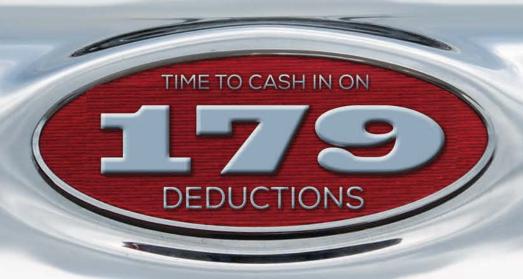




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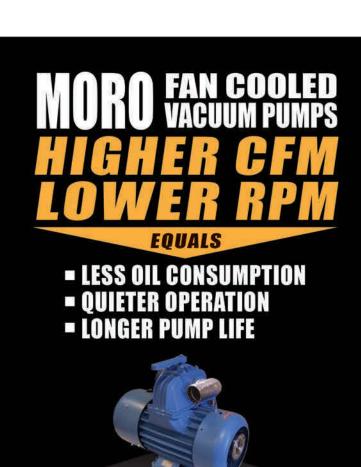
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Contact Jim with your comments, questions and opinions at editor@pumper.com.

Classy Truck Triple Threat: Beauty, Brains and Brawn

Good looks, touches of technology and stout tank and pump combinations are all found in the parade of pumpers for 2015 By Jim Kneiszel, Editor

he competition for the classiest truck to appear in *Pumper* gets fiercer all the time. And that's no different for 2015, which marks a decade of contests to choose the best truck of the year from our monthly Classy Truck feature.

Trucks seem to be getting bigger – with stronger powertrains, vacuum pumps and blowers – and better looking every year. Eye-popping looks might have to do with the evolution of vinyl graphics. With communications playing a key role in business, trucks are outfitted with Bluetooth technology and laptops, tablets and iPads for routing efficiency. Size and sheer pumping prowess might be the result of a maturing of wastewater industry manufacturing and demanding truck owners.

And we can't overlook a rebounding economy and increased onsite system regulations that are keeping pumping professionals working at a blistering pace. When the phone keeps ringing and customers need long-neglected tanks scoured of all waste, contractors require capable vacuum trucks that won't break down. Undersized, underpowered and unreliable trucks will not be tolerated when there's work to be done and it has to be done now.

CAST YOUR BALLOT

So pumpers are on a constant mission to update tired, older rigs or buy new models covered under manufacturer warranties. And when they restore an older truck or buy a new one, pumpers often send us their Classy Truck photos – more of them every year. I take that as a matter of pride in their small businesses.

For the 10th year running, we want your help in choosing the Classy Truck of the Year. Inside this month's issue and online at www.pumper.com,



When the phone keeps ringing and customers need long-neglected tanks scoured of all waste, contractors require capable vacuum trucks that won't break down. Undersized, underpowered and unreliable trucks will not be tolerated.

you'll find a rundown of the 12 monthly Classy Truck entries for 2015. Read about the trucks and take a look at the photos, then follow the instructions to go online and vote for your favorite truck.

Here are a few trends we saw in the monthly Classy Truck winners this year:

Big and bold

Trucks with tanks in the 4,000- to 5,000-gallon range are not unusual or reserved for rigs that transport wastewater for a lot of commercial customers. Owners tell us they go to bigger tanks for a variety of reasons, but pumping and dumping flexibility is at the top of the list. Larger capacity means emptying more tanks on a daily route before having to swing over to the treatment plant for disposal. That's especially important if dumping locations are fewer and farther afield, or when popular disposal sites have long waiting lines. Along with the big tanks come the big semi-tractors. We're seeing more long-haul semi conversions to make these pumping rigs, and these heavy haulers provide plenty of oomph to move wastewater and reliable power to work for years.

Reuse and recycle

This year's list includes interesting truck conversions, including two roll-off container trucks repurposed for wastewater hauling. The January truck owned by Maznek Septic Service in Bedford, New Hampshire, allows for the 4,100-gallon vac tank to be swapped out for a 20-yard container when needed. The March truck owned by Kensington Septic Service in Canada utilizes a repurposed scissor hoist. The May truck owned by American Septic Service Inc. in Carol Stream, Illinois, started its life as a box truck.

Accessorize for convenience

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With rising labor costs, it makes a lot of sense when one truck can do the work of two or more pieces of equipment. For example, the June truck owned by Raider Rooter in Boynton Beach, Florida, adds a General Pump TSF Series toolbox jetter for convenient drainline cleaning. Kensington Septic's truck carries a rear-mounted backhoe so technicians can offer to make minor repairs on the spot or dig up tank lids quickly. The September truck owned by Kuettel's Septic Service in Hortonville, Wisconsin, has heated collars, a 36-inch rear hatch and a hoist for convenience.

Steel vs. aluminum

Carbon steel tanks continue to be a cost-effective option for many pumpers. Seven of the 12 Classy Trucks utilize economical mild-steel tanks. At the same time, aluminum has a popular foothold in the market. Five of this year's trucks carry lightweight aluminum tanks. None of this year's trucks uses the durable stainless steel tank option.

Show your team colors

More and more it appears contractors want continuity in their fleet colors. They say passing motorists identify them by the color of their trucks. That could be especially true of the metallic brown Kuettel's truck, a very unusual choice. Professional vehicle painters in the offseason, February Classy Truck owners Jim Garris and Kenton Brubacher of J & K Septic, New Paris, Indiana, chose one of their favorite muscle car colors, Metallic LeMans blue, for their rig. Two trucks - from Raider Rooter and the July entry from Zeiter's Septics Unlimited Inc. - boldly used a pink accent in their graphics. And Shane Irwin of Irwin Septic Tank Cleaning in Midwest City, Oklahoma, chose a sports team's color - Oklahoma City Thunder blue - for his latest rig.

SHARE YOUR TRUCK

A beautiful vacuum truck is a source of pride for members of our pumping community, a reflection of the success being enjoyed by readers of this magazine. They symbolize putting food on the table and sending the kids to college for many established small-business owners. They are an indication that young, upstart contractors have arrived.

The volume of truck photos we've been receiving lately is an indication of a robust septic service industry. With a backlog of trucks we want to share with you in a timely manner, we're going to publish 50 percent more Classy Truck photos during 2016. Starting with our WWETT Show issue in February, we'll publish an additional truck every other month.

We're greedy. We always want more Classy Truck submissions. So if you're putting a new rig on the road in the coming year, be sure to send us a few snapshots and a list of your favorite specs from the truck. Send the photos and information to me at editor@pumper.com. Who knows? A photo of your truck may one day splash across the cover of *Pumper* as our annual winner.



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CLASSY TRUCK ROUNDUP

tricked-out trucks

Classy Truck has been a popular feature in *Pumper* for years, but 2006 marked the start of an annual contest to choose the top rig from each year's monthly winners. Lately we've rounded up previous winners, gorgeous graphics, and unique modifications for your viewing pleasure. Check them out!

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TURNKEY SYSTEM

blower upgrade

This issue features Phil and Kathy LaRoche of LaRoche's Sewer, Drain & Septic Services. In this exclusive sidebar, Phil discusses making the change from a traditional vacuum pump to a blower system, and the benefits he's seen since. Check out the profile, then head to pumper.com



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Combining plumbing and pumping services suited a small Alabama contractor looking to build more revenue By Ken Wysocky

eptic service contractors who doubt whether expanded drain cleaning services can mesh well with their existing pumping operations would do well to consider the experience of Mark Vice, the owner of Fayette Drain & Sewer Service Inc., based in Fayette, Alabama.

Vice started his company in 2000 by primarily focusing on unclogging drains. But a few years later he started pumping out septic tanks and grease traps, for several reasons. First, he was familiar with pumping septic tanks from a previous job. Second, there was only one other competitor in the area at the time. Third, the profit margins were good. And last but not least, he wanted to diversify his business base and stay busy.

"Fayette is a small town, so to survive you have to do a little bit of everything," says Vice, who co-owns the company with his wife, Melissa. "So if it has water running through it, we go after it. ... The thought of calling someone else to do something that I can provide to our customers is awful."

(continued)

Fayette Drain & Sewer Service Inc. Fayette, Alabama OWNERS: Mark and Melissa Vice FOUNDED: 2000 EMPLOYEES: 12 SERVICE AREA: 60-mile radius around Fayette SPECIALTIES: Septic service, onsite installation, plumbing and drain cleaning WEBSITE: www.fayettedrainandsewer.com

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Right: Melissa Vice works in the Fayette Drain & Sewer Service office.



Left: Shawn Leonard returns vacuum hoses to an International vacuum truck built out by Keith Huber Corp. after pumping out a lift station.

Below: Mark Vice, right, watches as Jeff Goree and Josh Jackson clear a drain at a local business using a Duracable Manufacturing Co. drain cleaning machine.



DIVERSIFIED SERVICE

Today, Fayette Drain receives about 35 percent of its revenue from septic system and grease trap related services (including septic system installations), about 35 percent from drainline work, and the rest from plumbing services. And thanks to its diversified customer base, the company has grown steadily since its inception. Fayette Drain now employs 12 people and owns a sizeable fleet of equipment that includes two vacuum trucks, two mini-excavators, a trailer-mounted water jetter, numerous drain cleaning machines and several pipeline inspection camera systems.

"I bought a used pump truck for \$20,000 in 2002 and it's still running," Vice says. "There's no telling how many thousands of dollars it has earned."

Like every major equipment purchase Vice makes, he approached the vacuum truck investment with caution. "I'm always sure I have the business before I buy equipment," he says. He started out by asking the owners of chain fast-food restaurants if they'd hire him to clean their grease traps if he bought a vacuum truck. After he received verbal commitments from about a dozen businesses, he bought the truck.

"I put the math together and figured out how many customers it would take to enable me to make the payments," he explains. "At that point, I figured any septic work would be a bonus.

"I knew how to do it and I knew there was a market for it," he says of the pumping service. "I always had intended to do it, but I had to wait until I felt comfortable enough to make that investment."

PERSEVERANCE PAYS

There was a time when buying trucks and equipment seemed like a pipe dream to Vice, who worked in a cotton mill for about 11 years before taking a

Before this, if I needed a water heater on a Sunday morning, for instance, I'd have to call the hardware store and see if the owner could meet me and get me one. ... Now I just run out to the shop, grab one, throw it on the truck and go. It all goes back to convenience.

- Mark Vice

job as a technician at a plumbing services company. After about four years working for another company, he decided to strike off on his own. At first he bought a van and drain machines.

"I did a lot of footwork – and a lot of praying," he recalls. "I gave out 3,000 business cards my first year alone and asked people if there was anything I could do for them. I even painted someone's house because we didn't have enough plumbing work." After three months, Vice had just \$700 left in a checking account and was seriously questioning his business prospects.

Then fate intervened with a cold spell that generated a lot of work thawing frozen drainlines. After six months,

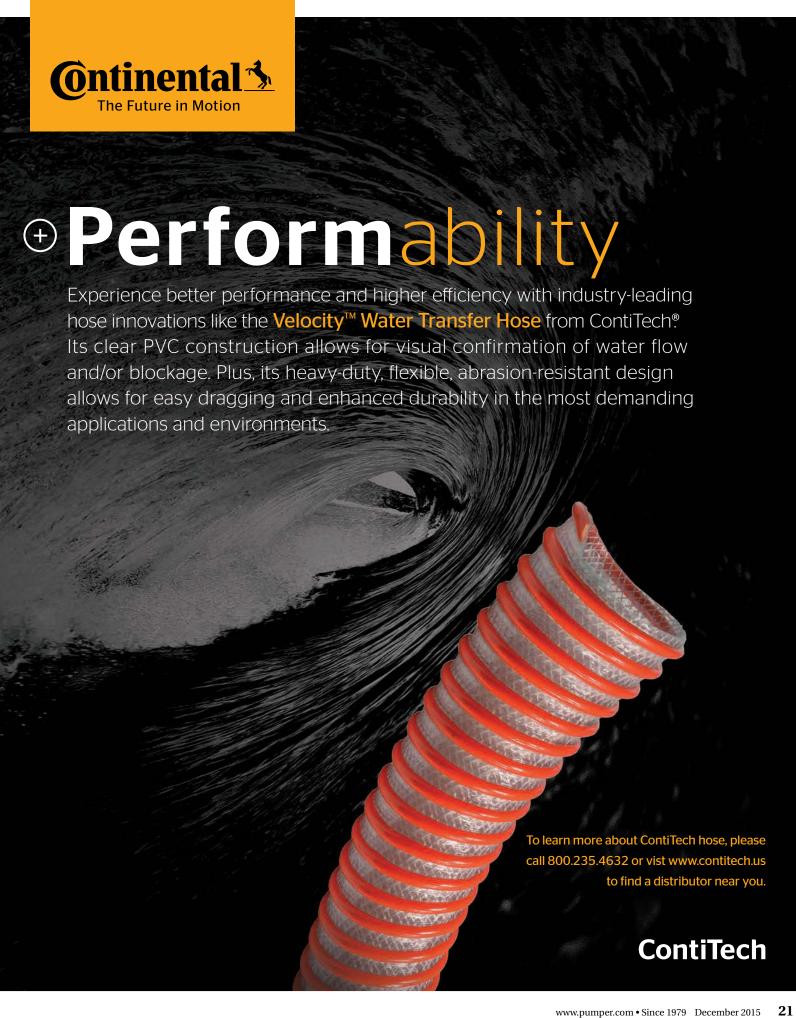
Vice had made enough money to pay off an initial business loan. And things just took off. "Business just exploded," he says. "People who I'd given business cards to just started calling with jobs."

By 2008 the company employed six workers. Vice expanded into industrial cleaning and cleaning drainlines in apartment complexes. As the company's reputation grew, he pushed for more commercial business.

"Residential work is great, but it's very unpredictable," he points out.

"You might get 10 calls today and just two tomorrow and 15 two days from

(continued)



Need handy supplies? Open a store.

As a way to increase efficiency for his plumbing and pumping business, Mark Vice decided to build his own retail parts and supply store, Vice Plumbing Supply.

"It came to the point where we had two or three trucks sitting at a local hardware store every morning for 30 minutes," says Vice, who with his wife, Melissa, co-owns Fayette Drain & Sewer Service Inc. in Fay-

ette, Alabama. The company offers plumbing, septic tank, grease trap and excavation services, as well as natural gas pipeline work.

"Not only were we losing all that time at the store, we'd also waste time running back and forth to it to get parts during the day. I'm parts for technicians
Josh Jackson and
Jeff Goree. The
supply store gives the
company a convenient
source for parts and
wholesale prices for
its service work.

Melissa Vice rings up

guessing it was costing me at least 30 minutes every time a service technician had to run to get, say, a 50-cent part ... and in most cases, you can't charge a customer for that lost time."

Vice estimates he was paying about \$150,000 to \$200,000 a year for plumbing parts, thanks to a 40 to 50 percent markup compared to the whole-

sale prices he now pays for parts. He says he also sells repair parts to do-it-yourself homeowners and some local contractors.

Mark Vice helps a customer choose repair parts at the Vice Plumbing Supply store.

To house the store, the Vices built a 5,100-square-

foot building that also includes service bays for repairing and maintaining the company's vehicles. The building is about a mile away from their home and conveniently located in the heart of Fayette.

"We've been running the store for four years now, and it's paying for the mortgage and the land," Vice says. "It's a great location. ... Now we have a quick (employee) meeting every morning, then they get their parts, get in their trucks and head out to their jobs."

The supply house brings him one step closer to being self-sufficient. "Before this, if I needed a water heater on a Sunday morning, for instance, I'd have to call the hardware store and see if the owner could meet me and get me one. Sometimes he could and sometimes he couldn't. Now I just run out to the shop, grab one, throw it on the truck and go. It all goes back to convenience. I like things right there when I need them, especially since this business is so unpredictable."

Currently the store is only marginally profitable, but Vice looks at it as an investment. "When I put a pen to it and calculated the wholesale costs (of plumbing parts) versus the retail costs, it has worked out great," he says. "And after we pay off the note in about five or six years, the store will be more profitable."

For tax purposes, Fayette Drain and Vice Plumbing operate as separate corporate entities. And because the store sells supplies to the general public, it has to pay state and local sales taxes. "Vice Plumbing charges Fayette Drain for all the parts," Vice explains, which also cuts into the profits.

"But we needed a shop, too. So now we have a situation where Vice Plumbing pays for the mortgage and Fayette Drain lives rent-free in the building. Basically we built a shop and the store pays for the building."

now. But apartment complexes and restaurants provide steadier work. You're not going to pump a lot of septic tanks when it's dry, but you'll pump out grease traps whether it's wet or dry."

Vice says he tries to get commercial customers - especially the owners

of restaurants and apartment complexes – to buy into the concept of scheduled maintenance cleanings because they're easier to organize than scrambling to answer emergency calls. He does not ask for formal contracts, just verbal agreements.

"We want customers to be able to drop us at any time if they're not happy with our work," he explains. "We don't want them to feel trapped by a written contract – just pleased with our service."





EQUIPMENT MATTERS

To maximize revenue, Vice prefers to avoid subcontracting his workload. As such, part of his business model includes buying two of each kind of machine whenever possible. "If I have one excavator on a job, for example, and I get another call for a job that requires an excavator, I can't stand the thought of pulling that first excavator off and sending it to the other job and having nothing for an emergency backup," he says.

