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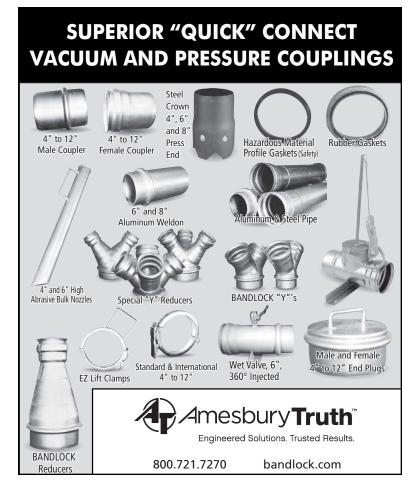
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## May 2015



## 18 Pumping in the Pueblo

### - David Steinkraus

Working the rugged border regions of Arizona, Valley Plumbing and Septic Service stresses hometown service, family company values and environmental stewardship.

**ON THE COVER:** The crew at Valley Plumbing and Septic Service, Rio Rico, Arizona, builds out its own rigs with smaller vacuum tanks to suit the type of work they do and the varied terrain they face near the U.S.-Mexico border. Owner Ruben "Sonny" de la Rosa III is shown on the job with his Ford pumper with an 1.800-gallon steel tank and Jurop/Chandler pump. (*Photo by Mark Henle*)

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Fuel oil is mistakenly delivered down a septic inspection port, causing environmental mayhem. How could this disaster be prevented?

- Jim Kneiszel, Editor

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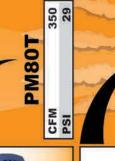






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Contact Jim with your comments, questions and opinions at editor@pumper.com.

## **Label Septic System Components**

Fuel oil is mistakenly delivered down a septic inspection port, causing environmental mayhem. How could this disaster be prevented? By Jim Kneiszel, Editor

t was a nightmare of mistaken identity for the school district in Waldoboro, Maine, when a fuel delivery worker dumped 2,000 gallons of heating oil into a septic system inspection port. The incident earlier this year will undoubtedly cost responsible parties thousands of dollars in environmental cleanup costs and could necessitate the expensive replacement of a drainfield.

Two questions come to mind: 1. How did this happen? 2. Do readers of *Pumper* have similar tales to tell?

First, how did the fuel oil – all 2,087 gallons – get pumped into the septic tank? According to an account in the *Bangor Daily News*, the orifices for fuel oil and the septic inspection port looked similar – they were similar 4-inch camlock fittings, located 50 feet apart at Medomak Middle School. The septic port was above ground level, while the oil fill tube was below ground level. A photo of the septic port showed no distinguishing characteristics, colors or tags that would be obvious to a service technician.

According to the news story, school officials shoveled snow away from the oil-receiving pipe when they called for a fill. An experienced delivery person – who had, however, never delivered oil to the school – apparently mistook the septic pump station port for the fuel port and filled the order, with some of the oil flowing back into the septic tank and some heading for the drainfield.

What played out was an environmental disaster. A local pumper was called to empty the septic tank and several hundred gallons of oil were recovered. Plans were in the works to try and save the drainfield and continually test the area for environmental damage. Meanwhile, bottled water was provided to students and staff until well water could be assured to be safe.

### **LABEL IT**

There should be no way for the delivery worker to mistake the septic port for a fuel port. That it happened indicates poor labeling of both access pipes and possibly the need for lockout security measures. The purpose of these ports should be clearly tagged and identified. They could also be locked and only opened by a school staff member upon the arrival of either the oil company driver or a septic service technician.

Beyond tags that identify septic system ports, it might be a good idea for the onsite industry to choose a universal color for system access points so tanks, ports and panels related to an onsite system are easily identifiable to technicians. This would be especially helpful for commercial properties where technicians servicing a variety of systems will routinely visit.

Early on in the aftermath of the Maine snafu, a Maritime Energy official said the oil company "has taken ownership" of the cleanup. The company hired an engineering professional to try and preserve the drainfield and arranged for regular septic pumping to recapture more of the oil. It's good to see the company move swiftly when quick action could mitigate some of the damage.

It might be a good idea for the onsite industry to choose a universal color for system access points so tanks, ports and panels related to an onsite system are easily identifiable to technicians. This would be especially helpful for commercial properties where technicians servicing a variety of systems will routinely visit.

Clearly it's the job of the oil company to know the location of the oil fill port. It's an obvious conclusion to blame the oil company for an incomprehensible situation like this. But is the oil company the only responsible party in this case?

### **WE DO OUR PART**

With a clean environment and the preservation of an expensive onsite system at stake, it seems reasonable for maintainers of all of a building's utilities to take appropriate steps, clearly marking all components that are visible on the property. Such measures could have easily prevented a disaster like this.

As an industry, we can choose to focus on protecting the environment as well as protecting the investment our customers make in wastewater treatment. This includes installing systems and marking access points clearly for other contractors who may look for them in the future. And it goes far beyond situations like this one.

It means designing systems that are easier to inspect on a routine basis to keep them working at their best and functioning properly for as long as possible. It means using risers to bring tank access to ground level for more convenient pumping service. It means adding lids that promote the greatest level of safety to prevent children from accessing the tank. It means educating customers about the proper care of their systems and when they should call on you for your expertise.

## **SHARE YOUR STORY**

Have you found anything unusual when pumping a septic tank, checking inspection ports or outlet baffle filters? Have you found ports, risers and lids, or control panels vandalized or tampered with in some way? Have you had an experience that suggests more security measures should be taken by septic service companies to protect their customers' systems? Share your stories with me at editor@pumper.com. ■

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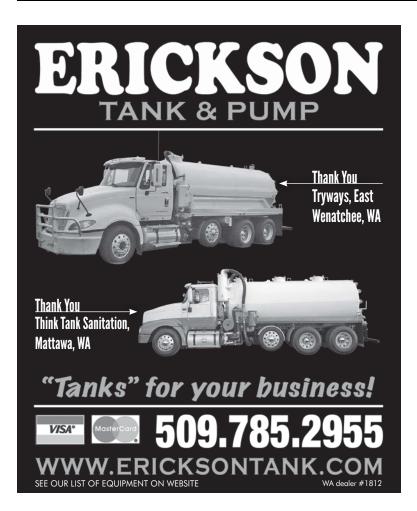
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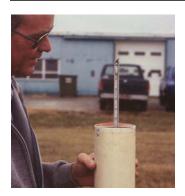


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## 7 smallbusiness tips

Getting through the startup phase of a business is critical, but it's just the beginning. Next your business needs to evolve and hopefully expand. Here are seven ways to avoid letting your business become stagnant.

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## **PRODUCTIVITY BOOSTERS**

## tools of the trade

Jeff Ruggiero and Best Septic Service are profiled in this month's issue. Check out an exclusive online story about what two tools Ruggiero uses daily and wouldn't want to be without.

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Owner Ruben "Sonny" de la Rosa III doesn't stop there. For his family and for the future, he is looking at how to expand to serve new areas, broaden his service menu and maybe even leverage his wastewater expertise to start a completely new business.

## ON THE BORDER

Valley Plumbing is based in Rio Rico, Arizona, an unincorporated community of about 19,000 people about 15 miles north of the U.S.-Mexico border. About 20 percent of Rio Rico is served by municipal sewer, and that's only the lower elevations, de la Rosa says. Climb the mountains that sprawl across the countryside and everyone utilizes septic systems.

De la Rosa's father, Ruben de la Rosa II, started the company in 1997. He had owned a mechanics shop and towing business, sold out, grew bored in early retirement and took up pumping. At first the company was Valley Septic and Handyman Service because Ruben II did other work, such as changing out water heaters and laying tile.

(continued)

## **Valley Plumbing and Septic Service**

Rio Rico, Arizona

OWNER: Ruben de la Rosa III

**FOUNDED:** 1997 as Valley Septic and Handyman Service

**EMPLOYEES:** 4

SERVICES: Septic service, onsite installations, licensed perc test and design, portable sanitation, residential and commercial plumbing

**SERVICE AREA:** 80-mile radius from Rio Rico, Arizona

**AFFILIATIONS:** National Association of Wastewater Technicians

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2005 Freightliner M-2, Cat 210 HP, AUTO, NON CDL, AC, low miles, new 1850 gallon steel vac tank, new Jurop PN-84 vac pump.

**Call For Pricing!** 2-YEAR 100,000 MILE **DRIVE TRAIN WARRANTY** 



2007 International 4300, DT 210 HP,6 spd, NON CDL, **new** 2000 gallon Alum. vac tank, **new** Jurop PN-84 Vac pump.

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De la Rosa worked for his father after high school, left Rio Rico for a while to train in computers and then returned. After working in various jobs in the company, he took operating control in 2013 when his dad stepped down. The company became Valley Plumbing and Septic Service to reflect the direction de la Rosa wanted. Since taking over, he has followed his father's advice and kept the company small while learning what it's like to be in charge.

About half of Valley Plumbing's business comes from septic pumping and portable restroom rentals. The other half comes from onsite installations

and repairs, plus some design work and plumbing. These halves complement each other. Pumping and portable restrooms provide a steady income, while all the other services provide revenue boosts throughout the year.

Installation work comes in spurts, de la Rosa says. Arizona developers built heavily during the last housing boom, and there is a glut of homes on the market, making it much more affordable to buy rather than build.

"Right now I'm gaining more repairs instead of orders for installations at new homes. And all these repairs come from somebody calling and saying, 'Hey come pump my tank," de la Rosa says.

address frequently asked questions. A website currently under development will help in that regard. Valley Plumbing might look late to the Internet trend, but it really isn't because local guys need to be known locally, and de la Rosa has a strategy for that.

When he offers a special service deal, de la Rosa will run a large ad in the local newspaper, but you won't find him listed there all the time. He is in the phone book. When the next sports season comes along you'll see Valley Plumbing's name on team T-shirts, on a team banner or promoted on seat cushions. He gives money to school sports booster clubs. He does

> not do targeted mailings. "I can give money to marketing companies, or I can give money back to the community, and what I chose to do is give to the community."

> He is accredited with the Better Business Bureau and carries an A-plus rating there. It has helped him. People have called with jobs because they checked out the company on the BBB website.

> The company started with social media less than a year ago, beginning with a Facebook presence. The company Facebook page isn't updated as often as he would like. "Social media tends to take up more time than I want to invest in it. I could sit down and look at my phone or my computer for hours. When I was spending more time in the office, before I took over the whole operation, I had to consciously limit my exposure

to computers because of the time they can consume."

## learned a lot from my father and grandfather, and hope I can teach it to my son and my daughter ... I hope they have a broader life and see a few things I haven't. And I hope to leave them the kind of legacy left to me – one built on hard work, honesty and family.

Family is important. I've

- Ruben de la Rosa III

### THE LOCAL GUY

De la Rosa grew up in this community, so he positions the company as the local guys who can be counted on and aren't too busy or "too corporate" to help others.

"When people call me, it's not necessarily to have me do work. They may call for a chat and refer a job to me in the process," de la Rosa says. "We're a mom-and-pop operation, and my customers know me by name. They even know where I live. They can call me. They know the owner of the company is on top of things."

While personal service is good, de la Rosa is looking for efficient ways to

### **PURPOSE-BUILT RIGS**

When it comes to his fleet, de la Rosa finds smaller equipment better suited to the varied terrain of his service territory. "Over here it's not quite flat. Everywhere I go I'm going up a mountain, down a mountain and over bridges," he says.



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**Right:** The Valley Plumbing and Septic Service family includes, from left, Andrew Bixler, Alonzo Medina, Ruben de la Rosa, Ruben de la Rosa II, Ruben "Sonny" de la Rosa III, Jenny de la Rosa and children, Ruben, 8, and Lily, 6.

**Below:** Jenny de la Rosa works in the Valley Plumbing and Septic Service office, as son Ruben IV looks on.





He prefers vacuum tanks on the smaller side for septic service. He is willing to make a second trip to pump a tank, but it usually is not necessary for his residential customers. And he doesn't service commercial accounts that might require pumping bigger tanks.

For portable sanitation service, the crew uses an Isuzu truck with a platform behind the cab carrying a 300-gallon steel tank for waste and a 135-gallon plastic tank for freshwater. A 5 hp Honda engine drives the vacuum pump.

The septic pumping truck is also on the smaller side. It's a 1996 Ford chassis with a 1,800-gallon steel tank. A 420cc Predator engine is connected with a belt to a PN58D Jurop/Chandler pump.

Also in the inventory is an International with a 1,600-gallon steel tank.

The International was purchased already built with a PTO-driven pump, while de la Rosa and his crew built out the other trucks. He chooses steel tanks and prefers to drive the pumps with truck-

I'm open to suggestions. I don't believe in being a dictator. If they see something or have a good idea, I will listen to them and I will change my plans without hesitation. It's more of an 'us' instead of a 'me' when it comes to our operations. My guys are important, and this way they feel like it because they've got a say.

— Ruben de la Rosa III

mounted gasoline engines. This arrangement makes the equipment easier to maintain, he says. And because the trucks' larger diesel engines are not running constantly, he saves money on fuel and reduces carbon emissions.

"And that's kind of like what we are. We're environmentalists. We're trying to make this place safe for our children and their children to come.

The water we drink is how many billions of years old? It's our job to make sure it stays clean," he says.

For the installation side of the business, he has a variety of excavators from Kubota, including a 008 and a U15 mini-excavator, and a Bobcat backhoe.

To serve portable sanitation customers, Valley Plumbing has 80 units from Satellite Industries, of which 50 to 60 are typically out on the job.

### **THE HARD-WORKING CREW**

The attitude de la Rosa has toward his customers is one he extends to the people who work for him. "We're all like family. That's pretty much how we built the company," he says.

(continued)

## Life near the border

Working so close to a major crossing to Mexico brings its own set of challenges for Valley Plumbing and Septic Service in Rio Rico, Arizona. It's only about 15 miles to the crossing between Nogales, Arizona, and Nogales, Mexico, an area with great cultural diversity.

A number of agricultural companies have their offices in the U.S. and farms across the border. There is a large Korean population working in export-import businesses, and many Mexicans cross into the United States to buy goods and avoid the large import taxes they would pay at stores in Mexico, says Ruben "Sonny" de la Rosa III, owner of Valley Plumbing.

Of course, de la Rosa and his workers speak Spanish. Though not a requirement for a job with Valley Plumbing, living in the area means being bilingual, says de la Rosa, whose varied heritage includes Hispanic ancestors.

Being located so close to the border means living with border security. There is a Border Patrol checkpoint well into the United States on Interstate 19 about 20 miles north of the border and about 5 miles north of Rio Rico. Valley Plumbing's service rigs are frequently stopped for inspections. "I have never had an easy time with these guys. Every time I'm treated like a criminal. They want to take my truck apart," says de la Rosa.

At the same time, all the border security people bring business. U.S. Customs and Border Patrol has a firing range just a few feet from the border with Mexico, and Valley Plumbing rents portable restrooms to the agency for use at the range.

"The idea of what they're trying to do, I fully agree with it. We need to keep the country safe, just as long as nobody's rights are taken away and as long as I can get to my jobs on time," de la Rosa says.



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**Left:** Technician Alonzo Medina loads a Satellite Industries Global restroom onto a pickup truck for delivery.

**Below:** Ruben de la Rosa II operates a Case backhoe during a septic system installation.

De la Rosa's wife, Jenny, oversees the office. The couple has two children, Ruben IV, 8, and Lily, 6. One of the full-time employees, Alonzo Medina, has been with the company for nine years and is a mentor for the younger workers. The other full-time employee, Andrew Bixler, had previously worked in an area mine. When that shut down he brought his knowledge of heavy equipment and ability to do minor mechanical repairs to Valley Plumbing. De la Rosa's dad rounds out the crew.

De la Rosa's role is to not act like a boss.

"I'm open to suggestions. I don't believe in being a dictator. If they see something or have a good idea, I will listen to them and I will change my plans without hesitation. It's more of an 'us' instead of a 'me' when it comes to our operations. My guys are important, and this way they feel like it because they've got a say," he says.

### **FINDING NEW DIRECTIONS**

One new component de la Rosa is considering for the business is adding a dewatering plant. The municipal sewer from the Ambos-Nogales runs north to Rio Rico and this is where wastewater is treated. This system also collects some wastewater from Nogales, Mexico, and the hours of peak flow from Mexico restrict dumping times for pumpers to one two-hour block in the morning and a two-and-a-half-hour block in the afternoon. Dewatering would get around this obstacle and trim his costs.

He intends to expand the business to the north. There's a lot of open territory between Rio Rico and Tuscon about 50 miles farther north, and the region is dominated by decentralized wastewater systems. Every week he receives a few calls from people who are just outside his customary territory. What dissuades him is the amount of diesel he would have to burn to serve those customers. But his father's home is in that area, and he could park a truck there and commute to it by car.

His other idea would employ his water knowledge for food production. He has become interested in aquaponics, a closed system in which fish are raised in a tank and the water from it is treated by a planting of greens or other edible plants. It creates a small, independent ecosystem involving waste and biology – exactly what pumpers are trained in and deal with all the time. "And that's how I think I was so easily hooked, because I had the knowledge already and didn't realize it."

It also takes his environmental stewardship in a new direction. "Our food is dirty, and we're feeding our families that. Aquaponics means raising

your proteins and plants – your vegetables and fruits – by using wastewater in a different way, yet in the same way nature uses it."

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To learn about Ruben de la Rosa's favorite piece of excavation equipment, go to www.pumper.com and read an exclusive online story about Valley Plumbing and Septic Service.

## **BUILDING A LEGACY**

Everything that Valley Plumbing is, and everything de la Rosa wants it to be, can be distilled into a single word: legacy. That means creating a better and smarter world, and keeping in mind who this world is being passed

down to.

"Family is important," de la Rosa says. "I've learned a lot from my father and grandfather, and hope I can teach it to my son and my daughter. If this career path is one he or she wants to take, the company is theirs. Whatever they do, there are things I hope for them. I hope they have a broader life and see a few things I haven't. And I hope to leave them the kind of legacy left to me – one built on hard work, honesty and family." ■

## **MORE INFO**

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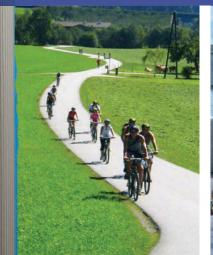
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Dick Yemm is speaker and consultant on succession planning, and author of *The Stories* – *Tomorrow Your Business Without You*. Reach him at rileyspress@atlantic.net.

## **Seamless Succession**

A spouse armed with an action plan can save a family business when the owner is suddenly out of the picture By Dick Yemm

state of momentary confusion typically engulfs a loved one when notified that her husband or his wife has just been in a serious accident or has passed away. Suddenly the surviving spouse's world is turned upside down and life-altering decisions must be made, especially when a family business is involved.

Consider the story of Amanda, whose husband Tory was hit by a drunk driver while riding his motorcycle. Even though she had worked in their business, she was unprepared to replace him as principal operator.

It was apparent that the business would soon unravel with no one in control of day-to-day decisions. Amanda quickly found that Tory's will and life insurance were of little help. Each would apply only in the event of his death. Instead Tory's durable power of attorney appointed Amanda as his personal representative to conduct business if he became incapacitated.

### **TAKING OVER**

The family's financial future depended on her working in his place. Somehow she and the employees had to keep the business operating. Her management style could be described as crisis control through trial and error as she learned from daily mistakes. There was no plan to assist her in running the business, only the legal temporary transfer of authority provided by the power of attorney.

