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

Jim Kneiszel Editor

# Transitioning From the Answer Man to the Septic Detective

Our wastewater expert column name is changing, but our long partnership with University of Minnesota educators stays the same

By Jim Kneiszel

hroughout my time as editor of *Pumper* since 2005, I have had the privilege of working with septic system experts from the University of Minnesota through technical collaborations and the Septic System Answer Man column, which has run continuously for the better part of four decades. I believe our readers have benefited greatly from the continuity we've enjoyed working with these researchers and educators who ushered in the modern age of decentralized wastewater treatment.

Our first septic expert was Roger Machmeier, who was an Extension Agricultural Engineer at the University of Minnesota. In the pioneer years of septic system design, Machmeier attended one of the first trade shows that grew into the Pumper & Cleaner Expo in New Orleans, shortly after this magazine was founded by Bob Kendall and Pete Lawonn. Before the column came along, he became a fixture training pumpers at the Expo, which moved to Nashville where it became a fixture of the industry.

Machmeier received so many questions about septic service at the shows that in the 1990s, the Answer Man column was born to pass along important information to pumpers. I always thought he was happy to have this outlet to reach thousands of septic professionals beyond those sitting in his training classes. And we were honored to pass along his expertise.



Retiring Septic System Answer Man columnist Jim Anderson looks over an excavation with Dan Wheeler, a soils trainer at the University of Minnesota. (Dave Gustafson photo)

Improved systems and better training have translated into higher quality sewage treatment and better longevity of septic systems for homeowners.

- Roger Machmeier

#### **LOOKING BACK**

For the 30th anniversary of *Pumper* in 2009, Machmeier reflected on the progress of the wastewater industry:

"New techniques and products have emerged to enhance the professional services provided by the pumping and onsite system installation industry," he wrote. "Improved systems and better training have translated into higher quality sewage treatment and better longevity of septic systems for homeowners.

"I believe the mood of the industry has changed to one of contractors showing more pride in their work," he continued. "I would hope the days of advertisements with sayings like, 'You dump, we pump,' are over. Education has given the personnel of service companies a basic knowledge on why the septic tank has to be regularly cleaned and pumped.

"My message to the onsite sewage treatment industry is simple: Keep up the good work. Continue to be a proud professional in your activities with onsite sewage treatment," he concluded.

Throughout this time period, Machmeier was working hand-in-hand with his University of Minnesota colleague, Jim Anderson, so when it came time for him to retire from the column, it was only natural to turn the job over to Anderson in 2012.

#### **CHANGES COMING**

It has been a great pleasure to work with Anderson as he addresses every conceivable issue a pumper could face during daily service routes. Beyond the columns, he remained heavily involved with Pumper & Cleaner Expo training, every year training ballrooms full of contractors from across the country and the world.

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Cummins ISL (380 HP) Allison Automatic, 171K Miles, New 4000 Gallon Tank, New Jurop LC-420 (425 CFM) \$148,000



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Jim Anderson speaks during an education session for pumpers. (Dave Gustafson photo)

He eventually took over as education coordinator for the National Association of Wastewater Technicians, a position he held for many years. From that platform he was able to set training priorities and write courses that helped introduce more modern decentralized wastewater techniques to the pumper community. So like Machmeier, he helped raise the bar of professionalism.

Long retired from the university and off the traveling training circuit, Anderson moved to a lake in northern Wisconsin to spend more time with

Sara Heger, who now produces the Septic Detective column, is shown in a training session for wastewater professionals.

family. Recently he let me know he was ready to give up Answer Man and I started searching for a new writer to carry on the tradition. Luckily, I only had to look as far as the next link in the University of Minnesota chain of septic educators.

In this month's issue we welcome Sara Heger, who many of you already know as a researcher and instructor with the Onsite Sewage Treatment Program in the Water Resources Center at Minnesota. She is a certified onsite system designer and service provider, and is past president of the National Onsite Wastewater Recycling Association.



Sara Heger and Dave Gustafson, right, onsite educators from the University of Minnesota, consult on a project.

#### **NEW NAME, SAME GREAT CONTENT**

With this changing of the guard, it's obvious we had to change the name of the column. No longer the Answer Man, Heger will be called the Septic Detective. She is still looking for your questions, however, so please feel free to send them to editor@pumper.com and we will pass them along.

Heger is proud to follow in Anderson's footsteps. As she explains, she was hired by Anderson as a graduate student in 1998 to conduct research related to alternative technology. He was her adviser as she pursued a master's degree in Water Resource Science, and then served on her Ph.D. committee as she added a doctorate to her credentials. Anderson became her boss at the Water Resources Center.

"He was always supportive of me developing as a professional and serving in leadership positions," Heger said. "His strong support of our program to teach science-based soils and engineering to septic professionals was steadfast through challenging times at the University. Our program would not be the national leader it is without his leadership and dedication."

I have a similar thought about the long, beneficial partnership between *Pumper* magazine and these University of Minnesota educators. We've done our best to deliver their important lessons to readers and we hope the columns have been helpful to the pumping community. As always, we welcome your questions, comments and topic suggestions for the Septic Detective.



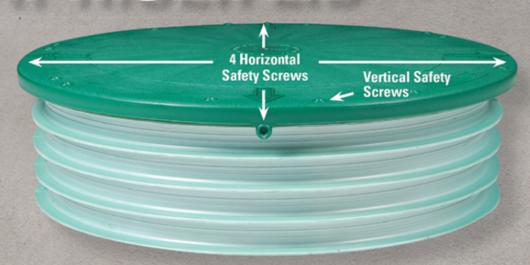


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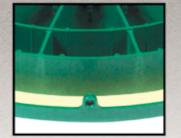
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#### ROOT INTRUSION

### a pain for installers

In this online exclusive article, authors Jim Anderson and Dave Gustafson discuss the importance of watertight septic system components, delving into how proper installation can prevent raw sewage leakage and repel the threat of root intrusion. pumper.com/featured





SAFETY TIPS

#### avoid common mistakes

The construction industry is noted as the deadliest field for workers, with 985 lives lost in 2021 alone due to accidents involving heavy equipment and electrocution. This article explores how understanding the causes of these accidents can lead to effective and life-saving solutions.

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One of the biggest mistakes made when replacing a failed pump is just putting in the same model pump that was originally there.

Septic Pump Replacement Do's and Don'ts
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JNIVERSITY RESEARCH

## study supports routine pumpouts

A recent study out of the University of Georgia finds that septic systems should be inspected within a year of their installation, and that best practices indicate more routine pumpouts of septic tanks is ideal.

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PASSING THE BATON

### secure your business's future

As the septic pumping industry continues to advance, one key to long-term success lies in preparing the next generation of leaders. Three businesses in the sector, previously profiled by *Pumper* magazine, serve as examples of how family-owned companies can work to ensure their legacies continue by grooming their successors.

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decade ago, René Goulet was at the start of a scientific experiment at his pumping business, Goulet Septic Pumping & Design, in Green Valley, Ontario.

For years he and other pumpers had been land-spreading septage, but Goulet worried that would end as Ontario's Ministry of the Environment began to add regulations. Goulet wanted to be ahead of regulators, so he joined Chris Kinsley, now an engineering professor at the University of Ottawa, in a project to test the effectiveness of reed beds to treat septage.

#### **NATURAL FILTERS**

A pair of engineered reed beds were built on Goulet's farm, where his business is based. Each bed has layers of gravel and coarse sand and is planted with phragmites, reed grasses that grow in nearby ditches. Beds receive septage at one end, and release cleaned water on the other end. Water flows from the beds into a lagoon and is used for spray irrigation of a plantation of poplars. A third unplanted sand bed was built as part of the experiment to act as a comparison to the reed beds. That's where the project stood when *Pumper* last wrote about Goulet in 2012.

The sand bed has now become another reed bed. Nature converted it when seeds from the other two beds drifted over and took root. Three years ago, René built a fourth bed. It's double the size of the first ones, he says, at 50 feet by 100 feet. (The originals were 50 by 50.) He planted nothing with the expectation that seeds from the other beds would colonize the new one.

"So we're up to four reed beds, but size-wise we have five," says his daughter and Goulet Septic manager Jessica Goulet.

In 2021 they installed an aeration system in the lagoon to help break down solids before wastewater flows to the irrigation system. Aeration has been working so well that they're looking at adding a couple of lines to increase agitation, Jessica says. The lagoon is built with a triple liner, and solids not broken down by the aeration system form a layer of organic matter that helps protect the liner, René says.

The two 1 hp aeration pumps are from Canadian Pond. A pair of 150-foot long hoses connect to each pump and create small bubbles. This aerates about half the lagoon at the moment. He wants to install more hoses and valves to direct air to half of the lagoon at a time.

#### **SLUDGE REMOVAL**

About two years ago, the original beds were cleaned out for the first time since they were built. About  $4\,1/2$  feet of sludge had accumulated in the beds, René says. That sludge becomes part of the filtration as it builds up.

The Goulets brought in a large excavator to do the cleaning. To start the cleaning, the excavator cut a trench through the middle of the beds so Kinsley could take samples. Although his research project had ended, he was still interested in what had happened in the beds.

The excavator operator had to be careful not to hit the liners on the side, René says. On the bottom a layer of sand covered the base gravel layer, so once the operator found sand he left a few inches of compost.

With a manure spreader Goulet distributed the sludge among the poplars. Also, Jessica says, they let the beds dry out before cleaning. "That sludge is a lot better than the liquid stuff. There's much less chance of polluting," René adds.

"The first two reed beds, the reeds were planted in sand. It looked like peat moss, about 12 to 14 inches of peat moss right over the top of the sand. It was nice, fluffy and above that it looked like black ground. It was very decomposed," René says.

In the sand bed that had been seeded by the two planted beds, the bottom 12 to 14 inches looked like clay, very wet and dense, René says. Above the clay-like layer was a well decomposed layer that looked like black earth.

IT LOOKED LIKE PEAT MOSS,
ABOUT 12 TO 14 INCHES OF PEAT
MOSS RIGHT OVER THE TOP OF THE SAND.
IT WAS NICE, FLUFFY AND ABOVE THAT IT
LOOKED LIKE BLACK GROUND. IT WAS
VERY DECOMPOSED.

**RENÉ GOULET** 





- Gerard Goulet operates a John Deere as part of the irrigation process.
- Effluent is conveyed to the poplar groves through a customized Bauer Magnum SX1000 pump from Vanden Bussche.



The Ontario Ministry of the Environment recently gave the project another five-year permit, René says.

One condition of the project was that Goulet Septic could not patent the design, Jessica says. There was a flurry of interest in the technology early on with tours coming to the farm.

#### **MINIMAL COSTS**

"In the last few years we haven't really had anybody interested because it costs a certain amount of money to put in," René says, "but what people don't understand — after it's in, it almost doesn't cost anything to run, and that's a big advantage."

Aside from the irrigation pumps, and the cost of those is minimal, the other big cost is running the aeration pumps, Jessica says. "Even that, it's a drop in the bucket. The aeration addition to the lagoon almost replaces any product we would put into the lagoon to help the decomposition."

The downside, René says, is that the Bio-Desolve (MTS Environmental) they previously used kept the lagoon water clear. In 2022 they used only aeration, and the lagoon grew a green moss they've never seen before, he says.

In 2022 the four beds combined treated 1.76 million gallons of septage, René says. When customer demand for pumping is high the beds may receive 36,000 gallons in a week, he says, and that saturates them. Effluent flowing into the lagoon becomes darker than usual (hydraulic pressure pushes effluent too fast through the sand and gravel), but the system keeps working and clears itself when customer demand drops, he said.

In 2023 René plans to add two more beds, each 50 by 50 feet. At 50 by 100 feet the newest bed is too large for easy cleaning, he explains. When it needs cleaning, it will have to be out of commission for a few months in order to dry out. Having more, smaller beds will provide capacity and allow one bed to be out of service for cleaning, he says. Essentially, he says, he's found you need one bed per day of dumping, which lets beds drain and dry on days when they're not used.

#### **CLEARING DEBRIS**

When he started the poplar plantation, René says, he was pulling septage from the lagoon and spraying it into the trees, so he wanted a species that would easily absorb water and nutrients. "But now that we have the reed beds, we could have another type of tree that only sucks up water. I mean, there's not much nutrients left in the water from the lagoon because it's fairly clear water now."