"When you're in the emergency service business, that's where you make your money," he adds. "If there's a whole building shutdown and a customer says

'I need you now,' I want equipment at my disposal so we can do timely and quality work. I don't want to have to depend on someone else to be there for me when I need it."

A wide array of equipment also ensures additional revenue streams. "After most jobs, I've made money off unclogging a drainline, I've made

If it has water running through it, we go after it. ... The thought of calling someone else to do something that I can provide to our customers is awful.

- Mark Vice

money on cameraing the line and if needed, I've made money digging up the drainline and replacing it," Vice says.

The company currently owns two vacuum trucks. Abernethy Welding & Repair Inc. built Vice's 2012 International truck. It features a 2,500-gallon steel tank and a Jurop/Chandler water-cooled pump. The other truck, a used 1991 International, features a 2,500-gallon steel Keith Huber Corp. tank and a

350 cfm pump from Power-Flo Pumps & Systems.

The company also owns two Kubota Tractor Corp. mini-excavators, a Caterpillar Inc. backhoe/loader, two dump trucks (Mack and Chevy) with Ox Bodies dump bodies, a trailer-mounted US Jetting water jetter (4,000 psi at 18 gpm), three Chevrolet service vans with KUV bodies made by Knapheide Manufacturing Co., and two Chevrolet service trucks. Each service van is equipped with drain cleaning machines made by Duracable Manufacturing

(continued)



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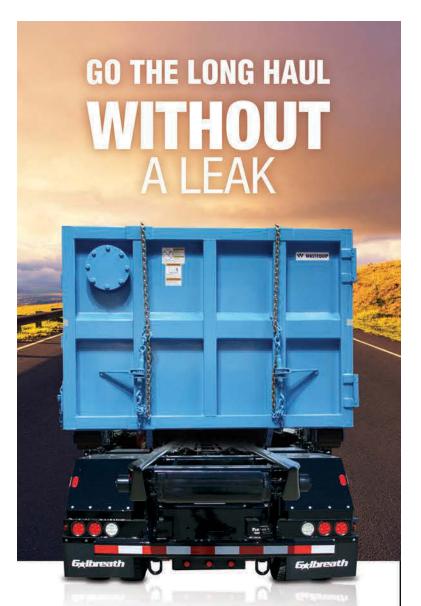












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Josh Jackson uses a Kubota mini-excavator to replace a waterline.

THERE WHEN YOU NEED US

Of course, all the machinery in the world isn't worth much without also providing quality service. Vice says Fayette Drain ensures customer satisfaction through great employees and a rather simple philosophy: Always answer the phone.

So Fayette Drain contracts with an answering service from 5 p.m. to 7 a.m. "If people get an answering machine when they call, most times they're probably going to call someone else," he suggests. "You have to value every phone call because every time you miss one, you miss out on at least \$100 in work."

Vice says the answering service costs \$160 per month, a cost he can make up with one additional septic pumping job. The decision to ensure customers talk to a live person any time they call is a no-brainer to someone savvy about the importance of customer care.

"It's a great investment. When people can't flush their toilet (because of a backup), they want someone and they want someone right away," Vice explains. "So when they call, they want to talk to someone, not an answering machine."

MORE INFO

Abernethy Welding & Repair, Inc. 800/545-0324 www.abernethywelding.com

Duracable Manufacturing Company877/244-0556
www.duracable.com

Jurop/Chandler 800/342-0887 www.chandlerequipment.com

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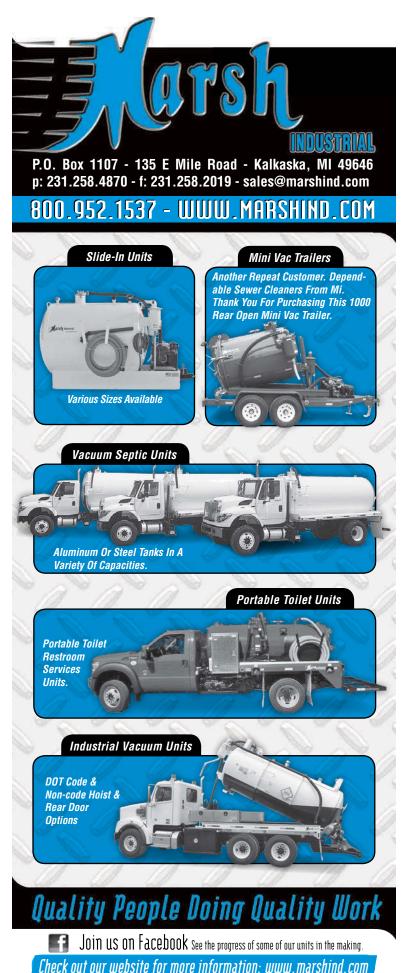
Pipehorn Utility Tool Co. 800/952-3710 www.pipehorn.com

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Richard J. Bryan is a speaker, executive coach and author of *Being Frank: Real Life Lessons* to *Grow Your Business* and *Yourself.* For more information, visit www.richardjbryan.com.

5 Tips for Management Success

Formulate a solid business plan, assemble a top-notch crew to carry it out, and watch your company grow By Richard J. Bryan

rank was ex-Special Forces with a fine arts degree — an unusual mix in the world of business. He achieved a lot in his career by following five simple principles he was able to apply to any business. If you can apply these same principles consistently, you will move away from being a micromanager and become far more strategic in the way you run your company.

So, what are these magic principles? Really, they are just good common sense, but as Frank was fond of saying, "Good business is just common sense; unfortunately, common sense is not common practice."

Principle 1: Define your role

Too often business owners are not clear on the difference between management issues and ownership issues. Management issues are things like dealing with accounting, administration and the sales process. They are seemingly urgent matters that must be dealt with in a timely fashion. The person overseeing these functions can be the business owner or an appointed manager.

Ownership issues are the things that only the business owner can do, such as dealing with banking partners and setting the long-term strategy for the organization.

Frank's approach was simple: Have a clear split between ownership of the business and management of the business, and find the most talented people to run day-to-day operations. This sometimes means that the owner needs to step aside from management and make way for another qualified leader.

Concentrate on an area where you are talented and do what you are passionate about. Let others take care of the things that you are not so good at and that conform to their strengths. Everyone will benefit.

Principle 2: Create a compelling vision

One of the most effective ways to harness the potential of an organization is to get everyone pulling in the same direction. However, without a compelling vision, this can be difficult to achieve.

Vision is a crucial component in getting employees to understand the company's goals and encouraging them to make meaningful suggestions about how to meet them. It doesn't matter if your vision revolves around customer service excellence or creating innovative products — as long as it is inspiring and challenging.

Frank did not believe in having a vision that was just there to tick the box and display on a plaque. Rather, it was an important part of the overall company strategy.

Set time aside to work on your business rather than in your business by developing a vision that enables you to grow the business and achieve your life goals. Don't make the excuse that you are too busy to spend this time crafting a quality vision — it will be the best investment of time you ever make.

Principle 3: Hire "A" players

Frank believed the key to running an organization successfully in the longer term is to hire great people. As he was fond of saying, "If you can surround yourself with people who are smarter than you are, chances are your business will do just fine."

Many leaders feel insecure about hiring really smart people, as they believe it will undermine their credibility, but building a great team enhances your reputation as a leader. Make sure hiring "A" players is a priority for you as a business owner or leader.

Principle 4: Develop trust

The key to leading your team is to develop trust. This is what keeps top performers working for you in the longer term. Frank knew if you can become a better coach and mentor rather than micromanage your best people, you will find they trust you and are more loyal to the organization. "After all," Frank would say, "people leave bosses, not organizations."

The best employees know their market value. What keeps them working for you is not money, but the ability to work independently and express their talents in their own way. They are self-motivated and driven to achieve excellent results. Too much interference from their immediate superior can strip them of motivation.

Principle 5: Have fun

Frank was always firm but fair in his leadership. One of his greatest strengths was knowing when to have fun.

Celebrating success — such as landing a major new customer or having a particularly profitable quarter — was always something he believed in doing as a way to reinforce the positive behavior that caused it.

Even when under pressure to perform, Frank knew the value of a joke or lighthearted moment to relieve the tension. Look for opportunities in your own business to have some fun as this can be a key retention strategy for your best workers.

By following Frank's simple principles you can grow your business and also have a lot more time to spend with your family and pursue other interests. As Frank would say, "You only live once and life is short, so you had better enjoy it!"

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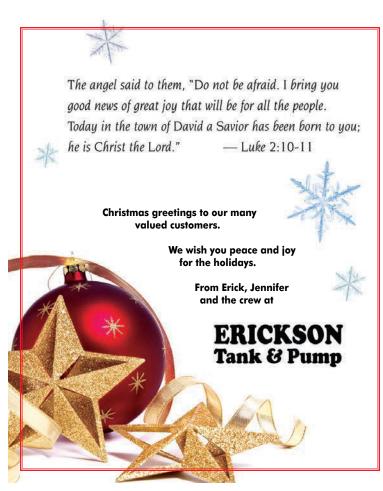
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Pick the Mother of All Classy Trucks

Help us choose the top rig in our 2015 Classy Truck of the Year contest

By Jim Kneiszel

ou can help the judges at COLE Publishing choose the 2015 Classy Truck of the Year. And it's easy to do. Simply review the photos and information about the 12 trucks featured in the pages of *Pumper* over the past year and then follow the instructions included here to vote for your favorite truck.

You choose the criteria for your personal selection. It could be the bold and complex vinyl graphics. Or the professional paint job and amount of chrome dripping from the rig. Or maybe you're a sucker for features aimed at greater work efficiency or driver comfort. Whatever the case, you have one vote to cast.

The reader tallies will be part of what a team of judges considers when making a final selection. The Classy Truck of the Year and its owner will be featured in the February 2016 issue of *Pumper,* the issue distributed at the Water & Wastewater Equipment, Treatment & Transport (WWETT) Show in Indianapolis.

Look, read and go to **www.pumper.com** to cast a ballot for your favorite truck. You have until Dec. 20 to make your vote count.

JANUARY



Maznek Septic Service Bedford, New Hampshire

Larry Maznek bought a silver 2006 Peterbilt 378 roll-off container truck and converted it for pumping with a 4,100-gallon skid-mounted steel tank from Amthor International and a National Vacuum Equipment Challenger 866 pump. The truck has AirTrac suspension, a Vulcan onboard scale and 50,000-pound K-Pac Equipment hoist. The tank is built to be easily swapped out for a 20-yard container.

FEBRUARY



J & K Septic New Paris, Indiana

Jim Garris and Kenton Brubacher added a 1997 Freightliner FLD 120 chassis formerly used as a roll-off container rig and had Du-Mar Welding fabricate and install a 4,700-gallon waste/300-gallon freshwater steel tank and a Jurop/Chandler LC 580 pump. Garris and Brubacher installed equipment including a Crust Buster (Schmitz Brothers LLC) and prepped and painted the truck Metallic LeMans blue.

MARCH



Kensington Septic Service Inc. Kensington, Prince Edward Island, Canada

Floyd and Dwayne Bryanton run a 1995 International 4900 built out by previous owner Thomson Septic with a 1,700-gallon steel tank and Wallenstein 402H pump. The truck carries a rearmounted backhoe built by the Bryantons to do light work like digging up tank lids. Under the tank is a repurposed scissor hoist to help with dumping. Both owners drive the truck and perform residential septic service.

APRIL



SoCal Industries Industry, California

Johnny Guerra and Rudy Lopez added a metallic charcoal 2010 Kenworth, built out by Satellite Industries with a 3,200-gallon steel tank and Masport HXL-400 pump. Features include a Masport scent box and Moro digital level gauge, a custom blue flame job done in-house, and many chrome accents. The truck is named Mamba after NBA star Kobe Bryant.

MAY



American Septic Service Inc.

Carol Stream, Illinois

Jake McKamey bought a former box truck 2005 Freightliner M2 and had Imperial Industries add a 2,500-gallon steel tank and Masport HXL 75 pump. The truck features heated collars, three rear sight glasses, aluminum toolboxes on both sides, aluminum hose trays and a chrome rooftop horn. McKamey drives the truck and uses it for residential septic service.

JULY



Zeiter's Septics Unlimited Inc.

Morris, Illinois

David Zeiter bought this black and magenta 2015 International 7500 WorkStar built out by Imperial Industries with a 4,000-gallon aluminum tank and National Vacuum Equipment 4307 blower. Features include a Garnet SeeLevel gauge, heated valves, and many chrome accents. Names on the hood are Miss Sydney (Zeiter's daughter) and primary driver Dennis Blish.

OCTOBER



Sweet Honey Inc.

Grimes, Iowa

Dean Cadwell added a 2013 Kenworth T800 built out by Advance Pump & Equipment with a 4,500-gallon aluminum tank and a National Vacuum Equipment 4307 Max Pack high-vacuum trilobe blower. The truck has heated collars, halogen work lights and a Garnet SeeLevel gauge. Cadwell drives the rig and uses it to clean grease traps and interceptors.

JUNE



Raider Rooter Boynton Beach, Florida

James Pardew purchased a 2006 International 8600 over-theroad semi-tractor and had it converted for vacuum service. Engine & Accessory Inc. added an Amthor International 4,000-gallon waste/200-gallon freshwater aluminum tank and Masport HXL400 WV pump. Features include a General Pump TSF Series toolbox jetter, a 24-inch aluminum toolbox, aluminum hose trays and steel painted wheels.

AUGUST



Tom's Sewer & Drain Service

McDonald, Ohio

Richard Glass bought a red 2013 Peterbilt truck from Pik Rite Inc. outfitted with a 4,000-gallon aluminum tank and Masport pump. Convenience features include rear sight glasses and a gallon gauge on the back of the truck, work lights in the rear and on the cab roof, running lights on both sides, and stainless steel toolbox and diamond-plate hose trays.

NOVEMBER



Irwin Septic Tank Cleaning Midwest City, Oklahoma

Shane Irwin bought a 2002 International 4300 DuraStar truck built out by Progress Tank with a 2,200-gallon aluminum tank and Jurop/Chandler R260 pump. The rig was painted Oklahoma City Thunder blue with chrome flames and features Chelsea air-shift PTO, three aluminum toolboxes, aluminum hose trays, stainless steel wheel covers, and tinted windows.

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SEPTEMBER



Kuettel's Septic Service

Hortonville, Wisconsin

Duke, Doug and Dale Kuettel bought an all-brown metallic 2014 Volvo VHD64B built out by Imperial Industries with a 5,500-gallon steel tank and hoist system and National Vacuum Equipment 866 liquid-cooled pump. The rig has a Volvo Itrain automatic transmission, a 36-inch rear hatch, heated collars, work lights, an aluminum toolbox, wheels, hose trays and other accents.

DECEMBER



Felix Septic Service Inc.

Bow, New Hampshire

Mark Thompson added a red and white 2015 Peterbilt 325 with a 5,200-gallon steel tank and TSI 800 vacuum pump built by Transway Systems. The truck features top and rear 21-inch manways, heated collars, sight tube, aluminum fuel tank and Alcoa Dura-Bright wheels, work lights, stainless steel visor, chromed air horns and exhaust, and LED marker lights.







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North Dakota Judge Blocks Clean Water Act Updates

By Doug Day

he U.S. Environmental Protection Agency's new Clean Water Act rules were blocked in August by a federal judge in North Dakota. The EPA says the temporary injunction from U.S. District Judge Ralph Erickson applies only to North Dakota and 12 other states (Alaska, Arizona, Arkansas, Colorado, Idaho, Missouri, Montana, Nebraska, Nevada, New Mexico, South Dakota and Wyoming). The EPA says it will continue to enforce the rule in the rest of the country. The North Dakota case is one of 10 cases pending across the country, affecting a total of 29 states.

Designed to clear up confusion over various court rulings on challenges to the 1972 Clean Water Act that put into doubt what waters were under jurisdiction of the law, the revisions seemed to increase the uncertainty. Opponents of the rule, on their "Ditch the Rule" website, call it a federal land grab that would "immensely" expand the EPA's jurisdiction and cover puddles, ponds, ditches, dry streams, groundwater and isolated wetlands. In response, the EPA started its own "Ditch the Myth" website saying the rule reduces the scope of waters under its jurisdiction, "does not protect any waters that have not historically been covered under the Clean Water Act," and "protects fewer waters" than before.

The judge ruled the EPA exceeded its authority in its update to the Clean Water Act, which has been opposed by agricultural, business, energy, housing development and other groups. A federal judge in West Virginia declined to block the rule in August.

Ohio

The Ohio Environmental Protection Agency has released up to \$5 million for low-income homeowners to repair and replace failing onsite wastewater treatment systems. The Water Pollution Control Loan Fund provides the principal-forgiveness loans through local health districts, with each district eligible for a maximum of \$300,000 in 2016. Local districts must nominate projects, which are then selected based on state EPA criteria. The program has been revived after being phased out two years ago. Another \$18.5 million is available to communities to correct combined sewer overflows or to provide sanitary sewer for unserved areas.

Alabama

A state circuit court judge has issued a final ruling that requires remaining structures in a mobile home park and marina to be removed. Septic tank failures and graywater discharge problems resulted in a notice of violation to the property owner, Alabama Power Company, which leased the 37 acres to Lake Martin's Pleasure Point Park and Marina. The company was cited in 2013 for 19 violations, including unpermitted and illegal septic systems and graywater discharges from the mobile homes, resulting in cancellation of the lease. Residents had reported problems to the operator of the mobile home park but say she did nothing to remedy the situation.