A major fear of many spouses is what happens to them and their families if their husband or wife — the principal operator of a company — becomes unable to run a small family-owned company. The answer depends on many things, including what planning and preparation has been done before the triggering event occurs.

If there has been no planning, the fate of the business falls to state statutes that direct the appointment of the disabled owner's personal represen-



Spouses need to have some type of organized action plan just in case they have to assume control. A prepared spouse is aware of the options for running a business before a triggering event occurs.

tative. The ability to control management of the company can transfer with the appointment. There is no guarantee that a family member will be appointed to that position. A family's future interest in the business remains in peril depending on the appointee's success.

An adequately prepared spouse can be the key to a business' survival. The spouse's designation as personal representative in either a durable power of attorney or a will gives the person authority to represent the owner's interest in a company. If the owner controlled the fate of their business, then the spouse can automatically succeed to that position, unless limitations have been made in the estate-planning documents.

In this case, however, the company's fate depends on the successor spouse's decisions. Often the successor spouse is placed in the owner's position as a means of convenience, it never being expected that he or she would have to operate the family business. Little thought has been given to the spouse's qualifications or ability to handle the burden.

## **KNOW YOUR OPTIONS**

Spouses need to have some type of organized action plan just in case they have to assume control. A prepared spouse is aware of the options for running a business before a triggering event occurs. Options include:

- Continue to personally operate the business
- Operate the business as an overseer, not involved in daily operations
- Elevate a designated employee to be chief operating officer
- Hire a temporary experienced manager
- Sell all or part of the business as soon as possible
- Exercise an operating, purchase or buy-sell agreement

Making the appropriate choice depends on many factors. Chief among them is the length of time anticipated for the successor spouse's involvement. Will the spouse's participation be short-term until the owner recovers? If so, how long should the company be operated with temporary leadership before implementing a permanent succession plan? And will a permanent plan mean different ownership and/or management?

In some cases the successor spouse may qualify to represent the owner's interest but not have the necessary license and education to run the



company. If necessary, a qualified manager with the necessary qualifications can be hired.

The potential successor needs to develop an action plan based on:

His or her:

- · Management ability
- Availability
- Motivation
- · Operating knowledge of the company

## The company's:

- · Type of legal entity
- Size
- · Number of employees (their knowledge and experience)
- · Diversification of management
- Diversification of product or services

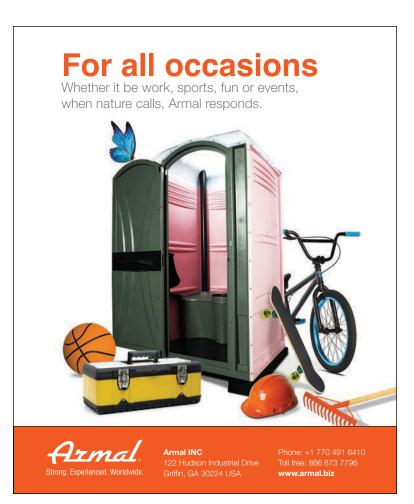
All businesses are not created equally. Entitlements and protections vary under state statutes, according to how a business was legally structured. For instance, ownership interest of a company started and continually operated as a sole proprietorship ends when the owner can no longer participate in its activity. Companies created and operated as a corporation, partnership or limited liability type of either have owner interests to transfer.

## START TEACHING

Developing a successor spouse's action plan starts with learning through dinner table discussions and reading trade magazines. The education should be broad in scope so options are understood. Detailed operating knowledge is not required because businesses change daily in response to demands. Instead the spouse needs to be prepared to make crisis decisions.

Consider what your first steps would be in implementing an action plan. Different triggering events require different responses. Before any options are exercised, the first step of an action plan should be to gather all available information about the company. Confidential disclosures, useful shortcuts, administrative details, operating mechanics, guidelines and overviews detailed in an operating plan would be valuable aids in decision-making. Using a trusted adviser for support and guidance could also be of tremendous importance. From whom and how a spouse obtains assistance should be part of the operating plan document.

When unfortunate events strike, a prepared spouse with an action plan can make the difference for a business' continued operation and a family avoiding financial crisis.



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## Wisconsin Supreme Court finds septage is a pollutant in well-contamination case

## **By Doug Day**

eptic service professionals in Wisconsin may be facing a bit of a quandary concerning their liability insurance. In two December decisions, the Wisconsin Supreme Court ruled that septage and manure may be considered pollutants. When wastes are identified as pollutants, the court determined, they are subject to the pollutant exclusion clause of a liability insurance policy – even if that policy was purchased to cover a company in the business of handling septage or manure.

One case involved a septic service business that had a permit to apply septage as a fertilizer on their neighbor's farmland. The neighbor's well became contaminated by runoff, killing some cattle, and they sued the septic business' insurers. The Supreme Court agreed with lower courts that the septage qualified as a pollutant, so the pollution exclusion applied and the insurance company did not have to cover the damage.

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Chief Justice Shirley Abrahamson was the only dissenter, questioning why such a company would purchase insurance in the first case. "I conclude that a reasonable person ... in the business of hauling, storing and disposing of septage, would not consider septage a pollutant under ... general liability policies they purchased to cover liability for damage caused by their septic business operations."

In the manure case, the Supreme Court overturned a lower court and ruled that the manure became a pollutant when it entered wells on property adjacent to a farm field where it was spread as a fertilizer. Abrahamson also dissented in that case for similar reasons.

## **Michigan**

An exception to Michigan's septage waste law will remain in effect now that a sunset provision of the regulation has been removed. Most septage haulers are required to dispose of their waste at a receiving facility in their area. That provision does not apply to those who own a septage storage facility of at least 50,000 gallons if it existed prior to a septage disposal facility in their area. Those haulers can continue land application, an exemption that was scheduled to end in 2025. The Legislature's action removes that sunset provision and makes the exemption permanent.

The bill also limits the ability of local governments to impose stricter septage requirements than those in state law. Under Michigan law, septage receiving facilities must have a designated service territory, and some communities have made it mandatory that septage pumped in that area be taken to their receiving facility. Such mandates are now allowed only for existing receiving stations and only until their construction debt is paid off.

### **Maryland**

The owner of a rental home who bypassed a failed septic system has been fined and a contractor who did the work is being charged. The Laurel, Delaware, woman was contacted by tenants who rented the Wicomico County home due to strong odors and sewage backing up into the home. The woman hired a contractor to install a pipe that discharged wastewater from the septic system into a creek in a wooded area of the backyard.

The homeowner pleaded guilty to misdemeanors of water pollution and improper alteration of a sewage system and was placed on probation for three years, fined \$12,000 to be paid to the Maryland Clean Water Fund and ordered to perform 75 hours of community service. An additional \$23,000 fine was suspended by the judge. The contractor has been charged with two counts of water pollution and 11 counts of installing or altering a sewage system without a permit.



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ike many septic service contractors, Jeff Ruggiero is a self-admitted workaholic who was no stranger to 70- and 80-hour workweeks since 2010, the year he and his wife, Lisa, established Best Septic Service in Westminster, Vermont.

But there's more to life than just work, a fact that Ruggiero now realizes after receiving a sobering wake-up call in September 2013: a severe heart attack.

"I'm a pretty driven guy, but I drove myself right into the Dartmouth bed-and-breakfast for about five weeks," says Ruggiero, 49, referring to Dartmouth-Hitchcock Medical Center in Lebanon, New Hampshire, where he underwent triple-bypass heart surgery. "Two of my arteries were 100 percent blocked and a third was 79 percent blocked. They couldn't believe I was walking around, much less working every day. But I never had any problems before that.

"It definitely was a wake-up call," he adds. "I never thought it could happen to me ... I thought I was bulletproof."

Ruggiero's experience offers fellow pumpers a cautionary tale about burning the candle at both ends for years without respite. But it also points out the value of having loyal, cross-trained employees who can handle day-to-day operations when the boss suddenly isn't around.

(continued)

Nace, a representative of Rich Earth Institute (third from right). The company is participating in a "peecycling" study with the institute. Best employees include (from left) Justin Ruggiero, Seth True, Jaden Frost, Lisa Ruggiero, Jeff Ruggiero, Rachel Comtois and Wayne Turner. The restrooms are from PolyPortables LLC. (*Photos by Kayla Rice*)



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TEL (800) 367-0972 FAX (315) 363-0193 WEB www.westmoorltd.com "I always knew we had great employees, but now I know we have the crew of all crews," Ruggiero says of his wife, Lisa, who handles the books and manages the office; son Cris, 22, who manages portable restroom operations; son Justin, 19, who performs septic system repairs, camera inspections and waterjetting; technicians Seth True and Wayne Turner; and Rachel Comtois, who handles dispatching, sales and marketing.

"They really battened down the hatches while I was gone," notes Ruggiero. "Lisa and I are really blessed. A lot of times you hear about employees who play while the boss is away, but not my crew. And when I came back, they made me fill out a job application. I thought that was pretty cool."

# **DRIVEN TO SUCCEED**

Ruggiero worked in the trash industry for 20 years before he and Lisa founded Best Septic with just one vacuum truck. "I always wanted to go into business for myself and work with my two boys," he explains. "I also thought it would be easier to manage my work schedule, which didn't work out too well."

Growth occurred rapidly. In just more than four years, Ruggiero says revenue has risen dramatically, which he attributes to his dedicated employees. In addition, the company grew by branching out into system repairs and then adding portable restroom rentals to its list of services.

"A lot of people started asking for restrooms for special events," he says. "Our service area is very rural, so there are a lot of septic systems, and people don't want to put all the waste generated by a special event, like a backyard wedding, into their septic systems.

"I also didn't want to have all my business eggs in one basket ... I wanted

to diversify," he adds, noting that the company's revenues now are evenly divided between septic service and portable restrooms; portable restroom revenues are split roughly 50/50 between special events and monthly

rentals. "We also started repairing septic systems and retrofitting systems with risers," he says.

Providing great customer service also contributed to the company's growth, Ruggiero points out. That means more than just cleaning restrooms thoroughly or being considerate of people's lawns/landscaping when servicing septic systems. In addition, it includes things like educating customers about septic system do's and don'ts or pointing out to restroom customers that they may need more frequent cleanings or, alternatively, another restroom or two on site to accommodate high usage.

Two of my arteries were 100 percent blocked and a third was 79 percent blocked. They couldn't believe I was walking around, much less working every day. But I never had any problems before that.

— Jeff Ruggiero

Right: Lisa and Jeff Ruggiero are shown with "Big Blue," a 1990 Ford L8000 built out by Imperial Industries, that's still a daily workhorse in the Best Septic Service fleet.

**Below:** Jeff Ruggiero explains a septic system inspection to a customer in Vernon, Vermont.





To learn about Jeff Ruggiero's favorite new business tools, go online to www.pumper.com and read an exclusive story about Vermont's Best Septic Service.

aluminum tank; a 2003 Ford F-450 with a 500-gallon waste/300-gallon freshwater

steel tank; and a 2003 Ford F-350 with a slide-in 300-gallon waste/150-gallon freshwater aluminum tank. All trucks were built out by Imperial Industries Inc., and rigs run National Vacuum Equipment Inc. pumps.

Ruggiero prefers smaller, more agile trucks with smaller tanks, well-suited for Vermont's mountainous terrain. "Vermont has a lot of dirt backroads so we need more nimble trucks, especially during our spring 'mud season," Ruggiero explains. There are three treatment facilities within the company's service area, which minimizes the need for larger tanks to reduce backand-forth disposal trips. In some circumstances, though, waste from smaller tanks is consolidated into a larger truck for convenient dumping.

The company also relies on a 2015 Ford F-350 service truck with a skid-mounted water jetter

made by RIDGID. The truck is a multitasker, used for doing everything from pipe repairs and riser installations to cleaning grease traps and hauling a trailer to deliver restrooms. In addition, Best Septic owns a 1997 GMC pickup truck that can carry a slide-in unit when needed; about 150 restrooms from

(continued)

# **AGILE EQUIPMENT**

As the company grew, its roster of equipment expanded, too. Best Septic now owns a 1990 Ford L8000 with a 2,000-gallon steel vacuum tank; a 2015 Ford F-350 with a slide-in 400-gallon waste/200-gallon freshwater



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# Best Septic participates in 'peecycling' study

For the last several years, Best Septic Service in Westminster, Vermont, has been playing a key role in a novel initiative in which human urine is diverted from septic systems into tanks, then collected, sanitized and turned into fertilizer.

"I know it sounds kind of kooky," says Jeff Ruggiero, who owns the septic maintenance, repair and pumping company with his wife, Lisa. "I initially thought there was no way people will do this ... but people are all over it. Vermonters are very eco-conscious."

The program is run by Rich Earth Institute, a research group based in Brattleboro, Vermont. The group is committed to advancing the use of human waste as a reusable resource.

Urine is rich in nitrogen and phosphorus – key ingredients in many fertilizers. Moreover, contrary to popular perception, urine is generally sterile and what little impurities it might contain can be removed easily through either pasteurization or long-term storage, says Kim Nace, the group's founder and administrative director.

The case for "peecycling" is compelling when you consider that nationwide, 1.2 trillion gallons of water a year is used for flushing toilets. And an average person flushes a toilet five times a day, and four of those times it's to dispose of just urine, not feces, Nace says.

"That means we each use more than 4,000 gallons of clean water every year just to get rid of urine," she adds. "It's a no-brainer – we've got to stop flushing toilets so often."

An average person produces between 100 and 150 gallons of urine a year. That equates to about 8 pounds of nitrogen and almost 1 pound of phosphorus – fertilizer to produce 320 pounds of wheat in a year, enough for a loaf of bread every day, Nace notes.

People who participate in the program either buy urine-diverting toilets or retrofit existing toilets with a separator. The urine is diverted to a holding tank located in a basement, while feces still go into a septic tank, Ruggiero explains.

The program collected 5,000 gallon of urine in 2014. Best Septic currently hauls roughly 450 gallons of urine a month, which is taken to a local horse farm. There it's treated and used to grow hay, Ruggiero says. In addition, Ruggiero has outfitted 10 portable restrooms with urine-separating devices so the company can contribute to the program, too.

The company hauled the urine for free for the first two years of the program, but now charges a flat fee, he says. Rich Earth refers program participants to Best Septic.

"It definitely gets our name out there for more business," Ruggiero says, noting that the company gives a promotional pamphlet to urine-collecting customers who don't already use Best Septic to pump their septic tanks.

"I think Jeff and Best Septic are amazing," Nace says. "Jeff very quickly understood what this is about and how he could be a part of it. He's very committed to doing what's right for managing human waste."

Nace admits that recycling urine sounds like "a strange thing" and that some people initially have a hard time dealing with the "ick" factor.

"But not only do people get over it, they're transformed when they realize something that comes out of our bodies can do so much good," she adds. "We've been astounded at how empowered people feel about it ... climate change has made people more adventurous to try things that get us more in harmony with the natural world."





Technician Wayne Turner guides a hose during the setup for a pumping operation in Brookline, Vermont.

PolyPortables (including four handicapped-accessible units and 15 special-event units with sinks and interior lights); a RIDGID SeeSnake pipeline inspection camera; and a Kubota mini-excavator.

# **PITCHING IN**

During Ruggiero's health crisis, employees assumed various extra day-to-day duties. "Everyone stepped up big-time," he notes. "Even Wayne's wife, Brenda, and their kids helped out with phones.

"After Lisa told everyone what had happened, they all said she didn't have to worry about a thing – that they'd handle everything," he continues. "We're all like family. Even my competitors called in to see how I was doing."

Ruggiero says his son Justin largely took over his job responsibilities – things such as emergency calls, running jobs and helping with truck repairs. "I'm so proud of him and how he stepped up and handled everything, along with worrying about me being in the hospital," Ruggiero says. "Overnight, he went from being an 18-year-old boy to a man running a business."



Lisa Ruggiero (in the foreground) keeps the books and office assistant Rachel Comtois helps Best Septic run smoothly.

Cross-training employees like True and Turner to do each other's jobs paid big dividends, Ruggiero adds. "Sure, it's costly to have two guys in a truck for several days," he admits. "But in the long run, it pays off."

More than a year after Ruggiero's heart attack, he says he still has to take it easy. But that fits nicely into his newfound perspective on work/life balance. What would he tell other pumpers who are pushing it to the limit? Back off a bit and make more time for family and friends.

## **SMELL THE ROSES**

"I discovered that all the stuff I thought was of major importance really is not that important compared to making time for family, then doing the job," he explains. "Otherwise, the workday never stops. You have to keep in mind that it all gets done eventually.

"The heart attack definitely got me to settle down," he continues. "I don't treat everything like it's a red alert – that everything needs to be done right away. I spread things out more so I can spend more time with my kids and Lisa and family ... spend more time with my nieces and nephews. I didn't do that before ... if they had a sports event or something else, I'd say, 'I'm too busy to go – I'll catch them next weekend.' I don't do that anymore."

That philosophy also extends to the company's employees, he says, noting that he's more conscious about allowing the crew even more flexibility to attend their children's events and activities.

"People always joke about how you never know – you could die tomorrow," Ruggiero says. "That's not a joke anymore. There's no more trying to be human dynamos ... everyone helps each other more."

# **MORE INFO**

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Jim Anderson, Ph.D., is an emeritus professor at the University of Minnesota Department of Soil, Water and Climate, education coordinator for the National Association of Wastewater Technicians, and recipient of the pumping industry's Ralph Macchio Lifetime Achievement Award. Email Jim questions about septic system maintenance and operation at editor@pumper.com.

# Spreading the Word

If land application of septage is an important disposal option for your business, create and constantly update your nutrient management plan By Jim Anderson, Ph.D.

**QUESTION:** Why are nutrient management plans important for land application?

**ANSWER:** I am frequently asked why nutrient and crop management plans are important if a pumper is going to use land application as a part of a septage treatment program. In the past I have explained what goes into a nutrient management plan, and that the federal rules regarding land application focus on the maximum allowable nitrogen application rate. Nutrient management plans are important for two reasons: to maximize the crop yield and protect the environment.

Whether you as a pumper are land-applying on your own property or working with a nearby farmer, it is critical to understand the nutrient needs of the crop being grown on the fields from an economic standpoint. If you are renting the land or working with a farmer, it is important that the crop yields enough to provide a return on the investment to either pay the rent or provide the farmer with income. If it is your own land then you still want a return over and above what you are receiving through pumping fees.

As I wrote in previous columns, the maximum allowable nitrogen application rate often does not supply the amount of nitrogen needed for high-value crops such as corn. The farmer will need to supplement the septage with additional applications to ensure an adequate yield. This is why a yield goal based on the crop, soil and environmental conditions at that location is established and it drives the application rate.

Other important factors can serve as a basis for future columns, such as the timing of applications of septage or otherwise, the total overall rate, the crop rotation and the source of additional applications. The bottom line is matching the crop needs to the applications to receive a realistic and adequate crop yield.

# **NITROGEN WATCH**

From an environmental perspective, several concerns are related to the nutrients in septage, manure or commercial fertilizers. Excessive nitrogen applications can lead to nitrogen leaching through the soil to the groundwater or running off into surface waters. This can affect drinking water supplies. I recently read an article about the City of Des Moines, Iowa, which is suing adjacent counties due to runoff from agricultural lands resulting in elevated levels of nitrates in the water they pull from the Des Moines River for a drinking supply.

In addition, here in the Midwest we worry about the level of nitratenitrogen in the Mississippi River, which contributes to hypoxia in the Gulf of Mexico. On the East Coast, there is concern for the impact of nitrogen on estuaries and Chesapeake Bay algal blooms. These are all large environmental problems with economic impacts.

