there and hanging out with everybody."

## IN HIS BLOOD

Country music has always been in Niemann's blood, and he thanks his mother for that: "I was doomed from the beginning hearing country music from the womb. My parents ran a bar when my mom was pregnant with me and I think hearing all those country songs on the jukebox got me going."

From an early age, Niemann was influenced by country acts such as Lefty Frizzell, Keith Whitley and George Strait. After graduating from high school, he attended South Plains College in Levelland, Texas, pursuing an Associate of Arts degree. He began his professional career by singing and playing acoustic guitar in Texas clubs and bars.

"I did that for about a year, just my guitar and me," he says. "Then I moved to Nashville and started working out there. Music is one of those

## THE BASICS INDUSTRY APPRECIATION PARTY

**WHEN:** Friday, Feb. 19

**WHERE:** Sagamore Ballroom,  
Indiana Convention Center, Indianapolis

**TIME:** 5 p.m. doors open;  
7 p.m. Jerrod Niemann

things where it's such an amazing thing to be a part of that once you've been bitten by the bug, there is no way out of it. It's just who you are."

In 2010, Niemann signed with record label Arista Nashville and released his debut single, "Lover, Lover." It became his first Top 40 single on the country music charts, and in August 2010 it hit No. 1.

Since then, Niemann has released four albums — *Judge Jerrod & the Hung Jury*; *Free the Music*; *Yellow Brick Road*; and *High Noon*. In 2013, his single "Drink to That All Night" hit No. 4 on the U.S. country charts and No. 1 on U.S. country airplay charts.

"I got my foot in the door writing songs in Nashville, and it's always fun being able to write your own material," Niemann says. "Every once in a while you find a song you wish you had written."



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## NEW MUSIC

One of those songs is “Blue Bandana,” his newest single, released in July. The song will be a part of his new album set for release later this year.

“When I heard the song it just took me to so many cool places and really took me to a lot of cool faces, too,” Niemann says. The song tells the story of a fan attending concerts wearing the same blue bandana and the singer noticing it each time. “Just traveling this country you see a lot

**“If you are part of a party that has already existed for many years, we try to be a chameleon of sorts. We’ll do our own songs, but we’ll also throw in a couple different ones, too, from rock and blues and everything.”**

**Jerrod Niemann**

of people who are kind enough to pack up in their cars and do a road trip spending their hard-earned money to see us. I’ve never really done a song that is a thank-you to those folks out there, but this song does that.”

The new album will combine music he’s done before — a country/rock mix — and the more traditional country sound. “It’s a wide array of music,” Niemann says.

He’ll perform some of the new songs from that album at the WWETT Show and hopes everyone can relax and get their minds off work and anything else going on in their lives.

“The real world can be quite a hard place at times for people, and if we can be the guys to get that off their minds for at least 90 minutes, then we’ve done our jobs,” Niemann says. “I just always try to keep a thread of laughter and craziness at our shows if we can.” ■

## Three nights of WWETT Show fun

By Luke Laggis

You come to Indy for the tools and equipment, the people and excitement. It’s the one time of the year when the whole industry comes together. So let’s have a party.

COLE Publishing celebrates the occasion every year with the Industry Appreciation Party. It’s a chance for everyone to relax and enjoy themselves. This year, the WWETT Show Kickoff Party will give you two nights to enjoy leading up to the Industry Appreciation Party.

It all starts Wednesday night. After the final bell rings on Education Day, you can head over to Lucas Oil Stadium, connected to the Indiana Convention Center, for a cold beverage and complimentary hors d’oeuvres while you network with manufacturers and peers. The event will be held Feb. 17-18 from 5 to 8 p.m.

Exhibitors have been invited to co-host the event along with COLE Publishing, and the COLE Pub truck will return to serve as the central bar. Attendees and exhibitors can kick back, relax, share stories or solve problems with industry peers.

“We are very excited to see how creative the co-hosts decide to be,” says Brad Bisnette, the show’s coordinator. “All will be providing a good time for sure.”

On Friday night, the focus will shift from Lucas Oil to the Sagamore Ballroom in the Indiana Convention Center for the Industry Appreciation Party. Country music star Jerrod Niemann will perform an up-close and personal concert for WWETT attendees. Beers are a quarter and the show is free, so you really can’t go wrong.

Visit [www.wwettshow.com](http://www.wwettshow.com) for complete details on the show. The Kickoff and Industry Appreciation parties are free for all registered attendees.

# GPS Insight Offers Scaled-Down Tracking Software Geared Toward Service Business Fleets

By Craig Mandli

**S**tandard Edition fleet and asset tracking software from GPS Insight gives service businesses complete visibility into mobile operations to reduce costs and drive efficiencies, according to Jen Gillham, regional sales manager with GPS Insight.

Geared toward smaller fleets of one to 25 units, it tracks anything from service trucks to excavation equipment, providing customizable software that allows business managers to gather information in a variety of ways. The 2015 Water & Wastewater Equipment, Treatment & Transport (WWETT) Show allowed GPS Insight personnel to share just how their product fits across several industry sectors.

“Providing these options is all about keeping up with the industry trends,” Gillham says. “The Standard Edition is perfect for the mom-and-pop shops on a tight budget. It’s a pretty minimal up-front investment.”