None of the poplars have been harvested yet. A local mill shut down, Jessica says, and a couple of proposals to use the wood for pellets have not panned out. Trees in the plantation are between 6 and 12 inches in diameter and from 40 to 50 feet tall.





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**RENÉ GOULET** 

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René clears tree branches with a John Deere tractor and a Bush Hog. He drives over the tree pieces, and the Bush Hog breaks them up enough so they decompose in about 18 months, he says.

#### **KEEPING BUSY**

A decade ago, Goulet Pumping was serving people within a 40-mile radius of its base. It's still handling the same territory. "We're so busy, we pretty much stick in the same area," René says.

In 2021, they pumped 1,600 tanks. That is not only residential work but also schools, a local wastewater treatment system and truck stops.

There's no company website because there is more than enough work, René says. "I don't even keep up the Facebook page the way I should," Jessica adds.

As in other places, migration has helped the business. "We've had a lot of people from the city moving out to the country, buying older houses, and most of the systems of the older houses here were put in in the '60s," René says.

Green Valley is about 60 miles from Montreal and Ottawa, but the edge of the company's service territory comes within 20 miles of each city center.

"The other thing is, with COVID and homeschooling, people were putting in in-law suites to get the parents to move in just to support them for homes-chooling and lack of daycare," Jessica says.

Designing systems is a new part of the company's business. René is 68, and designing is his plan for staying involved in the industry as 40-year-old Jessica begins taking over. "We've really been busy designing in the last three years," René says. "We're four designers in the area, and we're all pretty much the same age, which is close to retirement."

Ontario code specifies system size based on the square footage of a structure, number of bedrooms, and number of fixtures, René says. Most soils are either glacial till or clay, he says, so almost all of the systems he designs are raised beds. Commercial systems, more than 2,641 gpd, must be approved by the Ontario Ministry of the Environment, Jessica adds. As long as systems are not overly complicated, René says, he can design them.

#### **COVID CONCERNS**

At first the pandemic was scary because no one knew anything, and everyone was working from home. Case numbers in Ontario were quite high, and provincial officials took the pandemic very seriously, Jessica says. People who were exposed



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had to quarantine for 10 days. Goulet drivers carried letters identifying them as essential workers in case they were stopped.

In the initial stage of the pandemic, their driver, Thomas Cushing Jr., wore a mask and face shield, safety glasses and gloves. "He has a toddler who's not much younger than mine, so he would get home and undress outside," Jessica says. They used hand sanitizer after each pumping, sterilized the trucks, sanitized money, and encouraged customers to use electronic money transfers instead of cash.

"We're very lucky. We haven't really been touched by it," Jessica says.

#### **PRACTICAL MACHINES**

New in the company inventory is a 2021 Western Star truck with a 3,200-gallon steel tank and a Wallenstein pump. There is a hose reel, as there was on the company's previous trucks, and plenty of stainless steel toolboxes. Like previous trucks, this one was built out by Vacutrux.

"The only difference, as far as accessories, is this truck does not have a large water tank on the top. We weren't using it," Jessica says. The water tank on the old truck fed a pressure washer, but it was underpowered for unblocking sewer lines, René says. Also, he adds, "It takes time, and we are so busy just pumping, we really didn't want to continue that part of the business."

When a customer needs lines cleared, Jessica says, there are a couple of local contractors who are quick and efficient and receive a referral.

Another change with this truck was selecting an automatic transmission. "We went with automatic because in times when we need to hire a new driver, it's easier to find a driver who's more comfortable with an automatic," Jessica says. Another advantage of this truck, René adds, is that a technician can engage the vacuum pump by remote control.

A 2016 Bobcat 418 excavator does light work such as installing risers.

A 2017 Ford F-150 four-wheel-drive, with a towing package rated at 12,200 pounds, moves the Bobcat in a 14-foot enclosed tandem-axle trailer from Lightning Trailers. The trailer also holds tools, pipes and parts. René fitted out the inside of the trailer himself. The door folds down to act as a ramp.





For several years, the reed beds at Goulet Septic Pumping & Design were the subject of formal scientific research. When the beds were cleaned a couple of years ago, Chris Kinsley, who started the project and is a professor of engineering at the University of Ottawa, was on hand to see what had happened below the surface. "It smelled like soil," he says.

After he looked at the data he'd accumulated, Kinsley says, the quality of biosolids were comparable to sludge that had been mechanically dewatered, and in some cases the reed beds' product was better. Reed bed biosolids were about 4% drier, had about 3% more organic carbon and about 1% less nitrogen.

The bed biosolids were below U.S. Environmental Protection Agency limits that require tracking metals in soil for land application, and met Ontario limits. Bed biosolids also met EPA Class A pathogen limits for fecal coliform and salmonella although several samples did exceed the coliform limit, he says.

Overall, Kinsley says, there was no difference in treatment between a sand bed constructed later, and the original planted reed beds. Certainly the reeds make the beds look better, he adds, and during his time on Goulet's property it seemed the plants helped control odors.

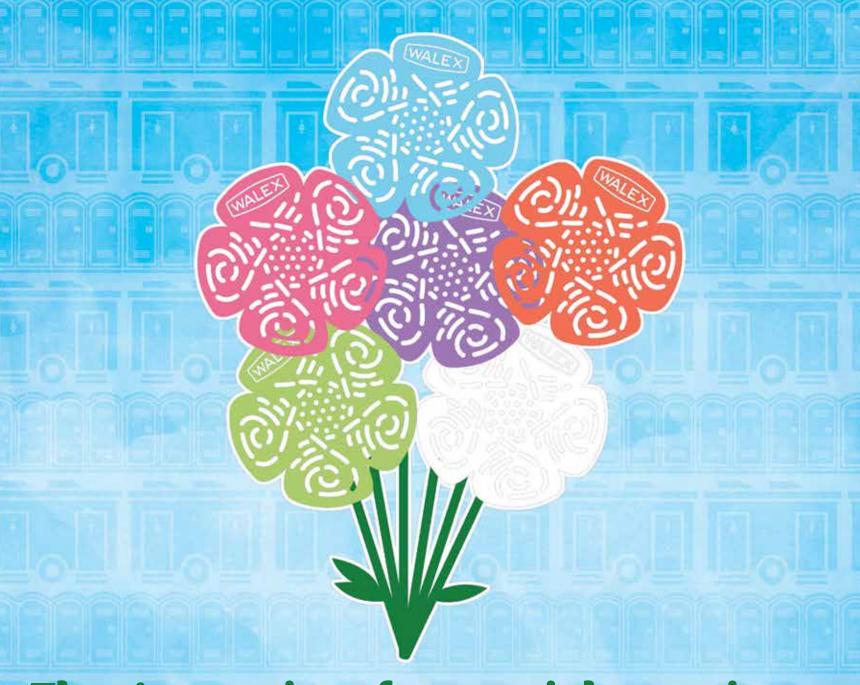
Based on the Goulet experiment, Kinsley says, he advised Ontario's 2,900-square-mile Algonquin Park on the design of a large similar system to handle some of its waste. Perhaps a dozen other people contacted him for information, he says. "I don't know if they ever went ahead."

Ontario's Ministry of the Environment was also interested in the results of his research, Kinsley says. If it ever pushes treatment of septage,

there will be a huge uptake of this technology, he adds.

Aside from filtering septage, the plants also play a role in keeping the bed operating. Roots break up the soil and keep drainage pathways open, Kinsley says. Winter freezing helped break up soil for drainage, too. "In the spring we had a massive flush of clean water coming out the bottom of the filters," he says.

Goulet with a 2012 Bobcat miniexcavator hauled to job sites with a customized Lightning All Aluminum trailer pulled by a Ford F-150.



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"If I'd have known the little machine was so heavy, I would have got barn doors, and I would have put an aluminum ramp on cables," he says. To handle the weight of the Bobcat, René says he had two aluminum ramps fabricated. They're about 20 inches wide and fit over the lowered trailer door. He had wheels installed on the ramps so he can roll them into position.

The company owns a AM200-100 camera (Amazing Machinery) for inspections but mainly uses the sonar function on it to locate the end of a line, Jessica says. The climate created by COVID depressed the market for inspections, she says, and a hot real estate market meant buyers were waiving inspections and all other contingencies. Inspection requests are coming in again, she says, but the company is finding plenty of work designing systems to replace all the failed systems in homes bought by city migrants.

A 110 horsepower John Deere 3155 tractor handles general chores, mowing and drives the Bauer Magnum SX1000 irrigation pump in the poplar plantation. This pump is like a sludge pump, René says, with knives to chop up any solids and reed pieces.

They have a Bush Hog to keep grass cut among the trees so it's easy to monitor irrigation, and an angular mower to keep grass short on the sides of the lagoon so it's easy to spot muskrats or other rodents trying to set up homes.

#### **HELP WANTED**

The Goulet team has expanded. Last time *Pumper* wrote about Goulet, the employee count was just one: Goulet himself. Now there are four. In addition to René there are Jessica, Cushing Jr., and part-time bookkeeper Lisa O'Neill.

There is plenty of pumping and repair work to be done, but it's hard to find employees, Jessica says. Ideally, René says, they would find someone to run a truck and do repairs, but he's not optimistic. So he does repairs whenever he can, but mostly he designs. "I design every day, and we install a lot of risers. People don't want to dig their tanks anymore."

René runs a truck less often these days, but jumps in the old truck (a 2017 International) for special jobs such as pumping a municipal wastewater plant. For the last few years Jessica has worked primarily in the office because her son was young. Once he's in school, she says, she will be able to spend more time in the field and learning.

"The way I look at it is, I really have to take advantage of the knowledge that dad has because they don't teach it anywhere." She took a course to get her designer's license and thought she would learn about septic systems. "You don't. You learn about math. You learn about the legalities of it."

#### **FORWARD THINKING**

Goulet Septic is in a good place right now, Jessica says. New septage dumpsites are not being approved, and their reed bed system is well ahead of what regulations require. Local pumpers are all about his age, and few people seem interested in taking over the businesses, René says.

A worry is what the province will ultimately require for septage. René says he's spent much time and money on the reed beds, yet the province could require all pumpers to dump loads at municipal wastewater plants. The city's nearest Green Valley is Cornwall, Ontario, about 24 miles away, but it's having a hard time handling its own wastewater, René says. "So where else do we go?"



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Some pumpers are hauling to sites near Ottawa (about 68 miles), he says, and those sites are nearing capacity. "Not to mention the cost," Jessica adds. "I was talking to a fellow pumper on the weekend, and he hauls four hours a day to dump."

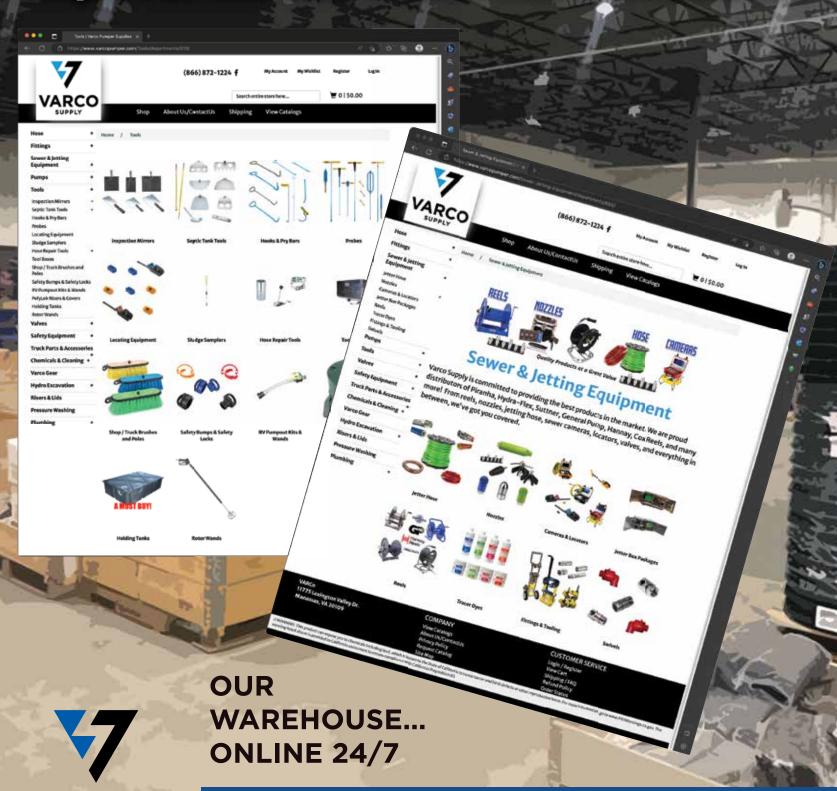
Taking septage from other haulers is not on the table because of liability, René says. Ontario's Ministry of the Environment told him that if any contaminants were to enter his beds, he'd have to bear the cost of having the bed and lagoon contents disposed of as contaminated waste, he says.