Even though septage rules focus on nitrogen as the nutrient of environmental concern, another nutrient of concern is phosphorus. As a colleague often points out to me: Take a look at manure management issues and you will see where septage land application concerns will be also.

The concern over phosphorus and its contribution to excessive algal blooms in freshwater systems was highlighted in the summer of 2014 by a harmful algal bloom in Lake Erie. Toxins created by the algae affected the drinking water supply for the City of Toledo, Ohio. This led to calls to reduce phosphorus loads by 37 percent in the Maumee River watershed. Requirements such as this will reduce the allowable level of phosphorus applied to cropland, regardless of source.

Ohio has also enacted legislation requiring certification for nutrient applicators that work 50 or more acres. This raises the need for pumpers who land-apply to follow a nutrient management plan that looks at all the crop nutrient needs as a part of the operation. It is another way to demonstrate that land application is a viable and economic alternative that also helps protect the environment.

# **ASK FOR ADVICE**

If you or the farmer you work with are not working with a crop adviser who provides a nutrient management plan, there are ways to get assistance with the plans. A good place to start is your local County Extension office; they can provide information on the current University crop nutrient recommendations for your state and location. These recommendations are the foundation for developing a nutrient management plan.

A visit to the local National Resources Conservation Service (NRCS) office can make you aware of potential cost-sharing opportunities available through the NRCS EQIP program to provide nutrient management planning through recognized crop professionals called Technical Service Providers who are certified to write the plans.

Having and following a nutrient management plan ensures you are using and in compliance with the current requirements. Remember that within the 503 regulations there are the separate reporting requirements for tracking and documenting your application rates. These need to be followed and adhered to, and you need to be able to present your plan and documentation upon request.

Finally, when you have and follow a nutrient management plan, you can be confident that you are maintaining the best practices available to provide an economic return on your investment and do the best you can to protect and enhance the environment.

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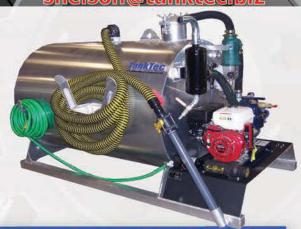
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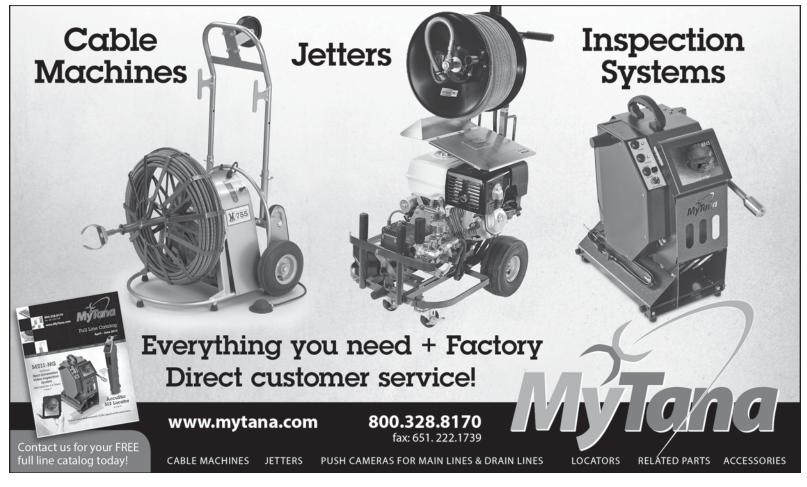
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# Pump the Pump Tank?

Can you offer some suggestions on how to get to the bottom of a customer's lift pump chamber issues?

This feature in Pumper reports noteworthy conversations that take place at the Pumper Discussion Forum, an online forum for industry professionals found at www.pumper.com. Pumper Discussion enables exchange of information and ideas on septic and drainfield installation and maintenance, trucks and equipment, portable sanitation, chemical and additives and much more. Information and advice in "Overheard Online" is offered in good faith by industry professionals. However, readers should consult in depth with appropriate industry sources before applying such advice to a specific business situation.



**QUESTION:** A customer called to tell me their lift pump alarm is coming on and there is a bit of water on the ground around the lift pump chamber. The tank is 1,000 gallons with another tank beside it for the lift pump. The tanks are connected with a sewer pipe with a built-in Polylok filter. Each time I pump the tank, I clean the filter. Could effluent cross through the filter and fill up the pump chamber heavily enough to fry a pump?

I've always examined the chamber and it is very watery. I've assumed the pump would handle all of this. I'm thinking either the wiring is bad, the float is stuck, the pump is burned out or the field is just full of water. I'm wondering because the last time I pumped the tank, this other chamber was not pumped. Only the septic tank was pumped and the filter rinsed.

Should I pop the cover on this chamber and pump out the bit of water in it, even with the effluent filter there? Or am I wasting my time? I've always thought the pump would handle this little bit of stuff.

ANSWERS: We pump [the lift pump chamber] every time. The hose is already out and solids do settle out in there. You are located in Canada; are you sure it isn't frozen? That's happened daily here this winter.

 $\diamond$   $\diamond$   $\diamond$ 

You need to get the cover off and see. I normally pump down the chamber to see what is going on and to test the pump and floats. With a lot of mound systems in my area being more than 10 years old, I see pump failure rates going up. The average pump life seems to be about seven to 12 years. Also, the 2014 winter being as cold as it was, I had one that blew the coupler when the line to the field froze. There can be many reasons the dosing chamber alarm is on. Until you pump it down and see, it is just guessing.

I charge extra for the pump tank. I have to pay by the gallon to dump, so extras are extras. Many of my customers elect not to empty the pump tank. I do inspect a pump tank when I pump and use a sludge sampler so I can advise when to pump the dosing tank. Normally the recommendation is every other or every third regular pumping.

 $\diamond$   $\diamond$   $\diamond$ 

For my customers with lift pump chambers, I install a float bypass switch so I can manually turn on the pump to make sure it's not a float switch problem. If the system pumps down and the high water level goes away, you know the problem is a bad float switch. If the pump is still not running, you will probably have to pump out the tank to get more serious about locating the problem.

I assume you checked the pump circuit breaker first to make sure you have power. I also have a tee in the outlet pipe, leaving the lift tank with a small inspection cap just under the surface that can be removed just outside the tank. If water squirts out of the top, you will know the pump is working and the problem is farther out.



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# **Smart Inspection**

General Pipe Cleaners rolls out marketing campaign for the Gen-Eye SDP video inspection system

# **By Craig Mandli**

s featured at the 2015 Water & Wastewater Equipment, Treatment & Transport (WWETT) Show, the Gen-Eye SDP video inspection system from General Pipe Cleaners provides wastewater professionals with everything they need for small- to medium-size pipe inspection.

"Its portability is very appealing to septic and pipe cleaning professionals," says Marty Silverman, vice president of marketing for General Pipe Cleaners. "The target market is drain cleaning specialists, but it's popular with plumbers and pumpers who perform septic system inspections as well."

Weighing 14 pounds, the Gen-Eye SDP offers features from full-size video inspection systems in a compact package. It has a four-hour rechargeable battery and a Wi-Fi transmitter. A full-size reel can be mounted on the docking arm to troubleshoot 3- to 10-inch lines. The unit's 10.4-inch LCD sunlight-readable screen with on-screen distance counter makes viewing easier when doing inspections in bright sunlight.

"The Wi-Fi capability means photos and video can be sent right to the customer without the tech having to set foot in the home," says Silverman. "That saves time for the tech, and inconvenience for the customer."

A panel indicator lets technicians know when the battery is running low. Not only can the Wi-Fi transmitter send video to a smartphone or tablet, a free app allows for the easy viewing and recording of real-time video inspections at a range up to 500 feet. In addition, an integrated SD recorder captures 32 GB of video or still images with a date and time stamp.

The unit includes a built-in voice-over microphone with switch, LED dimmer control, camera test port, video- and audio-out connections for external recording devices, and AC and DC power cords. A self-leveling color camera keeps pictures right-side up so contractors and customers can follow the camera as it moves through the line. The unit is protected by a heavy-duty Pelican case. The system has been available since fall 2014 and Silverman says feedback has been positive.





Mike Silverman, vice president of operations for General Pipe Cleaners, explains the features of the Gen-Eye SDP video inspection system to attendees at the 2015 WWETT Show. (Photo by Craig Mandli)

"The techs that already have the SDP really love it," he says. "The best reviews have been focused on its lightweight portability and the Wi-Fi capability. It's met our expectations so far."

Silverman notes that many techs who show interest in the SDP also look at General's Gen-Eye Hot Spot digital locator. Compatible with the SDP, the Hot Spot eliminates guesswork when inspecting and tracing drain, sewer or septic lines.

"We certainly market the SDP and Hot Spot together," he says. "Once the SDP is used to identify the type and nature of the problem, the Hot Spot is used to pinpoint that spot to efficiently repair the problem without any unnecessary digging."

General chose the WWETT Show to roll out the marketing campaign for the system. Silverman says the show is a great opportunity to put General's products in front of the target audience.

"This show always has great traffic, and the attendees, especially this year, are buying," he says. "We always get a ton of feedback here that we can take back and integrate into our products."

General is already thinking ahead to next year's WWETT Show. "We're always looking for ways to improve and integrate," Silverman says. 800/245-6200; www.drainbrain.com. ■





# **2016 Day Pattern Shift:**

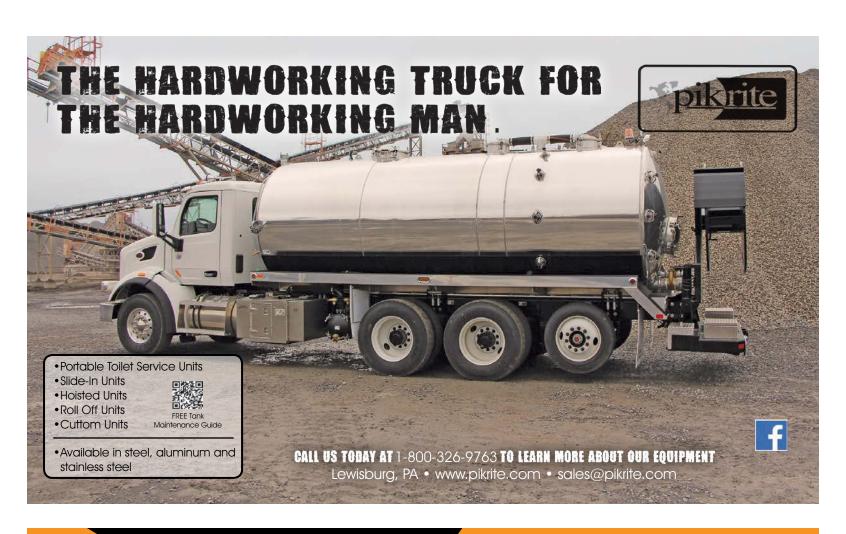
# **Education Day:**

Wednesday, February 17

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# Moving Beyond the Holding Tank

Manitoba wastewater association wants provincial environmental officials to consider new onsite treatment technologies in environmentally sensitive areas By Doug Day

he people who install onsite wastewater systems in Manitoba have some thoughts about improving the industry in the Canadian province. Regulators have a few ideas of their own. Since the two organizations have developed a good relationship over the years, the chances of moving forward are pretty good.

"They rely on our association for a real boots-on-the-ground support for what they're trying to do," says Hugh Bonner, continuing education chairman and longtime board member of the Onsite Wastewater Systems Installers of Manitoba (OWSIM).

Formed in 2006, OWSIM has just over 100 members. There are a few engineers and suppliers, but the vast majority are installers, representing roughly half of the active installers across the province. The industry is regulated by Manitoba Conservation and Water Stewardship (CWS).

"They come to us when they have questions about certain practices that installers have put in place and ask for our opinions that may be used in determining the actions they'll take," says Bonner.

That was the case in 2010 when the province began phasing out surface discharges from ejector systems. OWSIM contributed to the rule changes, which now requires that owners commit to replacing such systems upon the transfer or subdividing of property. While repairs to existing ejector systems are allowed,



**Hugh Bonner** 

no new ejector systems will be permitted. There are several exemptions in response to concerns about its impact on rural homeowners. They may now get exemptions if the property is not located in an environmentally sensitive area, is at least 10 acres, complies with other regulatory requirements and does not impact any other property owners.

# **HOLDING TANK ISSUES**

While there are no pumpers on its current membership roster, OWSIM is beginning to reach out to them because they are an important part of the industry. Manitoba is the only Canadian province that requires holding tanks – rather than distribution fields – for septic systems near many lakes, rivers and streams, and areas with poor soils. The tanks are required to be pumped periodically by a registered waste hauler. Many of the systems serve cottages and second homes in popular vacation areas.

"It is very unique," says Bonner. "Our association believes it would be to the betterment of the whole industry if the holding tank law was possibly altered to allow a properly designed advanced onsite system."

There is concern about holding tanks not being pumped properly and effluent making its way to a water body. There is also an issue with the sewage lagoons where septage pumped from holding tanks is taken. Along with

the level of treatment for various nutrients that can harm water quality, the lagoons are subject to overflows.

"The lagoon structures have been lacking in some areas," says Bonner. "In times of high water or a lot of rain, we have had a number of emergency discharges right into the receiving water." He adds that 2014 was one of the worst years for high water levels. "We've seen water levels in our lakes and rivers that are probably 10 to 15 percent higher than we've ever seen."

# **TEST SYSTEMS EXPLORED**

While owners of holding tanks pay for pumping, there is not always a fee for disposing of the waste in the tax-supported lagoons. Bonner poses a question that is on the minds of many: "Why should our population be made to pay for a certain percentage [that] wants to have cottages in these pristine areas?"

Altering the rule may be difficult. Holding tanks are popular with cottage owners because they are inexpensive, comparatively speaking. A system with a 2,400-gallon holding tank costs about \$3,500, while a proper system with a distribution field would cost around \$20,000.

"It's our belief, especially in the case of a second home, that the homeowner should bear the entire cost, including taking care of the septage rather than having it hauled to lagoons that are paid for by all the residents of Manitoba," says Bonner.

CWS has shown flexibility on the holding tank issue. "They've actually considered allowing a few secondary treatment installations designed by our installers to test them out," he adds. "So they are open to it. As the recreational homes get bigger, so do the flows, and so do the problems that go along with it. We are making inroads."

## TRAINING OPPORTUNITIES

Training and certification of installers is done by CWS as often as twice a year, depending on the number of registrants. The session, including a test, costs \$1,000 per person, which has increased from \$300. Certification attracts more than just onsite professionals.

"There are a lot of individuals who take it, homeowners and quasi-contractors that may do one or two systems, then fade away, but have certification that is good for five years," says Bonner. Because of that, he says it's difficult to keep track of the number of active installers.

There is no requirement for continuing education, but OWSIM offers it to increase professionalism of its members.

"Initially, we had very good response," says Bonner. "It has waned somewhat in the last few years, though we're always trying to develop new courses to gain their interest. Like all organizations, there is a higher rate of interest in the beginning."

OWSIM has offered training on such topics as pressure dosing and per-



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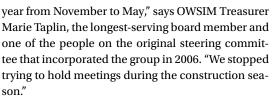
A soils assessment course will be the next training opportunity. "We

have very different soils around Manitoba," says Bonner. "Around Winnipeg we have tight clay soil, out west is sandy soil and there is a lot of bedrock in the east." And there is the cold weather that impacts system design, especially in the tundra of the northern subarctic region.

**IMPROVING PARTICIPATION** 

While training attendance could be better, membership meetings garner good partici-

pation with around 25
people at each. "They are
held five or six times a

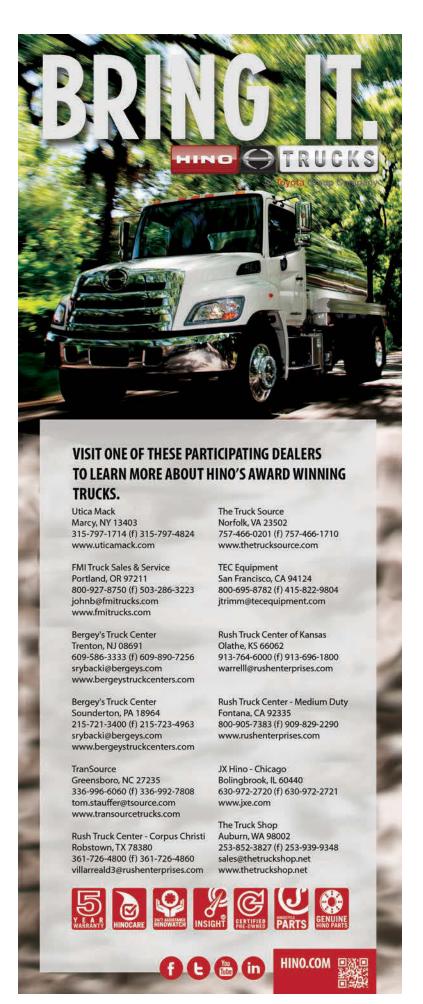


OWSIM Training Facilitator Rudy Hartfiel says the Member Services Committee has recently added a new twist to those gatherings that is proving pop-

ular. "We've had suppliers and industry representatives host luncheons. Along with networking, it gives our members a little bit more because they get to see what those businesses do and what they offer." ■



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# Cleaner and Greener Choices

Author and engineer David Sedlak says technologically advanced decentralized wastewater systems will help shape a smarter path for development and infrastructure for future generations

# By David Steinkraus

very few months there's a news report about the need to fix the aging water and wastewater infrastructure in cities. To engineer David Sedlak, the future contains more than just the Big Pipe. In his future, solutions will be customized to each situation and onsite technology may play a major role.

Sedlak is a professor of engineering at the University of California-

Berkeley, co-director of the Berkeley Water Center and deputy director of the engineering research center for Reinventing the Nation's Urban Water Infrastructure, a collaborative project involving several universities and funded by the National Science Foundation. The ideas he talks about here are part of his recently published book, Water 4.0.

**Pumper:** In your book you say water 3.0 was the construction of municipal wastewater treatment plants in the 20th century. Where are we now in the shift to water 4.0? **Sedlak:** I think it depends on where you are.

We have pieces of the next technologies in place in certain cities, but these revolutions

do not happen at the same rate in all places. The front line of change is in cities where the existing systems are unable to serve people's needs. With respect to urban drainage, you will find the leading edge in cities like Philadelphia and Indianapolis where leaders are working on green infrastructure — green roofs and bioswales that absorb water or slow it down.

I have two visions for how this could work out for our water and wastewater systems. One is a central treatment and recycling system. Today those are managed by government. The other vision is distributed technologies built first for clusters of homes in neighborhoods or developments. These could be run by utilities or private companies that contract with government agencies.

I see a possibility for in-house treatment — a membrane bioreactor can treat a home's wastewater in the space taken up by a modern clothes dryer — but this will require decades to happen. It's hard to make such a change in one house, just as it's difficult today to take a single home off the power grid. As time goes on we'll see retrofits, most likely through a requirement to upgrade at the time of sale.

# **Pumper:** Where does onsite technology fit into what you see?

Sedlak: Green infrastructure is a large civil project, but onsite contractors have skills in plumbing, drainage, excavating and grading. They could have a role in rebuilding or altering urban drainage.



Reach David Sedlak by email at sedlak@ce.berkeley.edu.