About 80 families had to relocate their mobile homes. Alabama Power said it could cost up to \$1 million to remove all illegal systems and clean up the property. Fewer than 30 structures remained on the land at the time of the final court ruling.

Arkansas

A lawsuit filed against the operator of a large onsite wastewater system alleges a decade of violations and overflows. The Arkansas Department of Environmental Quality filed the suit in August against Property Owners Improvement District Number 5, which provides onsite wastewater treatment for more than 400 homes in a subdivision near Farmington, Arkansas. ADEQ seeks \$420,000 in penalties and proof that the operator can run the system properly.

Inspections found overflows from an aeration pond and manhole, along with solid waste on the ground and in a tributary of the Illinois River more than a mile away. An emergency order required the district to stop the discharges and to make repairs. The department says similar incidents occurred in 2007, 2008 and annually since 2012. The improvement district was fined \$2,150 in 2014. According to the *Northwest Arkansas Democrat Gazette* newspaper, the operator claims the system is oversized, built for three times the number of homes it serves, so the wastewater levels don't get high enough to move waste to the next stages of treatment.

Wisconsin

Amish families in Wisconsin will now be able to get a waiver from state plumbing, electrical and building codes that violate their religious beliefs. The exemption was included in this year's state budget and is available to members of all established religious sects. The state has about 17,000 Amish, ranking it fourth in the nation, and some have been fined or evicted for violating codes. Under the waivers, the Amish will not have to install smoke or carbon monoxide detectors or follow electrical or plumbing codes of the state or local community that violate their religion. David Mortimor of the National Committee for Amish Religious Freedom says the law could be a model for other states.

Delaware

An effort to reduce nitrogen from septic tank effluent in the Chesapeake Bay watershed is running behind schedule. The Chesapeake Bay Foundation reports that reduction efforts are more than 10 percent behind schedule for the 2017 goals. Septic systems contribute 3 percent of the nitrogen in Delaware's watershed, and 7 percent in Maryland. The two states require the use of the best available technology for new or replaced systems near the bay. That covers about 1,500 lots in Delaware and 52,000 in Maryland.

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eventually successful and pumping companies can now store septage on their property.

The LaRoches operate LaRoche's Sewer, Drain & Septic Services, in Faribault, Minnesota, a rural area about 55 miles south of Minneapolis. They live and work on a 30-acre parcel of land and also own six registered landapplying fields.

The company has been around since 1974 when Phil's father, George, started doing septic pumping and drain cleaning. The next year they branched out into the portable restroom business and then added tent

rentals. However, in the late 1990s they sold the restroom and tent division and returned to their roots focusing strictly on septic work. That had the added benefit of reducing their labor force, "which keeps the stress levels a little bit lower," Phil notes.

Today they mostly work within about a 30-mile radius providing a complete range of septic services. "We do pumping, drain cleaning, jetting, repairs, design work, installations and inspections," Phil says. They also clean grease

Right: Technician Josh Tarka, left, and Dave Bryer mix a lime stabilization slurry alongside their 2010 Mack Granite TM700 vacuum truck built out by Crysteel Truck Equipment with a Balzer Inc. tank and Challenger 506 liquid-cooled vacuum pump from National Vacuum Equipment.

Below: LaRoche's keeps its fleet clean. Here technician Dave Bryer scrubs a 2014 Ford E-450 that carries a Cam Spray jetter.



traps. "We do a ton of them, but a lot of ours are 25- to 50-gallon traps underneath the sinks in the restaurants."

PROACTIVE AND REACTIVE

The company's staff includes parttimers daughter Amy LaRoche and Dan Ford working with Kathy, who handles the office, payroll and bookkeeping; 18-year veteran Dave Bryer, the main septic driver; and Phil's brother, George LaRoche, who primarily handles septic compliance and designs as well as drain cleaning, working with a recent hire, Josh Tarka.

permitted and monitored. - Kathy LaRoche

"I have always felt it's nice to perform the drain work in tandem as far as efficiency and carrying in equipment," Phil says. "And for mainline cleaning

It was a cooperative effort between the county commissioners, ourselves and the MPCA to help draft the language for the septage storage to be





Left: Owner Phil LaRoche demonstrates mounting a spreader attachment to new hire Josh Tarka.

we use a Spartan 1065, which it's almost a must to have two guys." Phil says everyone multitasks and he picks up all the overflow work, whether it's office or field related.

The team stays busy year-round not only because of the company's broad service offerings, but because the LaRoches work hard to get everyone on maintenance contracts, which helps prevent emergency calls and balances out the workflow.

"Every month we just have a long list of where we're going, what we're doing," Phil says. "We've got a lot of people on quarterly, semiannually, annually, whether it's jetting or pumping or what-have-you." Kathy adds they're always working on customer education, both in person and through their website, emphasizing regular maintenance for the health of the system and to avoid costly repairs.

(continued)

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Money down the drain

Pumper Phil LaRoche, of LaRoche's Sewer, Drain & Septic Services, in Faribault, Minnesota, was working on a routine sewer job one day in 2015 when suddenly there was a problem. "We had a Warthog nozzle (StoneAge Inc.) we were using for tree roots. The hose just blew apart and there sat that Warthog in the city sewer." Most of his nozzles run \$50, \$75. This one was \$1.000.

He had recently had the jetter hose repaired and a new end crimped onto it. "It wasn't done to proper specs, so the end where it was crimped on came off," LaRoche explains.

He wasn't about to give up on the Warthog. "There's not enough money in this to lose \$1,000 nozzles," he says. They used the company's MyTana Mfg. push camera to crawl down the sewer and push the nozzle to the next manhole where they were able to pull it out.

The scare taught LaRoche a lesson. "I'd recommend having a true jetter hose distributor or provider do your crimping to proper specs," he advises. "We retrieved it, but it was a little stressful."

In spring and summer, maintenance work is used to fill in the schedule between inspections, design work and installations. In winter, it's often repairs the company is dealing with. "We do a lot of reactive work where one day you might have a couple service calls lined up and by the end of the day you've done 18 just from people calling with problems. Then the maintenance work we just interject throughout," Phil says.



Above: Technician Dave Bryer takes a pH reading at a residential

septic system with an EcoSense

Right: Josh Tarka, left, and Dave

Bryer dump a load into one of two 25,000-gallon septage storage

tanks owned by LaRoche's. The

be land-spread at a later date.

septage will be stored until it can

ph10A pen tester (YSI, a xylem

THE DEEP FREEZE

The 2013-14 winter season was particularly bad when they were called out to thaw about 160 frozen systems. A normal year would be 20 to 25. "It was just a cold, cold winter, and the frost went deep because we didn't have any snow," Phil explains. The team sometimes found themselves working 65, 70 hours a week.

While they can't do anything about the weather, the LaRoches urge their customers to take care of all problems,

whether it's a small drip or an improper slope on a drainline. They also suggest homeowners cover their tanks when they're away for extended periods, a practice they personally follow on a piece of property they own in northern Minnesota. "I cover my system," Phil says. "I use insulated blankets and cover the tank and part of my drainfield just in case we don't get a lot of snow for insulation. Some people spread straw, but I don't care for that because you've got such a cleanup come spring."

Besides reminder cards and maintenance contracts, the company's No. 1 promotion vehicle is their website, Kathy says. But they cover all bases,

from phone books to Facebook. The team wears red company sweatshirts and works hard to keep their red trucks looking good. "It's a traveling bill-board," Phil says.

THE RIGS ARE READY

The company has two vacuum trucks: a 2010 Mack Granite TM700 built out by Crysteel Truck Equipment with a 3,700-gallon steel tank from Balzer Inc. and a Challenger 506 liquid-cooled vacuum pump from National Vacuum Equipment, and a 2011 Mack Granite TM700 built out by Advance Pump

I use insulated blankets and cover the tank and part of my drainfield just in case we don't get a lot of snow for insulation. Some people spread straw, but I don't care for that because you've got such a cleanup come spring.

- Phil LaRoche

& Equipment with a 3,500-gallon steel tank and a Challenger 4310 blower from National Vacuum Equipment.

Other equipment includes a 2014 Ford E-450 with an insulated cargo box carrying their Cam Spray jetter system, a 2012 Ford E-250 service van, two Caterpillar skid-loaders (257B3 and 247B2), a Mustang ME3602 miniexcavator, a MyTana Mfg. camera system, a RIDGID SR-20 locator, and a Crust Buster tank agitator.

FIGHTING CITY HALL

Minnesota septage haulers fall under the same umbrella of rules and

(continued)





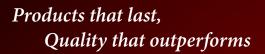
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regulations as municipal waste treatment plants – "but without the deep pockets," Phil says. Over the years individual haulers attempted to convince the MPCA to OK temporary septage storage, but they were never successful.

Right: George LaRoche works in the company office designing a new septic system for a client.

"You could have storage," Phil says, "but it had to be in something you could move – a mobile unit on wheels. Some people would use 6,000- or 8,000-gallon tanker trailers. For some people that's fine, but for someone like ourselves where we're pumping a million-plus gallons a year, you need some sort of storage to get by" When land application was impossible, the company would

to get by." When land application was impossible, the company would have to temporarily suspend pumping operations or hold waste in their trucks. They'd also try to find a treatment plant that would take it – which was not always easy. "I've worked on that for 25, 30 years, getting these different municipalities to accept this waste," Phil says.

The LaRoches began their efforts to petition the state to change the rules by assembling a group of about a dozen pumpers. They brought in their state professional organization, the Minnesota Onsite Wastewater Association (MOWA) and worked out a strategy.

"There were different regulatory officials at this powwow just to air this out," Phil says. "We came up with a plan, then met with the MPCA to really iron it out." After a year and a half of phone conferences and face-to-face meetings with the MPCA, the regulations were finally changed to allow haulers to have on-site storage facilities. Oversight and permitting is done through the local governing authority (usually a county) for 50,000 gallons or less and by the MPCA for facilities where more than 50,000 gallons will be stored. Only Minnesota-registered storage tanks can be used.

STEP TWO

Once they gained state approval, the LaRoches approached their county for a permit. But because it was a new rule, the county had no forms or procedures and little idea of how to proceed. "We were pioneering it," Phil says. "We really had to help each other."

"It was a cooperative effort between the county commissioners, ourselves and the MPCA to help draft the language for the septage storage to be permitted and monitored," Kathy explains.

It took about eight months to obtain a permit. "But now I really think it would be pretty expedited," Phil says. And he adds the cost is fairly minimal. After nearly two years of effort, the company was finally able to install

two 25,000-gallon underground Xerxes fiberglass holding tanks at one of their fields. "It's quite a capital investment," Phil says. "Buying the tanks and installing them, we probably have \$75,000 invested." But, of course,

Left: George LaRoche uses a Crust Buster tank agitator at a residential septic system. His truck is a Mack Granite TM700 built out by Crysteel Truck Equipment with a 3,700-gallon Balzer Inc. tank and Challenger 506 liquid-cooled pump from National Vacuum Equipment. companies could use smaller tanks, Kathy adds. "We chose to go with the 50,000," she says, "but you could go anywhere from 5,000, 10,000, 20,000 – anything up to the 50,000." Kathy takes care of the required reporting to the county, recording gallons in and out, the load source and where the waste ultimately ends up.

HELPING OTHERS

After having been immersed in all the issues surrounding septage storage in Minnesota, the LaRoches now happily enjoy the fruits of their labor. And being considered experts on the subject, Phil has gotten involved in a few training sessions for other maintainers. "I've done some speeches, some training in Minnesota. The instructor wanted some real-life stories, so I've given some talks that way," he says.

The LaRoches are proud of the role they played in this significant effort to improve conditions for Minnesota maintainers,

solving one of the decentralized was tewater industry's biggest headaches. "Storage is a huge, huge issue," Phil says. \blacksquare



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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

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

New York

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

North Carolina

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

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

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

Ohio

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

Oregon

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

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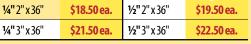
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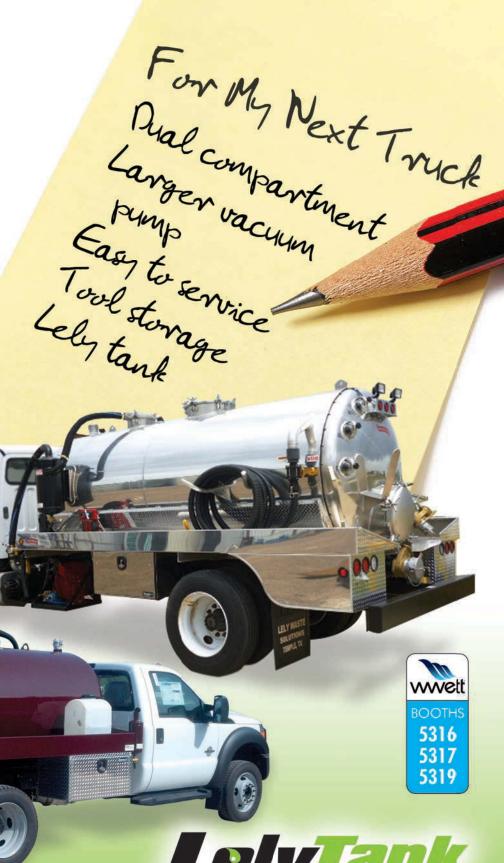
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Where to Cut and Where to Spend?

Experts say dump phone book advertising and look to social media and help from business professionals to build profitability By Erik Gunn

You have to market your products and

services in such a way that

your message resonates

target market and ideal

customer and convinces

one who can solve that

problem for them. ""

them that you are the only

with the problems of your

rying to digest and implement business advice can be like trying to fill a squirt gun from a fire hose. There's no shortage of information to act on, but it comes at you so fast most of it will be wasted.

Spend more on this! Stop wasting money on that! And so on. So where do you start?

To help get some focus, I asked a number of small-business owners and consultants in a wide range of fields what top costs they would recommend cutting back on and what top things they would recommend spending more on.

As you can probably guess, they didn't all agree; some directly contradicted each other. Still, there was a surprising degree of consensus. Read on.

WHERE TO CUT COSTS

1. Traditional marketing channels. "Spend more on the Yellow Pages!" ... said none of these people, ever!

Local print advertising and TV and radio ads are all losing their audiences — although if you have concrete evidence to the contrary for your business, you might have reason to set aside this advice.

The bottom line, says William Schroeder, co-director of justmind.org, an Austin, Texas, therapy clinic, whose original degree is in marketing: Get a clear picture of how people really are finding out about your service, then focus your dollars on those channels.

"Social media is easy and cheap for an owner to keep updated."

2. Paper and paperwork. There are many ways you can significantly reduce your paperwork.

"There is really little reason to use paper anymore," says Kelly Fallis, CEO of Remote Stylist, an online furniture seller. Electronic signing, credit card swipe gadgets that attach to mobile phones or tablets, and vast storage capacity on the Web (or, if you don't trust the Internet, on a server that takes up just a few inches of shelf space in the office) all combine to eliminate the need for paper in most day-to-day business use.

WHERE TO SPEND MORE

1. Tailored marketing. Your business still needs marketing of some kind. Rather than only focusing on your local hometown advertiser, broaden your efforts to include search engine ads, ads on review sites like Yelp!, and social media such as Facebook and Twitter.

Don't assume that one size fits all — for you or for your customer base.

That also means, don't just blithely throw money in any direction.

Instead, take some time to explore your options and see which ones best fit your community and your customer base. You might find that Yelp! isn't that popular in your area, but another review site is. Or that Google Plus has outstripped Facebook among social media users in your community or at least among the segment of the population you're most eager to reach.

Don't just use your ads to toot your own horn. "Start creating clientspecific content," says James Chalmers, vice president for strategy at Mako Invent, a consumer product development firm. "Not a sales pitch, but rather information that educates them."

There's some dispute over how much attention you should give to "search engine optimization" — SEO for short.

> One correspondent points out that SEO formulas change drastically when search engine companies like Google tweak their search algorithms — and send your carefully crafted online promotional material to the bottom of the search lists.

> Yet local SEO is important for services that rely mainly on a local customer base. Here the best advice may be to take your time vetting the people who sell you their services. Make sure they really understand not only your business, but their own.

> 2. Employee quality. Note, I didn't just stop with "employees." You'll be wasting money if you simply hire people but fail to invest in their training, in making your business a satisfying and rewarding place to work, and in giving them the tools they need to do the job right the first

Walter Wise "Make sure your staff and teams are taken care of and happy," says Chalmers. "They are your best sales team, and productive staff people cut costs in the long run!"

3. Professional help, where you need it. Unless you have a CPA, a law degree and a human resources management certification on your resume, you can't do these things all by yourself.

Sure, you can automate a lot of your bookkeeping operations — and you should. But don't just rely on Mint.com or QuickBooks any more than you would assume that you can take care of your health and your family's health by reading Web M.D. or the Mayo Clinic website.

"You also need to pay for people who are good at numbers," says Haroon Ahmad, head of public relations for JotForm, a tech company that builds business forms online. "You need to pay for an accountant. You might be great in your line of work, but you can easily lose all your money if you

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don't have someone who's good with numbers working your books."

The same is true for other professional expertise, especially in any aspect of the business that can be affected by local, state or federal laws.

It's also true for marketing.

"You need to spend your time and effort on doing those things that grow your business," says Walter Wise, a business strategist and executive coach at BPI Strategy Group. "If you are not good at any of these — and most small-business owners are not — find someone to help you and teach you how to do them.