Meanwhile, a solution is already tested and in place on the Goulet farm. "I think we're pretty proud of what we've done here," René says. "I think we're a good example."





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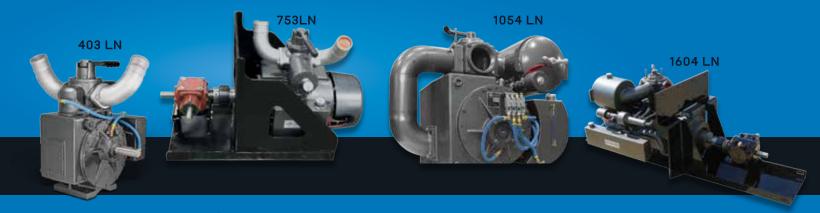
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# Will Robots Be Part of Your Future Workforce?

A valued frontline crew, on-call temp workers and even way-out technology may help you cope with chronic staffing shortages

By Jill Johnson

t's no secret that staffing shortages facing most businesses today are extremely challenging. It is also highly unlikely that these challenges are going to resolve in the near term. So, what do you do now when you just cannot find the talent you need? It is time to rethink all of your staffing options. The key is to make the most of the staff you have and to augment them with outside resources and technology.

#### 1. Prioritize frontline, customer-facing employees

The foundation of business success is based upon your revenue and the stability of your revenue streams. Customer loyalty and retention depends on their satisfaction. Prospects rely on their ability to access the information they need to make informed decisions and gain a comfort level with their options. Organizations with a history of sales success often rely on operational delivery to keep them going when they are short staffed. Yet it is your customer-facing staff who are the most valuable to sustaining revenue.

Identify staff who interact with your customers from the phone call order for septic service to the technician's visit to invoicing for the work performed. Their success in meeting customer needs, satisfaction and prospect demands determine if you can satisfy and keep them. If frontline workers have the bandwidth to provide exceptional service, they can keep your customers and expand your prospect pool.

Today's consumers are looking for faster information. Many prefer to get information via video or audio. Adjust to how they want to consume information. Streamline your team's workload by creating tools and resources to quickly get them the answers they want and need. Ensure they have the tools and resources to be more efficient. Clarify what can help them deliver a better customer experience. Remove the roadblocks to their success.

#### 2. Outsource when necessary

The gig economy is here to stay, and that may be true in the wastewater industry as it is in the technology sector, for instance. Leveraging external relationships with outsourced resources — say for day laborers or retired or other independent contractors — can help you flex your staffing and can be a valuable way to get the work done. While not as optimal as building your own team, the pressure relief you experience can give you the breathing room needed to determine if you really need more full-time technicians or some of your work can be routinely outsourced.

For small projects — especially for office tasks like IT, website development or marketing — online resources like Fiverr and Upwork provide

Technology and automation use is exploding as companies seek opportunities to invest in devices and software that provide options to leverage the staff they already have and enhance productivity.

you with worldwide access to gig workers with specific skills that are needed in the short term. Most of these online sites have filters allowing you to clarify what service you need, information ahead of time on the potential cost, control over where your talent comes from and what languages they speak.

Staffing agencies can bring workers for large, sporadic projects requiring more hands. While it will be more expensive, keep in mind, you are not paying any benefits and you will not get hit with an unemployment claim when you no longer need them. Agencies vet the staff who work with you and will help you find the right workers you need.

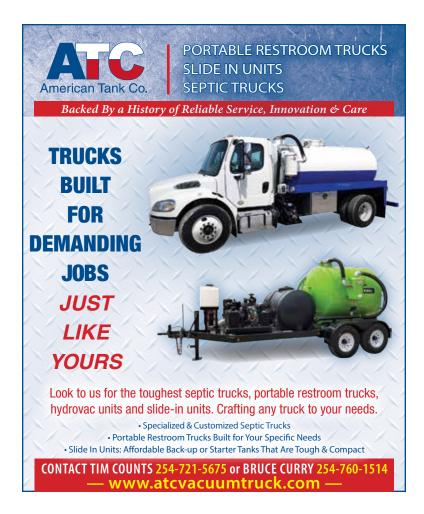
Outside vendors can provide key services for you and do bookkeeping, administrative work, sales support and social media. Long-term vendors have deep insight about your history, your team and your company's culture. They know your preferred communication methods and how you like to work. Outside vendors are an exceptionally valuable safety valve when you cannot find the right permanent talent.

Do not try to manage too many different outside resources. Focus on the most critical work they can provide for you and engage in short-duration tests to see if you have chemistry and if they provide you with value.

#### 3. Consider the potential of technology

Technology and automation use is exploding as companies seek opportunities to invest in devices and software that provide options to leverage the staff they already have and enhance productivity. Autonomous devices include robots, drones, vehicles, floor cleaners and more. These devices can sense the environment around them and operate without human involvement. Other devices such as exoskeletons are able to support a worker's body and provide augmented biological capabilities such as safely lifting heavy objects.

While robotics as a field is advancing, they are not truly autonomous of human interaction. They still need people involved in the process to use



them. This includes programming, monitoring them and changing batteries as they perform their service. At best this is now "co-botics" and people will never be fully eliminated from the equation and they will work in tandem. As these options expand, you can take advantage of them too, even if you are a small business.

There is growing interest in how data and analytics can be used to manage staff productivity and service delivery. Most technology devices are already collecting data. When combined in the future with artificial intelligence, the possibilities for data analytics appear to be endless. When the data is combined with AI interpretation, this can provide valuable insight to help streamline your processes and maximize staff efficiency.

Evaluate how you are using the software and technology currently deployed in your business to see how you can maximize their value. The return on the investment should be carefully evaluated to identify any efficiencies achieved or productivity enhancements. Get your team any needed training so they can effectively work with advanced technologies. You might need a different skill set in your workforce to work with the technology and this may expand your workforce to pull from a broader pool of potential talent.

#### IN CONCLUSION

It is clear that staffing shortages are not going away. We have to find opportunities to gain increased productivity from our existing workforce and alternatives for completing the work we need done. Focusing on the needs of our customer-facing team members, making smart use of outside resources and maximizing technology use provide viable options for addressing the issue. When you expand your potential for getting the job done, you are more likely to find the resources you need.









Sara Heger, Ph.D., is a researcher and instructor with the Onsite Sewage Treatment Program in the Water Resources Center at the University of Minnesota. She is also a certified septic system designer and service provider. Send questions for Sara to editor@pumper.com

### Using the Septic System as a Personal RV Dump Station

Proceed with caution and recommend these important steps when your customer wants to empty a camper holding tank into their tank

By Sara Heger, Ph.D. Photos courtesy of Sara Heger

ver the last few years sales of recreational vehicles have been through the roof, which has led to many questions about where the waste collected in the holding tanks should go. The easy solution is to drop it off at a dump station and go on your merry way, but there are times when your customers may want to add this to their septic system.

It may be that they have an RV or have family and friends stopping by with their RV, which happens to have full tanks of black and graywater. An RV dump station at home can provide a convenient and cost-effective solution for RV owners. However, there are two challenges with adding this waste to septic systems.

First off, the wastewater is very concentrated due to the lack of graywater — most of the fixtures in RVs are low-flow to help stretch the clean water supply. Typical toilets only use 0.8 gpf and most RV showers operate at 2 gpm. Most RVs do not have a washing machine, and consequently experience a high level of organics and solids.

Secondly, most of the chemicals used to deodorize or break down the solids can add considerable challenges to treatment. Generally, people choose a holding tank product to eliminate odors, prevent clogs and waste buildup, and to keep sensors clean and working properly.

#### **BEWARE OF ANTIMICROBIALS**

In 2020, we did a study at the University of Minnesota testing four commercially available RV holding tank treatment products. All four products were found to be slightly acidic (ph range from 5.2 – 6.3). Microorganisms in septic systems prefer a neutral ph of 6.5-7.5. One of the products evaluated contained bronopol, a wide-spectrum antimicrobial product. Adding antimicrobial products into a septic system should be limited as the beneficial bacteria are needed throughout our systems for them to function properly.

In addition, when lab-tested, this product added an additional 55 mg/L of oxygen demand to the system. Another product tested contained both formaldehyde and methyl alcohol. Methyl alcohol has a very strong odor, which will mask the odor from the toilet waste. Formaldehyde is used most often in embalming and also as glue in building materials. It is added to holding tank additives to kill bacteria which is not a good thing for septic systems.

In addition, this product added 1,200 mg/L of BOD5 to the system and nearly 60 mg/L of phosphorus! If these chemicals are used in the RV, the

The wastewater should be slowly added to the system ideally through a cleanout near the house versus directly into the septic tank to prevent turbulence.

waste could have a detrimental impact on a septic system.

Other products are typically enzyme or mineral based. Although these products are generally not as harmful for septic systems, they are generally not as effective at eliminating odor (enzymes) and preventing clogs and waste buildup (mineral based). RV blackwater tanks containing these chemicals have the risk of overloading the septic system with solids and negatively impacting the biological environment of the septic tank.

In another small study done at two state parks dump stations, the effluent leaving septic tanks was off the charts with its loading. The  $\mathrm{BOD}_{\scriptscriptstyle 5}$  at the two parks ranged from 1280-1530 mg/L, the total suspended solids from 92-230 mg/L and nitrogen levels from 757-769 mg/L. These nitrogen levels are very high compared as other sources of wastewater — primarily toilet flushing — which are typically less than half of these values. These parks have advanced commercial pretreatment systems designed to handle the higher load from RVs.

#### **DUMPING VOLUME**

The last issue to consider is the volume and method of conveying RV waste to residential septic systems. The amount will vary as larger RVs generally have larger tanks. Typically, graywater tanks will hold 30 to 50 or more gallons, and the backwater tank is typically 20-40 or more gallons. This could add more than 100 gallons of concentrated wastewater to the treatment system.

Adding these concentrated waste streams at one time into the septic tank may cause turbulence and overloading. The use of a pump to add the waste to the septic system should be avoided as it will macerate the solids into smaller pieces that will not settle well and will add the wastewater at a higher velocity. Since the goal of additives is to break down the waste into smaller pieces so



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A camper rinses out the drain hose after emptying the RV holding tank.

they can be more easily evacuated from the RV, this also can lead to solids that would not settle well.