There is also the need to build the next generation of onsite treatment systems. These devices will be better than the septic systems we now rely on because there will be more biotechnology built in. What we're talking about is extending onsite technology into parts of cities where it doesn't exist now. The limit to how far this could go is population density. At some point you overwhelm the capacity of the soil to treat effluent, so you have to turn to municipal sewers. With next-generation systems that reuse water for irrigation or for toilets, you can serve a much greater population density before you reach the limits of the soil and groundwater.

# **Pumper:** Do you believe treatment will eventually become the responsibility of the homeowner?

Sedlak: In less densely populated areas, yes. One opportunity for onsite installers will be in the parts of cities that are expanding. It will depend on the costs a developer faces to hook up to sewers and on the capacity of the

**Green infrastructure** is a large civil project, but onsite contractors have skills in plumbing, drainage. excavating and grading. They could have a role in rebuilding or altering urban drainage.

David Sedlak

municipal system to accept the additional flow. Capacity is one reason why we have combined sewer overflows. Cities expanded but did not expand their collections systems for the additional demand. As a result, they suffer when they continue to hook up more homes.

The solution will differ for each location. In many places we will limp along with what we have because changing big systems is very expensive. In some places the geology and

soils won't support extensive onsite systems. And then there is the issue of population density. I don't see onsite treatment taking off in the core of Manhattan or downtown San Francisco, but many of our cities are quite suburban. If you look at what we have now, when you're in the country everything is onsite. As you move closer to a city center there is less onsite treatment. I see us pushing the boundary for onsite treatment closer to city centers.

# Pumper: What skills should onsite installers develop now so they're prepared for that future?

**Sedlak:** It is difficult to know the exact skill set that contractors will need. Certainly installers should maintain their abilities in construction and plumb-

(continued)

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ing. Beyond that I think there will be an advantage to those who know how to work with Internet-enabled sensors and electronic controllers. We will have more sensors and actuators that can be triggered remotely, and we're already seeing the start of this. Some pump manufacturers are already giving IP addresses [for Internet access] to pump electronics. Eventually an operator will be able to contact those pumps from anywhere and adjust them.

Maintaining the security of these Internet-enabled machines will be important. One problem we have now is people set up machines but don't upgrade them. To keep these future machines running securely, an onsite installer will have to swap in new circuit boards and upload new software. I don't mean that they need to be able to write computer code from scratch, but many machines will probably come with a base package installed — as computers do now — and a competitive installer will be able to alter this and add value by providing custom functions or new functions tailored to a specific situation.

# **Pumper:** Where do codes and regulations fit in?

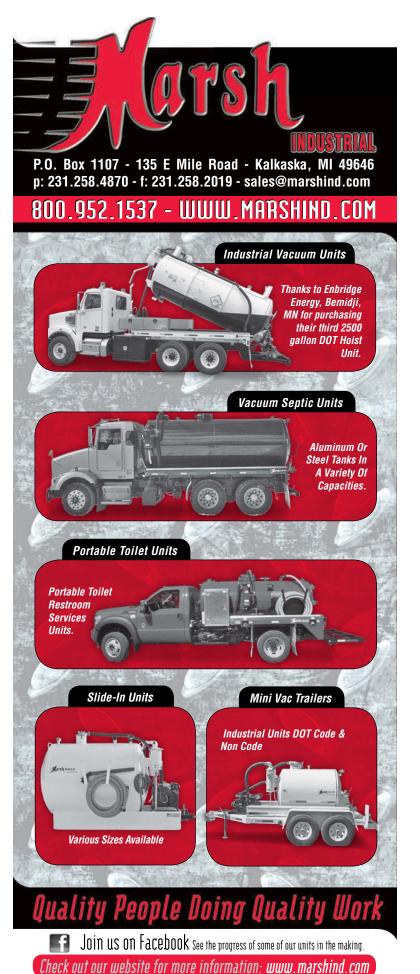
**Sedlak:** I think the codes and regulations in many cases have not caught up with technology. That's made worse by not having enough people to enforce the codes, so health officers and building departments fear being given some new requirement or unfunded mandate. Increasing permit fees to cover costs would make permits prohibitively expensive. On top of all this they have to worry about risks to public health. Graywater reuse is suffering from this problem now.

Solving this requires advocates. Michael Nutter, the mayor of Philadelphia, saw green infrastructure as one of his signature approaches and worked for it, and there are other politicians and utility leaders around the country who have made it a priority, but many politicians won't invest in the issue because they don't see a payoff. Municipal wastewater utilities long ago learned the need to advocate for themselves, but leadership in the onsite industry is more diffuse. Yet there are possibilities. Many nongovernmental organizations and environmentalists support these ideas, and it makes them natural allies for the onsite industry.

**Pumper:** In the last sentence of your book, you talk about the need to start changing now before some crisis forces us into poor but necessary decisions. Can we change?

Sedlak: There are times when we have been foresighted enough to lay the groundwork that we need. In the 1990s there was a water supply scare due to a drought in Southern California, and it led to a large investment in securing the water supply. Even though the drought is all over the news now, and the water utilities will not become greatly concerned unless the drought goes on for a few more years. So there is a clear benefit to those who are wise enough to act before a crisis occurs. ■





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# NAWT will miss working with retiring EPA official and MOU partner Joyce Hudson

# By Dhru Bhatt

s many of you may know, Joyce Hudson, the head of the U.S. Environmental Protection Agency Decentralized Department in Washington, D.C., retired Thursday, Feb. 12, after 39 years of dedicated public service. It was with mixed feelings of joy and disappointment that the board of directors of the National Association of Wastewater Technicians celebrated Joyce's retirement. She will be sadly missed. The NAWT board wishes her well in her future endeavors and hopes to see her from time to time at conferences and events.

Joyce's retirement celebration was attended by NAWT's president Jeff Rachlin, treasurer Ralph Macchio and secretary Tom Ferrero. The celebration was attended by Joyce's family, friends and business associates. Rachlin read a letter of tribute to Joyce in front of the group.

Through the years Joyce has shown respect and patience toward our industry, which had not gone unnoticed. Her leadership qualities, fairness and understanding have been invaluable for the advancement of the industry. Before she became the leader of her unit, many NAWT members often felt that no one was listening to their concerns. She helped change all of that and made sure our industry had the resources available to help our members and others become better educated about systems and the implications of not taking care of those systems.

In addition, the partnership she created through the Memorandum of Understanding leaves us all in a better place going forward as she enjoys a hard-earned retirement. This, too, is the mark of a true leader. The MOU partners have given everyone a place where serious discussions can take place about issues and problems within the industry. This will continue to bear fruit in the years ahead.

The NAWT Board of Directors sincerely wants to thank Joyce for her service to the industry. We wish her well in the future and a happy retirement.

# 2016 NAWT Excellence in Service Award & 2016 NAWT Hapchuk Scholarship

Submissions are being taken for NAWT's 2016 Excellence in Service Award. All applications for the award must be completed and postmarked by Nov. 2. Any applications received after the deadline will be placed on file for the next calendar year.



Entries for the 2016 NAWT William Hapchuk Memorial Scholarship must be received or postmarked by Jan. 1, 2016, to be considered for the scholarship. For

Retiring EPA official Joyce Hudson is greeted by NAWT officials, from left, Tom Ferrero, Jeff Rachlin and Ralph Macchio.

details regarding the assignment for the scholarship, please visit our website (www.nawt.org).

For more details regarding NAWT's 2016 Excellence in Service Award or Hapchuk Scholarship, please visit the NAWT website. If you have questions about NAWT, feel free to contact us at 800/236-6298 or email at info@nawt.org. ■

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is a business writer in Racine, Wisconsin.

# The Fate of Fuel Surcharges

Your transportation costs are down – but now is no time to stop thinking about how you factor the cost of fuel into your rate structure By Erik Gunn

hen gas and diesel prices began to climb a few years back, your business probably faced a tough choice: raise prices to cover that extra bite off your bottom line, or hold the line and cut back on other costs. Some may have opted for a third alternative — a fuel surcharge.

That was fine then. But in case you hadn't noticed, fuel prices began 2015 at their lowest point in years — and about half of what they were just a year ago. With more fuel price fluctuations expected in the future, the issue now is how to make sure your invoices for service properly account for those shifting costs.

If you raised prices when your fuel costs were going up and didn't lose business — well, good for you. You got lucky. If you held the line on prices and cut back on expenses, you've probably been breathing easier. You should also be putting away some of that extra cash for a rainy day, or using it to make new investments in your business that you've been putting off.

And if you implemented a fuel surcharge? The last few months have probably been ... well, interesting.

# **SURCHARGE BASICS**

Whatever strategy you've used, with fuel costs still extraordinarily low, it might be time to look again and consider your options.

Fuel surcharges are a standard in long-haul trucking as well as regional trucking-based services (think trash collection). The surcharge is typically indexed to a base fuel price at a certain time, then updated (often weekly) by plugging in the new fuel price. The formula also typically includes the miles traveled for the job. We were growing and starting to get jobs farther

The source for the fuel price figure can vary. You could simply choose the price of the station nearest your shop. Or, you could use something like the American Automobile Association's average price, available daily by state (see fuelgaugereport.aaa. com/todays-gas-prices).

Another option is FuelSurchargeIndex.org (www.fuelsurchargeindex.org). This online service was set up by a Texas IT firm, ProMiles Software Development Corp., in collaboration with large carri-

ers. (ProMiles mostly produces software applications for truckers to set up routes, report fuel tax information and complete required paperwork.)

The FuelSurchargeIndex.org database pulls data from truck stops across the country and fuel card providers offering up-to-the-minute price information. While mainly used by long-haul and regional truckers, the business does have some customers among local fleet owners, according to marketing VP Chris Lee.

A subscription costs just under \$20 a month, but Lee notes that many subscribers sign up for just one month every quarter to get data, updating their surcharges for three months at a time.

# **REAL-WORLD EXAMPLES**

Money Manager reached out to business owners facing challenges similar to those of the typical cleaner or pumper in accounting for the cost of fuel. We didn't get just one answer.

Kenneth Combs is co-owner and CEO of CQC Home, a construction and remodeling business in Durham, North Carolina. Until about four years ago — as the latest surge in fuel prices was taking off — CQC Home simply wrapped fuel costs into the general overhead expenses that were part of every customer's price quote.

Then it happened. "We were growing and starting to get jobs farther and farther away from our home base," Combs says. "We were starting to notice a decline in our bottom line and an increase in our overhead."

But rather than simply ratcheting up the overhead factor for all jobs, the business took a surgical approach.

For customers closer than 30 miles, the contractor made an across-theboard overhead adjustment. Customers more than 30 miles from the shop started getting a fuel surcharge as a specific line item.

The surcharge formula includes the price of gas, the distance to the job, the amount of time the job is projected to take (in CQC Home's business,

> that can be days, weeks or even months) and the number of vehicles required each day. The vehicle count is based on how many people are needed that day, which depends on what stage the project is in.

# **TRACK YOUR EXPENSES**

Customers subject to the surcharge have gone along with no pushback, Combs says. Consistency helps; as gas prices began coming down late last year, so did the surcharge, he points out.

And it's made a difference. "We spend, right now, about \$70,000 a year on fuel, and \$15,000 or

\$20,000 of that we have been able to charge directly" to customers through the fuel surcharge.

American Standard Roofing in Southfield, Michigan, takes a different approach. Richard Goodman, the general manager, prefers wrapping the cost of fuel into the overall price. Trying to calculate a specific fuel charge for each job strikes him as a tedious waste of time.

"You know on a year-by-year basis exactly how much you have spent

and farther away from our home

base. We were starting to notice

a decline in our bottom line and

an increase in our overhead. ""

**Kenneth Combs** 



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on fuel and how many jobs you have completed," Goodman says. "Take this information over several years to average it out and find your approximate cost per job." That approach "saves time and gives you a longer view of your business."

Goodman cautions against cutting prices to reflect dropping fuel costs. "If you drop your pricing down too far and the prices suddenly spike back up, you can find yourself in a real sticky situation," he says. Instead, he recommends using the new extra cushion to put money back into the business.

### **NO SINGLE ANSWER**

The best strategy is the one that keeps you both profitable and competitive in your market, and that can differ depending on your circumstances.

Take calculating distance to the job as part of your surcharge. For the long-haul trucker that's no big deal; the distance will be the same for any carrier. But for a local business that may draw customers — and face competition — from all over its territory, it isn't so easy.

When a potential customer in the city down the highway from you calls because her friend in your hometown loved your work, do you really want to charge her an extra fee to hire you instead of the contractor in her own community?

For that matter, will having to count up the miles to and from every job be helpful? Or just a drain on your time?

Then again, just wrapping the cost into general overhead could put you under the gun if or when fuel prices shoot up again.

If you do include a fuel surcharge as a customer line item, make it transparent and tie it to a consistent formula that you can explain in clear and simple terms. If it's just a black box, your customers will suspect a scam that lets you advertise lower prices while charging more.

# **FORWARD THINKING**

Surcharge or no surcharge, now's the time to look again at how you account for the cost of fuel when you put a price on your services — and implement a new policy if you need one, says Lee.

With prices as low as they are likely to be for a while, you have an opportunity to put in place a fuel surcharge indexed at zero against the current price of fuel. "Then as the prices go back up, the new trigger points kick in," Lee says.

What comes down will probably go up again. And when it does, you'll need to be ready.  $\blacksquare$ 





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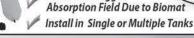
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Arkansas Onsite Wastewater Association www.arkowa.com

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

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

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# Georgia

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

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Onsite Wastewater Professionals of Illinois www.owpi.net

# Indiana

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

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

# Kansas

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

# Kentucky

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

### Maine

Maine Association Of Site Evaluators www.mainese.com.

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

# Maryland

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

## Massachusetts

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

# Michigan

Michigan Onsite Wastewater Recycling Association www.mowra.org

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

# Minnesota

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

# Missouri

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

# Nebraska

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

# **New Hampshire**

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

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

# **New Mexico**

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

# **New York**

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

# North Carolina

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

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

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

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

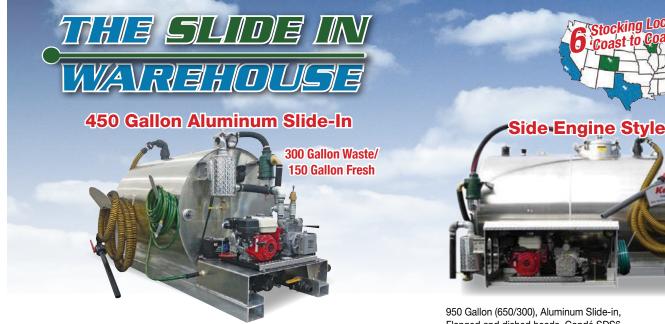
# Oregon

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

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# **Virginia**

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

# Washington

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

# Wisconsin

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

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

# **NATIONAL**

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

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

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

# **CANADA**

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

# **British Columbia**

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

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

# Manitoba

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

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

# **New Brunswick**

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

# Nova Scotia

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

# Ontario

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

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

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wner Jake McKamey bought a 2005 Freightliner M2 from V & H Ford that was formerly used as a box truck, and had Imperial Industries add a 2,500-gallon steel tank and Masport HXL 75 vacuum pump. The truck is powered by a Caterpillar C7 engine tied to a six-speed Eaton Fuller transmission. The truck features top and rear manways, 3-inch inlet and 6-inch discharge with heated collars, three rear sight glasses, aluminum toolboxes on both sides, aluminum hose trays and a chrome rooftop horn. The all-white paint job is contrasted by bright blue and black graphics from X-treme Graphics & Lettering. The interior sports an air-ride driver's seat and stereo. McKamey drives the truck and uses it for residential septic service.

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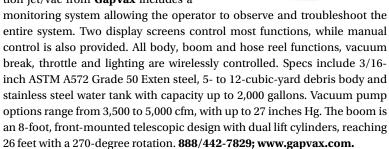
## Septic System Inspection and Jetting

By Craig Mandli

### EXCAVATION EQUIPMENT

### GAPVAX MC ADVANCED SERIES

The MC Advanced Series combination jet/vac from GapVax includes a





### HI-VAC AQUATECH B-10

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stable, while the self-cleaning tanks are corrosion- and abrasion-resistant. The air/vacuum system has an operating capacity of 2,700 cfm and a 204-inch water column. Options include extended boom, pneumatic foot control for one-man operation and lockable vacuum tubes. An internal boom allows for pickup of materials above and below water. 740/374-2306; www.hi-vac.com.

### KOBELCO SK350LC

The Tier IV Final **SK350LC** crawler excavator from **Kobelco Construction Machinery** USA is 82,200 pounds and powered by a 270 hp Tier IV Final Hino engine. It provides as much as a 10 percent reduction in fuel consumption compared to a Tier III machine and incorporates



both selective catalytic reduction and self-cleaning diesel particulate filter systems. It has a digging force of 50,600 pounds, a digging depth of 24 feet 10 inches, a suggested 0.875- to 2.75-cubic-yard bucket range and a swing speed of 10 rpm. **281/888-8430**; www.kobelco-usa.com.

### VERMEER BY McLAUGHLIN SEWER JETTER/VAC COMBO

The **Vermeer by McLaughlin** sewer jetting system converts a vacuum excavator into a versatile jetter/vac combination unit for cleaning manholes, small sewer lines up to 12 inches in diameter,



and hydroexcavation in sewer lateral repairs or spotting utilities. The jetter hose is inserted into the line and uses the pressure from the vacuum excavator's water pump to propel the jetter head through the pipe being jetted. As the jetter hose flushes out the line, the suction hose removes debris. Once the cleaning is complete, the hose is retracted. **800/435-9340**; www.mclaughlinunderground.com.



### NOZZTEQ MONRO-JET F-4

**MONRO-JET F-4** nozzles, distributed by **NozzTeq**, combine the power of a solid-stream pencil jet with the large coverage of a fan jet. Their orbital-design circular water jets generate power as high as 36,250 psi at modest gpm rates. They can be used for hydroexcavation and for other types of

surface cleaning such as concrete, steel, castings and large surface areas including line removal from runways. They can be modified for internal pipe cleaning of sewers and pipes of all types. 866/620-5915; www.nozzteq.com.

### PRESVAC SYSTEMS HYDROVAC

The **Hydrovac** hydroexcavator from **Presvac Systems** is designed for cold weather operation and is offered as an option to be in full compliance with DOT collection



and transportation of hazardous materials. The high-vacuum blower allows extraction of all types of soils, gravel, rock, clay, water and silt material using a knock-out tool in the debris tank. Modular filtration configured to blower size provides blower protection and minimal maintenance. It comes with a heavy-duty 8-inch boom up to 25 feet long, with six-way hydraulic power and wireless controls for all boom functions, soft-start water pump, vacuum breaker and truck engine speed. **800/387-7763**; www.presvac.com.

### **EXCAVATION EQUIPMENT**

### VAC-CON X-CAVATOR

Designed for ease of use, the **X-Cavator** from **Vac-Con** comes with a hydrostatic drive that uses the chassis engine to eliminate the need for PTO, clutch and gearbox operation.



It offers water systems up to 4,000 psi, and a mobile wireless remote control enabling the operator to work the chassis engine rpm, boom, automatic vacuum breaker, dump controls and hydraulic door locks from remote areas up to a half mile away. The boom rotates up to 270 degrees. **855/336-2962**; www.vac-con.com.