The Standard Edition allows service providers to track crews, heavy equipment, rentals and other assets. With real-time monitoring, management can see all fleet activity and easily dispatch vehicles. Crews are kept safe by monitoring driving habits and hours worked, as well as quick emergency response. It is Web-based and can be accessed from any mobile device.

“The program can keep track of every stop, proving when, where and how long technicians are on site,” says Gillham. “It really provides a lot of oversight very easily.”

During an event, dispatchers can instantly determine the closest truck to a particular location and send directions to the driver via email, SMS text message, or to a Garmin navigation device. If a customer wants to know when a technician will arrive, the manager can provide a quick, accurate answer. Detailed vehicle history data can verify that technician visits a particular location. The software allows users to go back as far as needed to look up the history of a specific vehicle’s location and activity data, which could help refute any claims and prove job completion.

“Not only will companies like these features, their customers will, too,” says Gillham. “There’s no more ‘We think the tech will be arriving between 8 and 11.’ The manager can locate the truck, determine where the tech is in their workload for the day, and provide the customer a more accurate estimate.”

For the cost-conscious, eliminating excess idling and speeding, and identifying unauthorized vehicle usage can reduce monthly fuel costs. The routing function proactively assigns the shortest/fastest route. Owners can analyze historical routes to determine unnecessary trips and coach staff



Jen Gillham, center, regional sales manager with GPS Insight, and Brie Ann Gaylord, right, the company’s marketing events coordinator, explain features offered with the Standard Edition fleet and asset tracking software to a WWETT 2015 attendee. (Photo by Craig Mandli)

members to become more efficient. Fuel card reports are also available to flag non-fuel or fraudulent fuel purchases.

To aid in stolen equipment recovery, management is immediately alerted when vehicles or rental equipment are moving where or when they shouldn’t. Real-time mapping allows managers to report the location to the authorities. Around-the-clock technical support is also available to users.

Gillham saw the WWETT Show as the perfect opportunity to get GPS Insight in front of the company’s target market – service providers. The main goal was to let companies, regardless of size, know there is a GPS program available that will suit them. The company’s Pro Edition is geared toward fleets of more than 25 units, while the Enterprise Edition is aimed at large companies and municipalities that have in excess of 350 units.

“We’re trying to wave our flag to let these people know that they have options,” says Gillham. “That’s why a show like this is so perfect for us. We want these companies to know that keeping tight track of assets is important, regardless of how big you are.” 866/477-4321; [www.gpsinsight.com](http://www.gpsinsight.com). ◻



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# Emissions Update: No More Tiers

Diesel manufacturers are delivering off-road equipment that meets Tier 4 Final standards. Two suppliers explain what's changed — and what hasn't.

By Peter Kenter

**O**ff-road diesel engines have made significant strides since the U.S. Environmental Protection Agency adopted Tier 1 emission standards in 1994. Tier 4 standards have been phased in since 2008, with the strictest Tier 4 Final requirements to reduce nitrogen oxides (NOx) and particulate matter (PM) incorporated last year and this year.

However, Tier 4 Final standards are outcome-based, not prescriptive — each manufacturer is permitted to achieve outcomes using its own solutions and technology. On hand to discuss their approaches are Joe Mastanduno, account manager, rental marketing, with John Deere's Construction and Forestry Division, and Brad Stemper, solutions marketing manager with Case Construction Equipment.

## What differences will operators see in off-road vehicle engines in Tier 4 Final?

**Stemper:** Selective catalytic reduction (SCR) has allowed manufacturers of excavators and other machines to meet the NOx standards of Tier 4 Final most efficiently. Our excavator solution involves a more efficient SCR system in combination with a diesel oxygen catalyst that uses a chemical process to break down particulates into less harmful components, reducing overall emissions by up to 95 percent. We didn't want to stack up technologies that could use more fuel, affect peak horsepower or force us to redesign the machine envelope for technologies that would adversely affect our purchase prices, particularly on small- to medium-sized equipment.

**"People aren't willing to sacrifice power or torque. Through all of the changes, the power and performance of our engines have remained the same with no degradation in reliability, responsiveness or ease of operation."**

Joe Mastanduno

**Mastanduno:** Our approach at John Deere has been to build on proven technologies, including cooled exhaust gas recirculation (EGR), exhaust filters and variable-geometry turbochargers. We refer to this as the building

block approach. Particulate matter levels established in our Tier 4 Interim designs will be maintained, while NOx will be further reduced by about 80 percent. This NOx reduction will drive the need for a new technology called SCR to be added to engines above 75 hp. This technology will require an additional fluid called diesel exhaust fluid (DEF), therefore a tank, lines, pump and nozzle are all new components associated with Tier 4 Final. Due to the continued usage of cooled EGR, the DEF consumption will be quite low, which allows for smaller DEF tanks and lower DEF costs.

## How do these changes benefit contractors?

**Stemper:** Contractors don't care about how Tier 4 Final is being resolved. They want a machine that runs the same, offers the same or better efficiency, costs less, and earns them more money. We used the emission mandate as an opportunity to improve our machines. For example, we looked at ways to integrate hydraulics and electronics to create a variety of work selection modes and make the machines more efficiently leverage movement and stored power.

**Mastanduno:** Aside from the obvious benefit of lower engine emissions, John Deere has worked to provide additional benefits as well. A great example of this is in the telematics, which creates the ability to monitor engine performance remotely, diagnose any problems, and report them to the owner. We can also update diagnostic software remotely and seamlessly using our exclusive communications tool, JDLink.