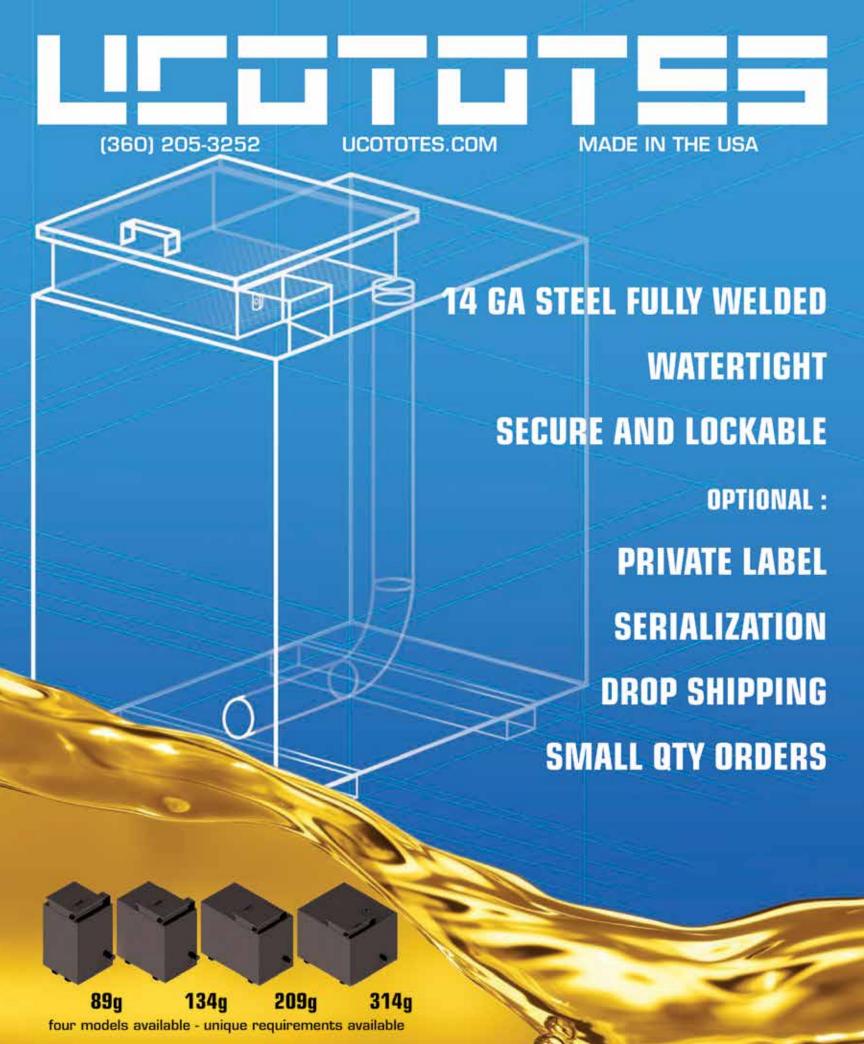
Taking all of these concerns into consideration, if a property owner still wants to add their RV waste to a system here are the critical items:

- 1. Do not use RV chemicals.
- 2. Do not dispose of anything other than human waste, toilet paper and water into the system.
- 3. Depending on use, the septic tank may need to be pumped more frequently due to the increased concentrated load.
- 4. The wastewater should be slowly added to the system ideally through a cleanout near the house versus directly into the septic tank to prevent turbulence.

Another option to consider is a holding tank exclusively used for the RV waste. This holding tank is pumped when it fills and the septic system is protected. **P** 



At a campground dumpsite, the drain hose is connected to the outlet of the RV holding tank.



#### PUMPER **INTERVIEW**



### Will Climate Change Play a Role in New Onsite Regulations?

Virginia grapples with a variety of environmental issues as it plans first septic code revision in a generation

By David Steinkraus

t's been more than 20 years since the state of Virginia fully revised its onsite rules, and it's time to do it again. To find out more, *Pumper* talked to Lance Gregory, director for the Division of Onsite Water and Wastewater Services at the Virginia Department of Health.

#### **Pumper:** It's really been 20 years since your last revision of the code?

**Gregory:** The last complete revision of the regulations was done in 2000, but there have been some minor changes over the years. We have a fast-track amendment process for things that are noncontroversial, and we just did a fast-track amendment in November that added some criteria for pad designs and clarified some things with pumps that are integral to a treatment unit.

#### **Pumper:** Did you have any fast-track amendments for advanced treatment units?

**Gregory:** We have a separate set of regulations for alternative onsite sewage systems (that's the term we use in Virginia for advanced treatment units), and we promulgated regulations for those in 2011. That included requirements for operations and maintenance, and reporting of operations and maintenance to the health department. It also incorporated a 50% total nitrogen reduction requirement for alternative systems when they're in the Chesapeake Bay watershed, which covers a fairly large portion of our state.

#### **Pumper:** What are you envisioning with this code overhaul?

**Gregory:** It really is a complete opening of the regulations, making sure we're keeping up with current industry practices, resolving any inconsistencies we have between regulations or policies, or with regulations at sister agencies — really just trying to bring our regulations up to speed with all the changes that have happened in the industry over the last 23 years.

#### **Pumper:** What's the process for revisions?

Gregory: The first step we took was to have work group meetings last

year. We have seven different work groups that are splitting up the different sections of the regulations for discussion. Each group met four or five times to start giving us feedback on what changes we might make.

The next step is to submit a notice of intended regulatory action. This year we'll pull those work groups back together to start actually putting together some proposed revisions so that once that notice of intended regulatory action process closes, we can move pretty quickly to submit proposed regulations.

The way we look at soils today is a lot different than the way we looked at them 30, 40 years ago. We have a lot of systems with very shallow separation to the water table, or often in the water table for a short period of time.

#### **Pumper:** How long will revision take?

**Gregory:** The hope would be to have proposed language in place by the end of this year. Then that proposed language has to go through a comment period. Then you have to go through a final adoption process. We're probably looking at a solid two more years to finish.

### **Pumper:** Coastal flooding has pushed some onsite tanks out of the ground in Virginia, so are you looking at specific regulations related to climate change?

**Gregory:** Legislation in 2021 gave the Virginia Department of Health authority to incorporate considerations for the impact of climate change in our onsite sewage system regulations. One of the work group subgroups

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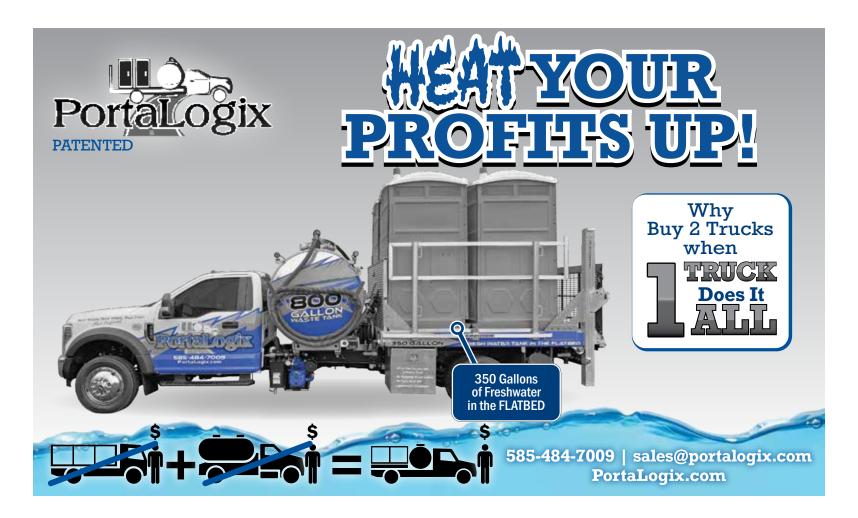
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is focused specifically on the issue of climate change, so we do anticipate some revisions centered on that.

#### **Pumper:** So you're not at a point of saying, for example, we're going to eliminate onsite systems in some places?

**Gregory:** Right. We've got a ways to go. The goal is how we ensure protection of health for homeowners. Right now our separation distances for conventional systems are the same as for alternative systems, so could we reduce or modify those setbacks if you have an alternative system? That's been the focus: What are the mechanisms to ensure people have a safe means of sewage disposal even as climate change impacts may be coming to them?

#### **Pumper:** What's your minimum separation from groundwater at the moment?

**Gregory:** For a conventional system it's 18 inches of vertical separation. We reduce that in other treated-effluent standards. We have TL2 — which is similar to NSF 40 — with a 12-inch separation. For TL3 we have 10 mg/L BOD and 10 mg/L TSS, and if you have a system meeting that you can be separated by 6 inches. We also have a zero-inch standoff.

#### **Pumper:** Zero inches to groundwater seems unusual. Why do you have that?

**Gregory:** There are some properties with water at or very near the ground surface, and our direct dispersal of effluent to groundwater standard provides another option for designs on those properties. It also helps to address repairs on sites with older systems. The way we look at soils today is a lot different than the way we looked at them 30, 40 years ago. We have a lot of systems with very shallow separation to the water

table, or often in the water table for a short period of time. So when you go in to repair those sites, you effectively have a zero-inch standoff and need some mechanism for repairing those systems.

#### **Pumper:** Aside from the coast, what's the state of onsite systems in the rest of Virginia?

**Gregory:** We estimate there are about 1.1 million onsite systems in Virginia, and about half of those — based on U.S. Census data — are about 40 years old or older. Thinking about the average lifespan of a septic system, something that's 40 years old is either at the end of its life or getting close to it.

#### **Pumper:** Do you have requirements for inspections at the time of property sales, or something like that to monitor older systems?

**Gregory:** The only ongoing monitoring requirements we have are for alternative systems. They have to have a maintenance report submitted once a year, and more frequently if it's a larger, non-residential system. If you're within the Chesapeake Bay Preservation Area, essentially east of Interstate 95, those areas must do pumpouts every five years.

#### **Pumper:** Do you have any last thoughts?

**Gregory:** I would encourage people to participate in this process. All of our regulatory revisions and proposals ultimately run through our Sewage Handling and Disposal Advisory Committee — that's SHADAC. Those are public meetings. They're posted on Town Hall Virginia (www.townhall. virginia.gov/) as are meetings of the subgroups when we hold those. It's much better for us to get feedback now than a year and a half from now when we think we have a final regulation, and somebody raises a problem that we hadn't considered. **P** 

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# Septage Disposal Management

By Craig Mandli

#### **DEWATERING EQUIPMENT**



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system, hydraulic unit, controls and a 20-foot stainless steel screw conveyor. The press includes an independent gravity section, vertical pressure section and paddlewheel distributor. Features addressing odor control concerns include odor hoods, enclosed gravity sections, piped away filtrate and noisereducing shower boxes. 518-695-6851; www.bdpindustries.com

#### Bright Technologies, Division of Sebright Products, 0.6-meter skid-mounted belt filter press



The compact 0.6-meter skid-mounted belt filter press from Bright Technologies,

Division of Sebright Products, has stainless steel frame and roller construction as well as radius wedge zone and wing roller for sludge dewatering. Components include a sludge pump, polymer system and washwater booster pump. Options include a sludge flowmeter, air compressor and discharge conveyors. With a compact, walk-around skid design, it can be utilized in as little as a 10-by-20-foot floor area. The Boerger rotary lobe sludge pump has a maintain-in-place design offering ease of maintenance. Cake solids of up to 35% can be achieved. Rates of 25 to 50 gpm make it ideal for small applications or when a processor has outgrown dewatering containers. 800-253-0532; www.sebrightproducts.com



#### In the Round Dewatering horizontal drum

The horizontal biosolids dewatering system from In the Round Dewatering features a stainless steel drum with perforated plastic tile lining. The drum is mounted on a roll-off frame

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Boerger BLUEline rotary lobe pumps are a self-priming, valveless positive displacement pump used for conveying viscous and abrasive



materials. They are resistant to wear and provide pulsation-free operation. Operation is fully reversible, with dry run capability and flow rates up to 7,000 gpm. They are constructed with maintenance-in-place design, allowing for all wetted parts to be easily replaced through the front cover without removing pipe or drive systems. The pump conveys biosolids (primary, waste activated sludge, return activated sludge, digested, thickened, etc.), grease, sewage, scum, lime slurry, alum sludge, permeate and polymers. 612-435-7300; www.boerger.com

#### Franklin Electric Little Giant WE Series

Designed to pump treated effluent longer distances than normal effluent sump-style pumps, the Little Giant WE Series is built with a Franklin Electric submersible motor, providing maximum durability with years of reliable service. It consists of a high-head filtered effluent pump powered by a 1/2 hp submersible motor and includes a removable built-in check valve. The high-quality top bearing and stainless steel upthrust washer add resilience and reliability. 800-437-6897; www.littlegiant.com



#### **ROLL-OFF CONTAINERS**

#### AQUA-Zyme Disposal Systems ADS

The ADS 30-yard open-top roll-off dewatering unit from AQUA-Zyme Disposal Systems can be filled with 22,000 to 25,000 gallons of biosolids at 1% to 2% solids in about



two hours. After draining for 24 hours, the unit can be picked up using a standard-capacity roll-off truck and transported for solids disposal. Sludge volume can be reduced by 80% with reductions to 98% in BOD, COD, FOG and TSS. Effluent is clear, the unit has few moving parts, and the size of filter media can be selected according to job requirements. Standard equipment includes a roll-over tarp system; side, floor and center screens; 1/4-inch floor plate; 7-gauge side plates; four door-binder ratchets; eight drain ports; two inlet ports; and a long-handle scraper. Units are also available in a 15yard size. 979-245-5656; www.aqua-zyme.com



#### **Bucks Fabricating Dewatering-**Style Roll-Off Containers

Dewatering-style roll-off containers from Bucks Fabricating feature a removable perforated steel basket that filters the materials within, separating the liquids to the

bottom while the sludge materials remain on top. From there, the fittings, or apertures, commonly located on the bottom of the sealed tailgate allow the hauler to drain the liquid from the container. This process decreases the

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# PRODUCT FOCUS

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#### Park Process Sludge King II

The **Sludge King II** roll-off dewatering container from **Park Process** incorporates an engineered design that eliminates trapped water in the bottom of the filter cake. The second centerwall filter increases



filter area by 33% producing drier cakes in less time. The plastic floor panels that cover the floor space between wall filters and center wall filters serve three purposes. They hold down the bottom of the filter elements, help eliminate standing water and aid in filter cake dumping. The inlet manifold is split into three inlets, each with a ball valve, allowing incoming flow to be distributed evenly into the three compartments formed by the two center-wall filters. **855-511-7275**; www.parkprocess.com



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## Pinnacle roll tarp sludge container

Roll tarp sludge containers from **Pinnacle** come standard in 20-, 25-, 30- and 40-cubic-yard capacities. The radius-bottom containers have 1/4-inch floors and 3/16-inch sidewalls.