## VOLVO CONSTRUCTION EQUIPMENT EC250E

The EC250E crawler excavator from Volvo Construction Equipment delivers a 5 percent improvement in fuel efficiency over past models. This efficiency is not only due to the Tier 4 Final/Stage IV-compliant engine, but also a range of features the manufacturer says optimizes flow and minimizes pressure losses in the hydraulic system. The ECO mode is designed to reduce fuel consumption without

performance loss in most operating conditions. The operator may manually control flow to the hydraulics using the integrated work mode system. The unit can be equipped with optional automatic idling and auto engine shutdown systems. When controls are inactive for a preset time (between three and 20 seconds), engine speed is reduced to idle. When a machine has been motionless for five minutes, the engine automatically turns off. 828/650-2000; www.volvo.com/constructionequipment.

### LOCATORS/INSPECTION EQUIPMENT

## BRIGHT DYES SEPTIC INSPECTION TRACING DYE

Bright Dyes septic inspection dyes disintegrate rapidly in water and provide vivid, fluorescent color detectable in murky water, sewage or septage. When performing septic inspections, it can be used to identify leaks, infiltration and exfiltration in plumbing connections, validate sanitary and septic hookups and



performance, and identify leachfield issues and sources of contamination in wells. They are safe, nontoxic, biodegradable and are certified by NSF International to ANSI/NSF Standard 60 for use in and around drinking water. They are available in fluorescent yellow/green, fluorescent red, fluorescent orange and non-fluorescent blue. They are available in tablet, liquid or powdered form. 800/394-0678; www.brightdyes.com.

### DITCH WITCH UTILIGUARD

The **UtiliGuard** utility locating system from **Ditch Witch** uses ambient interference measurement to automatically scan the surrounding area for noise, recommending the best frequency among its 70 options. For more accurate locates of obstructed utilities, it measures distances (depth) both horizontally and vertically to the utility. It has a sixbutton, multi-language operator interface and a high-contrast LCD display to ensure visibility in all conditions, including direct



sunlight. Dual outputs allow users to connect the transmitter to two utilities at once. It is Bluetooth-enabled to simplify data transfers. A rugged housing with IP65 rating is designed to protect against dusty, dirty and wet conditions, and its transmitter and receiver battery life is 100 and 30 hours respectively. 800/654-6481; www.ditchwitch.com.



### FORBEST PRODUCTS FR-R2012

The 512-hertz **FB-R2012** wireless digital locator from **Forbest Products** can detect buried water pipes, sewer lines

and other pipeline. It can be used in Normal or Noise Control modes for different environments. Noise Control is chosen where there is interference. A shift button enables sensitivity grade conversion between near and far for locating and pinpointing the location and depth of the transmitter. Onscreen status indicates the signal strength of 15 levels and battery charge. The hand-held locator is powered by six AA batteries and comes with retractable poles for easy carrying. 650/757-4786; www.forbestusa.net.

### PROTOTEK LINEFINDER LF2200

The LineFinder LF2200 from Prototek uses a frequency-sniffing feature to operate at frequencies between 16 Hz and 100 kHz to locate any sonde or transmitter box. It has preset support of 16 Hz (steel or ductile iron as well as cast iron and nonmetallic), 512 Hz (cast iron or nonmetallic) and 8 kHz (nonmetallic only) sondes. It traces underground metallic lines at four industry-standard frequencies using an external transmitter box; other frequencies can be sniffed as well. It passively locates underground power at 50 or 60 Hz. Users may select power frequency and scaling in U.S. or metric units. It is designed so the operator is guided through a series of LCD screens to locate both sondes and lines with accurate position as well as precise depth. Locating is



enhanced by handle vibration and LED feedback at key locating points, in addition to on-screen imagery. **800/541-9123; www.prototek.net.** 

### LOCATORS/INSPECTION EQUIPMENT

### RS TECHNICAL SERVICES QUICKPEEK

The **QuickPeek** all-inclusive, portable video inspection system from **RS Technical Services** is designed to have a compact design in a lightweight, easily transportable and durable stainless steel housing. It is suitable to inspect lines 2 to 10 inches in diameter and up to 300 feet long. It has a high-resolution color, low-lux, self-leveling camera with high-intensity LED lighting and high-impact sapphire lens; 512 Hz in-line transmitter; 2-inch sleeve and 3-inch finned skid; 200-foot pushrod, 7-inch bright LCD monitor with adjustable viewing angle, easy access control center and sun shield that reduces glare and protects the monitor dur-

ing transport; AC/DC input, video/audio I/O, condenser microphone and keyboard for text annotation. Options include an onboard or external battery pack; SD card recorder or laptop interface; additional roller skids for 6-, 8- and 10-inch straight runs; and a 100- or 300-foot pushrod and 512 Hz receiver with depth readout. **800/767-1974; www.rstechserv.com.** 

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unwanted and inaccurate readings. 855/422-6346; www.ssilocators.com

### SUPERIOR SIGNAL 5E ELECTRIC SMOKER

The **Superior 5E Electric Smoker** from **Superior Signal** is designed to connect to any septic clean-out or inspection port to smoke test the entire system in a few min-



utes. It pushes smoke throughout the system to find cracks, leaks and quickly identify problems. The system takes minutes to set up and seconds to see the results, according to the maker. It comes with an 8-foot industrial grade flex-hose, and is compatible with Superior Smoke Candles that generate up to 40,000 cubic feet of smoke. **800/945-8378**; www.superiorsignal.com.

### PRESSURE WASHERS/SPRAYERS

### JENNY PRODUCTS STEAM JENNY

**Steam Jenny** direct-drive cold pressure washers from **Jenny Products** are powered by 9 or 13 hp Honda GX Series engines and have a triplex ceramic plunger pump with pressure ratings between 3,000 and 4,000 psi and flow rates between 3 and 4 gpm. They come with thermal pump protection, an unloader valve and a high-pressure relief valve



to prevent pump damage. To protect the engine, the unit will automatically shut down if low oil levels are detected. The chassis is made with powder-coated, seven-gauge steel. Standard items include a professional-grade insulated trigger gun with safety lock, quick-connect nozzles with nozzle control, high capacity in-line water strainer, gun/wand holder, hose reel mounting adapter and dual rubber isolators. 814/445-3400; www.steamjenny.com.

### WATER CANNON 18H26

The **18H26** hot-water pressure washer from **Water Cannon** is powered by a Honda GX 390 engine, with choice of pumps from General Pump or Cat Pumps. It sits on a portable four-wheel push bar frame for support and ease of use. It provides 4 gpm, 4,200 psi and a 118-degree temperature rise. The triplex ceramic plunger pump is designed to hold up to commercial and professional daily use. It comes with an overheat safety valve that opens and closes

automatically to allow the recirculating higher-temperature water to be released and allow cool water to replace it, helping to protect the wear parts. **800/333-9274**; www.watercannon.com.

### **PUSH CAMERAS**

### AMAZING MACHINERY VIZTRAC II AM240-200

The **Viztrac II AM240-200** pipe inspection camera from **Amazing Machinery** has 200 feet of 1/2-inch push cable with fiberglass rod inner core, a 20-inch cage reel and attached water-sealed case



containing the controls, a high-resolution 7-inch LCD monitor and wheels to increase mobility. It also has a 1-inch powder-coated lay-flat frame with upright rolling stand; a 1 3/8-inch O.D. metal camera housing; nine dimmable high-output 5 mm LED lights; high-resolution color camera with a self-leveling head; scratch-resistant sapphire glass lens; high-grade 512 Hz sonde locator with an average range of 12 to 15 feet; and an integrated digital video recorder with remote control, compatible with most standard SD cards. 800/504-7435; www.amazingmachinery.com.

(continued)



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### **PUSH CAMERAS**

### CUES MPLUS+

The CUES MPlus+ lateral and mini-mainline push system with stainless steel frame is designed for easy operation with its all-in-one setup. The control unit can be quickly removed to be used separately for off-road or remote job sites or to accommodate compact storage. The system includes video titling, video observation coding, digital recording and optional line tracing. This lightweight system includes large and durable wheels for portability and a balanced footprint for stability. 800/327-7791; www.cuesinc.com.



### GENERAL PIPE CLEANERS GEN-EYE SDW

The **Gen-Eye SDW** video inspection and location system from **General Pipe Cleaners** has a Wi-Fi transmitter inside the command module that sends video to a smartphone or tablet. A free app lets operators view and record video inspections at a range up to 500 feet. Older SDN systems can be upgraded with

the Wi-Fi feature. The unit includes a 10.4-inch LCD screen, built-in water-proof keyboard, integrated SD recorder and a heavy-duty Pelican case. Weighing 12 pounds, the unit comes with a docking arm to mount on a full-size reel to troubleshoot 3- to 10-inch lines, or on a mini-reel for 2- to 4-inch lines. It has a built-in voice-over microphone with switch, LED dimmer control, camera test port, video and audio out connections for external recording devices, and AC and DC power cords. **800/245-6200; www.drainbrain.com.** 

### KEG TECHNOLOGIES KI FENSIGHT

The **KleenSight Camera Nozzle** from **KEG Technologies** can clean and shoot video of pipes in one pass. The 1080P HD self-leveling camera takes high-quality video recorded to a 16 GB internal memory, where it is stored until



the memory is full and the files are written over. Video can be downloaded by setting the Wi-Fi mode, making it a Wi-Fi hot spot. Any Wi-Fi capable device can access and download the data. Videos can be emailed or sent to the cloud to share with co-workers or customers. A high-performance nozzle is used to propel the camera and also clean the line, eliminating the need to preclean. 866/595-0515; www.kegtechnologies.net.

### MYTANA MFG. COMPANY MS11-NG

The MS11-NG mid-size inspection system from MyTana Mfg. Company is suitable for inspecting 3- to 4-inch lines up to 150 feet long. The monitor, control box, pushrod reel and camera are contained in a single piece of equipment with a carrying handle. In addition to color self-leveling, the camera head has a built-in 512 Hz transmitter for locating trouble spots, even in cast iron pipes. Wi-Fi transmission of the video image is available, so inspections can be simulcast to a

smartphone, tablet, laptop or other Wi-Fi-equipped laptop with the free MyTana Viewer app. An optional recording device captures inspection records to provide to customers. 800/328-8170; www.mytana.com.

## RADIODETECTION CORPORATION GATORCAM4

The **GatorCam4** pipeline video inspection system from **Radiodetection Corporation** has a rugged controller with an integrated lithium-ion battery that removes the external power lead. A push-button fuel gauge provides a quick indication of remaining power even when the controller is switched off. It can be configured to suit most inspection requirements. A range of pushrods is available, from the extra-flexible 100-foot plumbers reel up to the 500-foot extra-stiff rod designed to push for longer distances. Both 1- and 2-inch cameras are available, which, when used with skids, can inspect pipes with diameters from 1 to 12 inches. **877/247-3797**; www.radiodetection.com.

RATECH ELECTRONICS ELITE SD WI-FI

The Elite SD Wi-Fi inspection system from Ratech Electronics allows operators to record pipe inspections wirelessly to an iOS or Android device and take live video and digital still photos to immediately upload to YouTube. It doesn't require USB thumb drives, SD cards or DVD discs. Just download an app to an iPhone or

iPad and stream the video wirelessly. The Wi-Fi interface is available on any current Ratech product or existing Ratech system in the field, and is available with a sun-readable 10-inch LCD monitor and either a self-leveling camera, small ultra micro-camera or pan-and-tilt push camera. Systems come in cable lengths from 100 to 400 feet. **800/461-9200**; www.ratech-electronics.com.

### VIVAX-METROTECH VCAM-5

The vCam-5 inspection system from Vivax-Metrotech comes with either 200 or 400 feet of 12 mm Kevlar-reinforced pushrod, stiff enough for distance runs while flexible enough for easy entry and turns. Two models of self-leveling color camera heads are available and are interchangeable. The system is fitted with field-serviceable terminations and standard dual-frequency locatable sonde. The Type-CP System includes the vCam-5 control module with an 8-inch daylight-readable color LCD,

512 Hz transmitting sonde, traceable pushrod, recording to HDD, USB thumb drive or SD card, and Wi-Fi. **800/446-3392; www.vivax-metrotech.com.** 

### SPARTAN TOOL SPARVISION 200

The 25-pound **SparVision 200** pipe inspection camera from **Spartan Tool** is self-contained for easy maneuverability. It uses iPad Air or Samsung Galaxy S10 technol-

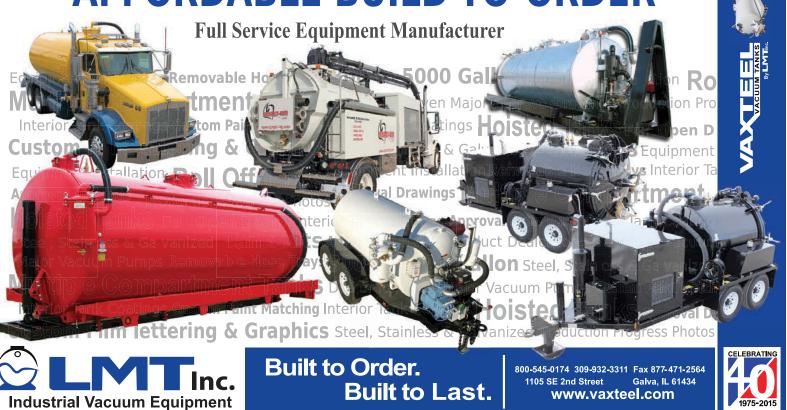
ogy, and comes with telestration to draw on the screen to indicate problems, Wi-Fi emailing of recordings, and a full on-screen QWERTY keyboard. It comes with 200 feet of ultra-slick pushrod and the self-leveling camera providing instant snapshots at any time. It has a standard 512 Hz locating beacon and pushrod distance

counter. 800/435-3866; www.spartantool.com.

(continued)



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The TruCore large-diameter sludge sampler from Sim/ Tech Filter allows samples to be taken quickly without creating excessive turbulence, as there are no restrictions caused by valves, stoppers or flaps. With an inside diameter of 1 3/8 inches, the capacity per foot is almost 10 ounces. The straightthrough design allows the sample to be quickly and effortlessly returned to the tank. The unit is made of a polycarbonate sampling tube clearly marked every foot, and PVC fittings. It comes as a single-piece 8-foot unit or as two 4-foot units that slip together. Custom sizes and configurations are available, as is a simple and customizable extension kit for deeply buried tanks. 888/999-3290; www.simtechfilter.com.

### TOOLBOX JETTERS

### **AMERICAN JETTER** COMPACT **VAN JETTER**

Compact Van Jetters from American Jetter have a skid footprint as small as 24 by 36 inches, while offering room for a camera and tools. Water tank footprints



are as small as 24 by 24 inches, making it easy to have a fully operational jetter inside a van using minimum space. A full speed-control reel mounted above the engine and near the rear door maximizes operator comfort, according to the manufacturer. A flexible mount-anywhere exhaust system allows exhaust to be run through the floor or other areas, reducing engine noise. Kohler engines to 80 hp power low-water shut-off pumps from 7 to 20 gpm up to 5,000 psi. A wireless remote option allows for water on/off and engine shutdown. 866/944-3569; www.americanjetter.com.

## DEWATERING BELT PRESSES CENTRIFUGES



### **CAM SPRAY RCJ SERIES**

RCJ Series skid-mounted jetters from Cam Spray are offered in flows and pressures of 8 gpm at 3,500 psi and 7 gpm at 4,000





psi. A three-plunger industrial pump with pulse is powered by a 688 cc Honda engine. It comes with 200 feet of jetter hose that can also be used to supply an optional portable reel cart available with 200 or 300 feet of hose. It is equipped with a 35-gallon buffer water tank with float control, powder-coated heavy tube frame, washdown gun and four-nozzle set. It mounts in the side door of a cargo van, on a truck bed or inside a service truck. Add a root-cutting nozzle for residential root cutting. 800/648-5011; www.camspray.com.

### SUPER PRODUCTS CAMEL JET 1600

The Camel Jet 1600 truckmounted, high-pressure waterjetting system from Super Products is used to keep municipal sewers, sanitary and storm sewer lines, laterals, and drainage

lines clean and free-flowing. It uses three rotationally molded polyethylene tanks to carry up to 1,600 gallons of water. The Lexan Containment System means users have additional safety protection from hose rupture or high-pressure water. Its heavy-duty triplex continuous-flow water pump provides up to 80 gpm and pressure up to 2,000 psi. Various water pump and drive system options are available, as well as a front- or rear-mounted 180-degree rotating hose reel with a 1,000-foot capacity. 800/837-9711; www.superproductsllc.com.

### **VACTOR** MANUFACTURING RAMJET

The truck-mounted Vactor Ramjet from Vactor Manufacturing comes with a Vactor Jet Rodder water pump to help break up blockages in sanitary lines and flush out debris. With up to 2,500 gallons of water in a stainless steel tank, it delivers flows of 60 to 100 gpm at 2,000 or 2,500



psi. The single-piston, hydraulically driven, dual-acting water pump delivers jackhammer-action water flow designed to break through line blockages and scour caked-on debris from pipe walls. A single operator can quickly solve line problems and tackle regular line maintenance. It can be configured with either a front- or rear-mounted hose reel. The auto-wind hose guide allows hands-free operation from the control panel for a clean, tight wrap. 800/627-3171; www.vactor.com. ■

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

### **Polylok Pipe Grates & Covers**

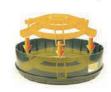
(3", 4", 6", 12", 15", 18", 24" & 30")

Polylok grates and covers are ideal for use with corrugated or ribbed pipe. They are made of HDPE with the highest UV protection on the market today.



### Polylok Universal Safety Screen - (20" & 24")

Polylok's safety screen protection can now be utilized on PVC ribbed pipe, HDPE corrugated, and concrete risers with Polylok's new Universal Safety Screen. Everything you need is included from self tapping screws to concrete anchors and a carbide bit to go with it.

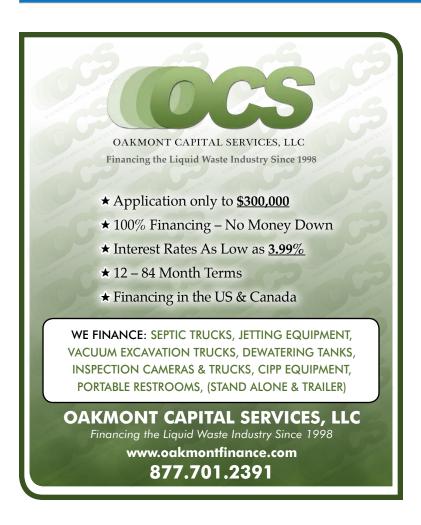








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### DAMAGE-RESISTANT ORENCO SYSTEMS RISER LIDS HAVE 20,000-POUND BREAKING STRENGTH

Damage-resistant DuraFiber lids from **Orenco Systems** fit most ribbed PVC and HDPE riser pipes. The 11-pound, 24-inch-diameter nonskid lid (30-inch available) is made of resin-infused, UV-resistant fiberglass fabrics.

"The nonskid material is 100 percent resin," says Eric Ball, vice president of product development. "Resin provides very good UV resistance. Once it oxidizes you get a protective layer so the sun doesn't break down the laminate."

The lids, which have a 20,000-pound breaking strength, include a flat-style flange for flush-to-grade installation and cored centering ring for easy alignment and snug fit. A urethane gasket helps ensure a watertight seal.



"All the lids I'm aware of have a flange that's vertical on the outside edge, usually an inch or a couple inches tall, that ends up being in the dirt or landscaping," Ball says. "If the lid hasn't been taken off for a long time, you've got grass growing and you have to get a shovel and dig around it. Then

when you put it back in you have to excavate even more. Whereas if you have a flat-style flange it's not buried in the dirt."