## Have Tier 4 Final engines sacrificed any power?

**Stemper:** Power hasn't been sacrificed between Tier 4 Interim and Tier 4 Final because power range is still a deciding factor in a contractor's purchase. On earlier versions, we reaped the efficiencies of going electronic, using high-pressure common rail fuel delivery and increasing performance with reduced engine size, so we haven't sacrificed horsepower with Tier 4 Final.

**Mastanduno:** People aren't willing to sacrifice power or torque. Through all of the changes, the power and performance of our engines have remained the same with no degradation in reliability, responsiveness or ease of operation.

## Are there any increased requirements for maintenance?

**Stemper:** The SCR system found in our new excavator line requires the use of DEF. However, as a whole the equipment is migrating to a longer life cycle, longer time between oil changes and longer service intervals. There's no

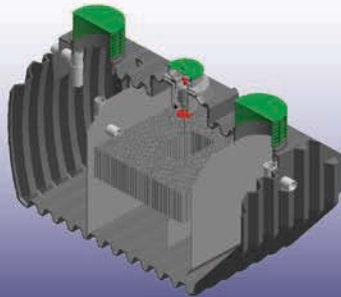


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diesel particulate filter that needs to be changed and no related regeneration.

**Mastanduno:** The exhaust filter is integrated into the engine design, which continuously regenerates and cleans it during normal engine operation without operator involvement. The initial EPA requirement was that diesel particulate filters needed to last 3,000 hours before ash removal. We're now up to 10,000 to 15,000 hours, which is often the life cycle of construction equipment before people retire or sell their machines. Operators will now have to change a small DEF filter along with routine maintenance.

#### Have off-road contractors become more savvy about maintaining supplies of DEF?

**Stemper:** The industry has adapted to that, primarily because the trucking industry drove demand before off-road requirements were phased in. Customers in remote locations are now seeing fuel delivery trucks carrying DEF. As Tier 4 Final becomes applicable to vehicles with lower horsepower, we're now seeing a brand-new customer base being exposed to the need for DEF for the first time — owners of skid-steers and backhoes, and small landscape companies, for example.

**Mastanduno:** Fueling companies have adapted well to the market needs, and they're routinely supplying DEF along with diesel fuel. DEF can be purchased in numerous ways ranging from simple 2-gallon jugs to bulk delivery.

#### Any new engine monitors or alarms?

**Stemper:** One change is that some systems no longer require operator intervention. For example, the SCR technology doesn't require the operator to regenerate the system. In short, there are fewer bells and indicators in our Tier 4 Final.

**Mastanduno:** We've added sensors and monitors to the equipment, but

we didn't want to add flashing lights just because something is happening. Do you need to see a light flashing when a filter is going through a self-cleaning cycle? Manufacturers struggle with the right level of information to provide the operator, and we will only flash a light when it's something that requires action from the operator.

#### Does Tier 4 Final offer retrofit possibilities?

**Stemper:** Today's engines are very complex, from electronic engine management to exacting exhaust pressures entering the catalytic chamber and leaving it. To retrofit, you not only have to add equipment, but understand how it works with every other part of the engine, and then go through the process of finding a way to monitor it. I would say it is difficult and becomes cost-prohibitive to the owner.

**Mastanduno:** Retrofitting will continue to be an option for contractors who own older machines and have a need to bring the emissions up to a higher standard than what they were originally designed to meet. This need is often tied to certain contracts or local air quality requirements. At this time the retrofits John Deere offers will improve both PM and NOx emissions, but generally are not capable of achieving Tier 4 standards.

#### The EPA is always looking to the future. What could Tier 5 look like?

**Stemper:** Europe is currently looking at implementing standards for CO2 exhaust emissions. We're hearing rumblings in the industry that this might be introduced in North America but nothing has been formally decided yet.

**Mastanduno:** If it does happen, we might see attention paid to smaller particulates or fuel consumption controls. However, for off-road vehicles, setting a standard for fuel consumption could be very difficult. How do you measure the fuel efficiency of a skid-steer against the efficiency of a motor grader? □

# Federal Clean Water Act Updates Remain Stalled

By Doug Day

The U.S. Environmental Protection Agency's updated Clean Water Act rules were blocked by a federal appeals court. A federal judge in North Dakota had stayed the rules, but that case applied to just 13 states. That order was extended to all states by the 6th U.S. Circuit Court of Appeals in Cincinnati. In a 2-1 ruling, the court stated, "A stay temporarily silences the whirlwind of confusion that springs from uncertainty about the requirements of the new rules and whether they will survive legal testing."

The EPA says the new rules apply to only 3 percent more waterways, but opponents claim the effects will be much broader. The agency began updating the rules in reaction to two U.S. Supreme Court rulings that raised questions about which waterways, small streams and wetlands were covered by the federal law.

Also, the U.S. Senate voted to block the rule under the Congressional Review Act. President Obama has said he would veto the resolution if it reaches his desk. It passed on a 55-43 vote just a day after the Senate bill requiring the EPA to rewrite the rule died; needing 60 votes to end debate on the bill, it failed to advance on a 57-41 vote.

## NATION

The U.S. Federal Trade Commission has finalized a consent order requiring Nice-Pak Products to stop advertising that its moist tissue and cloth products are flushable or are safe for sewer and septic systems. The FTC said the company must show that the products sold under several different brand names will "disperse in a sufficiently short amount of time after flushing to prevent clogging and/or damage to household plumbing, sewage lines, septic systems and other standard wastewater treatment equipment."