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#### CASE STUDY



#### A solution for septage receiving facility

**Problem:** The Coaticook-Memphremagog region in Quebec, Canada, is a vacation destination, which makes wastewater management an important environmental challenge. The septic tanks of the dwellings must be cleaned every couple of years and the septage treated. Some 8,000 tons of septage are produced yearly.

Solution: The Intermunicipal Solid Waste Management Board of Coaticook, an organization of 22 municipalities, decided to take up the challenge. The board has built a centralized septage receiving facility. The liquid septage received at this facility first passes through a modular Claro septage screening system, which can be equipped with an independent wash press, automated rock trap, hygienic baggers and a hauler access/metering/billing system. "We then put in chemicals, and we separate the liquid from the solid using a Fournier Rotary Press. Once this process is completed, the solids are recovered through composting," describes Francis Lussier, general manager of the board. The clean liquid is sent to the local landfill's wastewater treatment plant.

**Result:** The septage screen provides a low-maintenance system that protects equipment from fouling damage. The rotary press creates a cake with a dryness of about 40%. Lussier notes that municipalities could save in management and transportation costs. The board also reduces landfilling of organic waste and produces an excellent compost used by local farmers. **514-562-4575**; www.claroglobal.com and **418-423-4241**; www.fournierdewatering.com

# PRODUCT FOCUS

#### SCREENS/STRAINERS/SCREENING SYSTEMS



### JWC Environmental Honey Monster

The **Honey Monster** septage receiving station and FOG receiving system from **JWC Environmental** is designed to ease the management of septage waste for the wastewater plant operator and the

hauler. It quickly screens and processes septage, grease, FOG and sludge from vacuum trucks. The automated septage acceptance plant provides for cleaner handling of septage truck waste by reducing and separating unwanted solids such as rocks, rags, clothing, plastics and other trash, according to the maker. The combination of grinding, solids removal, washing and dewatering allows a typical septage truck to unload in 5 to 15 minutes. It is completely enclosed to ensure safety, vector control and containment of foul odors. The optional MonsterTrack metering and control system uses a flowmeter to track septage and provide accurate billing data for the facility and a receipt for the hauler. 800-331-2277; www.jwce.com

#### Lakeside Equipment Raptor Septage Acceptance Plant

The fully automated Raptor Septage Acceptance Plant from Lakeside Equipment is designed to remove debris and inorganic solids from septage tanks, grease traps, sludge, leachate and



industrial waste. It includes the Raptor Fine Screen, which compacts and dewaters the captured screenings to a solids content of 40%. The screen's rotating rake teeth penetrate the cylindrical screen bars, which prevents plugging and binding from grease and small debris. This allows for faster unloading times. The Raptor Acceptance Control System is a security access station that can be integrated to allow authorized haulers to unload their waste at the facility. Adding the data management and accounting system with the RACS station provides capabilities to track and invoice customers. **630-837-5640; www.lakeside-equipment.com** 



#### ScreencO Systems Trash Master 600 Auto Screen

The **Trash Master 600 Auto Screen** from **ScreencO Systems** uses gravity to separate the trash from the flow stream through a 6-inch inlet with dual fan spreaders. It is capable

of power-offloading vacuum trucks with a single 6-inch offload or 2- to 4-inch offloads at the same time at a rate of up to 800 gpm. It comes with an aluminum hopper (stainless steel is optional), with an 8-inch outlet cam and 3/8-inch gapped 1/4-inch stainless steel bar screen. The stainless steel U-channel with ultra high molecular weight polyethylene plastic-lined titanium provides for years of wear, with a high strength alloy steel 11 1/2-inch shaftless screw that moves trash to a waste container. The U-channel has slotted drain holes and a center channel bar screen for cleaner and dryer trash. A custom-built stainless steel bar rake and cleaning brush are included for easy maintenance. **208-790-8770; www.screencosystems.com** 











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# Recruit Young People to Join the Wastewater Industry

Professional opportunities abound, so why can't we solve this ongoing workforce shortage?

In Snapshot, we talk to a member of a state, provincial or national trade association in the decentralized wastewater industry. This time we visit a member of the Long Island Liquid Waste Association.

**Name and title or job description:**Robert McInerney, partner

**Business name and location:** United Cesspool Service Inc., Oakdale, New York

**Services we offer:** Sanitary/septic system pumping, grease trap cleaning and maintenance, and stormwater pumping and system rehabilitation.

**Age:** 57

Years in the industry: 39

**Association involvement:** I have been peripherally involved in the Long Island Liquid Waste Association my entire career. I have been an active member of our board of directors for the past two years and was recently elected president.

Benefits of belonging to the association: It keeps us abreast of code and regulation changes affecting our industry at the local level, as well as things happening at the state and national levels. We have formed some great relationships with other members and owe a lot of our success to these relationships. It's a great



Robert McInerney



Lisa McInerney

way to meet people on the leading edge of our industry here on Long Island. And the discussions we have are a great source of information, knowledge, and perspective we can apply to our everyday business operations.

**Biggest issue facing your association right now:** People always say it's the changing regulations that have the biggest impact on our industry. But from my perspective the biggest challenge is that we are not attracting enough young talent. There are very few 20-somethings that wake up and say, "I want to be in the septic business." People underestimate the amount

of technology involved in this business. Thirty years ago it was a guy with a vacuum truck and a hose, and now there is so much technology in the new innovative and alternative systems and wastewater plant operations that the opportunities are endless if someone is willing to put in the work.

Our crew includes: We have a great crew. We work hard and have fun doing it. Lisa McInerney — the best wife in the world — is responsible for all paperwork and really keeps the place running, Mike Stallone, business partner, runs the sewer and drain techs. Bob McInerney Jr., field service technician, catches all the loose ends for the entire crew and is in charge of maintaining inventories for parts, supplies and equipment. Rick Keller is a vacuum truck operator and bulk hauling specialist. Shawn Gaul is a vacuum truck operator and our resident expert in "hillbilly engineering." Jimmy Canton is a vacuum truck operator and our goodwill ambassador, always in a good mood and willing to help out a co-worker or customer. Jonathan Curtis, roto tech, has never met a line he couldn't clear. John Rogers, roto tech, brings a ton of talent and skills from other life experiences. Carl Marshall, weekend service tech, really picks up the slack to give our weekday techs a much-needed break.

**Typical day on the job:** I am usually in the office by 5 a.m. I make any adjustments to the schedule that may have occurred the night before. Our crew usually starts at 6 a.m. and I dispatch them to their first jobs. Then I go out in a truck and do a load or two just to take a little pressure off of the day. I try to get back to the shop by 1 p.m. and then answer calls and emails, do estimates and other paperwork until about 5 p.m.

**The job I'll never forget:** We were once called in to figure out why a septic system was filling up at a rate of 10,000 gpd when it should have used 1,000 gpd. After pumping for a few days, we were able to figure out that a contractor brought in by the landlord had accidently tied a branch of fire mains into the sanitary drainline and it was running constantly. Needless to say, they had to bring in a new fire contractor to make the repairs and we got paid to pump a whole bunch of clean water and haul it to the disposal facility.

My favorite piece of equipment: My cellphone. It allows us to stay in constant contact with our techs during the day, especially as things change and emergencies come up. We can send them customer information and any special info they may need. It also lets us send real-time photos to our customers about how their systems are performing or alert them to any problems we see. I don't know how we ever did business without them. A picture really is worth 1,000 words.

**Most challenging site I've worked on:** There was a time we had to pump some injection wells that were over 40 feet deep. We purchased an airlift that we put inline and attached to our portable air compressor. I



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#### **SNAPSHOT**

was skeptical at first, but it really did the trick and helped keep the project moving and on schedule.

**Oops, I wish I could take this one back:** I don't really have any big regrets about a project but I do have some regrets about the amount of repair dollars we have put into some equipment before finally concluding we are just throwing money away.

The craziest question I've been asked by a customer: If my septic tank is clogged with disposable wipes, can you just pump out the wipes and leave the rest of the tank alone?



The United Cesspool crew includes, from left, John Rogers, Mike Stallone, Rick Keller, Shawn Gaul, Jimmy Canton, Jonathan Curtis, Bob McInerney, Robert McInerney and Lisa McInerney.

If I could change one industry regulation, it would be: It would be great if we were able to mandate membership in our association as a condition of being granted a liquid waste haulers license. It would get more people involved and would help people see the opportunities available to them. Also, the increase in membership dues would allow the association to continue to serve our industry to the fullest.

Best piece of small business advice I've heard: When I first started in this industry I was just a kid. I worked for RGM Liquid Waste Removal (Ralph Macchio). He was tough but fair. He would always say, "If you don't inspect, you won't get any respect." He showed me it was important to catch people doing something right. That taught me the value of taking care of your people. No one can do this job alone, and without great people you cannot be successful. Our motto is, "Be nice, it doesn't cost any money." We try to treat our customers, co-workers and the people we meet during the day nicely, and it seems to be working. When we do any job, big or small, we always do it right. If you do things right and treat people fairly the money seems to take care of itself.

If I wasn't working in the wastewater industry, I would: I would have liked to have tried my hand at being a teacher — and the schedule seems pretty great. But I tell people all the time this is the only thing I am good at.

**Crystal ball time – This is my outlook for the wastewater industry:** This is a growing and ever-changing industry and technology is making it a very professional one. It is a grind. The hours are long and some days are absolutely miserable, but when you look back, some of those miserable days are also the most rewarding because they helped you learn something new or taught you how to look at a problem from a different angle. There is so much potential to succeed in this industry, and as regulations get tighter that only increases the opportunities for success. But we need to attract younger people that can see there is potential to provide a good living for their families. **P** 

- Compiled by Betty Dageforde









#### RULES & REGS

# Florida Legislature Considers Batch of Water Bills

#### By David Steinkraus

he Florida Legislature faced several bills related to the onsite industry and to local control of water this spring.

One of the more controversial bills is SB 1240 and its companion bill HB 1197. Both would prohibit counties and municipalities from adopting laws

about water quality, water quantity, pollution control and wetlands. Oversight of all those subjects would be reserved to state government, and the state could withhold money from local governments for violating the law.

"Cities and counties are using water as a weapon to slow down their growth. That is not what water is meant to do," said bill sponsor Rep. Randy Maggard, R-Dade City, according to the *Miami Herald*.

The proposed laws are too broad, too vague, and would remove the ability of cities and counties to protect their water and ensure there is enough of it, Rebecca O'Hara, a lawyer with the Florida League of Cities, told the newspaper.

*The Tampa Bay Times* listed several other water-related bills in its summary of introduced water legislation.

- § HB 423 and SB 1538 would implement a statewide septic system inspection program. The bill is a result of recommendations from the state's Blue-Green Algae Task Force.
- § A similar bill, HB 1425, would require inspections every five years for certain onsite systems. The measure would apply to systems more than five years old and would be administered by the state Department of Environmental Protection.
- § SB 358 would provide a tax credit to homebuilders and developers for up to 50% of the cost of each NSF 350 Class R certified noncommercial, residential graywater system purchased during a taxable year. The credit would not exceed \$4,200 per system.