"You have to market your products and services in such a way that your message resonates with the problems of your target market and ideal customer and convinces them that you are the only one who can solve that problem for them."

And that will be money well spent. ■





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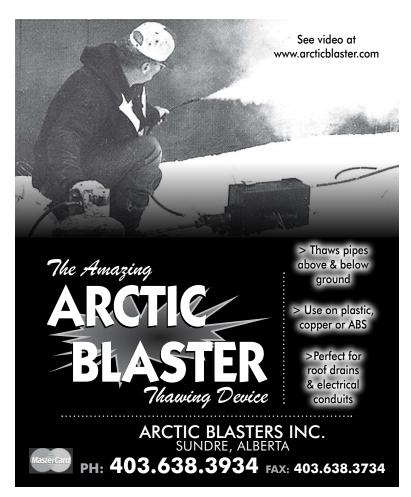
















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GP-EXT	3' Extension Handle for Go-Pro Shutter	GP-DB-4	4" Duck Bill Suction Nozzle 16.5" Wide
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Fuji Clean Introduces Compact ATU to the US Market

By Craig Mandli

apan has a bit different way of looking at residential wastewater treatment. Systems need to be efficient and effective, but most importantly small enough to fit into tight footprints with no space for leachfields.

For a decade, Fuji Clean has created systems that meet that demand in Japan. The company has brought the technology stateside with the idea that small, self-contained systems are needed in the U.S. as well. Fuji Clean brought its CE Series residential treatment system all the way from Japan to the 2015 Water & Wastewater Equipment, Treatment & Transport (WWETT) Show floor.

"Basically, Japan is out of space," says Scott Samuelson, the principal of Fuji Clean subsidiary Fuji Clean USA. "These systems are ideal for homes with limited or no space for a leachfield, as they only need a small footprint to operate. We saw that need in the U.S. and decided to bring the technology here."

The CE5 on display at the WWETT Show is Fuji Clean's most compact system, designed to treat wastewater from up to a four-bedroom home. No preceding septic tank is necessary. The unit is contained in a footprint of 7 feet 1 inch by 3 feet 8 inches – and just less than 400 pounds. It is maneuverable and adaptable to tight, difficult-to-access sites. Designed to accommodate variable flows and shock loadings, the low-power-draw (54 watts) low-maintenance system is NSF 40 and 245 approved.

According to Samuelson, the unit produces a consistent effluent quality, with a pollutant removal ratio of around 95 percent. A majority of system cleaning is accomplished with simple turning of control dials that reverses the flow of air and water and internally breaks up and purges heavy biofilm growth from the contact media. A typical service visit that includes





solids backwash cleaning takes about 20 minutes. Sludge needs to be pumped from the system approximately every three years, a typical time frame for traditional septic systems.

"It's basically a system that provides service in a miniscule footprint compared to a regular septic system," says Samuelson. "We are in the process of going state to state for approval to use it across the country." Scott Samuelson, left, the principal of Fuji Clean USA, and Dr. Toshiro Otowa, right, the global director of International Business Overseas Business Division for parent company Fuji Clean, discuss the CE5 advanced wastewater treatment system with an attendee at the 2015 WWETT Show. (Photo by Craig Mandli)

The system's contact filtration principle uses a circuitous control flow train through multiple aerobic and anaerobic chambers in direct contact with three types of fixed film media where biological digestion and mechanical filtration occur. A continuous air pump introduces oxygen to the aerobic chambers and powers two internal air lift pumps: one carrying process water and solids back to the primary chamber, and the other regulating flow equalization and metering outflow of treated effluent. Enhanced nitrogen-removing models are also available. Fuji Clean also offers larger commercial systems that can be installed in succession.

"That way the system is almost modular, as you can set them up to handle anything from a small house to a large shopping complex," says Samuelson. "It's a treatment process with science that works."

Samuelson says the company used its booth at the WWETT Show as an introduction to the market and let contractors know that as it gains state approvals, Fuji Clean provides another option for residential treatment in tight spaces.

"We came here this year hoping to fill our distribution network and determine the market for our products," he says. "We want to tell the world that we are here."

After the success of its 2015 WWETT experience, Samuelson says Fuji Clean will be back in 2016 with, he hopes, full approval for installation across the country along with new technology.

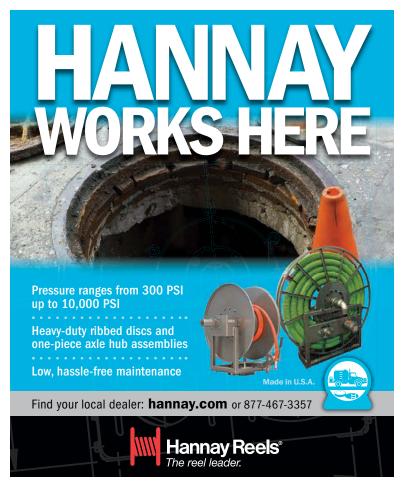
"Phosphorus removal is just starting to take center stage in the U.S., especially with waterfront properties," he says. "Our products remove 50 percent of it already, and we're looking at ways to remove even more. We feel that's an issue we're on the cutting edge of and something we are going to talk about even more." 207/406-2927; www.fujicleanusa.com. ■

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A Lesson Learned

In 1958, a young Army Specialist at Fort Sam Houston, TX built a wooden, portable restroom. He didn't like latrines and figured nobody else did either.

Al Hilde became quite good at building wooden restrooms, using them to create a very successful portable restroom business. However, he was always looking for a strong, lightweight alternative.

The breakthrough happened in 1972 when Alventured into plastics and built a Tufway, his first polyethylene portable restroom.

An operator in Nevada heard about the Tufway and wanted to be the first to see it. So, Al's sales manager loaded two Tufways into his pick-up truck and headed west.

Along the way, one of the Tufways fell out of the pick-up as it sped down the highway. It hit the pavement hard, but when he picked it back up, the only damage was a few scratches. He loaded it back on the truck and headed to his appointment.

When showing the operator the Tufways, he apologized for the scratches on one of the restrooms. When the operator heard what happened, he bought both Tufways and placed an order for 20 more. He said if a portable restroom could withstand a fall like that and only have a few scratches, he wanted a whole fleet of them.

We also discovered the value of a Tufway that day and it reminds us that to be successful, we need to rely on ingenuity and quality. That's why Tufways are still designed and made...in America.



Mission Accomplished

Travel to aid the needy in far-flung and desperate countries is a meaningful calling for Alabama pumpers David and Deborra Byrd

By Ken Wysocky

s the owners of a Roto-Rooter franchise in Huntsville, Alabama, David and Deborra Byrd are dedicated to resolving customers' issues of clogged drains and full septic tanks and grease traps. That urge to help others carries over into their personal lives, where they're devoted to performing a much larger – and sometimes risky – service for others: missionary work in foreign countries.

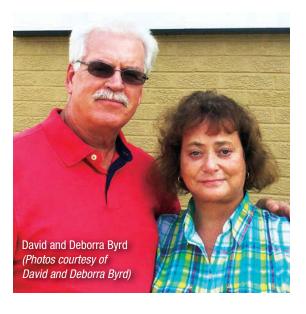
Since 1996, the Byrds – who purchased the Roto-Rooter of Huntsville, Madison County, and the Lincoln County franchise in 1991 – have taken more than 40 missionary trips to such far-flung countries as China, Haiti, Honduras, Iceland, India, Kenya, Namibia, Moldova, Romania, South Africa and Zimbabwe. They've been detained by foreign authorities and have seen unfathomable hardship and tragedy. But undeterred, they continue to make four to five sojourns a year, spreading a message of

hope and helping those who need it most.

Why do they do it? "The simple answer is because we feel the call," says David. "After our first trip, as soon as we got home, there was a yearning in our spirit to return. Once you go and you can taste, touch, feel and experience the needs of those who have no social-support structure, who do not even have soap to wash with or clean water to drink, who have no people to care about them and no faith in a God that cares for them, then your humanity draws you back, again and again."

The greatest reward is the blessing of serving others – of withdrawing from your comfort zone to experience the way the other 95 percent of the world lives.

- Deborra Byrd



THE DESIRE TO HELP

The Byrds' journey began innocuously enough in 1996 when the couple attended a presentation made by Curtis Silcox, the founder of Good News Today, a global missionary organization. Afterward, David was asked to give Silcox a ride to an airport – a two-hour drive away. As "church kids," the Byrds were well aware of missions but never dreamed they'd actually go on one. But two hours of talking with Silcox about missionary work planted a seed.

After careful consideration, David agreed to make a mission trip to South Africa later that year. "One trip was all it took to experience a life change," says Deborra. She did not accompany him because the couple didn't think they both could take time away from the business for 15 days. But David was so moved by the experience that they agreed to take future mission trips together.

It certainly isn't easy to leave work for 15 days at a crack, especially one

that has grown so significantly in the last two decades. Former managers of numerous Wal-Mart stores in Alabama, Louisiana, Mississippi and Tennessee, the Byrds started out with 11 franchise employees and offered only plumbing and sewer and drain cleaning services. Nearly 25 years later, the franchise employs 32 people and has branched out into cleaning septic tanks and grease traps, pipeline inspections, backflow testing and trenchless pipe rehabilitation.

WORKING TOOLS

The roster of equipment also expanded dramati-

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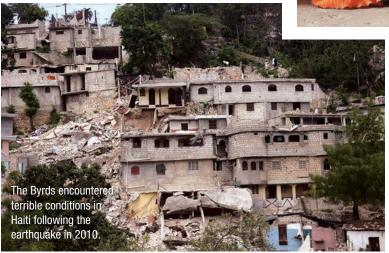
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cally. Today, the franchise owns 20 Ford service trucks; three vacuum trucks outfitted by Ibex Inc. and Transway Systems Inc.; a truck-mounted trailer jetter made by Myers (a Pentair Ltd. company); a trailer-mounted water jetter made by US Jetting; three excavators built by Caterpillar Inc. and Kubota Tractor Corp.; a pipe bursting system made by TRIC Tools Inc.; and a variety of pipeline-inspection camera systems, locators and detection equipment made by RIDGID and Amazing Machinery LLC.

"As in any business, your people make the difference," says David, explaining how the couple can leave the business for extended periods of time. "We are blessed to have wonderful people who know their jobs, service their customers and respect our company's



philosophy, which is – as stated in our company handbook – to give glory to God in all that is done. Our employees see it as their task to make sure all goes well when we are away so we can leave without worry. And in doing so they contribute to the mission effort. As a result, we're all blessed."

Over the years, the Byrds say they've been criticized at times for devoting so much effort to people in foreign countries when so many local people also need help. But Deborra points out that the couple also does mission work through their church, the Rock Family Worship Center.

"The church is very involved in domestic and world missions, and we lead mission teams for them, too," Deborra explains. "But there are many people involved in local missions that don't have the means or opportunity to commit to foreign travel. So they fulfill their mission (locally) and we do ours globally."

HAITI TRIP

The Byrds say it's difficult to pick a most memorable trip, but some definitely stick out more than others. One such trip: a medical mission to Haiti just three weeks after an earthquake devastated the country in 2010.

"It was unforgettable to see the need of the wounded and homeless ... to see the supplies that were available to them, then witness the 'system' that prevailed, which left rotting food on the docks, medical supplies in trailers and volunteers frustrated and held hostage to demands of mercenaries of every kind," she says. "There just is not enough money from any government to improve the conditions there until there is a heartfelt change in the societal structure."



Then there was a trip to the poverty-stricken shantytowns of South Africa and another to Kenya to work with women saved from slave trafficking. "Our organization was able to provide sewing machines to teach them a trade," Deborra says. "The material they learned with? Paper bags – and their stitching was so fine it could rival that done by any tailor." In communities in Romania and Central America, the couple encountered more senseless trag-

edy: children dying from diarrhea, even though the cure was quite simple – doses of Pepto-Bismol.



APPRECIATING FREEDOM

But the couple has no difficulty citing their most harrowing experience: the time they were arrested for carrying religious literature into a country where the Gospel is considered akin to pornography, she says. (She declined to name the country because she's afraid the couple's visa could be revoked, which would prevent them from making future missionary trips there.)

"We were arrested with the 'evidence,' which was confiscated," she recalls. "After

the officials yelled at us for some time in their native language, we were released. Through it all, we remained calm and repeatedly answered that we did not understand their questions, and tried to remain oblivious to the circumstances. When they saw their intimidation tactics weren't working, and with God's favor, they let us go."

Despite the obvious risks involved, the couple remains committed to taking more missionary trips. In fact, this past August they traveled to Honduras, where they helped complete a children's feeding center for two small villages.

"The greatest reward is the blessing of serving others – of withdrawing from your comfort zone to experience the way the other 95 percent of the world lives," Deborra says. The work also helps them appreciate even more what so many people here take for granted: the freedoms, privileges and standard of living enjoyed by Americans. As David puts it, "It makes us even more grateful for the miracle of being born in the United States of America."

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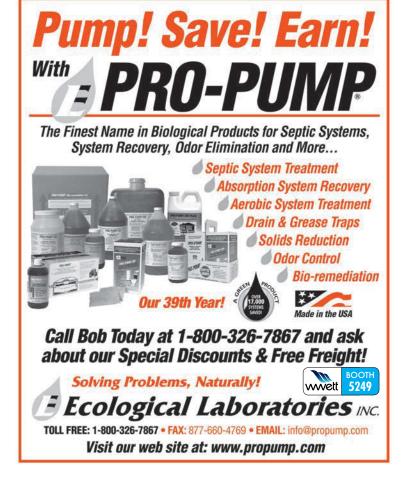
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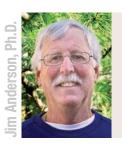
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Jim Anderson, Ph.D., is an emeritus professor at the University of Minnesota Department of Soil, Water and Climate, education coordinator for the National Association of Wastewater Technicians, and recipient of the pumping industry's Ralph Macchio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

Watch Phosphorus, Be Prosperous

Proper construction and maintenance of septic systems will prevent toxic levels of nutrients from invading neighboring waterways and threatening ecosystems By Jim Anderson, Ph.D.

QUESTION: Why do we worry about the phosphorus content in our septic system?

ANSWER: This is another frequent question I receive. Phosphorus is the limiting nutrient for algal growth in most freshwater lakes. These blooms can lead to toxic conditions for animals that drink or come in contact with water where these blue algae blooms occur. Further, the algal blooms can use up precious oxygen that fish and other aquatic organisms need to survive. This, combined with lower light penetration due to the algae in the water, can result in the loss of aquatic vegetation and lead to fish die-offs during these periods.

Obviously phosphorus is one of the nutrients contained in septic tank effluent, derived mostly from feces excreted into the system. Soaps and cleaning products used to contribute to these levels, but most no longer contain phosphorus. Most soils have the ability to fix or tie up large amounts of phosphorus through absorption, mineral precipitation and plant uptake. This results in very little movement away from the operating soil treatment unit - on the order of a few inches a year. One major exception to this would appear to be in areas of sandy soils where the primary weathered mineral forming the sand grains is quartz. This is based primarily on theoretical estimates of sites available to absorb the phosphorus and the minerals available to form precipitates.

ACIDIC CONDITIONS

A few months ago I ran across an article about a study conducted in Canada on a 20-year-old "filter bed," looking specifically at phosphorus. The system was located on a lake in central Ontario, so with my ties to Minnesota and Wisconsin I found this intriguing. They took approximately 120

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Phosphorus is the limiting nutrient for algal growth in most freshwater lakes. These blooms can lead to toxic conditions for animals that drink or come in contact with water where these blue algae blooms occur.

sediment samples and looked at the shallow groundwater below the system, which was the reason for the filter bed (or mound).

In sediment samples, they found that most of the phosphorus was tied up within 2 meters (a little over 6 feet) from the infiltration pipes. They also found that the phosphorus was not soluble, but tied up as mineral precipitates containing iron, aluminum and phosphorus coatings on the quartz sand grains. In the shallow groundwater, they did find elevated phosphorus levels in about 40 percent of the septic tank effluent levels in the plume, but there were no elevated levels beyond 5 meters (15-16 feet). Over six years of continuous monitoring, these values did not increase but appeared to stay steady. This means that the precipitates were not breaking down over time.

Sand used to construct the filter bed was transported to the site to solve the separation problem of shallow soils over bedrock - one of the problems we address through the use of sand mounds. The sand itself was granitic and free of carbonate buffering capacity, which means it was slightly acidic in nature. This means the effluent becomes more acidic as it moves through the sand. Under slightly acidic conditions, immobilization through precipitation reactions becomes more likely.

ENCOURAGING STUDY

This study affirms a long-held view that if our systems are installed and maintained properly, they will provide excellent treatment of septic tank effluent. Again, this means keeping systems shallow, utilizing as much of the soil profile as possible, and maintaining adequate separation distances to groundwater, bedrock and other limiting soil conditions. It also opens up the possibility that in areas where soils may not do as well with phosphorus removal, improvements can be made by specifying certain types of sand in mound design and installation.

This also has relevance for areas that have weathered granitic material at depth in the soil profile, a condition often found in mountainous areas in the West. Typically these layers have been avoided or viewed as problematic even though the permeability of the material is very good. As usual, there is the need for additional study, but these results are encouraging and offer the opportunity to develop systems that will improve treatment.