Last May, the FTC accused Nice-Pak of misrepresentation for claiming that certain wipes were safe for sewer and septic systems, break apart shortly after being flushed, and are safe to flush. Its ruling explains that any substantiation from the company "must be based on the expertise of professionals in the relevant area and have been conducted and evaluated in an objective manner by qualified persons, using procedures generally accepted in the profession to yield accurate and reliable results. Those tests must substantially replicate the physical conditions of the claimed environment in which the item can be properly disposed."

## NEW JERSEY

The state Department of Environmental Protection is proposing changes to its Water Quality Management Planning rules that would reduce "unnecessary red tape while maintaining the high standards of environmental protection," according to Commissioner Bob Martin. Environmental groups opposing the change, however, call it an "assault on clean water." The rule allows more development but does not allow new sewer lines in environmentally sensitive areas, according to EPA officials. New goals for nitrate dilution from septic systems that officials say will help

local planning agencies balance environmental protection with economic growth will, according to opponents, allow the number of septic systems in the 860,000-acre Highlands preservation area to increase from one per 88 acres to one per 22 acres. They say instead of two houses per 250 acres of land, the change would allow 11 homes to be built, though officials disagreed with that conclusion. The rules must go through a public hearing process before becoming final.

## BRITISH COLUMBIA

The British Columbia office of the Western Canada Onsite Wastewater Management Association (WCOWMA) is working with the Ministry of Health and the BC Provincial Renal Agency to develop best practices for home dialysis in households with septic systems. According to a report from WCOWMA, the BC office has been contacted several times recently regarding the matter and says it has "expressed concern that a septic system not designed to handle these flows could easily be overwhelmed, causing issues either in the tank or the field treatment component or both. For new systems, the presence of a renal patient performing home dialysis must be identified prior to planning the system; for older systems, upgrades may be necessary to handle the potential flows."

According to a WCOWMA newsletter, the number of patients choosing home dialysis is increasing. "The flow to drain effluent produced during this time period varies ... from 270 liters (71 gallons) for a three-hour treatment to 720 liters (190 gallons) during an eight-hour treatment," says the organization. "Treatments may be performed daily or several times per week. The effluent from this process is a mixture of reverse osmosis wastewater (90 percent) and a substance called dialysate (10 percent). Dialysate contains toxic substances that must be treated and dispersed."

## HAWAII

As Hawaii continues to reduce the number of cesspools in use across the islands, several businesses have been fined by the U.S. Environmental Protection Agency for failing to eliminate theirs. The EPA has fined one resort \$187,500, a hotel \$40,000, and a nightclub \$82,425. The resort has closed some of its cesspools, but still has 14 in operation and has committed to replacing them with approved septic systems over the next three years.

Large-capacity cesspools, those that serve nonresidential buildings or multiple residential units, have been banned in Hawaii since 2005. More than 3,000 have been eliminated. However, the state has more cesspools than any other state, about 90,000, and still allows about 800 new small-capacity cesspools annually.

Since July, the state has been offering individual homeowners a \$10,000 tax credit to replace cesspools with septic tanks or aerobic systems. A proposed ban on new cesspools has yet to become law due to opposition from many groups. □

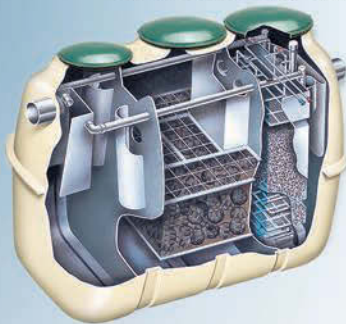
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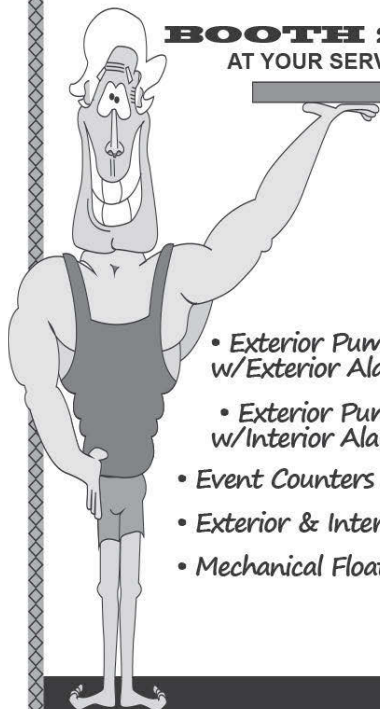
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# Protecting the Industry and Property Rights in North Carolina

Pumpers and installers work closely with the state Legislature to promote efficient wastewater regulations and a cleaner environment

By Doug Day

The North Carolina Septic Tank Association formed in 1990 to provide opportunities for all onsite wastewater professionals in the state, not just members. To attract voting members who would add value, membership dues were set relatively high at \$300 a year, according to President Jerry Pearce.

One benefit of joining is free training for members and their employees. It has helped attract 300 members, and the group has succeeded in spreading the benefits across the entire industry with affordable training for non-members and lobbying that has helped change the regulatory environment.