#### **Massachusetts**

In a tax-relief package released recently, Gov. Maura Healey proposed doubling the maximum tax credit for repairing or replacing an onsite system at a primary residence.

Current law allows homeowners to receive a credit equal to 40% of the cost to design and install a new system, up to a maximum of \$6,000. Healey's proposal would change the law to allow 40% of the cost up to \$12,000. To recover the maximum amount, homeowners would receive \$4,000 credits for three tax years.

Residents have cited the cost of nitrogen-reducing technology in their opposition to a proposed change in the state's onsite rules. The Massachusetts Department of Environmental Protection has suggested requiring all property owners in nitrogen-sensitive areas to install nitrogen-reducing onsite systems, using best available technology, within five years. If a municipality were to obtain a watershed permit, that deadline would be extended to 20 years.



Barnstable County, which covers Cape Cod, announced its AquiFund initiative to help people who need to upgrade to new advanced treatment onsite systems.

Eligible homeowners with 120% of the county's median household income may qualify for an interest-free loan. Homeowners at 120% to 180% of the median income may qualify for a loan at 2% interest, while those at more than 180% may qualify for a loan with 4% interest.

Loans are available only to new applicants, for properties on a nitrogensensitive watershed, and for properties that are single-family homes occupied as a primary residence year-round.

For more information, visit the county's website for the AquiFund program: www.capecod.gov/departments/health-environment/programs-services/water-and-wastewater/community-septic-management-loan-program-csmlp/

#### **Alabama**

Environmental and legal advocates in March accused the state of Alabama of discriminating against minority communities when it distributes money for wastewater infrastructure.

The complaint, filed with the U.S. Environmental Protection Agency, comes from the Natural Resources Defense Council, represented by the Southern Poverty Law Center. The complaint asserts that policies for money from the Clean Water State Revolving Fund make it impossible for poor residents to access funds, reported Alabama Public Radio.

Particularly at issue is money for the Black Belt, a region of rich black soils that is also known for severe poverty.

The Alabama Department of Environmental Management said audits have found the agency in compliance with federal rules. Of the \$463 million awarded for drinking water and wastewater projects, 34% went to Black Belt counties, but only 10.6% of the state's population lives there, the agency said.



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#### Washington, D.C.

The U.S. EPA announced more than \$2.4 billion will be available for water infrastructure projects for states, tribes and territories in 2023. Money will be distributed through the Clean Water State Revolving Fund. About half of the money will be available as grants or loans with principal forgiveness.

This is the second installment of money from the Bipartisan Infrastructure Law. From 2022 to 2026, the law allocates more than \$50 billion for water and wastewater infrastructure improvements. Among the amounts allocated are: \$20.9 million for Kansas, \$64.3 million for Missouri, \$11.9 million for Nebraska, \$31.4 million for Iowa, \$26.2 million for Oregon, \$166 million for California, \$15 million for Arizona, and \$176.9 million for Arkansas, Louisiana, New Mexico, Oklahoma and Texas.

#### Nevada

The Legislature is considering a bill that would encourage people to abandon onsite systems in favor of municipal wastewater systems. The bill, AB 220, would require property owners to connect to a municipal system by Jan. 1, 2054, if they live within 400 feet of the system and live in a county of more than 700,000 people, reported KVVU News. Currently the bill would apply only to Clark County, which includes Las Vegas and has a population of 2.3 million, according to the U.S. Census Bureau. Next largest is Washoe County, including Reno, with 493,392 people.

The bill would require a review of permits every five years to determine whether a property is within 400 feet of a municipal system, notify the owners of a need to connect, and revoke the system's permit after 365 days. The state would also establish a program to pay no less than 50% of the cost to abandon an onsite system and connect to a municipal system.

#### Maryland

Three institutions will receive a \$1.35 million grant to formulate solutions to the dangers that climate change poses to septic systems. Research will begin this summer and continue through mid-2025. Specialists from the University of Maryland, George Mason University and the nonprofit Resources for the Future will study flood risk and septic system health on the state's eastern shore. Using the information they collect, the research team will evaluate policy options such as upgrading onsite systems, facilitating connections to municipal wastewater systems, and helping relocation from areas particularly at risk.

#### **Massachusetts**

The state has fined the company 182 MTR LLC \$7,470 for violating wastewater regulations. The company owns Highway Auto Salvage in Northampton. In December 2021, the state investigated a complaint that an employee pumped the contents of a septic tank onto land next to Mill River. Also, 182 MTR failed to comply with a required system inspection, said a press release from the state.

If 182 MTR pays \$5,750 of the fine, the state will suspend the remainder provided the company brings its wastewater system into compliance with state rules. The press release said the company has hired an engineering firm to remedy the problem.

#### Oregon

Homeowners in the McKenzie Valley are eligible to receive up to \$35,000 to repair or replace onsite systems damaged in the Holiday Farm Fire. Payments will come from federal funds received by Lane County and the Oregon Department of Environmental Quality, reported *The Register-Guard* of Eugene, Oregon. The county and state partnered with the Eugene Water and Electric Board to distribute more than \$3 million.

Applicants must own the property, the property must be within the perimeter of the fire and must have sustained damage, and the repairs must be

completed by the property owner or a licensed onsite installer certified by the state. Grant funding is retroactive to March 3, 2021.

#### **New York**

Septage hauled to the new wastewater plant in the village of Lake George will incur a higher fee. In mid-February the Village Board voted to increase dumping fees from \$60 per thousand gallons to \$100 per thousand gallons. At their meeting, board members noted that Glens Falls already charges \$75 to \$80 per thousand, and a rate increase is expected, reported *The Post-Star* of Glens Falls.

Onsite system owners around Lake George — for systems within 500 feet of the lake or 100 feet of a major tributary — are being notified by the Lake George Park Commission to inspect and pump their systems at least once every five years. Owners of residential systems must pay a \$50 fee, and people with commercial systems will pay \$100, reported the Lake George Mirror.

About 2,700 systems will be eligible for inspections, and one-fifth, or about 540 systems, will be inspected each year between May and November.

#### **Florida**

A1 Septic in Southport was sidelined for a few days recently because one or more thieves stole the doors from its vacuum trucks. According to a report from WJHG News, the thief, or thieves, apparently entered the yard through a back fence.

Removing a door doesn't take long, and each one can bring \$5,000 to \$7,000 if thieves know where to sell them, said Jason Daffin of the Bay County Sheriff's Office. The same type of theft has happened in other parts of the state. he said.

A1 was back on the road after it received a new set of doors for one truck, but that set the company back about \$40,000.













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imothy Giard added a white and blue 2007 International 4300 with a 2,500-gallon steel tank and Jurop R260 pump. A DT466 engine tied to a five-speed Allison automatic transmission powers the truck. Features include dual aluminum toolboxes, aluminum wheels, chrome bumper, strobe lighting, front, side and rear inlets, LED work lights and a backup camera. On the interior are dual captain's airride seats, upgraded stereo and AC. Graphics are provided by Lombardo Graphics. Jeremy Giard and Paul Dubois are the drivers who use the truck for residential septic service. **P** 

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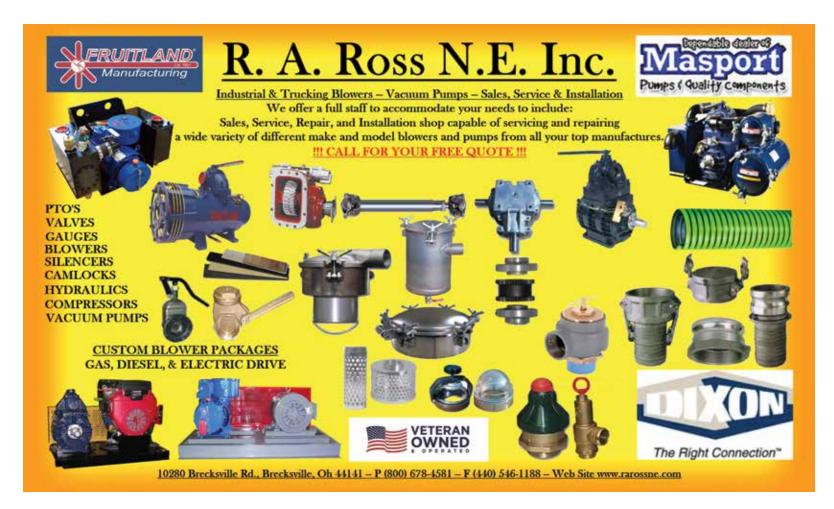
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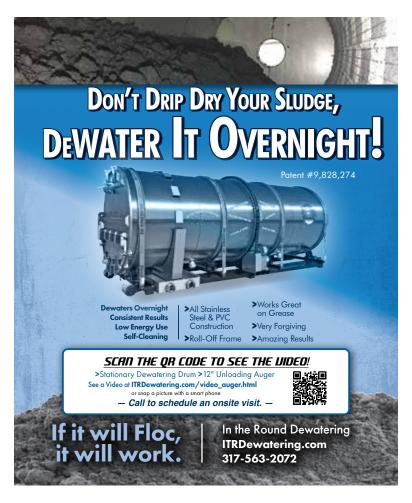
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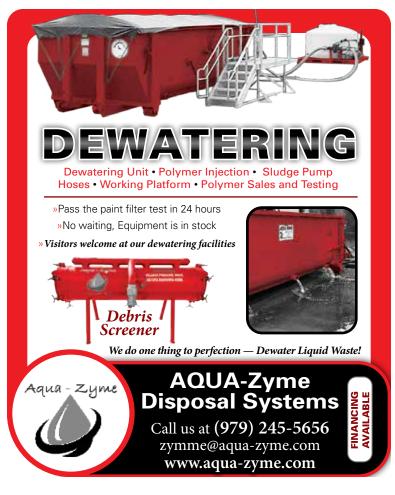






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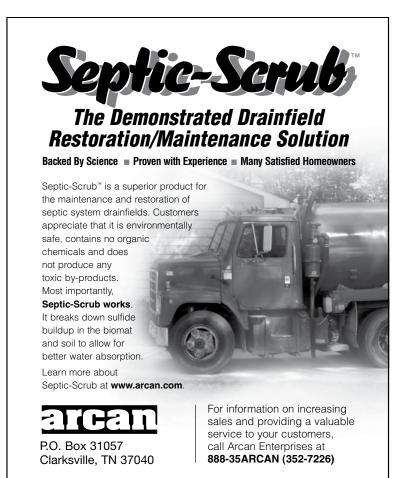
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Designing an electric truck to perform the tasks of portable restroom operators was a challenge, but Satellite embraced it. "Unlike the conventional truck footprint, which has ample room to fit batteries, wiring, and hydraulics, the EV chassis contains large battery packs that power the truck," says Craig Brooks, executive vice president for Satellite Industries. "This makes placement of PTO, the tank and bed a little more complicated."

The chassis is an International eMV607, and once the fine details were ironed out, Satellite decided to outfit the EV with mostly aluminum components because of the overall weight of the motor and the batteries. "The electrical components are heavier than traditional gasoline or diesel engines," Brooks says. "Because of that, we used an aluminum tank, bed and liftgate instead of steel to keep the overall weight of the truck down."

The EV can haul up to eight standard sized portable restrooms and features a 700-gallon aluminum tank separated to accommodate 245-gallons of freshwater and 455-gallons for wastewater. Its power comes from four banks of two AC/DC compatible 210-kWh lithium iron phosphate batteries. They can charge using a 125 kWh DC-fast charger in under two hours, or at slower rates starting at 24 kW for overnight charging.

An important part of the design was using an electric SmartPTO from Viatec draws power from its own battery, not the truck's traction batteries. Brooks says this is vital for extending the range of the truck, which is capable of 135 miles on a charge.

"To get the most out of the EV, a truck driver should charge their EV at a designated charging depot in a centralized location, usually at the homesite of the business," Brooks says. "A certified electrician can fit your operation with an EV charging kit for AC and DC charger installations."