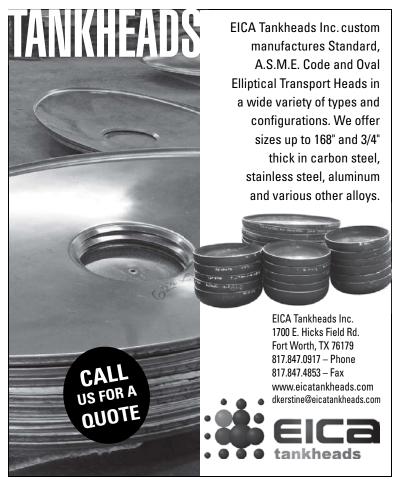
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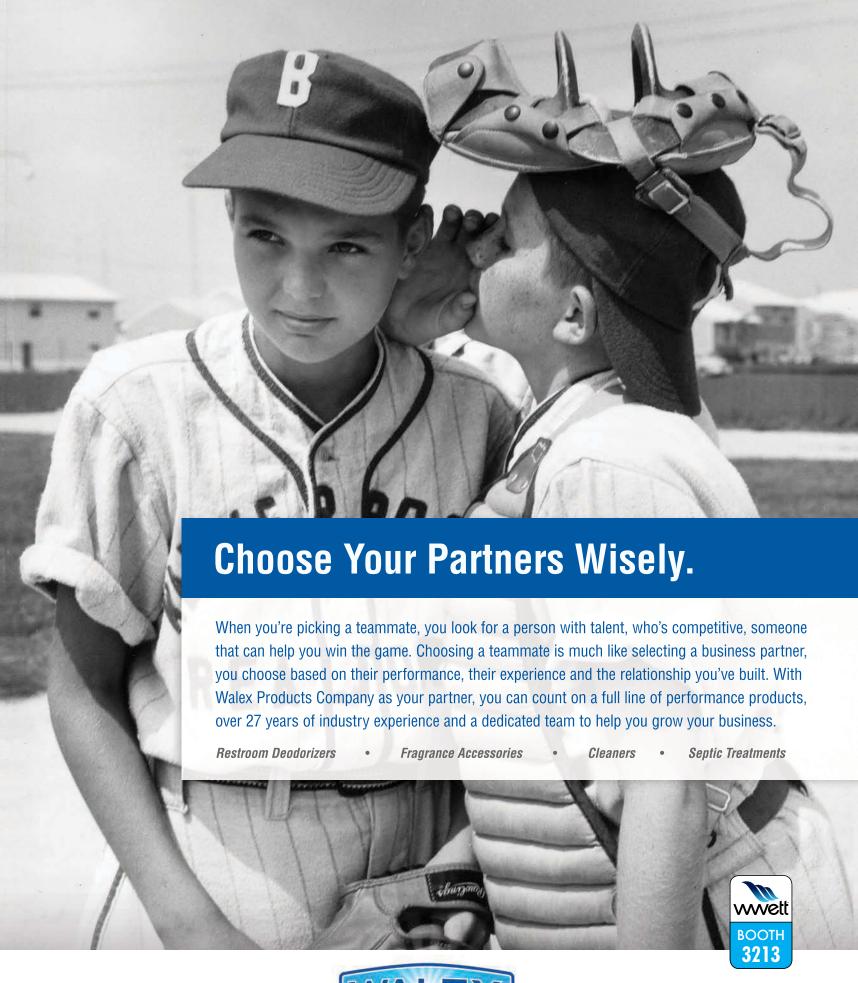
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wner Mark Thompson added a red and white 2015 Peterbilt 325 with a 5,200-gallon steel tank and TSI 800 vacuum pump built by Transway Systems. The truck is powered by a 425 hp Cummins engine tied to an Allison automatic transmission. The truck features top and rear 21-inch manways, 4-inch inlet and 6-inch discharge, heated collars, sight tube, aluminum fuel tank and Alcoa Dura-Bright wheels, work lights, stainless steel visor, chromed air horns and exhaust, and LED marker lights. Interior features include driver's air-ride seat, tilt and cruise, power windows and AC. Bold graphics were provided by Universal Signworks. Driver Kevin Harold uses the truck mainly for residential septic service.

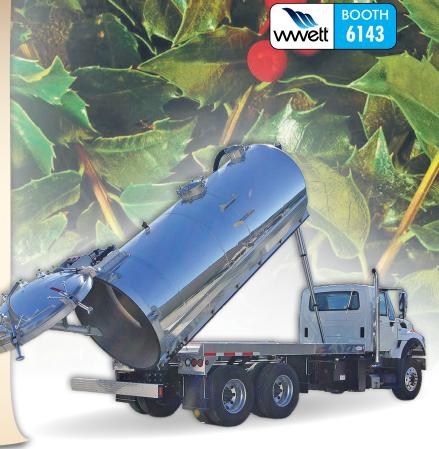
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Go-To Educators

Even without state training requirements, the Kansas Small Flows Association seeks to raise the professionalism of its membership By Doug Day

he Kansas Small Flows Association (KSFA) has one prime objective for onsite professionals in the Sunflower State: providing education and training. With no state requirements for licensing or continuing education, KSFA works to keep contractors and regulators up to date and promote the proper use and installation of septic systems.

Executive Director Charlene Weiss has been involved with the group since it formed in 1997, serving time on the board of directors and terms as president, vice president, secretary and treasurer. After 25 years as a regulator at the county level, Weiss became executive director of KSFA in 2013. Jessi Woods is a board member and past president.

What do you offer in the way of training?

Weiss: We try to be the educational source in Kansas. It's a hard thing to do when you don't have regulations that require regulators, much less installers, to attend classes. We have 85 members; it has been as high as 110. It's almost 50-50 between contractors, a couple who are both installers and pumpers, and regulators, with some manufacturers and engineers.

We have 14 courses. In the past, we've offered them when counties ask us to do training for their contractors. We have talked about changing that a little bit.

In October 2014, we received a \$43,500 grant from the U.S. Environmental Protection Agency 319 fund through the Kansas Department of Health and



kansassmallflows@

ksfa.org.

Environment to educate regulators. We've trained about 35, including a two-day soils workshop, the National Onsite Wastewater Recycling Association (NOWRA) conference, and regulators could get scholarships to attend educational sessions at our annual conference. We'll be doing another soils workshop and have one additional class to set up.

Woods: The two-day training materials were provided by NOWRA. In January 2015, we paid for five contractors to attend Certified Installers of Onsite Wastewater Treatment Systems (CIOWTS) training and sit for the exam provided by the National Environmental Health Association. Four of them passed the test that was conducted at our annual conference in February.

We are hoping counties will adopt CIOWTS as a form of licensing and would allow our educational programs to be continuing education for that.

Where does the regulatory power reside in Kansas?

Weiss: With the counties. The state has minimum standards, Bulletin 4-2, from the early 1980s. Most counties have their own codes that refer to Bulletin 4-2, which has not been revised since 1997. There is one county and

several cities that have no local regulations. The state regulates those entities as necessary.

The counties I worked in were fairly active and more advanced as far as not being afraid to look at alternative systems. Several years ago I was on a committee to rewrite the Kansas Environmental Health Handbook. We tried to cover everything from the original EPA manual from 1980 and update it to add alternative and advanced treatment systems.

Does it work?

Weiss: That's a good question. In many counties, the population is so sparse that it's not critical. The counties that have codes, a lot of them read the same. That makes it more consistent. Contractors have a harder time than anyone. They may work in four or five counties and something might be a little bit different in each.

I'd guess that about 25 percent of counties require some type of licens-

l'd like to see our association double in size. When you see states that require contractors to have licenses and continuing education, it seems like it helps the state associations.

- Charlene Weiss

ing or permitting for contractors, but not many require continuing education. It's hard to get the word out to contractors about KSFA when you have county-by-county regulations and we have to rely on counties for names and addresses. If they don't license them, they may not even have that information.

In the counties where I worked, we'd have 50-some licensed installers, but there were maybe 10 or 12 who did most of the work. It's hard to require continuing education and things like that for people who very seldom put in a system.

There has been a loss of some funding for counties. Is that having an effect?

Weiss: There had been funding from 1990 until 2011 for the Local Environmental Protection Program. (LEPP provided grants to local governments for regulating wastewater and water systems. It was cut in 2011 through a budget veto by Gov. Sam Brownback.) The money received was based on population, so some counties only received \$7,000 a year, but that was enough for them to at least have one sanitarian to administer the code.

To get the funding the code had to meet Bulletin 4-2, and to keep the



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funding you had to have someone administering the code. At one time, 100 percent of the counties had some kind of code. With the loss of those funds, there may still be an existing code in a county, but it may not be administered.

That's one reason why KSFA was interested in NOWRA's lobbying efforts last year and even contributed to it in hopes of some federal monies coming our way through the state.

What would be your ultimate goal?

Woods: We've always wanted some sort of a common state licensing program. We realized after a couple of years of trying to get there, because of the way things are set up, that was not going to be a very effective way to get it done. That's when we started going county by county, connecting with the bigger counties first, trying to get them on board with our educational programs and CIOWTS certification and hoping they would adopt our programs and it would trickle down.

Weiss: There are installers that are very active in our association and I think that is a key. We need more of them to be active. They can help spread the word.

Kansas provided guidance last year for local governments covering graywater reuse for single-family homes. What has been the reaction?

Weiss: I served on the state committee to get feedback from regulators and help write the specifications. They are fairly restrictive. Kansas has been very conservative. I don't know that there's anybody who has used them yet.

It will be a long time before you see a sprinkler system for graywater that you may have in other states. Everything still has to be subsurface, so really about the only way you can do anything is with drip irrigation. That's pretty difficult. There are also only certain times of the year you can do it – not when the ground is frozen – so you'd have to have a storage tank to be able to hold the graywater.

But at least we have something that we didn't have before. A separate graywater system for watering your landscape, even though it's subsurface, would not have even been discussed, probably. All of us on the committee felt it would be so much easier if you were building a new house. It would be really difficult to try to meet the specifications with an existing home.

Looking out a few years, what would you like to see?

Weiss: I'd like to see our association double in size. When you see states that require contractors to have licenses and continuing education, it seems like it helps the state associations. But even if the counties required it, that would be a big boost to our association and allow us to offer a lot more training and have a crowd where we have to turn people away. That would be awesome.

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NAWT Names New Education Coordinator

By Dhru Bhatt

ince 2007, Jim Anderson has served as education program coordinator for the National Association of Wastewater Technicians. He oversaw the NAWT education committee meetings and activities as well as coordinating workshops nationally. In 2007, the workshops available were the NAWT signature inspection workshop and two operation and maintenance workshops. By 2015, NAWT offerings have expanded to include workshops for



Jim Anderson

installers, vacuum truck drivers, designers and site evaluators (soils).

Citing the need to step out of this role due to

Citing the need to step out of this role due to family and other commitments, Jim has passed the reins to Kim Seipp. Kim and her husband, Jeff, own High Plains Sanitation Service, Strasburg, Colorado. She has also been instrumental in bringing a wide range of education courses to Colorado through the Colorado Professional Onsite Wastewater Association. With Kim on board, NAWT looks to further ex-



Kim Seipp

pand its outreach and education capabilities. Jim will continue to work on specific projects through the NAWT education committee.

2016 NAWT HAPCHUK SCHOLARSHIP

The deadline for the 2016 NAWT Hapchuk Scholarship must be received or postmarked by Jan. 1, 2016, to be considered. The scholarship application has been posted at NAWT's website at http://www.nawt.org/documents/ScholarshipApplication2016.pdf.

The 2016 Hapchuk Scholarship assignment is as follows:

Option one

Build a short story around the two photographs (found at the NAWT website). A homeowner is meeting with the septic professional to discuss why his system is not working properly as indicated by a floating manhole riser. The story should explain why the system may have gotten that way and what will need to be done.

The short story should reference websites or articles where the information can be found. You can change or enhance the photos and be creative about how the story is told. The story can be no more than 1,500 words.

Option two

Using the same two photographs, create a short video that could serve as a public service announcement for homeowners on how to avoid having this problem. A video, cartoon, etc., is acceptable. Be creative!

All applications for the scholarship must be completed by you, the applicant, and returned, if by postal service or email, with the form to the NAWT office.

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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.

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ANSWERS: It depends on what kind of tank you're adding. I know those GMCs are pretty heavy though; I used to have one and it was always overweight. And a lot of people out there build trucks that aren't spec'd right in wheelbase and weight. Figure 8.5 pounds per gallon of septage plus the weight of the tank. That is how they calculate the weight of the tank loaded.

*** * ***

My present vacuum truck is a GMC C6500 and rated at 25,995 pounds GVW. With tank and hoses and everything else, it scales at about 14,990 pounds. That gives me about 11,000 pounds more before exceeding legal load limit and staying under CDL. About 90 percent of my loads I scale under 26,000 pounds, but sometimes it will go as high as 28,000 pounds. Most trucks under 26,000 pounds have hydraulic brakes, and if you are fully loaded the brakes are on the weak side.

I ran an FL70 with air brakes rated at 26,000 pounds GVW. Everything on it is heavier than the GMC. I don't know how they came up with a 26,000-pound GVW. I just don't want to go to all that work putting a 2,000-gallon tank on it and find out it weighs 20,000 pounds empty.

*** * ***

Most all septic trucks you see running up and down the road are not legal when loaded, even the ones that have a high-enough GVWR because they won't scale out right per axle. I run what I call cheater trucks. They are 33,000-pound GVW trucks derated to 26,000 pounds GVW at the factory. They have the heavy suspension, bigger wheels and tires, air brakes/air ride and the most powerful motor and best transmissions. I have aluminum 2,800-gallon tanks so if they were loaded to capacity would be over 30,000 pounds. I run under CDL trucks for several reasons. The biggest is that insurance is way cheaper. To answer your question about staying under 26,000 pounds GVW, with aluminum you can go up to 2,350 gallons.

*** * ***

Almost all the pumpers in my area have gone to the smaller trucks, under 26,000 pounds GVW. Cheaper insurance, cheaper to operate, less damage to driveways. You say that you have a 2,800-gallon tank. Do you ever run fully loaded? I have had several people saying I just need to bite the bullet and buy an aluminum tank. That is not practical for me.

















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- HXL4, FloJet, dual service

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BOOTH 6143



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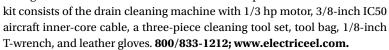
Business Diversification - Sewer and Drain Maintenance

Cleaning and maintaining sewer and drainlines can be an effective way for septic service professionals to achieve business diversification and keep revenue coming in throughout the year. Here are cable machines, locators, jetters, nozzles, plumbing products, cameras and root-control tools to help build your business. By Craig Mandli

CABLE MACHINES

ELECTRIC EEL MODEL Z5-P

The **Model Z5-P** machine from **Electric Eel** cleans 1 1/4- to 3-inch lines up to 100 feet, while running galvanized aircraft-wire inner-core cable. It has a built-in drum shaft slip clutch and upright frame on large 10-inch wheels with a folding handle. A rear bar shields the motor and allows for two-position operation. A steel guide tube/inner drum is included. A complete





The **DM55** sled drain machine from **Dura- cable Manufacturing** has a maintenancefree gearbox, an industrial 3/4 hp motor
at 175 rpm, and a durable frame. It has a
high-performance gearbox with a 10-to1 gear ratio, and enclosed polyethylene reels

in a variety of sizes. It is designed to handle several different sizes of reels to provide cable size flexibility. The power cable feed extends and returns cable automatically at a steady pace, helping service technicians run long lengths of cable in drainlines. It's effective on grease and roots and can be used on mainlines as well as industrial, commercial, residential jobs, including overhead and wall clean-outs. 877/244-0556; www.duracable.com.

LOCATORS

FORBEST PRODUCTS FB-R2012

The **FB-R2012** 512 Hz wireless digital locator from **Forbest Products Co.** is designed to detect buried water pipes,

sewer lines and other pipeline. It is compatible with the FB-T2011 512 Hz sonde transmitter and camera head with built-in 512 Hz sonde transmitter. It has two operation modes – NORM and NOISE CONTROL – for different application environments. NOISE CONTROL is chosen where there is interference. The shift button is for sensitivity grade conversion for locating and pinpointing the location and depth of the transmitter. On-screen status indicates the signal strength of 15 levels and battery volume. It is powered with six AA batteries, lightweight with retractable poles, and easy to carry.



RADIODETECTION CORPORATION RD8100

The **RD8100** locator from **Radiodetection Corporation** has an arrangement of five antennas with optional integrated GPS and usage logging, keeping users on the right line while enabling them to demonstrate safe working practices and validate quality of work. **877/247-3797**; www.radiodetection.com.



SUBSITE ELECTRONICS UTILIGUARD

The **UtiliGuard** utility locating system from **Subsite Electronics** includes an AIM system that automatically scans the surrounding area for noise and recommends the best frequency among 70 options. To help users make more accurate locates of obstructed utilities, it measures distances (depth) both horizontally and vertically to the



utility. The system has a six-button, multi-language operator interface and a high-contrast LCD display to ensure visibility in all conditions, including direct sunlight. A dual output allows users to connect the transmitter to two utilities at once, and the system is Bluetooth-enabled to simplify data transfers. Its housing with IP65 rating protects against a job site's dusty, dirty and wet conditions, and its transmitter and receiver battery life is 100 and 30 hours. 800/846-2713; www.subsite.com.

LOCATORS

SUBSURFACE LOCATORS LD-18

The **LD-18** digital water leak detector from **Sub-Surface Locators** reduces ambient, intermittent noises from dogs barking, cars passing by, footsteps and people talking. Its digital electronics sample the sounds every few thousandths of a second, and if it detects an intermittent sound, it suppresses it instantly. Water leak sounds are almost always continuous noises, and the unit can iden-



tify continuous leak sounds even in difficult conditions, like busy streets. 775/298-2701; www.subsurfaceleak.com.