## Has your strategy of high dues worked as planned?

**Pearce:** It works pretty well for us. Training is our largest funding apparatus. We can offer continuing education hours at a lower rate than the state or university. We're not driven strictly by membership dollars for our lobbying, outreach, and five or six annual college scholarships. We've awarded almost \$40,000 in scholarships to students going on to universities and community colleges.

**"We just have to be prepared in the private sector, and we have to make sure that the regulatory framework enables the greatest opportunities for our members, the onsite wastewater industry and the environment."**

Jerry Pearce

In 2006, we were the primary driver for the certification of onsite installers and time-of-sale inspectors. Occupational licensure is always a tough sale, but our argument prevailed and passed by an overwhelming majority. That led to the need for continuing education, and the association soon became the source for most of the training for certified onsite professionals in North Carolina. The requirement varies, but it's around six hours annually.

We train about 1,500 people a year at our annual convention and 10 regional sites across the state during the year. We provide about 50 to 75 percent of the required training for pumpers, installers, time-of-sale

## Jerry Pearce

president of the North Carolina Septic Tank Association, 919/971-4599  
or contact Doug Lassiter, association executive director, at douglassiter@gmail.com.



inspectors, soil scientists and certified operators. It is free for members, and we extend that free training to registered sanitarians for the counties. We wanted to get regulators into the same class, listening to the same speakers as the people who are being regulated.

We also offer hands-on training for contractors who want to help groups like Habitat for Humanity and the Wounded Warriors Project. They get credit for installing a system under our supervision. That's working well for those who learn that way, the people who can sit on a backhoe for 12 hours a day but can't sit in a classroom for two hours.

## How do you manage all that training?

**Pearce:** We get great help from Emerald Enterprises, which keeps the records, plans the classes, and keeps the association current with our paperwork. Our executive director and members write the curriculum with help from other stakeholders. The North Carolina Department of Labor does all of our safety training, and we bring in the Highway Patrol Motor Carrier enforcement group to do training. Our vendors go out of their way to provide staff people for presentations.

## What does your membership look like?

**Pearce:** Voting membership is limited to tank manufacturers, installers and pumpers. We have other active, non-voting members from licensed soil scientists, professional engineers, manufacturers of components or systems, and local health department regulators.

## Lobbying is another primary focus of your group.

### What does that entail?

**Pearce:** Doug Lassiter, our executive director, is also our lobbyist. He works with the Legislature, state agencies and local environmental health agencies to promote our industry and help develop legislation to expand our





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opportunities and protect from unwarranted regulations. He also works with issues that concern related industries, like stormwater reuse, solid waste and land application.

Our legislative success started in the late 1990s when the Legislature demanded that all potential water polluters come up with improvements for their industry. While the state suggested a study, we suggested requiring effluent filters and access devices on septic tanks. The Legislature liked giving homeowners something that could be of immediate benefit, and the requirement was put in place the next year.

Our most recent legislative action was the Regulatory Reform Act of 2015 that passed (last) September trying to make rules easier to understand and implement and trying to eliminate some that might be outdated. We promoted the idea of having an option for owners and developers to get approval of onsite wastewater systems.

Historically, the sole authority for approving systems was with the local health departments with review by the state. We promoted the engineer option permit. The owner can contract with a qualified professional engineer to design the system, licensed soil scientists to evaluate the site, and a certified installer to build the engineered system. The system design has to be as stringent as the standards of the local health department.

While it's more expensive, the turnaround time is much quicker, so that can change the bottom line, especially for a property developer. There are permits that have been waiting for approval for more than 1 1/2 years. This option will cut that at least in half.

I still think 85 percent of permits will be written by the local health department, but we'll have this extra tool. We promoted this as the stability of the three-legged stool – protecting public health, the environment and the owner's economic investment. The Legislature liked the idea and included it in the bill, along with a few other of our ideas. Of the 71-page bill, 19 pages

dealt with onsite wastewater, including the engineer option and some language to clarify rules, things that will immediately affect the industry.

Another bill, two years ago, required agencies to review and eliminate rules every five years. The On-Site Water Protection Branch is now looking at the rules that haven't been revised in probably 12 years. We could have waited for that review, but a lot of us participated the last time they tried about 10 years ago. In the end, they decided to not move forward with the rule changes. So we took advantage of the Reform Act.

We are participating in the review, trying to bring common sense and effectiveness to the task and make sure the rules do not establish unnecessary hurdles that add costs. We attempt to work with the regulators but recognize that we may be approaching necessary changes from different directions. It's our job to make sure the needs of the private sector are not overlooked. We just have to be prepared in the private sector, and we have to make sure that the regulatory framework enables the greatest opportunities for our members, the onsite wastewater industry and the environment.

### What's your vision of the future?

**Pearce:** We did a survey of our certified installers a few years ago. The average age was 57. We're talking with NC State University about promoting and improving the soils science department. Part of that will be to make sure we have college students getting certified training. We have in place in our association the ability for certified installers to bring sons and daughters to courses with them and make it easier to transfer ownership of the business to provide that next generation of onsite wastewater professionals.

There are new technologies, especially in Europe where they have more population density and fewer natural resources, so hopefully we'll be able to bring some of that technology over here. We want to protect our industry. If that means adapting, then we adapt. □

# Make Your Trucks and Equipment Safer

A wide range of aftermarket lights, alarms and cameras added to your trucks and equipment can help ensure your crew comes home safely at the end of the workday

By Peter Kenter

**W**ith a wealth of aftermarket vehicle and equipment safety devices available to onsite installers, deciding what to buy is a combination of knowing what you need and knowing what makes sense for any particular truck or machine in the yard.