Other features include a customizable 6-inch center insert and molded-in "caution" statement: Always keep fastened; Do not enter.

"We can take any artwork and put it into the center of the lid," Ball says. "We'll do the artwork or it can be provided. Typically it's a logo and phone number."

Four tamper-resistant 5/16-inch stainless steel flathead screws and hex wrench are included. Optional 2- or 4-inch insulation can be preinstalled or added in the field with a hardware kit. The lids are available in standard green and three landscape patterns: grass, river rock and bark. **800/348-9843**; www.orenco.com.

### F.M. MANUFACTURING 30-FOOT TRAILER

The 30-foot flatbed trailer from F.M. Manufacturing has three 3,700-pound torsion bar axles, side roller for easy loading,



low-profile tires, solid front header and tie-downs on both sides. The customizable trailer has electric brakes on all axles and LED lights. 877/889-2246; www.fmmfg.com.



### FLEXAUST FLEX-TUBE SERIES HOSE

Flex-Tube Series hoses from Flexaust are made from polyurethane or PVC and available in OEM colors with plain ends or screw cuffs. The medium-weight hoses with smooth interiors are available in 1-, 1 1/4-, 1 1/2- and 2-inch diameters in lengths up to 100 feet. **800/343-0428**; www.flexaust.com.

### ILLUMAGEAR PERSONAL ACTIVE SAFETY LIGHTING

The Halo Light 360-degree personal active safety system from Illumagear attaches to any hard hat, en-



abling the wearer to see and be seen in all directions. The 9-ounce portable light ring also frees hands and eliminates shadows in personal work areas. The hardened plastic LED light ring features a tension-spring mounting system, single-button functionality and four light modes: high alert, normal, task and dim. IP67 rated against dust, dirt and water, the light ring has a rechargeable lithium-ion battery that lasts 12 hours on full power (276 lumens). 206/973-4277; www.illumagear.com.



### TOW-LET FLUSHING TRAILER

The foot-flushing trailer from Tow-Let Manufacturing includes urinal, hand-wash sink, soap, towel and tissue dispensers and six-bulb LED solar-powered interior and exterior lighting. Mounted on a DOT trailer, the PolyJohn restroom, available in an assortment of colors, has 55-gallon waste and 27-gallon freshwater tanks. Each flush uses about 2 pints of water (about 100 flushes per fill). The lockable rear-mounted

storage box includes pump, charging system, hose and room for supplies. 712/623-4007; www.tow-let.com.



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- 173 horsepower
- · 3600 pump
- #6 plungers
- · Tank inlet filtration system
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- Hydro-throttle
- · 40,000 PSI @ 6.8 GPM
- · Note: hours unverifiable



## 2009 Int. 7600 with 2010 Vactor HXX | Truck ID #72091

- · Cat C-13 engine
- Fuller FRO-15210C transmission
- Mileage: 109,287 Hours: 4,612
- · 430 horsepower
- GVWR: 66,000; front 20,000; rear 46,000
- 20 GPM Cat pump
- 8702 Hibon blower
- 12 yard debris box

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## WATER CANNON HOT-WATER PRESSURE WASHER

The 18H26 model hot-water pressure washer from Water Cannon has a Honda GX 390 engine and choice of General or Cat ceramic plunger pumps. Features include a portable four-wheel push bar frame for support, 4 gpm, 4,200 psi, 118-degree temperature rise and overheat safety valve. 800/333-9274; www.watercannon.com.

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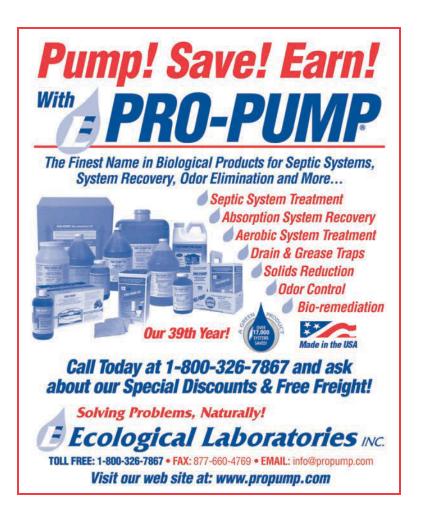
Effluent turbine pumps from Clarus Environmental Products are available in 11 to 85 gpm capacities with heads to 500 feet. Pumps range from 1/2 to 3 hp and feature discharges of 1 1/4, 11 and 19 inches (27 gpm models) and 2, 35 and 55 inches (85 gpm models). Starting boxes are not required for pumps 1 1/2 hp and smaller and are included with 2 and 3 hp models. 800/928-7867; www.clarusenvironmental.com.

### REELCRAFT STAINLESS STEEL REELS

Series LC stainless steel hose reels from Reelcraft Industries are designed for light-duty, spring-driven reel applications in corrosive or sanitary environments. Made for stationary indoor and outdoor use, four base slots enable the reel to be easily mounted or adjusted. Models are available for up to 70 feet of 3/8-inch I.D. or 1/2-inch I.D. hose. **800/444-3134**;

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## Marathon Data names director of marketing

Marathon Data Systems named Joe Bonelli senior director of corporate marketing. He will be responsible for global marketing, branding and awareness strategies for the software company.



Joe Bonelli



GapVax names
Gulf Coast representative

GapVax named Alexander Teich sales representative for the Gulf Coast. Based in Deer Park, Texas, his territory includes New Mexico, Texas, Louisiana, Oklahoma and Arkansas.

Alexander Teich

### Continental completes Veyance acquisition

Tire manufacturer Continental completed the acquisition of Ohiobased rubber company Veyance Technologies upon receiving approval from the Brazilian antitrust authority CADE (Council for Economic Defense). As part of the agreement, Continental will divest Veyance's air springs business in NAFTA and its steel-cord belting business in Brazil. The transition is valued at \$1.5 billion.





### MOWA presents lifetime achievement awards

The Minnesota Onsite Wastewater Association (MOWA) presented lifetime achievement awards to Jim Anderson, Gretchen Sabel and Ron Jaspersen.

Anderson has been conducting research and providing education on septic systems since 1971. To-



Pictured from left are Ron Jaspersen, Jim Anderson and Gretchen Sabel.

gether with Roger Machmeier, he started the Onsite Sewage Treatment Program at the University of Minnesota. Anderson's soils expertise, combined with Machmeier's engineering knowledge, created a program that trains installers, designers, inspectors and service providers. In addition, Anderson helped develop and update Minnesota Rules during 30 years as chair of the Minnesota Septic System Advisory Committee. Anderson retired in 2008 but continues to educate septic service and onsite professionals.

Sabel retired in 2014 after 36 years of state service dedicated to environmental protection. She was on the team that helped pass the Minnesota Groundwater Protection Act in 1989. Her many years of support for local programs resulted in millions of dollars in assistance and development of 250 local programs.

Jaspersen served the onsite community for many decades as a precast tank manufacturer and through his efforts to improve the industry. He worked on issues that included association finances and bylaws, state septic code and policy, and state statutes.

### Subaru Industrial Power redesigns website

Subaru Industrial Power redesigned the layout and functionality of its website, www.subarupower.com. Product pages include 360-degree views. Quick search provides parts accessibility and illustrated guides help ensure proper selection.

## Flowserve signs New Way Air Bearings license agreement

Flowserve Corp. signed a license agreement with New Way Air Bearings to develop externally pressurized solutions for its seal and pump operations.

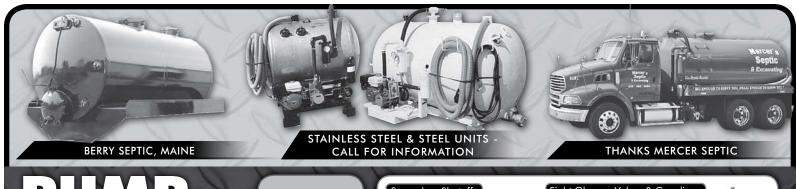
### General Pipe Cleaners celebrates 85 years

General Pipe Cleaners, a third-generation, family-owned business



Pictured from left are Mike Silverman, Jeff Silverman, Steve Glick, Steve Silverman, Art Silverman, Marty Silverman, Bob Silverman, Lee Silverman and David Silverman.

founded in 1930, celebrates its 85th anniversary. The company's line of products includes drain cleaners, water and trailer jetters, video inspection systems, water leak detectors, pipe freeze kits, pipe thawing kits, and copper and plastic tubing cutters.



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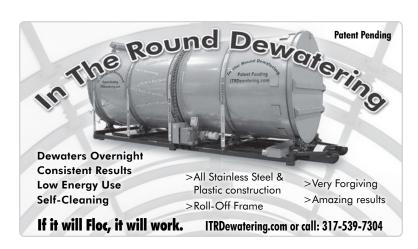
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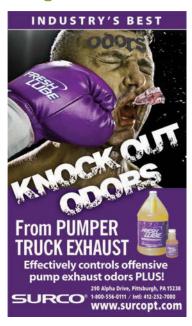
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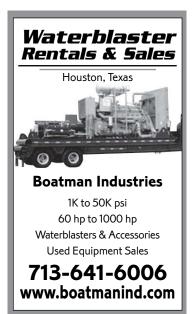






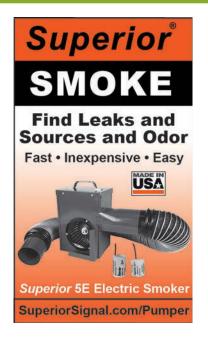






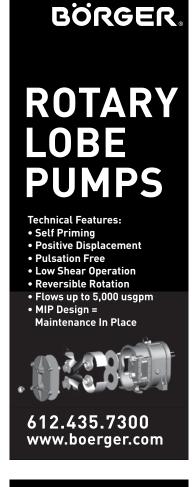




















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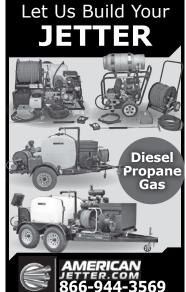
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Portable restroom business for sale. Service area is from Pensacola to Panama City Beach, Florida. Currently 300 units, operated by one employee. Great area for growth if desired. We own multiple businesses. Cutting back due to health issues. Asking \$140,000. Owner may finance a portion. Call or text 850-306-5386. Email Iderrickir@yahoo.com (P05)

National Grease Recycling Inc. Let us teach you how to recycle restaurant's waste, fryer grease and oil (yellow grease) only. Big \$. Over 30 years experience, will guide you through complete process from collection to processing to marketing to end users. Don't lose your trap business to competitors that offer both services. We also buy cooking oil, unprocessed, anywhere in the country. Call for information. References available - many success stories. Dewey Walker, 813-704-5090 or 813-758-2552. (PBM)

Retiring from an established, family-owned, full-service septic pump company in western Colorado. Large, loyal customer base. Turnkey with website, client list, trucks and lots of tools. Proven good income. Serious inquiries only please. E-mail eagleseptic@qwestoffice.net (P05)

Septic tank cleaning and inspection company for sale. Serving Central and Eastern Massachusetts. 4,000-gallon International, portable jetter, and Kubota backhoe included. Also tank trailers. Call 508-989-1078. Serious inquires only. (P05)

Portable restroom business for sale in Eastern Kentucky. 500+ units, sinks, holding tanks, hand sanitizers, trailer units, 3-restroom trailer unit, supplies, four (4) trucks, trailers. Great growth. Established customers. Serious inquiries only! 606-356-3828. Leave message. (P05)

Daytona Beach, FL septic tank, portable toilet, ATU & lime stabilizer facility for sale. Well established. \$1.3 million without property. 3.5 acres prime real estate with office-warehouse rental building & lime stabilization plant. \$1.5 million. Call Paul 386-547-9907. (P05)

Minnesota family-owned septic service. SE Metro, three-county service area. 1991 International 2,500-gallon pumper - new LMT tank in 2010. 1991 International 3,400-gallon pumper - new Jay's tank in 1998. Both good everyday runners. 3,000+ QuickBooks customer database. Serious inquiries only. Call Bob 612-730-5870. Mon-Fri 8-5 CT. (P08)

**ARE YOU MOVING TO FLORIDA?** Would you like to start a septic and sewer cleaning business? I have license - will sponsor. For more information call Larry at 931-335-3231 or 931-248-1284. (PBM)

PORTABLE TOILET COMPANY established for over 25 years in the metro New York area for sale. 250 portable toilets, 10-position transport trailer, 27 ft. comfort trailer, ADA units, sinks, hand sanitizers, holding tanks, etc. Strong customer base includes contractors, special events & government contract. Owner retiring, serious inquires only. Email outhouseinfony@gmail.com (P06)

Full-service septic business in the Northwest Florida Panhandle: Three (3) newer pump trucks, monorail truck, dump truck. Land application site also. 20 years of customers. Running two pump trucks seven days a week and a set crew. Plenty of work. Owner ready to pursue other business ventures. \$800,000. 850-902-9044 (P07)

Septic tank cleaning & inspection service business for sale in Central Maine. Owner is branching out after 20 years and wants to sell this part of the business. Profitable, turnkey business with a loyal customer base. Two pump-truck operation (1) 2000 GMC - 2,500-gallon capacity, 136,000 miles. (2) 2004 Peterbilt — 4,500-gallon capacity, 129,000 miles. Serious inquiries only! \$257,000. Call 207-782-1620 or email septicbizsale@gmail.com (PBM)

PARADISE FOR SALE! Bee's Honey Pots, Inc., portable toilet company established in 1983 in the beautiful Florida Keys is for sale. Based on Big Pine Key, Bee's is the oldest established and largest portable toilet company in the Keys. Sole owner and operator for the past 30+ years wants to go fishing! Interested? Call 305-872-2287. (P05)

Septic Tank Service Business for Sale, Northeast Florida. Owner wishes to retire. Callahan area north of Jacksonville, a fastgrowing area in Florida. Profitable, turnkey business. 29 years in business with loyal customer base. Two pump tuck operation: (1) 1996 International 4900: DT466, 5-speed transmission, 2-speed axle. 2,500-gal-Ion capacity. 297,000 miles. Good tires, excellent condition. (2) 2000 Freightliner FL70: 8.3 Cummins, 6-speed transmission. 2,400-gallon capacity. 195,000 miles. Good tires, excellent condition. Business includes complete onsite lime 20,000-gallon stabilization plant in Northeast FL. Owner will train and assist with licensing. Call for more information. Kenny Farmer 904-879-4701 or 904-545-0357. (P05)

Portable Toilet Business for sale - Central NC. Turnkey operation. 500+ units, sinks, holding tanks, supplies, trucks and trailers. Great growth potential, established customers. \$455,000 OBO. Serious inquiries only! portabletoilets4sale@gmail.com (P05)

Grease trap & cooking oil pumping/recycling business for sale -- Owner ready to retire. 30-year-old established business with accounts encompassing 5-state area based in metro Atlanta. Ample rolling stock to handle current 600+ contracted used cooking oil accounts and 900+ grease trap accounts. Includes pre-treatment/recycling facility (w/50,500-gallon daily discharge permit) on 2.5 acres of land, only 2.7 miles off 1-75 N in metro Atlanta. Serious inquiries only. Call Cary 678-937-6020. (P05)

Want to add to your toilet business? Temporary Fence business located in Riverside County of CA. Asset sale \$750,000 asking price, terms available to right buyer. Contact jrandle598@msn.com. Serious buyers only.

Established 1964: A turn-key operation with customers based in beautiful Southern Oregon. Portable toilets and septic pumping business. 2.05 acre property with storage tanks. Building includes storage, office space and more. Over 500 portable units, 5 handicap compliant. 6 service vehicles, 3 septic pumping trucks. \$400,000. Serious inquires only. Office 541-772-9484 (P07)

www.RooterMan.com. Franchises available with low flat fee. New concept. Visit website or call **1-800-700-8062.** (PBM)

### **COMPUTER SOFTWARE**

FreeServiceReminderSoftware.com, FreeServiceDispatchSoftware.com, FreeRouteManagementSoftware.com. (P05)

### **DEWATERING**

Portable septic and grease receiving stations, dual-screen design. Screens that really work - simple, non-mechanical. Set it up anywhere. 208-790-8770 screencosystems.com screencosys@gmail.com (PBM)

Do you DEWATER with a BOX? If so you really need to check us out! ITRDewatering.com 317-539-7304 (P10)

## DRAINFIELD RESTORATION



Refurbished TerraLift for sale. Great condition, runs great, used very little. ......\$25,000

Call or text 704-902-4602, NC P05

**Soil Shaker 2000.** Universal skid steer attachment for drainfield restoration. Buy factory direct. \$6,250. Check us out on YouTube or call 406-670-8318. (PBM)

PLACE YOUR AD ONLINE AT www.pumper.com - IT'S ALWAYS THERE TO MEET YOUR BUSY SCHEDULE

New and used terralifts for sale starting at \$20,000 used and \$38,000 new. Financing available. Call John at AerraTech 413-298-4272. (PBM)

### **DREDGES**



2009 IMS 5012 Dredge: 325hp engine, 22-foot digging depth. Ergonomic cab with joystick controls. Excellent shape. Unit is ready to go to work. .....\$235,000 For more pictures email

terry@merrellbros.com Call 800-663-8830, IN

P06

## GREASE TRAP SEPARATOR TANK

For Sale: JWC Septage Receiving Station \$25,000 FOB. Charlevoix, MI 49720. 231-330-3559 jwc@siteplanning.com (P07)

### **GREASE UNIT**

Pre-owned 2008 Peterbilt 340 cab and chassis with a 3,000 U.S. gallon carbon steel vacuum tank unit with drum holder behind cab. (Stock# 6641CC) www.VacuumSalesInc.com (888) VAC-UNIT (822-8648) (PBM)

### **HAZARDOUS WASTE UNITS**



**2007 Freightliner** with Presvac 3,200-gallon DOT-certified stainless steel dump door with Demag 200 750cfm 27" vacuum pump. 46k rears, 18k front. 80,000 miles. Excellent condition.

**KLM Companies 617-909-9044**PBM

2015 Presvac/Freightliner: DOT certified 3,200-gallon polished stainless steel. Full dump/door vacuum truck with Moro PM100 vacuum pump. Automatic, Cummins power. 46k rears, 20k front. Must see! KLM Companies 617-909-9044 (PBM)

Pioneer 5,500 U.S. gallon, carbon steel trailer with pump package. (Stock# 0220C) www. VacuumSalesInc.com (888) VAC-UNIT (822-8648) (PBM)

New 3,200 U.S. gallon, carbon steel, DOT certified, 407/412 vacuum tank, dump type with full open rear, door and a Presvac PVB 750 vacuum-pressure pump installed on a 2015 Peterbilt 348 cab and chassis. (Stock #13587 A-E) www. VacuumSalesInc.com, (888) VAC-UNIT (822-8648) (PBM)

### **INSURANCE**

Paying too much? Slow certificates? Claim problems? Rates keep going up? Want a fresh start? We can help: Call 800-454-1970 (PBM)

### **JETTERS-TRAILER**



**Xtreme Flow Trailer Jetter Hot/Cold!**Model# HJ2TA8536, tandem axle trailer, 35 hp Vanguard 8.5 gpm @ 3,600 psi, 325-gallon water tank, 300' hose, General pump. **Fully loaded!** List \$36,995. On sale for \$32,995.