VIVAX-METROTECH VLOCPRO2

The **vLocPro2 Series** of buried utility locators from **Vivax-Metrotech** helps execute locates with speed, accuracy and confidence. With a range of frequencies low enough for telecom and power and high enough for gas and water, it serves as one tool for various applications. The left/right direction arrows help increase

the speed at which the technician can locate, and SD and CM features allow the user to pinpoint a target line in congested areas. The unit is lightweight and balanced and uses rechargeable or alkaline batteries. The MyLocator2 desktop application allows the user to fully configure the unit to specific requirements. Supervisors/managers have the ability to lock features, ensuring consistency and reliability of locating techniques across the workforce. **800/446-3392; www.vivax-metrotech.com.**

JETTERS

AMERICAN JETTER DUAL-REEL VAN JETTER

American Jetter offers a dual-reel option on super compact van jetters. Each reel can be activated manually or by wireless remote, providing instant jetting access to two hose sizes. A skid footprint as small as 24 by 36 inches offers room for 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 flexible mount-anywhere exhaust system allows exhaust to be run through the



floor or other areas, reducing engine noise. They come with Kohler engines up to 80 hp, and power low-water shut-off pumps from 7 to 20 gpm up to 5,000 psi. The wireless remote option allows for water on/off, hose reel in/out and engine shutdown. **866/944-3569**; www.americanjetter.com.

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. Its 200 feet of jetter hose can be used to supply an optional 200DS4 portable reel cart available with

200 feet of 3/8-inch jet hose. It comes with a 35-gallon

buffer water tank with float control, powder-coated heavy tube frame, washdown gun and a four-nozzle set. It easily mounts in the side door of a cargo van, on a truck bed or inside a service truck. A root-cutting nozzle enables residential root cutting. 800/648-5011; www.camspray.com.



HI-VAC O'BRIEN 7000

The **O'Brien 7000 Series** trailermounted jetter from **Hi-Vac Corporation** comes with water tanks with a sediment pump for easier cleaning and longer life. The trailer has the muffler and air cleaner mounted inside the

enclosure for improved sight lines, electric reel control for smoother rotation and easier operation, and hydraulic and water gauges mounted in the main control panel for easier viewing. **800/752-2400**; www.hi-vac.com.

MONGOOSE JETTERS MODEL 184

The Mongoose Model 184 jetter from Mongoose Jetters by Sewer Equipment has a tubular steel frame, corrosion-resistant pre-painted sub assemblies, updated controls, strong hose reel, high-quality diesel engine and run-dry pump. 877/735-4640; www.mongoosejetters.com.



SPARTAN TOOL MODEL 727

The **Model 727** cart-mounted hydrojetter from **Spartan Tool** is available in a true hybrid version that can be run on either gasoline or propane by flipping a lever. This allows the operator to use it indoors and outdoors without any loss of pressure or flow. It produces 3,000 psi, which provides enough pipe-cleaning pressure to scour any line up to 6 inches in diameter, while its 4 gpm of flow moves the debris downstream. Pulse technology reduces line friction for easily

maneuvering the corners of drainfields, while its 200 feet of 9/16-inch hose provides the length to get through most fields in one pass. It comes with 75 feet of 3/16-inch trap hose for tight bends, seven nozzles for various jetting situations, a washdown wand with adjustable nozzle, jetting gloves, easy winterization for cold climates, and an electric-start motor. 800/435-3866; www.spartantool.com.

JETTERS

US JETTING 4018

The **4018** trailer jetter from **US Jetting** is available with a powder-coated or galvanized frame and aluminum components such as fenders, toolboxes, and anti-



freeze and fuel tanks. It has a true run-dry triplex plunger pump. This simple design makes for easy and minimal maintenance. It has a redesigned HATZ Tier 4 Final four-cylinder diesel engine. 800/538-8464; www.usjetting.com.

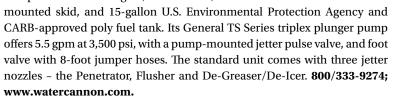
VAC-CON HOT SHOT

The **Hot Shot** high-pressure water jet machine from **Vac-Con** is used for removing stones, bottles, cans, grease, sludge and other debris from sanitary sewer and/or storm drain lines. It comes with a noncorroding polyethylene water tank and can be

operated by a single person with all controls for high-pressure water and hose reel located at the front of the machine for ease of operation and increased safety. Units are available with 1,000- and 1,600-gallon water tank capacities. Options include variable flow, articulating hose reel, polyethylene water tanks, 30 gpm at 3,000 psi water pump system, auxiliary engine or hydrostatic drive, cold-weather recirculation system, side-mounted toolboxes, air purge system, hose footage counter, arrowboard, strobe lights, inspector cam, high-pressure spray bar, hose rewind guide, 600 psi hand gun system with 25 feet of hose and a selection of nozzles. 855/336-2962; www.vac-con.com.

WATER CANNON 16T52

The **16T52** two-wheel road-ready commercial trailer jetter from **Water Cannon** comes with an electric-rewind, high-capacity hose reel that fits 500 feet of 3/8-inch or 350 feet of 1/2-inch hose. It has a 200-gallon tank with float valve, a poly toolbox, lights, a front jack with wheel, safety chains, and aluminum fenders. The high-pressure jetter has a Vanguard 18 hp electric-start engine, V-belt drive, trailer-



NOZZLES

ENZ USA ROTOPULS 30

The **Rotopuls 30** rotating vibration nozzle from **Enz USA** is provided with an eccentrically supported rotor, which produces hard vibration impact and pulsating jets. The resulting pulsations become so strong that hard deposits are disintegrated. It is safe to use in pipes made of plastic,



steel or concrete from 1.5 to 4 inches in diameter. The small size allows for navigating tough bends. It is ideal for cleaning waterless urinals, is available in a 1/4-inch connection and operates on flow as low as 3 gpm. 877/369-8721; www.enzusainc.com.



NOZZTEQ ICE BEAR SERIES

Ice Bear Series sewer nozzles from NozzTeq were developed to quickly penetrate ice-filled lines. These are short, low-profile nozzles with rounded leading edges that easily work their way into tight areas, and have six

rear-facing and three front-facing jets. The front-facing jets come together at a single point a few inches in front of the nozzle, focusing full jetting power on the ice, breaking it up quickly. The powerful, low-angle rear jets push the nozzle up to blockages and stabilize it at the ice face, while quickly sweeping out ice and debris to clear lines and prevent refreezing. Laminar flow is preserved from truck to nozzle end for more powerful jet streams produced at lower pressure, extending equipment life. The jet orifice size is fixed. **866/620-5915**; www.nozzteq.com.

PLUMBING

BRIGHT DYES

Concentrated leak inspection dyes from **BRIGHT DYES** dissolve rapidly in water and provide a vivid fluorescent color detectable in murky water, sewage or effluent. They can be used to identify leaks, infiltration and exfiltration in plumbing connections, validate sanitary and septic hookups,

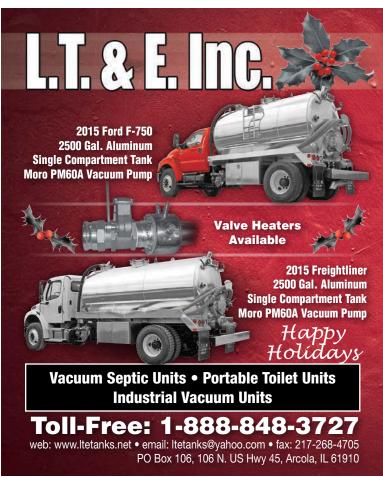


and perform septic inspections to identify leachfield issues as well as sources of contamination in wells. They are safe, nontoxic, biodegradable and certified by NSF International to ANSI/NSF Standard 60 for use in and around drinking water. They are available in fluorescent yellow/green, red and orange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

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PLUMBING

GENERAL PIPE CLEANERS HOT-SHOT

Hot-Shot 320 and 400 machines from General Pipe Cleaners



thaw pipes in minutes to eliminate tearing up floors, breaking through walls or digging around pipes in frozen ground. The Hot-Shot 320 generates 320 amps to thaw up to 100 feet of 1 1/2-inch pipe, weighing just 30 pounds. The Hot-Shot 400 has a dual-level output, and its 400 amps can thaw frozen lines up to 175 feet long in 1 1/2-inch lines. On jobs with only a 15-amp breaker available, the unit can be switched to 320 amps and pull just 14 amps. The operator attaches pipe clamps to the frozen pipe section, plugs the machine into any 115-volt receptacle, and the frozen pipe is thawed. The compact machine comes with a heavy-gauge steel case. **800/245-6200**; www.drainbrain.com.



HAMMERHEAD TRENCHLESS EQUIPMENT RS MAXPATCH

RS MaxPatch, a fast, trenchless, selective point repair system for pipes 3 to 48 inches in diameter from HammerHead Trenchless

Equipment, is a safe CIPP solution used to repair short sections of pipe. The corrosion-resistant fiberglass composite system repairs and seals isolated pipe defects such as cracks, leaks, joint offsets, corrosion and root intrusion. The resin and fiberglass matrix provides structural strength, while its thin, tapered profile and smooth finish help maintain or increase flow capacity. **800/331-6653**; www.hydraliner.com.

SUPERIOR SIGNAL COMPANY 5E ELECTRIC SMOKER

The **5E Electric Smoker** from **Superior Signal Company** can connect to any septic clean-out or inspection port to smoke test the entire



system in a few minutes to find sources of odors and other faults throughout the building plumbing, septic system and leachfield. It gently pushes smoke throughout the system to find cracks and leaks and quickly identify problems, takes only minutes to set up and seconds to see the results. It comes with an 8-foot industrial-grade flex hose. It is used with Superior Smoke Candles, providing up to 40,000 cubic feet of smoke to find odors, leaks and other faults in residential and commercial facilities. 800/945-8378; www.superiorsignal.com.

PUSH CAMERAS

AMAZING MACHINERY VIZTRAC MAX

The **Viztrac Max** camera from **Amazing Machinery** has the same durability and super slick push cable as previous Viztrac cameras, with a 22 percent larger 9-inch LCD color display, and a rechargeable lithium-ion battery pack capable of up to eight hours of field use before recharge. The unit includes an AC/DC adapter for direct power supply, a 512 Hz sonde transmitter, and a DVR that records to a standard SD card. A 4GB card is included. **800/504-7435**; www.amazingmachinery.com.

ARIES INDUSTRIES SEEKER

The **Seeker** video inspection system from **Aries Industries** is a compact, portable unit for drainline inspection. The easy-to-use, contractor-grade system works in 3-inch-diameter or larger pipe. Weighing only 40 pounds, the unit is self-contained with no external wiring. It can be used in conjunction with a CCTV truck. It comes with a built-

in 512 Hz transmitting beacon and a bright 6.4-inch LCD screen. Users select from either a self-leveling mini-camera or a pan-and-tilt camera with self-cleaning wiper blade. Built-in AV outputs enable inspection data to be recorded onto an SD card, DVR or a laptop using any software. Wireless controls, video

transmission up to 300 feet, and line tracing are available. **800/234-7205**; www.ariesindustries.com.

COBRA TECHNOLOGIES CP SERIES

The **CP Series** of portable inspection systems from **Cobra Technologies** has the functionality of a truck-mounted system in a compact, go-anywhere package. The portable platform with wheels and collapsible handle makes transportation easy. Its lightweight cable allows for maximum crawler productivity, but can support multiple crawlers for 6- to 48-inch lines, while the auto-level rewind supports cable with 600- to 1,000-foot capacity. It includes built-in DVD recording, a daylight LCD monitor, Touch Pro Data Logger and CAMS Office software. **800/443-3761; www.cobratec.com.**

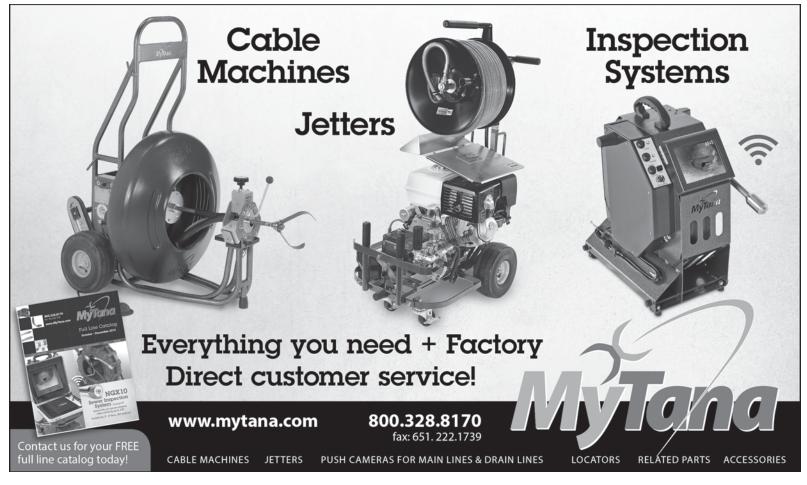
CUES MPLUS+

The **MPlus+** portable lateral and mini-mainline push system from **CUES** has a modular design that enables easy operation with its all-in-one setup, and offers flexibility by facilitating quick removal of the control unit to be used separately for off-road or remote job sites or to accommodate compact storage. The system integrates

video titling, video observation coding, digital recording and portability into an easy-to-use package. This lightweight system includes large and durable wheels for easy portability and a balanced footprint for stability. **800/327-7791**; www.cuesinc.com.

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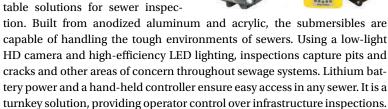




PUSH CAMERAS

DEEP TREKKER ROVS AND CRAWLERS

ROVs and crawlers from **Deep Trekker** are easy-to-use, portable solutions for sewer insp





519/342-3177; www.deeptrekker.com.

IMAGE INSPECTION SERVICES BIGFOOT

The **Bigfoot** all-terrain video unit from **Image Inspection Services** is a compact, self-contained pipe inspection system. Designed as a

small-community sewer inspection system for on- and off-road usage, the lightweight mini 4x4 chassis, coupled with wide low-impact turf tires, can traverse sensitive off-road areas with minimal damage to landscaping and noise disturbance. The entire video unit is powered by a self-contained roof-mounted solar panel, charge controller, battery system and power inverter, which makes it virtually silent during operation. The video system is housed in a lightweight aluminum box containing a variety of camera control panels, cable reels, crawlers and tools. 800/667-6670; www.image-inspect.com.

RATECH ELECTRONICS ELITE SD WI-FI

The Elite SD Wi-Fi pipeline inspection camera system from Ratech Electronics allows operators to record pipe inspections wirelessly to an iOS or Android device, and take digital still photos and live video that can be immediately uploaded to YouTube. No USB thumb drives, digital

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

RS TECHNICAL SERVICES QUICK PEEK

The all-in-one portable **Quick Peek** video inspection system from **RS Technical Services** is a compact, lightweight solution for drainline condition assessment in lines 2 to 10 inches in diameter up to 300 feet long. The unit has a 7-inch bright LCD handle-mounted monitor with a sun shield/screen protector that can be positioned for comfortable viewing. Easily accessible monitor controls include power mode, aspect ratio (screen size) and menu, plus set buttons for color, brightness, contrast, tint and volume. The side-mounted AC/DC power source houses controls for all camera functions and provides a camera test terminal, AC/DC input, video/audio output, keyboard input and a condenser microphone with

on/off switch. 800/767-1974; www.rstechserv.com.

MYTANA MFG. COMPANY MS11-NG

The MS11-NG midsized video inspection system from MyTana Mfg. Company can be used to inspect 3- to 4-inch lines with up to 150 feet of range. It has a 1 1/2-inch color self-leveling camera head, built-in 512 Hz transmitter allowing a technician to locate during the inspection, and a daylight-readable 6.4-inch monitor. Record or upload an inspection using the MyTana viewer app, available for iPhone, iPad and Android. Built-in Wi-Fi allows multiple viewers on relining/rehabilitation projects. Inspection records can be uploaded to YouTube or still photos emailed to customers. Media connects through RCA jacks on the front of the unit. 800/328-8170; www.mytana.com.

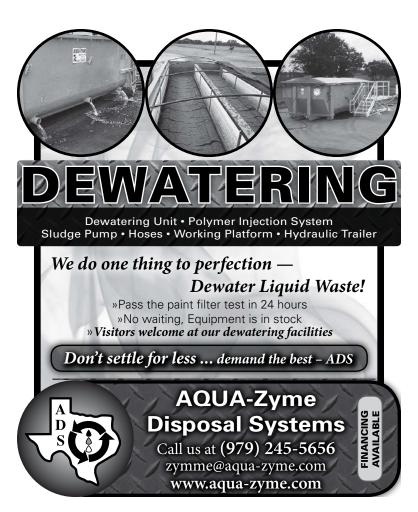
RAUSCH USA MINCAM360

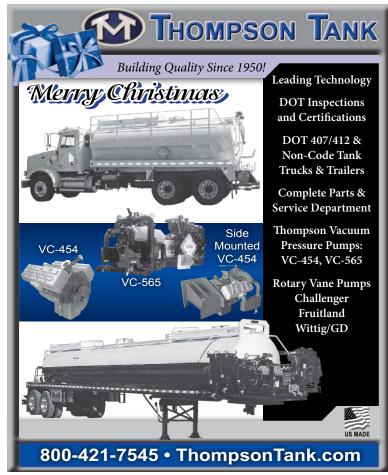
The 2-inch minCam360 remotecontrolled pan-and-tilt push camera from Rausch USA has a four-step zoom, and a tri-band sonde with selectable frequencies. The Bluetooth remote includes a joystick for cam-



era control. The cable reel comes with 200 feet of cable (it holds up to 300 feet), and the unit can run for four hours. The 8.4-inch sunlight-readable monitor enables recording video, voice and photo directly to an SD card. It is designed as a capable stand-alone inspection system, including a text generator for detailed reporting and an on-screen distance counter. It can be used in pipes 3 to 16 inches in diameter with all centering accessories. 717/709-1005; www.rauschusa.com.