Meeting safety regulations for any vehicle begins with observing the regulations covering that equipment – federal, state and local. For example, federal regulation 49 CFR 393.95 – “Emergency equipment on all power units” covering trucks and truck tractors specifies requirements for carrying fire extinguishers, spare fuses and warning devices for stopped vehicles (including flares and reflective triangles).

**“Many of the light products have shifted to LEDs, which are becoming brighter and brighter and use less power. Sometimes operators shift to new colors and patterns controlled by microprocessors just because they provide something different to notify traffic that they’re stopped on the road.”**

Daniel Pfeffer

However, equipment owners may choose to go beyond the required regulations, upgrade older equipment, replace damaged equipment, or look for novel safety solutions for specific applications.

E-commerce has made a wealth of aftermarket safety devices available to consumers. But choosing what to buy should be governed by some simple guidelines:

- If an item you’re replacing is covered by any regulation, ensure that the product you’re buying promises to meet that same regulation.
- More is not always better. If you’re buying an item not covered by regulations, ensure that using that item does not interfere with another regulation. Again, citing 49 CFR 393.95, trucks can use other safety devices for a stopped vehicle in addition to approved reflectors and flares, “provided those warning devices do not decrease the effectiveness of the required warning devices.”
- Ensure your vehicle has the real estate required to mount the new safety devices on dashboards, hood, doors, side panels or trailers.

- If the device is electrically powered, ensure you have access to the vehicle’s accessory power system – and that the vehicle can produce enough power to operate the device.
- Plan carefully to ensure that the item will actually improve safety and achieve the results you’re looking for in the intended vehicle.

Daniel Pfeffer is owner and president of Vehicle Safety Supply, an online retailer based in Mamaroneck, New York, which offers thousands of aftermarket safety products ranging from safety apparel to lighting products, alarms, mirrors and backup monitors. The company’s clients include truck repair and maintenance facilities, fleet garages, small businesses and do-it-yourselfers.

“In most cases, the people ordering these items are service professionals, so they know what they want and how to install it,” says Pfeffer. “But in most cases, the items in our catalog could be installed by someone with a good set of tools and familiarity with their vehicle.”

## Rear observation camera systems

Backup and rearview cameras and their associated monitors represent a large sales category for the company.

“These are used both for backing up and to provide wide-angled rearview visuals while driving forward,” says Pfeffer. “These models come with fairly large dashboard monitors, larger than those you would find in passenger cars. The screens measure from 5 to 7 inches diagonally and obviously need to be located in the cab, so you need to make sure you have room for them.”

Options on camera systems include water resistance, automatic activation when backing up, infrared night vision, multi-camera monitors (capable of handling input from up to four cameras), automatic camera heating for cold temperatures, and digital video recorders.

Buyers can order entire systems including camera, cables and monitor, or order a la carte.



The Preco rear observation camera system (ECCO Safety Group) features a 7-inch LCD high-resolution color monitor and infrared color camera. (Photos courtesy of Vehicle Safety Supply)

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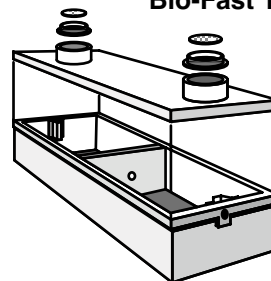
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## Backup alarms

While required on many vehicles by law, backup alarms and their familiar “beep, beep, beep” have reached a price point that makes them economically available to any equipment operator, both on- and off-road.

Pfeffer notes that backup alarms can be installed as stand-alone equipment, although they’re often used in tandem with rear observation camera systems.

“Depending on the model, you can select them for adjustable sensitivity, distance, single alarm tones, dual alarm tones, and decibel levels of alarm tones,” he says. “They’re one of the least expensive and most easily installed safety devices.”



The Smart Alarm from ECCO is a self-adjusting backup alarm designed to overcome ambient noise levels.

## Mirrors and assemblies

Mirrors come in a range of configurations and designs, from model-specific mirrors made by original equipment manufacturers to aftermarket replacement mirror assemblies and add-ons for specific needs. Customers choose from mirror styles that include West Coast heated mirrors that dissipate fog, to spot and fisheye mirrors



A Grote stainless steel fender-mounted replacement mirror extends rear visibility.

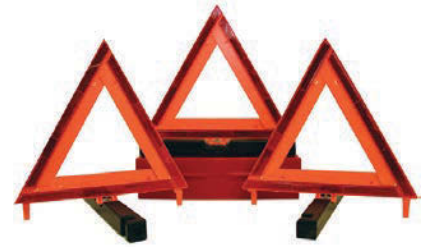
that offer the widest views at the expense of some distortion.

“If you’re thinking of ordering brackets designed to mount a mirror to the hood or buy an extended side bracket to keep an eye on loads that you’re towing, plan ahead to ensure you’ll be getting the views you want,” Pfeffer says.

Installers should also make sure bracket assemblies won’t interfere with operation of onboard tools or hoses – or prevent them from getting through narrow lanes or garage doors.

## Emergency safety kits

Owners of most vehicles would be wise to stock them with a comprehensive roadside emergency safety kit that minimally includes flares or reflective triangles, fire extinguisher, first-aid kit, reflective vest, jumper cables, flashlight and batteries. Kits for vehicles in colder climates may include a blanket, candles, matches, energy bars, shovel, tire chains, traction mats, fuel-line deicer – and even a whistle to attract attention if the vehicle is stranded off-road.