So far, Satellite has been showcasing the truck at trade shows, and Brooks says there is a general sense of excitement around EV technology. "Satellite's new EV is well-suited for long days on the job," he says. "It's designed to deliver reliable and efficient performance while reducing environmental impact by emitting zero tailpipe emissions."

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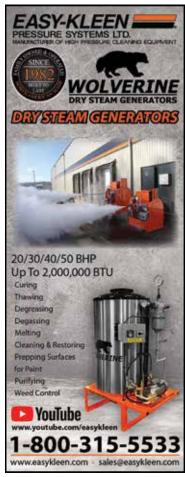






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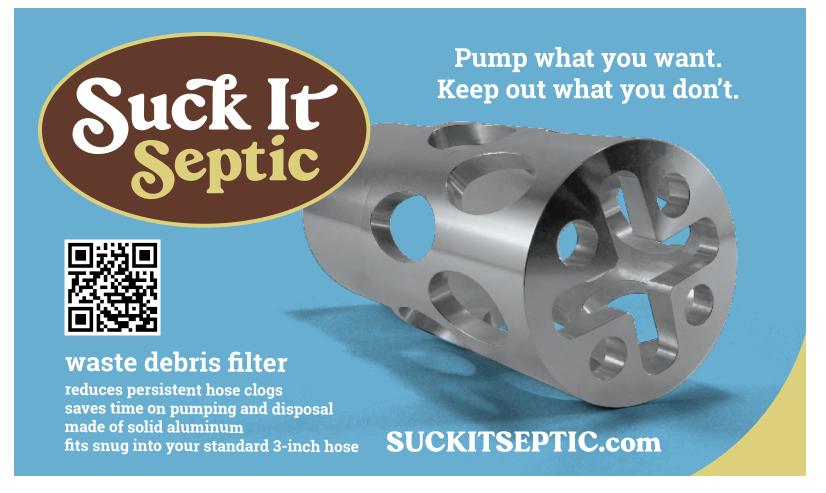


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2002 Freightliner FL80 with Presvac 3200 gallon DOT 412 full open door Vacuum tank with Fruitland 1200 Vacuum pump. Original thickness of tank. Cummins 350 HP with Fuller trans ready for work KLM Companies 617-909-9044 (PBM)

2024 Peterbilt 548 cab & Damp; chassis with 3,200 gallon, C/S, DOT, full open rear door, dump type unit with A Presvac PV750 pump (Coming in July) Stock# 14116

www.VacuumSalesinc.com, (888) VAC-UNIT (822-8648). (PBM)

2024 Freightliner 108SD cab & Description chassis with 3,200 Gallon, C/S, DOT, full open rear door, dump type Unit with a Presvac PV750 pump (coming in July) Stock# 14093 www.vacuumsalesinc.com (888)VAC-UNIT (822-8648) (PBM)

1997 Ford with Cusco 3,200-gallon DOT certified dump and door liquid vacuum truck. Cat engine with Moro M9 vacuum pump. Runs and pumps excellent. \$29,500. KLM Companies 617-909-9044 (PBM)

2000 International with Cusco High Dump 27", DOT Certified, 412 with vacuum pump, pressure offload as well. Cummins Power with low miles and hours. KLM Companies 617-909-9044. (PBM)

2023 Freightliner 114SD cab & Depth chassis with a Vacall AJV1215 combination unit – 12 cubic yard debris & Depth chasses with General 87 GPM @ 2,000 PSI water pump (coming in August) Stock# 14079

(PBM)

www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648).

**Pumper** 

#### **JETTERS - TRAILER**



The HotJetil® is a best-selling hotand cold-water drainline cleaner featuring a 35hp Vanguard engine by Toyota and delivering 10gpm @ 4,000psi that cleans drains up to 300' and 12" in diameter. The HotJet II® is American made using nonproprietary parts for affordability and ease in serviceability making its return on investment truly impressive. Prices subject to change. Financing available.Contact us for current pricing and availability

800-624-8186; sales@hotjetusa.com; www.hotjetusa.com (PBM)



Model 747 SECA trailer jet. LOW hours, excellent shape! \$19,000. Call Kelly for more details. **608-835-7767.** (PBM)

1999 Harben 4016-300 Jet Trailer (Stock #200SC) (888)VAC-UNIT (822-8648) www.vsirentalslic.com. (PBM)

#### **LEASE/FINANCING**

Easy truck and equipment financing programs apply now. Click on the Link below for online application www.adzfinancing.com No money down and 100% financing for qualified buyers. Low rates, 84 mos terms on new trucks. Credit challenged businesses accepted. (2 year plus minimum only) Qualified new business applicants welcome. Application only programs for qualified customers up to 750k.100% Financing. If you are not using us chances are your competition is! ADZ FINANCING COMMERCIAL FINANCING 888 901 8818 PH 484 840 1231 Direct 866 885 8190 Fax Anthony Zanghi https://www.adzfinancing. com/ www.facebook.com/100truckloan2017/ [facebook.com]

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

#### **MISCELLANEOUS**

Wanted: Used Terralift Machine in good condition. Illinois septic service company willing to travel to pick up machine. If you are interested in selling, please call or text 248-640-9882. (P06

#### **PARTS & COMPONENTS**



Clear the Main Line with ease, JnA Main Line Vac. Just hook the line vac to your hose, insert the incoming mainline pipe and watch the line come clean. Works on 3" & 4" pipe. Free shipping in the US. \$149.99. Order at jnamainlinevac.com. 919-559-9344. (PBM)

#### **PORTABLE RESTROOM**

10 Olympic Fiberglass units. Need new skids.. and 10 poly portables. \$100 per unit. Customer is responsible for pick-up. In Florida. 772-370-0831 (P06)



**80 Tan Poly Portable Integra** units for Sale. All units in good, rentable condition. \$225.00 each. Customer is responsible for pick-up or shipping. **Call 1-800-634-2085. (P07)** 



80 Satellite Hi-Tech orange/gray portable toilets for sale. All are in perfect, rentable condition. These are the STRONGEST units ever built, we've sold over 700 in the last 6 months to customers across the US at a very, below value price of only \$225 per unit. Customer is responsible for pick-up or for setting up shipping from NY. \$225 each. Call 1-800-634-2085 (P06)

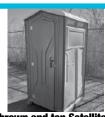


#### 25 brand new Olympic Fiberglass

4'x4' shells without doors. Good to make your own custom security booth, ticket booth, baby changing station, shed or portable toilet. \$200 per unit. Customer is responsible for pick-up or shipping from New York. Call 1-800-634-2085. (P06)



80 Grey Poly Portable Integra Units for Sale. All in Rentable Condition. Aggressively priced for immediate sale. \$225.00 per unit 1-800-634-2085 (P07)



200 brown and tan Satellite Tufway Portable Toilets, all in rentable condition. Take advantage of these used units while they're still available. \$225 per unit. Customer is responsible for pick-up from N.Y. Call 1-800-634-2085 (P06)

#### **PORTABLE RESTROOM HAULER**



2007 f550 6.0 bullet proofed diesal for sale. 400 gal fresh 550 gal waste. Honda engine for battioni vacuum pump. 25 ft tiger tail hose. Engine replaced 3 years ago. New injectors,glow plugs,harness,and u joints for 4 wheel drive. Engine has 200,000 miles. Truck has 318,000 miles. Truck does have blow by, but runs well. \$30,000 o.b.o. Call Ryan for additional info:

216-408-4848 (P06)

#### **PORTABLE RESTROOM TRAILERS**

2014 2 stall Restroom Trailer. Rich Trailers. Pictures upon request. Chadh@rentnsave.net 507-412-1184. \$19,500. (P06)

20 place portable toilet trailer, triple axle. Total overall length 43 feet. Heavy duty frame used for special events and fires. Good tires, well-maintained \$3,500 OBO. Call Mike at Portapros 208-739-7151. (P07)

#### **PORTABLE RESTROOM TRUCKS**



2 Trucks available. 2014 and 2015 Ram 5500. 1,000-gal waste/400 fresh. Aluminum tank w/ Masport pumps. Call 720-436-3910 for more info. (PBM)



2017 Hino, J08E-VC, diesel, 208k, auto trans, under cdl, AC, cruise, Amthor flat tank and lift gate, 800/400, 10 pot capacity, Masport HXL75 vac pump, DC10 water pump and hose reel, very clean great running truck. Finance and delivery available, \$42,000.00 Hulls Truck Bodies LLC 740-820-5338 (PBM)



2021 Best Equipment slide in unit 300/150. Has around 55 hrs on unit. I bought it for a back up unit and just bought a new truck so I no longer need it. This unit is like brand new, all stainless and built by Best Equipment in Cabot AR. Honda Motor, Electric Water pump 12V, comes with suction hose and wand, fresh water hose. Asking \$18,000. Call 419-303-3443. Located in Lima, Ohio. This unit new is \$21,500. (P06)



2008 International Durastar

Maxforce dt466. 550 gal waste. 350 gal fresh. Masport pto pump with 25 ft tigertail hose. Platform hauls 6-8 Std units. Has had 18k in engine work to resolve dt466 issues. All works well, except air gauge in dash cluster. Air brakes, but under CDL. 146,000 miles. \$30,000 obo. Runs good. Call Ryan for additional info 216-408-4848 (P06) 2018 Ford F550 Portable Toilet Pump Truck, 1100/400 aluminum tank, Masport pump, two toilet carrier. 110k miles, automatic transmission. \$55,000. 786-488-4276 or Info@

\$55,000. 786-488-4276 or Info@ Expressportable.Com. FL (P06)



Selling our very solid 04 Ford F550 portable toilet truck, 160k miles, 6.0 diesel automatic, brand new plug n play 9.3 h.p. 75 c.f.m. masport pump, 550 gallon waste tank, 325 gallon fresh, 4000 pound liftgate, zero rust, fresh D.O.T. on truck, new ball joints. This is the ultimate unit.. Room for 2 toilets to lay down on rear of truck. \$39,900.

can deliver for a fee, call 608-558-0870. (P06)



truck. 14,500 GVW. Diesel. 288,000 miles on the truck, miles will go up as it is working daily. Body is a workmate 800. 500 gal waste tank, and a 300 gal fresh water tank. 4 toilet carrying capacity w/ Full rear lift gate. Masport vacuum pump and wash down hose reel. Its been operated by the same driver its entire life. Asking \$20,000. Call with any questions. Jake @ 301-639-5212 or Jack @ 240-674-2665 (P06)

**Pumper Classifieds Work!** 



2022 Brand New Freightliner
M2106, 1,000-gallon tank, Cummins
B6.7 engine, Allison 2500 Transmission,
GVW 26,000 lbs. Call Ed 602-228-3333
or email social@rpbaz.com for full
details. \$155,000. (P06)

2024 Peterbilt 536 cab & Description (1,600 waste 2,150 gallon, Two compartment (1,600 waste 550 water) with An NVE B250 blower package, a DC10 wash down Pump, dual service, strobe package, toilet carrier, And backup camera (coming in April) Stock# 14095

www.VacuumSalesInc.com (888) VAC-UNIT (822-8648). (PBM

New Imperial 1300 U.S. gallon, portable toilet service unit mounted on a 2023 Ford F550 cab and chassis with a Masport HXL4 pump package. Stock #14103.

www.VacuumSalesInc.com (888) VAC-UNIT (822-8648). (PBM)

#### **POSITIONS AVAILABLE**

Septic Installers and Pumpers needed! ASAP! In sunny Orlando, FL. Experience required (3+ years). Insurable CDL required for Pumper. Relocation reimbursement available. Experienced, professional team to work with, newer equipment. Professionals only. Lapinservices. com Call Chris. 321-436-0150. (P06)

#### **PUMPS**



Fruitland 500 lufh 338 cfm with secondary and bracket. 720-436-3910 (PBM)

Buy & Sell all makes and models, new & used vacuum pumps, blowers, high-pressure water pumps, new and good used replacement parts. Buy discounted pumps online 24/7. Call us for a current inventory list. www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648). (PBM)

#### **Pumper Classifieds Work!**

#### **PUMPS VACUUM**

Fruitland 500 pump with truck mount hydraulic operated with pumps (2) also hydraulic tank and oil catch /muffler started to build truck never did finish it equipment never used all new the equipment was purchased in 2012 but kept inside all for 4000.00. Call 248-467-0569 ask for Mike (P07)