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Bio-Tab® is a highly concentrated tablet of bacteria (both aerobic and anaerobic) and enzymes that acts as a biological activator for septic tanks. In short, **Bio-Tab**® helps septic systems work like they were intended.

Unlike most competitor's dusty powders or messy liquids, **Bio-Tab**® is in a tablet form. Easy to use and easy to store, **Bio-Tab**® is highly concentrated (one jar contains a year's supply). It is a safe, non-toxic, non-corrosive and non-poisonous product that will not harm plumbing or septic systems.



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PUSH CAMERAS

RIDGID SFESNAKE MICROREFI

The **SeeSnake microReel** video inspection system from **RIDGID** is durable, reliable, lightweight and compact. It has a stiffer push cable than the SeeSnake microDrain, making it useful in inspections with tight turns such as toilet traps and P-traps. The stainless steel camera headspring assembly is designed for a long ser-



vice life, and there are long-lasting high-intensity lights. Both are compatible with existing SeeSnake monitors or the micro CA-300 digital inspection camera. Applications where only bore scopes could reach can be inspected – including boiler tubes, supply lines, sprinkler systems and an array of specialty applications – using the nanoReel. 800/769-7743; www.ridgid.com.

WOHLER USA VIS 350

The VIS 350 visual inspection system from Wohler USA can be used to inspect pipelines, precisely locate damage and accurately document the results of the inspection. Inspect waterlines 2 inches and larger with a pan-and-tilt camera head to ensure no damage is overlooked throughout the pipeline. The camera head has an integrated transmitter for location detection using the

L 200 Locator, which has an easy-to-read color display. A technician can record video footage and store photos on a 2GB SD card for documentation and archiving. **978/750-9876**; www.wohlerusa.com.

ZISTOS PORTABLE VIDEO POI F CAMERA

A portable video pole camera system from **Zistos** allows visual inspection of confined areas from outside the space, keeping the worker safely away from hazards. It can be used in pipes, sewers, underground vaults, tunnels, tank cars, storage vessels, septic tanks and dry wells. Its use can significantly reduce confined-space inspection costs by requiring fewer workers, less equipment and



shorter on-location time. 631/434-1370; www.zistos.com.



ROOT CONTROL - CHEMICAL/MECHANICAL

ID-TFC SR-SFRIFS WJ160

SR-SERIES WJ160 root-control equipment from **ID-TEC** produces 15,000 psi to cut through thick roots without damaging pipe surfaces. It is easily attached to the base robot, which operates in 7-inch and larger relined pipelines. It has a precisely aimed cutting nozzle, camera and high-power LED



lighting. Water is pumped under pressure through the nozzle, where the resulting blast is aimed directly at the root intrusion. Smaller root branches and dirt are flushed away with pressures up to 5,000 psi. Then the main root is cut off where it enters the pipe. Pressures up to 15,000 psi make the equipment fast and able to cut through main roots up to 5 inches thick. Step-less pressure adjustment and precision ensure that only the undamaged and cleaned pipeline remains after the operation. 503/504-8474; www.sr-series.com.

NU FLOW MICRO-CUTTER

The **Micro-Cutter** from **Nu Flow** is a pneumatic cutter used to clean and remove calcite and roots from the inside of a variety of pipes, including steel,

cast iron and Orangeburg. The system rotates at approximately 2,000 rpm and will negotiate turns of 90 degrees in pipes down to 2 inches in diameter. It runs at 40 cfm and allows for multiple cutting heads to be attached. These heads can cut through dense corrosion and root intrusion commonly found in drainlines. The drill tip has an adjustable spline available in various sizes to match different pipe diameters. 800/834-9597; www.nuflowtechnologies.com.

USB - SEWER EQUIPMENT CORPORATION TURBO CHAIN CUTTER

The **Turbo Chain Cutter** from **USB - Sewer Equipment Corporation** is made of tempered stainless steel and offers drive and thrust efficiency. Its small, compact design permits the cutter to navigate bends or curves in the pipe. The chain retainer



is driven by a high-performance turbine that's effective in the removal of roots, grease and mineral deposits from 4- to 6-inch sewer lines. The cutter requires low maintenance, no lubrication and comes standard with ceramic inserts. It can be used with recycled water. Carbide bits can be welded onto the chain. 866/408-2814; www.usbsec.com.

VAPOROOTER

Vaporooter is formulated to destroy roots on contact and inhibit regrowth for years. It contains two herbicides that penetrate root cells to destroy roots on contact and binds to pipe walls, joints and cracks to inhibit new growth. Computerized application equipment allows operators to jet up the line,

push a button and fill the pipe with foam while retrieving the hose. The application system fits any jet truck and is available as an option from many truck manufacturers. 800/841-1444; www.vaporooter.com. ■







PRODUCT **NEWS**



ALL-ALUMINUM
FLATBED UTILITY
TRAILERS AVAILABLE
IN SINGLE AND TANDEM AXLE

The all-aluminum 7816 tandem-axle and 7712H single-axle flatbed utility trailers from **Aluma** feature 14-inch aluminum wheels (standard) with rubber torsion axles and radial tires, aluminum fenders, extruded aluminum floor with front and side retaining rails, LED lighting package and safety chains.

"More and more manufacturers are going to LEDs, but we incorporated that probably five years ago," says Mike Lloyd, president.

The single-axle trailer has a 77-inch-wide by 142-inch-long bed and the tandem-axle trailer has a 78-inch-wide by 192-inch-long bed. The 7712H weighs about 600 pounds and has a 3,500-pound rubber torsion axle rated at 2,990 pounds. The 7816 weighs 1,150 pounds and can haul about 5,500 pounds.

"Because of the lightweight aluminum construction the trailers are easy to maneuver," Lloyd says. "You're also able to carry more. Corrosion and rust resistance are two other benefits."

The 7816R has two 5-foot pullout ramps with underneath storage, while the 7816T has a tailgate.

"Some people want a tailgate instead of the ramp, but most come with the ramps underneath," he says.

Both trailers have a swivel tongue jack and ball hitch. The single-axle trailer has a 2-inch hitch; the tandem trailer has a 2 5/16-inch coupler.

The tandem trailer also has drop-down stabilizer legs and electric brakes on both axles. **866/415-3285**; www.alumaklm.com.



COXREELS HOSE STRAIN RELIEF KIT

The Hose Strain Relief Kit from COXREELS protects hose fittings and connections from damage by providing strain relief when the hose is fully extended. The accessory is available for hand-crank and motorized reels with hoses between 1/2 and 1 1/2 inches in diameter. Ex-



isting COXREELS hand-crank and motorized reels can be modified to accommodate the kit. **800/269-7335**; www.coxreels.com.

BENLEE ROL TRAILER BA The backup ala trailers, roll-off

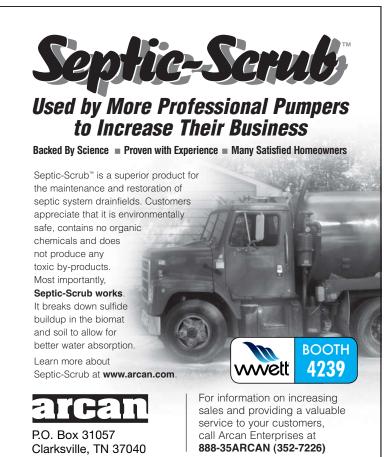
BENLEE ROLL-OFF TRAILER BACKUP ALARM

The backup alarm is available on Benlee roll-off trailers, roll-off trucks, dump trucks, crushed car trailers, pup trailers and open-top gondola trailers. The 8-inch mechanical device is made from zinc-plated 10-gauge steel for durability and low maintenance. 734/722-8100; www.benlee.com.

WORKWAVE FLEET MANAGEMENT APP

The WorkWave Fleet mobile-first flexible route planning app from WorkWave, formerly Marathon Data Solutions, is designed for small- to medium-sized fleets. 866/413-3498; www.workwave.com/fleet. ■





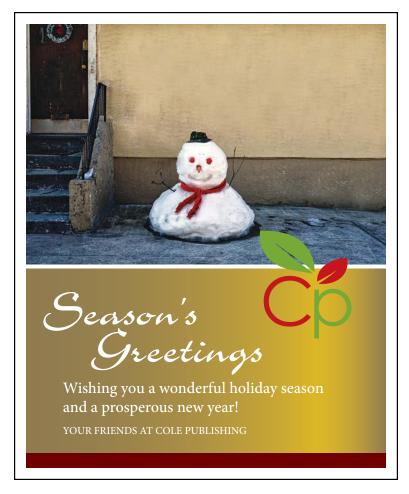
INDUSTRY NEWS

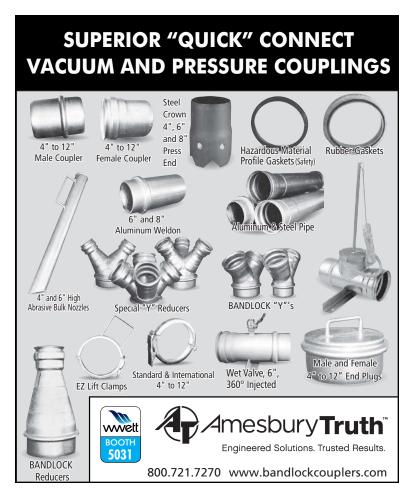
Advantage Funding expands sales team

Advantage Funding named Michael Kendro regional sales manager. He will be responsible for vocational sales in the company's southeastern region. Advantage Funding offers equipment financing and leasing options for vehicle dealers, distributors, manufacturers and end users.

Researcher receives ADS achievement award

Rafael Munoz-Carpena of the University of Florida-Gainesville received the American Society of Agricultural and Biological Engineers (ASABE) 2015 Advanced Drainage Systems Soil and Water Engineering Award. The ADS-sponsored award recognizes Munoz-Carpena for his research, methodology and educational contributions in the development and advancement of integrated hydrologic and water-quality modeling.











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Education Day Sessions

Wednesday, February 17, 2016

NAWT

National Association of Wastewater Technicians

Rooms 234-236

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

SSPMA

Sump and Sewage Pump Manufacturers Association Rooms 133-135

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

Business StrategiesRooms 140-142

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

Industry Safety

Rooms 237-239

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

SSCSC

Southern Section Collection Systems Committee
Rooms 231-233

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

NOWRA

National Onsite Wastewater Recycling Association Rooms 240-242

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

Portable Sanitation

Rooms 136-138

1:30 p.m.	Marketing Basics: How to Effectively and Efficiently Grov Your Portable Sanitation Sales Trust — How to Build it and Use it to Grow Your Portable Sanitation Business
	Your Portable Sanitation Sales
3 p.m.	Trust — How to Build it and Use it to Grow Your
•	Portable Sanitation Business
4.20	Portable Capitation Forum: Current and Future Critical

Portable Sanitation Forum: Current and Future Critical Issues Affecting the Industry Discussion

NASSCO

National Association of Sewer Service Companies

Rooms 130-132

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

Treatment Plant Operator

Rooms 243-245

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

WJTA-IMCA

Water Jet Technology Assoc. - Industrial Municipal Cleaning Assoc.

Rooms 237-239

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

Women in Business Rooms 136-138

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

Vacuum Truck Equipment and Operation Training

presented by NAWT National Association of Wastewater Technicians

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

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





WWETT Education Sessions

Thursday, February 18, 2016

Liquid Waste Treatment & Disposal

8 a.m. 9:30 a.m. Analysis of Drainfield Failures and Restoration Methods Cash In on Community System Operations and

11 a.m.

Ultra-Efficient Inspection Technique to Locate Leaks on Septic Systems

Sewer & Drain Cleaning, **Inspection & Repair**

8 n m 9:30 a.m. Using the Clean Water Act to Grow Profits Winning Trench Warfare — Finding Profitability

in Sewer/Septic Work

11 a.m.

Your Best Shot at Sewer Success — How to Get the Most From Inspection Technology

NOWRA Design Course

Staving in Front of Your Customer

Business Strategies

Rooms 240-242

Rooms 136-138

8 a.m. 9:30 a.m.

8 a.m.

9:30 a.m.

11 a.m.

Mound and At-Grade Design Low-Pressure Pipe in Drainfield Distribution

How Self-Employed People Can Make More Money Growing Your Business in a Tough Economy

Subsurface Drip Irrigation 11 a.m.

SSCSC Sewer & Drain Cleaning Course

8 n m 10 a.m. Hands-On Nozzle Technology Hands-On Jetter Hose Maintenance — Care and Repair

Onsite Septic Installation, Repair & Design

Rooms 237-239

8 a.m.

9:30 a.m.

11 a.m.

Overview of Application, Design, Installation and Operation of Drip Dispersal Systems Onsite System Pump Design Made Easy The Onsite Wastewater Industry and Our Carbon Footprint

Municipal Sewer & Water

Rooms 140-142

8 a.m. 9:30 a.m.

How to Recover Non-Revenue Water Phased Assessment Strategy for Sewers - Understanding Sewer Condition Quicker with Fewer Resources The Science of Pipe Cleaning — Flow and Pressure

11 a.m.

Sewer & Pipe Rehabilitation, Relining & Repair

Rooms 234-236

8 a.m. 9:30 a.m. Take Control of Inflow and Infiltration in Manholes When Things Go Wrong on a Lining Job Taking Small-Diameter Drain Lining Inside Infrastructure

Treatment Plant Operator

Rooms 243-245

8 a.m. 9:30 a.m. Smart Water Technology in Theory and Practice Dissolved Ozone in Municipal Collection, Treatment and Disposal

Municipal Biological Waste Treatment

11 a.m.



Many states approve WWETT education sessions toward fulfilling required certified education units or professional development hours.

See wwettshow.com for a list of approved states and courses.

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Friday, February 19, 2016

Liquid Waste Treatment & Disposal

Rooms 130-132

Fact vs. Fiction: The Top Ten Septic Myths 8 a.m.

9:30 a.m. All About Facultative Bacteria

Brown Grease Recovery From Grease Trap Waste: Science 11 a.m.

and Economics

Industry Safety

Rooms 140-142

8 a.m. Identifying and Managing Risk

in a Septic or Sewer Business

9:30 a.m. How Well Do You Know Your Cleaning Hose? 11 a.m.

Pathogen Exposures to Workers in the Onsite Industry

Business Strategies

Rooms 240-242

Creating a Data-Driven Strategic Marketing Plan 8 a.m. 9:30 a.m. What Every Sewer and Drain Contractor Needs to Know About Asset Protection, Tax Reduction and Estate Planning

Municipal Sewer & Water

Rooms 240-242

11 a.m.

GIS: Empowering Water, Wastewater and Waste Removal Organizations

Sewer & Drain Cleaning, **Inspection & Repair**

Rooms 133-135

8 a.m. Advanced Pipe Bursting

9:30 a.m. Low-Latency, High-Definition Video Over

Coaxial Cable for Remote Inspection

Plumbers vs. Technicians: The Slow Decline of the 11 a.m.

Tradesman

Municipal Sewer & Water

Rooms 231-233

8 a.m. 9:30 a.m.

Using Acoustic Inspection to Prioritize Sewer Cleaning Evaluation of Automatic Filters for Nozzle Protection in

Recycled Water Applications

Flow Monitoring — How to Make Your Program Successful 11 a.m.

Treatment Plant Operator

Rooms 243-245

8 a.m. 9:30 a.m. 11 a.m.

Insights into Ozone Water Treatment Plants Wastewater Microbiology

How to Ensure Gold is the Result — Choosing the Right **Dewatering Equipment**



Business Software & Technology

Rooms 136-138

8 a.m.

Know the State of Your Business Using

Business Charts and Reports

9:30 a.m. Using Software to Save Time and Increase Profits

Using Mobile Devices for Business 11 a.m.

Sewer & Pipe Rehabilitation. **Relining & Repair**

Rooms 234-236

8 a.m. 9:30 a.m.

11 a.m.