Reflective Peterson triangles are certified for their reflectivity by the U.S. Department of Transportation.

Many such kits are advertised as DOT compliant or DOT certified. However, as safety organization Tire Safety Group points out: “It is important to note that just because a kit is DOT certified, it does not mean that it is endorsed by the U.S. Department of Transportation. This government agency does not endorse any roadside emergency kit on the market.” DOT certification is related only to one item in the kit, indicating that the reflective triangles contained inside meet the requirements of FMVSS 125, which applies only to large trucks and buses.

Reflective clothing included inside these kits should also meet ANSI standards.

Pfeffer offers the kits online but notes that it’s one item that operators might be better off picking up locally. “Most safety add-ons, including triangle reflectors, are fairly light so they can be shipped inexpensively,” he says. “The total weight of the items make shipping uneconomical, when combined into a big kit.”

## Safety lights

Traditional safety lights need to be replaced with lights of the same performance level. However, many vehicle operators want the extra visibility offered by additional lighting products, including LED light bars. Products range from typical truck applications to lighting products made specifically for excavators or forklifts.



The Maxxima portable LED work light can be powered by rechargeable lithium-ion batteries.

“Many of the light products have shifted to LEDs, which are becoming brighter and brighter and use less power,” says Pfeffer. “Sometimes operators shift to new colors and patterns controlled by microprocessors just because they provide something different to notify traffic that they’re stopped on the road.”

The newest emergency lighting products gaining popularity are LED work lights powered by lithium batteries.

“They’re much more powerful and energy-efficient than they used to be,” say Pfeffer. “In an emergency situation, you’re not limited by the lengths of cables or tied to generators, and you can reserve vehicle power for onboard lights.” □



# “Duel Power Lid”

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## industrynews

### JCB adds locations to dealer network

Company Wrench JCB, headquartered in Carroll, Ohio, will offer JCB's full line of equipment in Columbia, South Carolina, and Raleigh and Charlotte, North Carolina. Equipment will include backhoes, wheel loaders, telescopic handlers, compact excavators, skid-steers and compact track loaders. Company Wrench has shop and field service technicians, parts, sales and rental departments at all locations.

### Vermeer names Andringa president, CEO

Jason Andringa assumed the role of president and CEO at Vermeer. The announcement was made as part of the company's family succession planning process. Andringa previously served as president and COO, in addition to a number of other roles since joining the company in 2005.



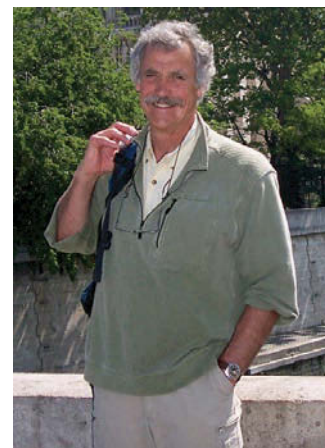
Jason Andringa

### Caterpillar receives Vision for America Award

Keep America Beautiful presented Caterpillar with the 2015 Vision for America Award last November for corporate commitment to sustainability.

### SludgeHammer co-owner Buzz Jenks passed away

Arthur Ward "Buzz" Jenks, co-owner of SludgeHammer Group, Ltd., died Jan. 3. He was 69. "Buzz will be missed by his business partners, Dr. Dan Wickham, and all the dealers and distributors of SludgeHammers," the company said in a statement. "His cheerful helpfulness and kindness was always there no matter what problem or fire he was putting out. He helped build the SludgeHammer brand by always meeting the needs of customers and putting them first." □



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## Water Cannon poly drive pressure washers

Poly drive pressure washers from Water Cannon are made for commercial and industrial cleaning applications. Features include laser-aligned Gates poly drive belt system, flat-free oversized tires, powder-coated steel frame, 15-gallon fuel tank, GX Honda twin-cylinder gasoline engine, and removable roll cage with hose reel platform and 250-foot-capacity reel. Accessories include tank-feed plumbing on the 8 gpm model, gun/wand assembly with quick connects, 50-foot high-pressure hose with quick connects, and four color-coded QC spray nozzles. 800/333-9274; [www.watercannon.com](http://www.watercannon.com).



## Komatsu America crawler dozer

The D61-24 crawler dozer from Komatsu America Corp. features a 6.8-liter, 168 hp SAA4D107E-3 EPA Tier 4 Final engine and choice between quick-shift, three-speed mode and variable 20-speed customizable transmission. KOMTRAX telematics provide machine metrics, including KDPF status, DEF consumption, fuel level, operating hours, location, cautions and maintenance alerts. The multi-lingual, 7-inch, high-resolution LCD monitor with Ecology Guidance helps operators monitor machine performance. A rear-view monitoring system is standard. 847/437-5800; [www.komatsuamerica.com](http://www.komatsuamerica.com).



## Ditch Witch mini skid-steer

The SK752 construction-grade mini skid-steer from Ditch Witch features a 24.8 hp Kubota diesel engine. The machine has an 860-pound operating capacity and increased hinge-pin height to 83 inches for efficient loading. Other features include an ergonomic operator's station with standard dual-lever ground drive controls and two-way auxiliary foot pedal. 800/654-6481; [www.ditchwitch.com](http://www.ditchwitch.com).