800-213-3272, www.hotjetusa.com

PBM

2008 Ford PipeHunter: 7844TMV. 1/2" hose. Giant jet pump 14.2gpm @ 4,000psi. Tuthill blower, 1/2-yd. debris tank. John Deere rear engine. 294 hrs. Ken's Truck & Equipment: www.khtrucks.com 972-938-1905 or 214-632-5277 (PBM)

2008 GMC PipeHunter: John Deere rear engine, 700-gallon poly water tank, 3/4" jet hose, Giant pump. Ken's Truck & Equipment: www.khtrucks.com 972-938-1905 or 214-632-5277 (PBM)

### JETTERS-TRUCK



**1993 GMC 1-ton Jetter:** 35gpm FMC pump, 3/4" hose, 500-gallon plastic tank. ......\$14,500 OBO Other jet trucks and trailers available.

608-835-7767. WI

### **JET VACS**



**2005 Ford F650:** CAT C-7 (210hp); 6-speed; A/C; 26K GVW. Vacmaster VNDS4000 vacuum excavator; JD diesel (155hp); D+W blower; Boss air comp; 450-gallon Spoil tank w/hyd. dump. Stock# 8364; 67,865 miles. .... \$79,500

800-520-4704, PA www.0pdykes.com



2004 Sterling Vactor 2115, Refurbished. One operator, 5,000cfm, Roots blower, 1,500 gallons at 80gpm, extendable boom, new rubber and new hose. Truck is ready to work! E-mail for more pictures .......\$85,000 0B0

csr@charlestonrotorooter.com Harry 843-556-4320, SC POS



**1999 Freightliner Guzzler** w/Cummins M-11, 350hp, Allison HD4060, 64k GVW. Guzzler combo unit w/stainless water and debris tanks, extendable & rotating hose reel, extendable boom. Roots 824PD blower, Meyers 80gpm pump. Ready for work. Photos available. ......\$58,000

708-878-8401, IL

2007 Mack Guzzler: Damaged, rear unit new in 2011. Ingersoll Rand Air Solutions Hibon model SIAV 8702 blower. Ken's Truck & Equipment: www.khtrucks.com 972-938-1905 or 214-632-5277 (PBM)

Jack Doheny Supplies Inc. offers a full range of late model combo units and DOT industrial vacuum loaders. Call us @1-800-3D0HENY.



248-345-3993. MI

P05



Call 877-389-2227. IN

2009 Sterling Vac-Con: VPD3616LHAEN S\N: 09085083. 3,975 main engine hours. Bean jetting pump. Roots 824 RCS blower, 16-yard debris tank. New aluminum extension tubes. Hydraulic-driven jetter pump. Ken's Truck & Equipment: www.khtrucks.com 972-938-1905 or 214-632-5277 (PBM)

2006 International VacCon: CAT pony motor, 3-stage fan, 12-yard tank, 1,300-gallon water tank. \$88,000. Call Jeff Brooks @ 317-258-4900 (P07)

2002 International Guzzler: 54,000 miles, 10-speed, 27" Roots blower. Stainless steel tank. Stk# 2300. Ken's Truck & Equipment: www.khtrucks.com 972-938-1905 or 214-632-5277 (PBM)

2006 International Vactor 2112\15: 9,300 hours, S\N: 05-07V-9443, Vactor jet pump 80gpm @ 2,000psi. 600' 1" new hose. 800' hose reel capacity. Pump-off system. Ken's Truck & Equipment: www.khtrucks.com 972-938-1905 or 214-632-5277 (PBM)

1998 Volvo GapVax: Stk# 2301, VIN# 4VHJCB JF8WN857157. Stainless steel tank, N-14 Cummins, 9-speed Fuller transmission, Roots 27" blower. Ken's Truck & Equipment: www.khtrucks.com 972-938-1905 or 214-632-5277 (PBM)

Vac-Con V390LHA combination unit with Roots 827 blower, 1999 International Model 2554 cab and chassis. (Stock #3918C) www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648) (PBM)

PRM

### **JET VACS**



2008 Vactor on a 2007 Sterling chassis: Flat rear door, 12-yard tank. Hydroexcavation reel and gun. 5,154 engine hours, 77,000 miles on odometer, 27,295 on hub meter has been installed since new. Pump-off option, rear camera. All tires better than 75%. Includes all tools, 5 nozzles including worthog nozzle. 80gpm @ 2,000 psi pump. CAT C7 engine. Well maintained and garage kept. \$169,000 mike@performanceplumbingva.com

Vac-Con industrial machine mounted on a pre-owned 2006 Sterling cab and chassis. (Stock #8593C) www.VacuumSalesInc. com (888) VAC-UNIT (822-8648) (PBM)

757-328-9879, VA

P05

2006 Volvo cab & chassis with a Vactor 2110 combination vacuum loader and high-pressure sewer cleaning system. (Stock #3483C) www.VacuumSalesInc.com (888) VAC-UNIT (822-8648) (PBM)

Pre-owned 2002 Sterling LT 9500 cab and chassis with a Clean Earth Safe Jet Vac 1015 combo unit. (Stock #3876C) www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648) (PBM)

2005 Kenworth T800 Vactor 2115: 15-cubic-yard hopper - 1,500-gallon water capacity. Roots 1024 Ras-J 18" blower 80gpm/2,500psi water system. 800' x 1" sewer hose/2,500psi. 2005 Kenworth T800, CAT C-470hp. Chassis tri-axle. Eaton-Fuller manual transmission with push axle. \$193,000. Call Jeff Brooks @ 317-258-4900 (P07)

### **LEASE/FINANCING**

Western Equipment Finance, a bankowned direct lender, is committed to continuing to help you prosper. All equipment types, new or used; we have the best rates and terms you deserve. App-Only Financing and credit decisions within an hour. Call the team you can trust, Jim Stekl at Western Equipment Finance 701-665-1647. jim.stekl@westernequipmentfinance.com (PBM)

**100% financing available.** Simple one-page application, same-day response. For more information please call THE LEASING EXPERTS @ 888-505-0060. WWW.TLEJAX.COM (P05)

North Star Commercial Credit: Commercial loans for trucks or equipment, flexible purchase programs to fit your budget, 21 years in the industry. Contact **Tom Myers, 877-804-2274.** (PBM)

### **MISCELLANEOUS**



> For more info call 863-984-8994, FL

P05

### **PARTS & COMPONENTS**

Imperial Industries, Inc. F&D heads — steel, aluminum or stainless, manufactured at our facilities and MZ brass valves and accessories, direct from Italy. Call 800-558-2945 for prices you can't afford to miss out on. (P07)

### **PORTABLE RESTROOMS**

80 Taurus used portable toilets: Good condition, burgundy color, \$275 each. Madison, WI area. 608-835-3459 or sales@buckyspt.com (P05)

200-300 Used portable restrooms for sale. All kinds, in good condition. \$275 to \$350. Buyer responsible for shipping. Please call 239-334-7689 ask for Kevin. (P06)

100 tan PolyPortables standard units, construction grade. Approximately 10-12 years old. \$150 each. Located in Albuquerque, NM. Call 505-345-3965. (P08)

45 forest green Hampel Sheds. Some like new, a few have sides and backs that turned bluish, \$340 each. 60 aqua Hampel Deluxes. These have NEVER seen construction. Like new, a few have dimpled doors, \$400 each. Call Albert @ 302-420-7237 (P05)

## PORTABLE RESTROOM TRAILERS

2 Decons, 28' Tonto, 18' Royal, 2001 ASCI, 16' Presidential, 26' Presidential, portable toilet hauler trailers. 315-437-1291, NY. (PBM)



2010 Black Tie Optimum 14: 8x14, 2 restrooms, separate mens and womens sides. Mens has 1 stall and 2 urinals, womens is 2 stalls. Water heater onboard, 418-gallon waste tank, air conditioned with heat strip and additional toe kick heaters. This unit has been used less than 10 times in its life and always stored indoors. We are getting out of rental business. It is ready to rent out. Like brand new........................\$22,000 www.blacktieservices.com/optimum-

618-988-8300. IL

P05

basic-restroom-trailers.html

**WANTED:** Used Wells Cargo UltraLav and Comfort Elite restroom trailers. Call Jamie Hunter at Hoosier Portable Restrooms 317-439-9383. (P07)

### PORTABLE RESTROOM TRUCKS



**2000 Ford F450:** V10, 600 waste/300 fresh. All stainless tank and fenders. 2-unit carrier. Low pressure/high pressure washdown pumps. Conde Super6 vac pump. \$25,000. Negotiable. Willing to separate truck and tank. Green Bay, WI.

920-655-7037, WI

P05



**2012 Ford F550:** 4x4, 58,000 miles, 750 waste/350 freshwater. Extended warranty up to 200,000 miles bumper to bumper. DC-10 water pump, Masport pump. Ledwell tank. \$47,000. Also have units and other route trucks available.

Clint 330-600-1912, OH PC



Complete Portable Toilet service truck mount units (turn-key), mounted on your truck or ours. Tool boxes, dual work stations, dc10 washdown pump, reversible vacuum pump, hose reel, set up complete, toilet racks available. 1100 waste/400 fresh: \$19,000, 1700 waste/600 fresh: \$20,500. Any custom options or sizes available!

TexLa Services 936-641-3938 www.texlaservices.com



Call 715-938-0119, WI

2011 Isuzu NRR: Diesel, automatic with 2008 Progress aluminum tank, 350 water, 900 waste, Masport pump, 77,000 miles, \$39,000. Call 845-883-7880. (P05)

2006 International DT466 4300: 265,054 miles, 300/400 H20 and 800 waste tank with Masport vacuum system. VIN #1HTM MAAL96H267168. \$27,500. For information contact Marcus at 208-467-0089. (P05)

2012 Ford F550: V10 gas, 87,000 miles, auto. trans., extra suspension. Masport pump, 1,000/200 carbon steel. \$35,500. garner@LRBCG.com 419-625-8764 (P05)

Three (3) portable restroom service trucks: 2004 International 4300 - air brakes, 1,100/400 Abernethy, 16,828 hours, \$35,000. 2006 International 4300 - air brakes, 1,100/400 Abernethy, 11,928 hours, \$37,500. 2009 Chevrolet Kodiak 5500 - polished aluminum Progress tank and wheels. All have two-unit carriers. Fleet-maintained with maintenance records. Route ready. Call or text 931-320-2004 before 6pm CST (P06)

PLACE YOUR AD ONLINE AT www.pumper.com - IT'S ALWAYS THERE TO MEET YOUR BUSY SCHEDULE

2003 GMC 5500 with Keith Huber Princess tank, 200,000 miles, 750/350 tank. Tank and boxes were refurbished two years ago. \$18,000 OBO. Call Joe or Stan at 618-939-3001 (P05)

Two (2) 2012 Ford F550 Crescent Trucks. 900 Model & 1100 Model. 110,000 miles. Used daily, excellent condition. \$49,000. Pictures available, NW Illinois. 815-946-2813 pbyers@bigjohnn.com (P05)

2007 Ford F750: 1,100-gallon waste/400-gallon water, 154,000 miles. \$26,000. Still in service. 724-752-1408 Pennsylvania. Ask for Jerry or Glenda. (P05)

Over 30 portable toilet trucks for sale. Example: 2009 Dodge 5500: 148,000 miles - \$28K. Tank sizes 300/150 to 1,200/400. Half CASH down - Owner will finance balance at 6%. Farmington, NY 607-368-0783 (P05)

2007 Ford F650, 5.9 Cummins, auto, 172,551 miles, MD1250 Satellite tank, good to excellent condition. \$39,000. Call for pics 320-583-4831. (P05)

Clean **2008 Ford F450** diesel, auto., 4x4 chassis, flatbed. New aluminum vac tank vac tank - 400 waste/200 water. New Conde vac pump. Call for more info. www.pumpertruck-sales.com. Call JR. @ 720-253-8014, CO. (PBM)

**Two (2) 2010 Hino 268s:** Satellite units, 850 waste/400 fresh steel tank, Conde pumps. Extended warranties included. www.pumpertrucksales.com. Call JR. @ 720-253-8014, CO. (PBM)

**2006 GMC:** Duramax diesel, Allison auto. New aluminum tank 400 waste/200 water, Conde pump, Honda motor. www.pumper-trucksales.com. Call JR. @ 720-253-8014, CO. (PBM)

**2009 Ford F550:** 4x4, diesel, auto, new aluminum tank 400 waste/200 water, new Conde vac pump. www.pumpertrucksales. com. Call JR. @ 720-253-8014, CO. (PBM)

1999 International DT466 4700: 177,032 miles, 500 H20 and 900 waste tank with Masport vacuum system. VIN #1HTSCAAL 6XH670911. \$15,000. For information contact Marcus at 208-467-0089. (P05)

2000 Int 4700 - \$17,500; 2002 Int 4300 - \$23,500; 2006 Int 4300 - \$39,500; Roll-off - \$23,500. Restrooms - \$150. 256-757-9900 or www.pbsos.com. (PBM)

### **PORTABLE SINKS**

Eight (8) PolyPortables Super Twin Sinks. Grey with two soap dispensers and one paper towel dispenser capable of holding one 940' roll. \$350 each. 419-865-4830 (P05) 43 PolyJohn single-user washstands. They are 43x18x9 16-gallon. They are used sinks, for any questions call Lance 561-346-9296 or lance@redtoilets.com (P05)

Twelve (12) Satellite Handiwash stations, eight work, four need repair. Asking \$750 for all of them. Call 419-625-8764. garner@LRBCG.com (P05)

### **POSITIONS AVAILABLE**

Hiring experienced septic tank installers and pump truck drivers. CDL and good driving record required. Pay is based on experience. Fax resume to 850-502-2308. (P05)

Experienced Wastewater Service Technician needed to install and maintain our wastewater treatment units for residential and commercial users in far western Chicago suburbs. Must have good mechanical skills and excellent driving record. Applicant should have an Illinois Septic Contractor's License and live in the the Western suburbs. Send resume to: sybraer@att.net or P.O. Box 4375, Wheaton, IL 60189 (P05)

On Site companies has multiple employment opportunities available for our current branches and future expansion branches for key Management, Operations, and Sales positions. Contact hr@onsiteco.com or call 651-429-3781. Check us out at www.onsiteco.com (P06)

Well-established septic company seeking individual for a sales/estimating position. Must have working knowledge of Kentucky on-site septic regulations. We specialize in new installation and repair of residential and commercial septic systems. Good salary + commission, health insurance and 401K. Send resume to: Human Resources, P.O. Box 1472, Crestwood, KY 40014. (P05)

Open positions at Johnson Environmental Services, South Florida location: Lift Station Technician Field Estimators/Supervisors (familiar with outside plumbing systems). E-mail resume with salary requirements to: alpanz@johnsones.com www.johnsones.com (P06)

GapVax, Inc., a nationally recognized manufacturing business, is seeking a talented, highly motivated individual to fill a full-time Sales Position in the Midwest (lowa based preferred) region. GapVax is the leading manufacturer of industrial and municipal vacuum units and hydroexcavation units in the United States. We provide the most reliable, comprehensive, and efficient mobile vacuum units in the industrial and municipal markets. Specifications of the position are listed on our website, www.gapvax. com, click on the Now Hiring link in the left hand column. Send resumes to Lthomas@ gapvax.com or 575 Central Avenue, Johnstown, PA 15902. (CPMGBM)

### **PUMPS-HIGH PRESSURE**



**NLB 40150E:** Complete. In good running condition.

Call Jim 813-985-4500 PO5

### **PUMPS-VACUUM**

Water-cooled Masport 200 pump. Machined and rebuilt to factory specs. New bearings, vanes, gaskets and seals. \$3,000 or \$2,500/ex. Other sizes available. Call or text John 541-501-3861 (P05)

Buy & Sell all makes and models, new & used vacuum pumps & high pressure water pumps, and good used replacement parts. Call for an inventory sheet and save. www.Vacuum Salesinc.com, (888) VAC-UNIT (822-8648) (PBM)

### **RENTAL EQUIPMENT**

Liquid vacs, wet/dry industrial vacs, combination jetter/vacs, vacuum street sweeper & catch basin cleaner, truck & trailer mounted jetters. All available for daily, weekly, monthly, and yearly rentals. VSI Rentals, LLC, (888) VAC-UNIT (822-8648) www.vsirentalsilc.com (PBM)

### **SEPTIC TRUCKS**



**1993 Freightliner** pump truck: HXL20 Masport pump rebuilt 3/13, new shutoff, drain valve, inlet, quick disconnect, pressure relief, fittings, hoses, clamps, etc. Tank capacity 2,200 gallons, installed 42"x28"x26" tool box, new bumper w/3500 lb. hitch. ..............\$25,000

800-978-7900, CA

P05

1986 International DT466, 2,000-gallon septic tank pumper, dump unit by Presvac Systems, rotary vane pump liquid cool (WPS126). Good working condition, 140,000 miles. Asking \$25,000 OBO. Call or email for photos & info. 207-444-5441. elwsd@ainop.com (P05)



1998 Mack RD688s: Transway 4,000-gallon carbon steel tank, rearopening door, 3 baffles, 4 sight glasses, 4" intake, 6" discharge, heated valves. Mack 12-speed extended range splitter, 350hp Mack engine, 2-stage jake brake, differential lock. Air-ride cab, spring suspension, double frame. 170,000 miles, 13,525 hours. Transway 1.045cfm pump. Tank dumps just like a dump truck with hydraulic piston. All maintenance done. Springs front and rear, rear frog legs, kingpins, sandblasted chassis and tank, primed and painted 5 years ago. Cab in great shape - no rust. Truck is 100%. Have all paperwork since 1998. We are getting a new truck. Asking \$86,000. Truck was \$198,000 new. Located in Boston, MA. Call or email for more info.

dustin@preventativeseptic.com
Dustin 978-473-4510, MA PBM



**2001 Freightliner FL80:** Factory-rebuilt CAT C7 350hp, 8LL transmission. 3,400-gallon T-Line tank, rebuilt 350cfm Wallenstein pump. 100-gallon water tank with pump and hose. Too much to list, call for more details. .......\$41,900

Jim 800-246-7736, WI

2007 Freightliner M2 Business Class: CAT C7 225hp, 6-speed manual transmission, spring suspension, 130k miles. Dual aluminum fuel tanks, fresh D.O.T Inspection. NEW 2,150-gallon vacuum tank, Jurop LC420 vacuum pump. LED lights, lined hose trays, 3" inlet, 6" discharge, 36" rear manway, 21" top manway, 3-5" glass sight eyes, 1/4" steel construction, 2 anti-surge baffles, hydraulic hoist, premium paint. \$48,500. Delivery available. Call, text, or email for more info, 734-731-5256, dbergeron@live.com (P05)

1999 International 2,500-gallon vacuum truck, original owner, 150k miles, rust-free, DT466, ready to work. Very reliable, clean title. \$29,500 OBO. Call for photos and details. 949-701-2687 or 949-307-0933 (P07)

P06

### **SEPTIC TRUCKS**



**2006 Ford F350:** 1,200 gallons, Jurop pump. One owner. \$36,000. Also have several other trucks for sale from 1,000-6,500 gallons.