Buvina Back Capacity

Successful Reduction of 1&I Using the Holistic

Approach to Sewer Rehabilitation

Large Scale Centrifugally Cast Concrete Pipe Culvert

Rehab in CO Dept. of Transportation Region 1

COLE Publishing's Onsite Installer Course

Rooms 237-239

This day-long session will walk professionals through an introduction to proper installation practices for the sustainable use of onsite treatment systems

Detailed session information available at: www.wwettshow.com

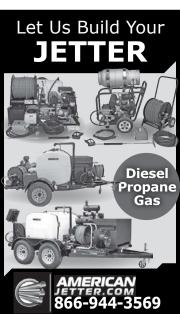






























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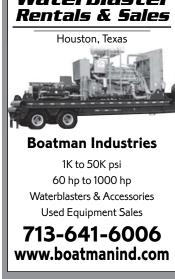
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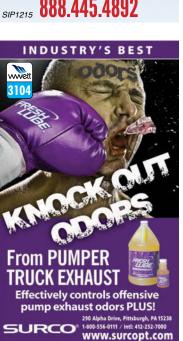














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> **Call Fredrickson Supply** 616-949-2385, MI

BUSINESSES

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. 30 years in business with loval customer base. Two pump tuck operation: (1) 1996 International 4900: DT466, 5-speed transmission, 2-speed axle. 2,500-gallon 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. (P12)

West Chicago, IL septic service business for sale. Family-owned for over 50 years. 630-629-1000

Portable toilet company - established for over 20 years in the central KY area - for sale. Approximately 350 portable toilets, (1) 12-position transport trailer. (1) 6-position trailer, 2 portable toilet trucks, (1) 2009 Peterbilt 1,100/400 with 118,000 miles, (1) 2005 International 900/300 with 200,000 miles, holding tanks, and handwash units. Strong customer base including contractor, special events and weekend service. Will sell business with or without pump trucks. ccportables@bbtel.com

Northeast Arizona. Elk & mule deer hunting. Septic pumping business for sale - \$265,000. House and 1.3 acres available - \$119,000. Turnkey and established over 29 years. Owner retiring. Call 401-741-5501.

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, 813-704-6599 or 813-758-2552. (PBM)

Well-established (1966) septic tank pumping business in Minneapolis, MN, south Metro counties for sale. Second owner retiring after 23 years. 2003 Mack Granite, 400hp Allison, 3,500-gallon aluminum Jay's tank, 866 NVE pump, built on new truck in 2003. 1990 Mack CH, single axle, 250hp, 5-speed, 2,500-gallon aluminum Jay's tank, 360 NVE pump, built 1999. 2,500 customer database. \$120,000. Call Greg at 952-469-2489. ggudbjartsson@gmail.com (P12)

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.

Well-established SW Florida portable restroom business for sale. 800+ units on the street, 15 ADA, 30+ sinks, 20+ holding tanks, 6 trucks, 2 trailers. Many longterm construction customers. Year-round event customers. Documented yearly growth. Only serious buyers need to inquire. portapottyrentals@yahoo.com

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

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 931-248-1284 or 931-287-5413.

For Sale: Northeast Ohio portable restroom company. Company consists of approximately 800 portable restrooms with 42 handicapped-accessible units, 16 handwash stations, 5 shower units, 2 delivery trucks, 4 service trucks and 3 delivery trailers. This is a 12-year-old company with many long-term customers and documented yearly growth. Owner is retiring. For serious inquiries please contact Rich at 440-223-4877.

Fully-equipped Long Island, NY cesspool cleaning company for sale. Established 50+ years serving Nassau & Suffolk Counties with excellent reputation and high-repeat customer base. 516-993-0446 (P01)

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616-516-1451, MI

P12

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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 vacuumpressure pump installed on a 2015 Peterbilt 348 cab and chassis. (Stock #13634 A-D) www. VacuumSalesInc.com, (888) VAC-UNIT (822-8648) (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

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

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2007 Volvo VHD64B w/X-Vac X-12 body. Great used dealer-serviced and work-ready truck. 12-yard debris tank. Hibon 27" blower. 1,000 gallons water w/20qpm General pump @ 4,000psi. 750K Hotsey boiler. \$110,000

Jason 303-301-7684. CO imitchell@transleaseinc.com P12

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2012 US Jetting Trailer 6018: 6,000psi @ 18gpm. Kubota diesel, extra reel, dump guns, nozzles, etc. Only 333 hrs. MUST SEE! 604-886-1212 or sstarbuck@dccnet.com (P01)

JETTERS-TRUCK



1993 GMC 1-ton Jetter: 35gpm FMC pump, 3/4" hose, 500-gallon plastic tank.\$11,900 OBO Other jet trucks and trailers available.

> 608-835-7767, WI PBM

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Call John 503-887-0070 PBM



2003 Super Products Combo Camel truck with a Sterling cab with manual transmission. The truck has 110,000 miles. Truck has a 16" PD blower on it. Truck runs, drives and operates great. Tires are in good condition. No accidents or issues. Truck is located in Chicago IL.

Mark 773-491-6093, IL



2006 International Vac-Con: 80gpm, 3-stage fan, 12-yd. debris tank, 96,923 miles, 11,063 hrs. Pony motor 2,351 hrs. \$115,000

> Call 877-389-2227, IN P02

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)

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)

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MISCELLANEOUS

Good used concrete molds for sale. 24" Eccentric cone form, bottom female pallet, 48" x 48" barrel form, top male pallet, bottom female pallet, 48" x 48" extended base form, 12" tall flat lid form and cone wire iig. (P12) Call 618-228-7702

PORTABLE RESTROOMS



units of each model in picture. \$75-\$150.

blallen@frontiernet.net 912-764-9975, GA

30 Satellite Synergies for sale. Great for parks & recreation. \$300 each. Northern MN. 218-591-1736. (P12)

Used GOOD condition portable toilets. Prices range from \$75 to \$200. Please contact me at Jmccord@aciservicesllc.net. (P12)

Olympic Deluxe flush units w/urinal and hand sinks. Good condition. \$250 each. NY/ CT line. 203-748-6906 (P12)

SUBMIT YOUR CLASSIFIED AD ONLINE at www.pumper.com

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30 - 40 Portable Toilet Trailers with or without toilets. With 2 portable toilets per trailer. \$600 to \$1,000; depends on condition of trailers and toilets.

Call Don 573-473-4093, MO P12

PORTABLE RESTROOM TRAILERS



Two (2) restroom trailers for sale, both have men/women side, one has 2 units on each side and the other has one unit on each side. Heater and air conditioner in both units. Built in sewage tank, must have water supply and electric supply. \$9,000 for smaller unit and \$11,000 for larger one. Will make deal if you want both.

740-483-9049, OH

P12



1996 20' Ameri-Can Restroom Trailer: 2 stalls/urinal men's side; 4 stalls women's side. Heat and a/c. For more info and photos contact

> 419-466-1349, OH or tom@clswrents.com

ADA Restroom Trailer: 2012 Wells Cargo (UItraLav). ADA stall + 1 men + 1 women. Great shape, kept under roof, Heat, A/C, water tank. Hydraulics lower trailer to ground. \$25,000. 540-765-7845 Roanoke, Virginia

P01

PORTABLE RESTROOM **TRAILERS**

2002 Ameri-Can Presidential - needs refurbishing. \$7,500 OBO. Ameri-Can 5stall - needs refurbishing. 786-533-2519. info@expressportable.com for pictures (P12)

6-station portable restroom trailer 10 X 36 certified ADA accessible for sale. Divided 3 stations 1 end and 3 on opposite end for men's vs women's. Floor plan and photos available. Contact gary@templetonconstruction.com or 325-653-6904 for more information. Buyer will need to furnish ramps. \$35,000. (P02)

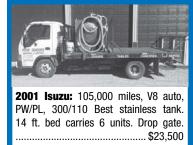
2 Decons. 28' Tonto. 18' Royal. 2001 ASCI. 16' Presidential, 26' Presidential, portable toilet hauler trailers. 315-437-1291, NY. (PBM)

PORTABLE RESTROOM TRUCKS



2013 Dodge 5500, aluminum 1,300gallon (1,000 waste/300 fresh) restroom tank, Masport HXL4 pump, diesel engine, pressure system and hose reel, DC10 water pump, excellent condition. Call for pricing.

> 866-720-4999 P12



231-250-1483, MI



Work - 870-238-9481 Cell - 870-588-1935. AR



2003 Isuzu NPR: Diesel, auto., Keith Huber Tugger pumping unit. Toilet rack hauls two units. \$22,000

Call Mid-America Sanitation 620-249-7386, KS kathyb@midamerica-sanitation.com



2005 International **4300**: DT466. Allison auto., 1,100 waste/400 fresh. Masport HXL400, DC-10 lowered work station. \$32,900

> **Call or text** 419-466-1349, OH

PN2

P12



Two (2) International Terrastar Trucks Available: 2014 with aluminum tank, 77,500 miles - \$62,500. 2013 with aluminum tank, 67,000 miles - \$65,000. Both trucks have extended warranty up to 200,000 miles.

> **Call Rodney Lane** 270-832-3793



2011 Chevy 3500HD 4x4: 100 fresh/ 285 waste stainless steel tank on custom aluminum flatbed with 8 ft. tool box. Perfect winter truck with 40,000 miles and Boss snow plow mount. ... \$32,500

Jake 218-298-1291, MN

1999 Ford F550: 7.3 diesel, rebuilt engine. 500/300, new vacuum pump, 2000 Ford F450: 7.3 diesel, 400/250. Honda vacuum pump, Slide-in unit: New Briggs & Stratton pump, 200/100. For questions & prices email Kerkstraservices@yahoo.com



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: \$21,000, 1700 waste/600 fresh: \$23,500. Anv custom options or sizes available!

> **TexLa Services** 936-641-3938 www.texlaservices.com P12

Portable toilet pump trucks for sale: 2008 Ford F750 with stainless-steel Best tank. 229k, Cummins 6.2L diesel, Allison automatic under CDL - \$27,900. 2008 Ford F750 with stainless-steel Coleman tank. 113k CAT diesel, Allison automatic under CDL - \$27,900. 2011 Ford F750 with stainless-steel Coleman tank, 77k Cummins 6.2 diesel, Allison automatic under CDL - \$34,000. 330-733-9000 pflvnn@superiorportables.com

For Sale: Six (6) 2005 Ford F450 diesel pumper vacuum trucks. 300 fresh and 650 waste. Mileage ranging from 235,485 to 283,503. Inquire for pricing. Please call us at 651-429-3781. (P12)

2008 Isuzu NPR HD: Crescent flat tank 550/250, Masport pump, 6-unit carrier, Theiman lift gate. 107k miles, one driver/ owner, new tires, works daily. \$45,000 OBO. 203-748-6906 (P12)

2001 International: DT466 engine, Allison MD 3560 transmission. 98 miles on rebuilt engine. 75% or better on 11R22.5 tires. 3,000-gallon tank. 602-438-7402

2007 Kenworth T270 aluminum 2,000gallon \$53,000; 2006 International 4300 1,350-gallon \$39,000; 2002 International 4300 1,350-gallon \$27,000. 256-757-9900 or www.pbsos.com (PBM)

2009 Ford F550: 4x4, diesel, auto., new 950-gallon 650/300 aluminum tank, Conde SDS6, 115cfm Honda 9hp electric start. www.pumpertrucksales.com. Call JR. @ 720-253-8014, CO. (PBM)

2009 Dodge 5500: 4x4, 6.7 diesel, auto., new 950-gallon 650/300 aluminum tank, Conde SDS6, 115cfm Honda 9hp electric start, 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.pumpertrucksales.com, Call JR. @ 720-253-8014.

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Used Waterless Hand Sanitizer Dispensers -\$3.00 each. You pay shipping. Uses bag in the box refills. Purchased from Toico Company. 989-777-3609

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SEPTIC TRUCKS

1999 International 8100: C10 CAT motor, 10-speed transmission, 370hp, 270,000 miles. MEC 8000 pump, 6" dump, 4" suction, heated valves. Runs and drives great, ready to pump. Questions call 920-765-1903. Pictures upon request by email or text. (P12)

1983 Ford 8000 with 1999 model Specialty B 1,800-gallon tank and Jurop pump. 3208 CAT engine with a 10-speed transmission. \$12,000 or make offer. Call 870-423-8654 for more info or pictures. (P12)

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1999 Freightliner: Cummins motor, pre-emissions, 8LL transmission. All tires are new, very low miles - 159,250.\$25,000

Call 715-938-0119, WI PE



2013 International 7600 WorkStar: Classy Truck of Year 2014. Lots of chrome. Max Force 12.4L, 8LL transmission, Eagle interior. Only 51,000 miles and 3,200 hours. 20,000 front, 40,000 rears, 20,000 tag, good tires. Imperial 5,000-gallon stainless steel tank, NVE Challenger 500cfm pump. NO FET TAX!

Call 715-938-0119, WI



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TexLa Services 936-641-3938 www.texlaservices.com P12

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)



740-820-5520, OH P1



1996 International: 6-speed, 2,500-gallon tank, new transmission and drive line, Fruitland pump. 218,282 miles. It's a good truck, just upgrading to a newer truck. Price includes hoses! If you have any questions, please feel free to call!

580-332-5157, OK



2011 & 2014 Internationals, 2012
Peterbilt: All have Masport pumps, Cummins and low miles. Sell as fleet or individually. Contact me for photos and prices.

717-250-1837, PA P1



2013 Freightliner M2-112: 21,445 miles, Progress 3,600-gallon aluminum tank w/Masport 400 & deodorizer. Detroit DD13 450hp. Fuller 10-speed, jake brake. 16k front, 40k rears. DEF/CARB compliant. Air ride, air seat, A/C, power mirrors, windows & cruise. Removable vinyl graphics. Full service records, excellent condition. More photos/details available upon request. \$128,500

glenn@advanced-septic.com 805-674-7222, CA P1:



2011 International 5900i Series w/ Cummins 450hp, 8-speed double low. Loaded. 282,000 miles. 2011 Advance tank 5,500-gallon aluminum. NVE 4310 blower, heated NVE valves. \$103,000

Call Dave or JR - 724-222-6080, PA



1999 Freightliner FL70 septic truck: 150,000 miles, 330hp CAT with Allison automatic. 500cfm Wittig water-cooled pump. Truck also has Harben jetter 4,000psi @18gpm with hydraulic reel and 500 ft. of new 1/2" jetter hose with heads. Hydraulic dump bed and digital liquid level gauge. Truck will run app. 80mph loaded or unloaded. This truck was built to image our larger Keith Huber Dominator Units. 2,400 waste/250 fresh. 6" dump air valve along with back & side 4" pumping valves. This unit is the baddest small unit in the Southeast hands down. Miles will increase since we use it daily. Our new unit arrives in 3 weeks.

678-906-0712, GA

P12



1999 Volvo: 400hp Cummins, Transway 3,800-gallon tank. New Fruitland pump March 2015, hoist just rebuilt. New transmission, 160k miles. \$65,000

Mike 443-235-5979, DE

2006 GMC 7500: Isuzu diesel, 210hp, Allison auto., under CDL. New 1,850-gallon vac tank, build in progress. www.pumpertrucksales. com. Call JR. @ 720-253-8014, CO. (PBM)

1995 Freightliner: Detroit Series 60, Fuller 13-speed, 3,365-gallon vac tank, Masport pump. www.pumpertrucksales.com. Call JR. @ 720-253-8014, CO. (PBM)



773-491-6093, IL

-491-0093, IL P01



2007 Mack CV700: Mack 460, jake, 18-speed, 18/46 with 20,000 lift. Double frame, 4,000-gallon steel septic tank, Masport pump. Work-ready.

716-685-6757. IL



1999 Kenworth T-300: Rebuilt 3126 CAT motor & 6-speed Eaton transmission, brand-new clutch. 2,500-gallon tank 5/16" thick. 2014 model new Jurop PN84, remote-control valve.

Call or text Jerry at 918-381-9072, OK

P01

P12



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Call 203-238-6768, CT Ask for Tommy or Jay

P01

SEPTIC TRUCKS



Very clean 1993 International 4900, 7-year-old 2,500-gallon tank, 180k miles, 6-speed transmission. NEW vacuum pump, NEW brakes. Tires 80%. Completely refurbished. Asking \$25,000

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2001 Freightliner: 6-speed manual, 2,500-gallon tank w/rear dump, heated valves. Battioni 8000 vacuum pump. Ready for work. \$40,000 OBO

724-837-6084, PA

Must See this Sweet 2003 Pete! Lely 3,600 gallon, aluminum hoisted tank w/ full-opening rear door, NVE460 vacuum pump, 110-gallon water tank w/DC10 pump. Always garaged. Very nice truck. Buy it now! \$95,500

> 217-337-5996. IL P12

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)

2005 Ford F750 XLT: 5.9 Cummins. 245hp. 7-speed, 122,500 miles, under CDL. New 1,850-gallon vacuum tank, new Patriot 300 vacuum pump. www.pumpertrucksales.com. Call JR. @ 720-253-8014. CO.

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)



2007 Freightliner M2 with a new Imperial 2,500-gallon steel tank, 260hp Mercedes engine, air ride, power heated mirrors, driver-controlled differential lock, NVE607 360cfm Challenger pump, aluminum hose trays. Stock# 418027.

Call 920-997-4922



1998 Kenworth T800 truck with 3,500-gallon tank and Challenger 360 pump. 4 new tires. Asking \$29,999. Please call Tony during normal business hours and weekends:

> 508-954-9994. MA P12

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.

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, (PBM)

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2006 Kenworth T800 quad-axle cab & chassis with a 2001 Somerset 4,500 U.S. gallon, full-opening rear door, vacuum tank and Robushci Series 65 vacuum blower. (Stock# 8893C) www.VacuumSalesinc.com (888) **VAC-UNIT (822-8648)**

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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)

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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)

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P12

P12



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952-873-3292, MN

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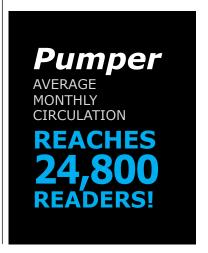
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