## Manitou compact excavator

The Gehl Z55 12,125-pound compact excavator from Manitou is equipped with a 47.6 hp Yanmar Tier 4 turbo-charged diesel engine. Eco mode and auto deceleration features enable cost savings by reducing engine speed by 10 percent without sacrificing power. A boom offset swing of 68 degrees in both directions allows for digging a square hole without repositioning the machine. An integrated digital display features recordable maintenance history with adjustable time intervals and reminders. 262/334-9333; [www.manitou.com](http://www.manitou.com).



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- » Protect from system abuse
- » Satisfy your customers



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

US Patent# 5,885,452  
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Patent# 6,811,692



The 7" filter in a 5" square concrete baffle.

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www.mowpa.org; 443/570-2029

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## Missouri

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

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Professional Onsite Wastewater Reuse Association of New Mexico;  
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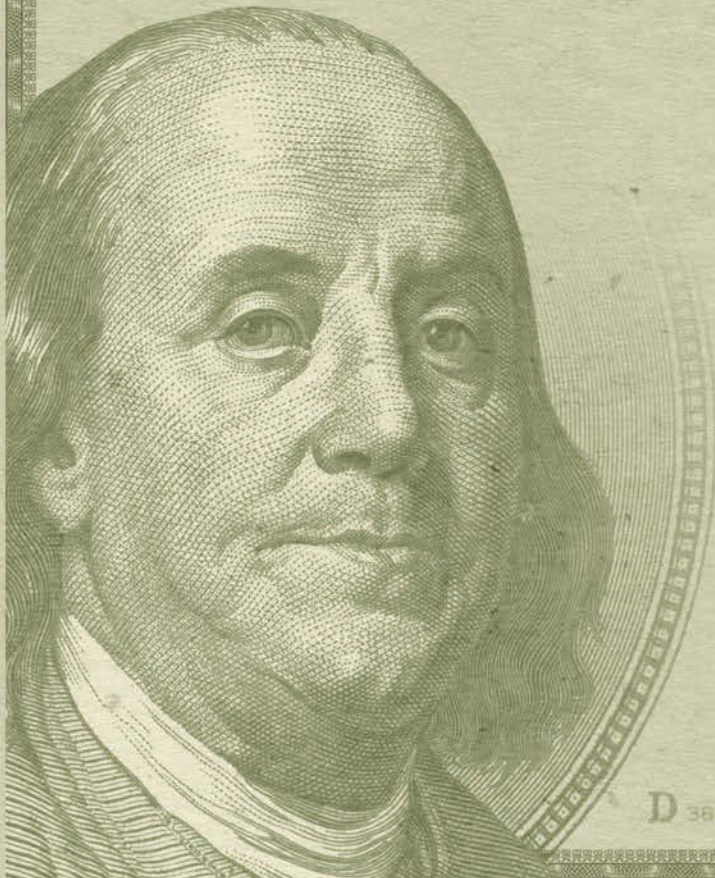


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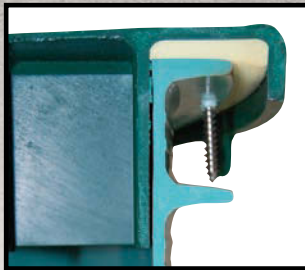
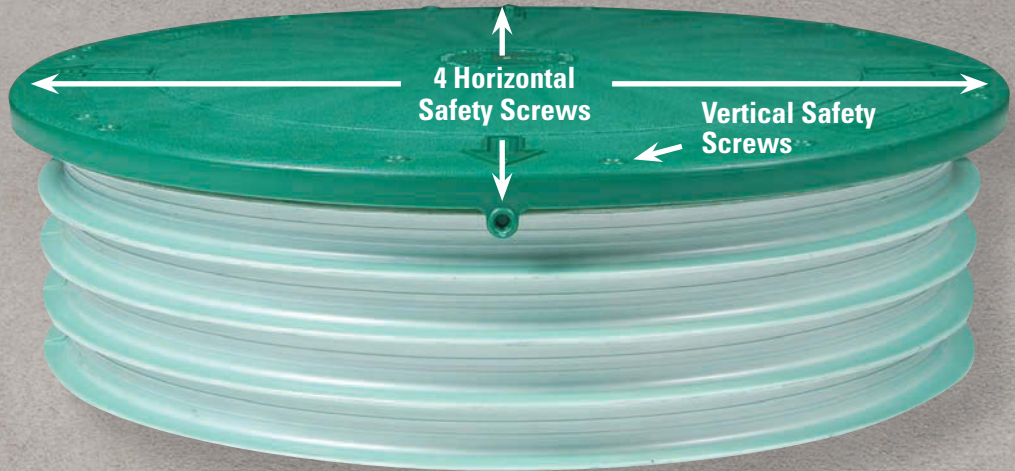
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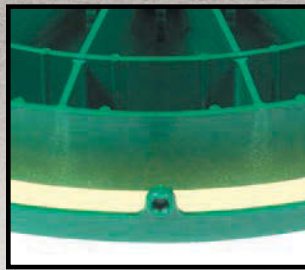
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- May also be used as Inlet & Outlet Tee

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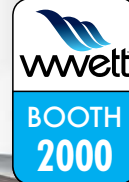
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- Simple to install
- Easy to clean

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