Jerry 918-381-9072, OK PO



Doug 724-856-2471, PA



**1999 Kenworth T800:** 4,000-gallon tank, Utile LW825 pump. 189k miles, N14 w/jake, Hendrickson 4-bag air ride, 76,000 GVW. 8LL transmission. Two (2) 3" intakes, One (1) 6" discharge, all heated. Front sight tube, Two (2) 20" manways, rear work lights. .....\$70,000

Call Tom 860-558-0045, CT P05

2007 Freightliner M2 106 Business Class: CAT C7 225hp, 6-speed manual transmission, 33k GVW, 128k miles. New tires, aluminum fuel tanks. Fresh paint on cab and frame. New 2,150-gallon steel vacuum tank, Jurop LC420 vacuum pump, hoist, LED lighting. Well-equipped and ready to pump. \$49,500. For more info call or text 734-731-5256 or email dbergeron@live.com (P05)

2001 Sterling Acterra: 165,000 miles, 2,460-gallon tank new in 2014, CAT 3126, 240hp, 7-speed, Masport H15W liquid-cooled pump new in 2009, heated valves. \$42,500.507-830-1614 Minnesota. (P05)



2008 Sterling LT9500: Mercedes 6-cylinder (450hp). Fuller 8LL. Aluminum wheels, A/C, power locks & windows, 66k GVW. Dickirson Septic Truck, 3,000 gallon, steel tank. Masport PTO-drive pump. 149,278 miles. Stock# 8405 .... \$79,500

**866-250-8260, PA www.0pdykes.com PBM** 



Turn-Key Vacuum Tank Units: 3,600-gallon, unit mounted on your truck or ours; \$20,000. 3,200-gallon truck units; 19,500. 2,500-gallon truck units; \$18,000. 1,500-gallon truck units; 16,000. Self-contained vacuum skids, 1,000-gallon; \$10,500. 2,500-gallon painted tanks ready to mount; \$13,000. PortaPotty trucks and any custom options or sizes available!

TexLa Services 936-641-3938 www.texlaservices.com

P05

P05



**1985 International 1754** with a 1,800-gallon tank. New Jurop pump installed one year ago. .....\$9,000

574-202-1667, IN

1991 International: 3,200-gallon tank, factory-remanufactured Cummins engine with approximately 200,000 miles. 9-speed transmission. Good brakes. 285cfm pump. Runs out strong. \$18,000 OBO. 518-651-6345 (P05)

2010 International 4400 pumper truck: 4x2, 260hp, 33,000 GVW, 6-speed, auto, 121,000 miles, S/A, 2,500-gallon tank, Masport HXL 400 WV liquid-cooled continuous-duty pump. Many extras. Ron Evans Enterprises 800-537-9528 (P05)



2002 Sterling M8500: 2005 Presvac 3,000-gallon with PV750 pump, 33,000lb. GVWR, tank hoist & full-opening rear door. Air conditioning, cruise control, AM/FM radio, air seat, jake brake, aluminum wheels, power steering, step bumper, cloth upholstery. Everything operates great, very clean, runs great, up-to-date inspection. Truck operates daily. We have not had any problems with this truck - we are looking to downsize. ................\$62,000

Call 704-545-6159, NC



317-517-6882. IN P05



**1995 International 4900:** DT466, 210 horsepower, 2,300-gallon tank, 250cfm Battioni pump. Very clean. ......\$23,500

317-517-6882, IN

1999 Sterling: Transway system, 3,600-gallon tank, hydraulic pump. 280,000 miles, needs TLC. Works good. As is \$18,000. Contact: 1671@comcast.net (P06)

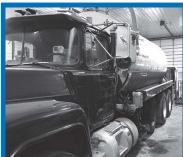
1997 Freightliner FL70: Good, older truck - well taken care of! Tank size: 2,300-gallon waste, 200-gallon freshwater. Also has wash-down system. Asking \$25,500. For more information call 563-924-2225. (P05)



> Don 772-287-0651, FL drice@callcookes.com

P06

PN9



**1988 Mack RD688ST** with T-Line 4,200-gallon carbon tank built in 2007. Has a Masport HXL15 just rebuilt. Truck recently had all new brakes. ...\$27,500

920-979-7711, WI



**1999 Freightliner:** Cummins motor, pre-emissions, 8LL transmission. All tires are new, very low miles - 157,000. ......\$26,500

Call 715-938-0119, WI

2011 Kenworth T800 tri-axle: ISX 525 Cummins, 8LL transmission, HXL400 Masport vacuum pump, 5,000-gallon Pik Rite tank, heated valves. Lots of extras on truck. 232,000 miles. \$98,000. 2005 Mack Granite tri-axle: 460cu., 18-speed, 5,000-gallon Pik Rite tank, Jurop R460 vacuum pump, heated valves. Lots of extras on truck. 230,000 miles. \$85,000. 570-713-4870 (P06)

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### 2007 Freightliner M2 Business Class:

CAT C7 225hp, 6-speed manual transmission, aluminum fuel tanks, 210k miles. NEW 2,500-gallon vacuum tank, liquid-cooled 400cfm vacuum pump, LED lights, large aluminum tool box. Well-equipped and ready to work. ......\$45,000

Call for more info 734-309-2093



Call Mark 603-493-1519, NH PBM



**2006 Western Star:** C-15 CAT, 475 horsepower, 10-speed transmission, jake brake, a/c, cruise, 20,000 lb. lift axle. New: 4,200-gallon tank, stainless hose trays, Jurop LC429 vacuum pump. Great running truck; looks new. \$73,500

Eugene 740-259-5555, OH PO5

2005 International 4400: 3,600-gallon aluminum Allied tank (2005 show truck) auto, Demag/Wittig RFL100, 6" dump, Two (2) 4" intakes (front, rear). Runs great, good rubber. 280k miles. Call for price. 240-375-7249 - Ask for Pete. 2005 International 7500: 3,600-gallon steel tank. 13-speed Road-Ranger, Masport HXL400WV, 6" dump, Two (2) 4" intakes (front, rear). Runs great, good rubber. 180k miles. Call for price. Trucks sold separate or together. 240-375-7249 - Ask for Pete. (P05)



Call 715-926-5525, WI



Call 715-938-0119. WI

2005 International 4300: National Vacuum Equipment 400cfm, 80% tread on Bridgestones, fresh-painted grey cab/white tank, 300k. Good condition. \$42,900. 905-681-3614 (P05)

1997 Mack 600 MR600 with used 5,000-gallon tank, 492k, Challenger 460 vacuum pump. Asking \$26,500. Hagerstown, IN. Call AdvSeptic & Sewer 765-489-5559 or e-mail advancedseptic@live.com (P06)

1992 International Eagle pump truck: 3,150-gallon Calumet tank, NVE MEC 285cfm pump, 465 cummins, 9-speed, low miles. Owner retiring - good stater truck. \$18,000 OBO. 315-436-4058 (P05)

**2003 International 4300:** DT 466 new inframe overhaul; Allison auto., 136k miles, used 1,200-gallon steel vac tank, under CDL; PV3 vac pump. www.pumpertrucksales.com. Call JR. @ 720-253-8014, CO. (PBM)

**1987 Kenworth T600A:** CW CAT 6-cylinder. Eaton-Fuller 15-speed. 8-bag A-R suspension. 3,365-gallon vacuum tank, Masport 75 pump. \$31,000. www.pumpertrucksales.com. Call JR. @ 720-253-8014, CO. (PBM)

**1999 Freightliner:** 8.3 Cummins, 6-speed, 2,300-gallon vacuum tank, Jurop pump. \$22,000. www.pumpertrucksales.com. Call JR. @ 720-253-8014, CO. (PBM)

**2008 Ford F750:** 260 Cummins, 7-speed, rear locking differential, New 2,500-gallon vac tank, new Jurup pump. www.pumpertrucksales.com. Call JR. @ 720-253-8014, CO. (PBM)

**1996 Western Star:** Detroit Series 60, 18-speed transmission. Hendricks suspension. 3,365-gallon vacuum tank, Masport 400 pump. www.pumpertrucksales.com. Call JR. @ 720-253-8014, CO. (PBM)

**1994 Peterbilt 377:** Detroit Series 60, 10-speed transmission. 3,365-gallon vacuum tank, Masport HXL pump. www.pumpertrucksales.com. Call JR. @ 720-253-8014, CO. (PBM)

**2000 Peterbilt:** 300hp CAT, 9-speed, rear locking. Excellent condition. New 2,500-gallon vac tank. www.pumpertrucksales.com. Call JR. @ 720-253-8014, CO. (PBM)

**Eight great older pump trucks - \$35,000 each.** Big power. Jake brakes. 3,365-gallon vacuum tanks, Masport pumps. All makes & models. www.pumper-truck.com. Call JR @ 720-253-8014, CO. (PBM)

2002 Freightliner FL70 with a Presvac 2,300 US gallon carbon-steel vacuum tank and Fruitland pump. (Stock# 4427C) www.VacuumSalesInc.com (888) VAC-UNIT (822-8648) (PBM)

2004 GMC with Progress 1,200 gallon aluminum vacuum tank and Masport pump. (Stock# 1364V) **www.VacuumSalesinc. com (888) VAC-UNIT (822-8648)** (PBM)

1997 Mack with a 4,000 U.S. gallon c/s vacuum tank unit with a Masport pump package. (Stock# 0330C) www.VacuumSalesInc. com (888) VAC-UNIT (822-8648) (PBM)

### SERVICE/REPAIR

Dynamic Repairs - Inspection Camera Repairs: 48 hour turn-around time. General Wire, Ratech, Ridgid, Electric Eel, Gator Cams, Insight Vision, Vision Intruders. Quality service on all brands. Rental equipment available. For more info call Jack at 973-478-0893. Lodi, New Jersey. (PBM)

### **SLIDE-IN UNITS**

1) 2008 Lely steel slide-in tank: 400 waste/200 water with a self-contained Conde vacuum pump and a Shurflo water pump. Asking \$6,500. 2) 600 waste/300 water steel slide-in tank. Battioni self-contained vacuum pump. \$6,500. Both units can be purchased for \$12,000. 254-534-5007 (P06)

Slide-in units, new and used. 337-315-0692 (P05)

### **SLUDGE APPLICATORS**



CAT corporate special **CT660L 6x6** with chassis and electrical specifications by Linco-Precision. 58,000 lb. rear axles with 60" spread. Sludge system: 5,500-gallon pressure/vacuum tank, 82" x 19', with 5/16" walls and 2 baffles. All plumbing is TIG welded stainless steel. Raven Viper Pro.

309-527-6455, IL

P07

P07



2015 Freightliner M2106: Cummins ISL 350, APS9060 bright-finish aluminum 1,000-gallon tank. Rear sump with 4" flange. The tank has full-length aluminum 34" sills, 20" pressure manhole on top and rear, 3" primary shut-off, and 4" rear inlet flange with riser pipe and S/S deflector. Defender 500 vacuum pump by Challenger. Raven Viper Pro.

309-527-6455, IL

### **TANKS**

Six (6) low-profile 250 wastewater holding tanks, black in color. Used once. \$175 each. Call 419-625-876. garner@LRBCG.com (P05)

Vacuum Tanks - New: Sizes from 1,000-4,300 gallons. All complete! Delivery available. www.JEagleTanks.com. Contact Jerry: JEagleTanks@yahoo.com or 800-721-2774. (PBM)

Larger tanks, new and used. 337-315-0692 (P05)

### **TANK TRAILERS**

1978 Beall tanker: 130 bbl. stainless steel trailer. Good tires and brakes. Great condition. \$12,000. Phil 307-260-8062 (P05)

### **TOOLS**

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

**T&T Tools.** Probes. Hooks: Probes feature steel shafts with threaded and hardened tips. The insulated Mighty Probe™ tested to 50.000 volts. **Top Poppers**™ open manhole covers easily. Free catalog. www.TandT tools.com. Phone 800-521-6893. (PBM)

### **TOYS**

Septic pumper and vacuum die-cast toy trucks: In your choice of colors and logos. several cabs available. Call 877-450-2100. write to Granite State Collectibles, PO Box 440, New Ipswich, NH 03071; or www. granitestatecollectibles.com. (PBM)

### **TRAILERS-VACUUM/TANKER**



Imperial Vacuum Trailers: In stock, 6000- and 6300-gallon aluminum singlecompartment Imperial vacuum trailers.

> **Call Mike** 800-558-2945 Ext. 328 PBM

1975 Fruehauf 10,000-gallon tanker, three axle. \$9,000 OBO. Washington state. Call Randy at 360-301-0249 or e-mail northsoundss@netzero.net for pictures. (P05)

2015 Acro Vacuum Trailer: Stainless steel 6.000 gallon, DOT certified double conical with air-ride suspension. Aluminum wheels all positions, full hose trays, OSHA walkways and railings. Vacuum pump option either hydraulic or self-contained. KLM Companies 617-909-9044 (PBM)

1998 Shop-Made Tanker: 80 bbl. vacuum pump trailer, air ride. \$10,000. Phil 307-260-8062 (P05)

### TRUCKS -**MISCELLANEOUS**

2004 Mack Granite: 427 with 13-speed. Imperial 5,500-gallon tank with stainless hose rack, hoist, rear opening door and vibrator. NVE blower. \$89,000 or best offer. 920-434-2888.



2008 Mack GU813: Automatic transmission, Mack Mp7 engine. 44,000 Camelback, 18,000 lb. front, National pump. 238" wheelbase, 150,000 miles. Extremely clean truck. ..... \$95,000

952-469-1800, MN



1992 Ford vacuum truck for sale. 2,000-gallon split-tank truck for pumping and jetting, 81,800 miles, great condition, ready to roll. Please call for more details .....\$37,500 OBO

303-912-3980, CO

P05

2001 Freightliner FL70: 2,500-gallon steel tank, full opening door, hydraulic dump tank. 3" suction valve 4" discharge valve. Two load baffles, 2" sight tube, dual side hose trays, 500-gallon water holding tank for the TSE2421 General pressure washer pump it runs 12gpm at 1,500rpm. The pump is a Challenger 866 500cfm vane pump. We are asking \$55,000. 317-945-2396. Ask for John. (P06)

2008 Peterbilt 367: Oilfield equipped, only 54,000 miles. \$115,000. ISX 550 Cummins diesel, 550 horsepower, 18-speed transmission, 20,000 lb. front, 46,000 lb. rears, 80-barrel water tank with Fruitland 500 pump. Call or email Del at 815-459-7751 or dayscrawford7@att.net for more information including pictures. (P10)

### **TV INSPECTION**

CUES Ford E450 Hi-Cube Diesel (7.3) 57,000 miles, 16' box with Aerocap, 7.5 diesel generator, roof a/c, CUES interior 1210 CUES reel with 1,000' new cable, 12-pin termination, Cobra Data with touch screen, rear monitor, OZ 2 camera or Cobra PTZ. CUES Shorty/Pipe Ranger or Cobra 6-24 crawler. Will deliver and train. Lamp 1 lateral launcher is available. Also available is 2005 Ford F550 4WD 16' box truck, diesel/diesel 60,000 miles. City owned, CUES Equipment, Granite computer, optional LAMP 1 installation, OZ 2 camera and Pipe Ranger. Cobra specializes in the refurbishing of CUES and Aries equipment for the contractor market. Call Alan Grant at 770-435-8991.



2002 Ford E450 CUES camera van. Night Owl camera, newer CUES computer, newer water-cooled generator. 56k miles, V-10. Auto crane to do the heavy work. Approx. 1,500 ft. of cable. \$37,950. Go to our website for more info and pics:

www.letsrollautoandequipment.net 719-494-4927, CO

2003 Ford Aries TV Inspection: Stk# 2168, V10 Triton gas engine. Honda motor powers rear unit. One (1) camera. Ken's Truck & Equipment: www.khtrucks.com 972-938-1905 or 214-632-5277

### **VACUUM EQUIPMENT**

2008 Shop-Made Tank: 80 bbl. bobtail tank - never been used. \$8,500. Call Phil 307-260-8062. (P05)

### **VACUUM LOADERS**



1997 Volvo Autocar with Keith Huber Dominator. DOT 407 coded. Two (2) LC 44 pumps. 880cfm. Cummins M-11. 350hp. 40,000 lb. rear end. 20,000 lb. steers. Full-opening rear door, tank hoist, vibrator, tag axle, rear work lights, full-length hose trays. Never used for hazardous waste. Located in Colorado. ......\$49,500

Contact Steven 303-299-9300 P05

2001 Gap Vax HG57 WET/DRY on Volvo WG64, 5,500 cfm, 27" Hibon blower, Cummins engine, chassis tank and bag house, in good condition, ready for work. KLM Companies 617-909-9044

FOR SALE: Guzzler and SuperSucker air movers; Wet vacs; Hydraulic submersible pumps; Air compressors; Sandblast systems; 5,500-gallon dump tank trailers. Call 502-551-0158 for more info. Cash buyer of used equipment.



1999 International Guzzler Ace DF: 27" Roots blower, 139k miles, 305hp CAT C-10. Good truck - ready to work! ......\$59,500

903-738-2917. TX



PRICE REDUCED! 2006 SafeVac VBR: Approx. 5,000 blower hours, 10,910 engine hours, 267,163 miles. CAT C-13 engine, Fuller RTO-14908LL transmission, 18" Roots 1024 RASTV blower. .....\$119,500

205-910-7577, AL

P05

P05



PRICE REDUCED! 1999 International Guzzler Ace High-Dump with NEW (less than 100 hrs.) Roots 27" blower. Fresh paint, 161,517 miles. 305hp CAT C-10. Great truck - Ready to work! ... \$79,500

903-738-2917, TX

2005 Sterling 7500 vacuum truck with GapVax MC series combination machine. 1,800-gallon tank. \$165,000. Sterling with 300hp CAT C7 engine, Allison 6-speed automatic transmission, 20,000# front axle, 40,000# rear tandem, a/c, radio, ABS brakes. Refurbished August 2014. Purchased new (one owner). Maintenance records. Mileage 128,427. Call: 843-875-5674 Eadie's Construction or email: dawn@eadiesconstruction.com (P05)

2003 Volvo vacuum truck with GapVax VHD series combination machine. 1,500-gallon tank. \$165,000. 370hp Cummins, Allison 6-speed automatic transmission, 20,000# front axle, 40,000# rear tandem, a/c, radio, ABS brakes. Refurbished August 2014. Purchased new (one owner). Maintenance records. Call: 843-875-5674 Eadie's Construction or email: dawn@eadiesconstruction.com

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1999 Sterling with a 3,200-gallon Cusco Master Vac high-dump unit. (Stock# 3378V) www.VacuumSalesInc.com (888) VAC-UNIT (822-8648) (PBM)

### WANTED

Wanted to Buy: Vactor 2100s and late model Guzzlers. Cash. Phone 800-336-4369. (PBM)

WANTED: Used CUES TV truck. No grout units please. Age is not important. 303-277-1112 (P05)

WANTED: Later model toilet paper re-roller machine. Call 330-683-0183. (P05)

**Wanted:** Grout trailer in good condition, complete. Call Jerry 813-677-7655 or e-mail jerrybaes@aol.com (P05)

### WATERBLASTING

Gardner Denver T-375M: Bare Shaft pump. Gardner Denver T450M Bare Shaft pump NLB 20-200: 12 gpm @ 20,000 psi. Gardner Denver LC-1500: 390 gpm max, 15,000 psi max. NLB 36-200 6 gpm @ 36,000 psi. HT-150S 25 gpm max 10,000 psi max, Shell Side Machine, Wheatley 165: 30 gpm @ 10,000 psi, Wheatley 165: 17 gpm @ 20,000 psi. Wheatley 125 with aluminum bronze fluid end. Boatman Ind. 713-641-6006. View @ www.boatmanind.com. (PBM)

FOR SALE: Diesel water blasters; Jet rod truck; Jet rod trailers. Call 502-551-0158 for more info. Cash buyer of used equipment. (P06)



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- > Waste Tank: 4200 US Gallon SS 316 > Hydro-X Package: 5 GPM @ 3500 PSI, 440000 BTU Burner, 700 US Gallon Water Tank SS 304





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