2006 Battoni Vacuum Pump -Model 4000. Complete with hanger, rt angle gearbox & driveshaft. Light usage. \$1000.00 Phone 815-239-1480 (P05)

#### **RENTAL EQUIPMENT**

2023 Polar 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 Rentals Inc. 617-909-9044. (PBM)

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

#### **SEPTIC TRUCKS**

2004 GMC C7500 with a 2,500-gallon aluminum vacuum tank and Challenger vacuum pump. Truck has 350k miles and a manual transmission with a 2-speed rear end. Truck was just serviced and had a DOT inspection. Call or text for more information. 734-777-0390. Delivery available. \$24,000. (P06)



Freightliner M class. Ac and heat work plus heated mirrors. Cummins diesel Allison automatic. 200,000 miles 33,000 GVW. Has electric brake controller and trailer hitch. New 2500 gallon tank with aluminum trays and heated valves with jurop pump three years ago. The truck was also painted then too. Truck runs and works great. It is still in service and working. No exhaust filter. \$65,000 obo. Phone Jim at 877-232-1520 or email tristaterooterman@gmail.com (P06)



1999 Freightliner, C12 CAT, 10-speed, 350k miles. Runs and pumps great. Has been a back up truck last couple of years. 13k steerable pusher. New paint. Masport 400. FOB Idaho. 208-941-1502. \$40,000. (P06)



Stock Unit! 2024 Peterbilt 548 with a 4,200-gallon steel tank and a Jurop DL180 blower ready to pump. Cummins ISL9 (360 HP) and Allison 3000 RDS with diff locks, 20K front with 46K rear. This unit is READY RIGHT NOW! With multiple Chassis ready for a tank/pump on the ground as well. Call Jonathan © 501-388-9565 or email Jonathan. IronVac@gmail.com to buy before it is gone. AR (P06)

1998 International 2,000 Gallon Presvac Septic tank DT466 Engine Presvac vacuum pump runs very good all in working order KLM Companies \$19,500 PH 617-909-9044 (PBM)



Selling our 2006 International
4300 septic truck, UNDER CDL, newer
DT466 engine, about 50k miles on it,
Allison automatic, newer tires all around,
1,250gallons waste, 350-gallons fresh or
remove divider and have 1,600-gallons
total. 3-inch load, 4-inch unload valves,
rust free, no winters, runs and works like
new, new Masport 275 c.f.m. air cooled
vac pump, interior perfect, serious only.
Can ship to you for 3.50 a loaded mile.
Located in Southern Wisconsin. \$62,900,
call Don 608-558-0870. Thanks for
looking. (P06)

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2022 114SD Freightliner with LMT ST-3500 Debris body. 1/4 A36 carbon steel Body. NVE 4310 900 CFM PD Vacuum pump. Full opening rear door. 3-Stage Hydraulic Dump cylinder Pkg. LED lighting Pkg. Access ladder. 6 inch discharge port. 4 inch inlet port. can run with 3 inch. body vibator. Mileage: 2964. Price \$249,000. Contact David Bruder at Brown Equipment 1-260-433-0893 call or text email:dbruder@brownequipment.net (P06)



2001 Freightliner. 2017 tank holds 4500 gallons. Truck has 252,000 miles 10 speed transmission with a Cummins. No smoke, no leaks. This truck was garage kept since day one. Good ac! Call me at 812-989-3751 Asking \$95,000 obo. (P06)



1997 Ford/Nseries 2100 gallon truck. 123,500 original miles! Cummins c8. Cold ax 7 speed transmission. Garage kept since day one!! Hose comes with truck. Good tires, no leaks, no smoke. Call me at 812-989-3751 asking \$27,500 obo. (P06)



2014 Kenworth T270 - \$28,000 476,392 Miles GX 390 Masport H75 1600 Gallon sludge capacity 550 gallon fresh water capacity Services 65 portable toilets Located in Burnet, TX. Please call 830-598-5227 or email info@gojbar. com if interested. (P06)

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PLACE YOUR AD ONLINE AT WWW.PUMPER.COM - IT'S ALWAYS THERE TO MEET YOUR BUSY SCHEDULE



2014 Isuzu NRR septic truck, 4x2 single axle, 168,827 miles, 110" wheel base, steel bud wheels 225/70r/19.5", cold a/c, power steering, aisen RSU automatic transmission, 30-gal fuel tank, front leaf suspension 7,275 lb., rear leaf suspension 13,660 lbs., liftgate, storage boxes, 714-gal. vacuum tank, water pump. Ready to work! In-service date April 2016. Contact Mark at Bobby Johnson Equipment -

318-995-6341 or johnsontruckparts. com. LA (P06)



**2000 International 9100.** Truck very nice, new paint new wheels / tires new pump and hoses 500 ft completely gone over, new fuel pump . 23,8000 miles

Contact Ernie Cox 302-218-0697 nhra1979@aol.com price \$60,000 0B0 (P06)



2003 Freightliner Business Class M2 Septic Truck \$15,999 obo. Does the job. Rusty but still thirsty. Call Paul 715-559-7558. (P06)

2000 Freightliner Pumper Truck with 4100 Gallon aluminum tank. Excellent runner. Please contact for pricing and information. Also willing to part out: Engine: CAT C12 Transmission: Eaton Fuller RT0-14908LL Front Axle: 20,000# Rear Axle: 46,000# Tandem 920-361-1445 (P06)

1997 Peterbilt 378 cab & chassis with a Presvac 3,000 U.S. gallon, C/S, vacuum tank & Masport HXL15WV water cooled pump. (Stock #6625C). www.vacuumsalesinc.com (888)VAC-UNIT (822-8648). (PBM)

# **Submit your classified ad online!**

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2013 Western Star 4700 Detroit DD13, 450 hp, Allison 4500 automatic trans, heavy spec truck, double frame, brand new 500cfm NVE866 challenger pump, brand new Bridgestone front tires, new Yokohama rears, 3,360-gal steel tank, dura plate epoxy lined tank, double locking rears, 200,000 miles, ready to work, excellent condition, well-maintained, located in Austin, Texas, no rust, cold a/c, heater, everything works! \$95,000 - Call Bill 512-585-0869. (P06)



2008 Freightliner Day cab with rarely used PTO powered vacuum pump. Extremely well-maintained tractor with zero issues or leaks. Like new 4,200-gallon tanker trailer inside and out. Only ever used for non-potable water. New rubber all around, huge bonus in itself! DOT Certified. Make an offer.719-666-2553. (P06)



1986 Freightliner FLC 112, Cummins L
10 motor, 9 speed Eaton transmission truck
has a 2006 amthors 3300 gallon aluminum
tank with all aluminum hose trays. Brand
new jurup pump good working valves on
back of truck....Truck is working everyday
everything works as should. 158,000 original miles. Asking \$40,000 call 973-7036216 truck located in Orange County
New York (P06)

1985 Mack RD 688S with 350 HP Mack E6 engine, 9 speed Mack transmission. 1998 Trident 4000 gallon steel tank, 2013 NVE 866 air cooled vacuum pump. Garnet See Level gauge with in cab display. Truck runs and drives great. Needs some TLC. \$15,000 OBO. Call Anthony: 978-423-0686. (P06)



Selling our 2005 Sterling, newer 3300 gallon aluminum vac tank, new masport 450CFM water cooled pump, newer rubber, 400 h.p. diesel engine with a 10 speed, air ride, air dump, Jake, lockers, pusher axel, new captain's chair, interior perfect, 225k miles, ready to work, \$59,900 firm, can deliver for the fee.

\$59,900 firm, can deliver for the fee Serious buyers only please. Call Don 608-558-0870 (P06)



2024 Mack MD7, 6.7 Cummins (300HP), 2500 RDS Allison, 33k GVWR, 2500-gallon aluminum tank, JUROP DL180 Blower, Call Hayden Evans: 501-388-9464 (P06)



5/19/2023 Day 1, Ring 1 in Brooklyn, MS. 2015 Kenworth T880 Septic / Vacuum Truck 5000 gal aluminum tank, steerable drop tag. jeffmartinauctioneers. com More info Owner's # 228-342-8304 (P06)



1993 International 9300. CAT 3406B, 13 SPEED. Airbag suspension. New shock & airbags. New head gasket. Good tires and brakes. 3500 Gallon tank. Ready to work. 726K miles. Call Brad 360-831-1088. (P06)

Submit your classified ad online! www.pumper.com/classifieds/place ad



**1998 Intl 9300 Eagle,** Cummins N14 REDTOP, 460 HP. 387,000 miles. 2003 Jays 3500 gallon steel vacuum tank. NVE 607 vacuum pump. Downsizing. **\$35,000.00 Phone 815-239-1480.** (P05)



2024 Peterbilt 548 with a 4,200-gallon steel tank and a Jurop DL 180 blower ready to pump. Cummins ISL9 (360 HP) and Allison 3000 RDS with diff locks, 20K front with 46K rear. This unit is READY RIGHT NOW! With multiple Chassis ready for a tank/pump on the ground as well.

Call/Text Jonathan @ 501-388-9565 or email Jonathan.IronVac@gmail. com (P06)



2006 International 7500 series 124,000 miles. 4200 gallon tank with a wittig 100 pump new tires 250' of hose \$87,500 call frank 914-698-0464. Local pick up only. (P06)



2004 F650, C7 Cat, auto, 26,000 gww, under cdl, AC, cruise, New 2000 gal tank stainless hose trays, Jurop PN84 vac pump, tires, paint and alum wheels. Very clean truck with all new equipment. Finance and delivery available, \$55,000.00 Hulls Truck Bodies LLC 740-820-5338 (P06)

### LIST YOUR TRUCKS & EQUIPMENT FOR SALE!

www.pumper.com/classifieds/place\_ad



2013 International 4300. Max force engine with 6 speed auto transmission, 156.500 miles. 2021 tank and pump, pump is a Jurop R260D, with electronic engager. Good running strong truck, still in service, we are just getting out of the septic business to focus more on the plumbing side. Ask \$97,500 Head's Plumbing Sales & Service, Inc. 404-696-3175 or officeclerk@headsplumbing.com (P07)



2020 Peterbilt 520 (4,350 miles) Pik Rite aluminum 4,800 waste/500 fresh, 430 hp, 80,000 LB GVWR Tri Axle, Allison RDS-P Trans, 214" wheelbase, warranty (5 yr/300k mi) premium Coverage Aftertreatment, NVE 4310 blower 931 CFM w/silencer and secondary-belt drive. 2 SeeLevel Annihilators, Cat 3560 Jetter pump (20/25 GPM - 4000/3500 PSI). Heated valves, Epoxy coating interior of tank, Birds eye view back-up camera system, 4 Hoses included this truck has every option Like new no rust truck never driven in the winter. Took delivery of new truck in March of 2021 with 3.200 miles on odometer. \$260,000. Call John 203-272-7102 (orders@mckinleyoil. com). (P06)

Pre owned 3,600 U.S. gallon, Aluminum vacuum tank; with a Presvac PV750 vacuum-pressure pump installed on a 2004 Peterbilt 330 cab and chassis. Stock #1693 www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648). (PBM)



2020 Western Star 4700 Septic Truck only 30,000 miles. Set-Back front Axle chassis. Detroit DD13 12.8L 505HP @1625 RPM Allison 4500 RDS Automatic Transmission Too Much to list!!

Call or Text 817.401.6434 or email garyl@lightfootmechanical.com \$249,985.00 (P06)



**2012 T800 Kenworth,** manual transmission, 400HP, NVE 866 pump package, 5,200-gallon aluminum tank. **\$65,000 0B0. 401-437-8942. (PBM)** 

New 4,000 U.S. gallon, aluminum, vacuumpressure tank mounted on a 2023 Peterbilt 548 cab & chassis with NVE 4307 Blower Package. (Stock #14006).

www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648).



(PBM)

2014 Isuzu npr auto diesel 700 w 350 f workmate tank Masport pump amt wash down 4 unit carrier with lift gate. 720-436-3910 (PBM)



2014 Freightliner Cascadia Vacuum Tank truck (white). 3,300-gallon New Tank (red). New NVE 360 cfm pump. Clean Interior. Good Cold A/C. Air Ride/ Air Brakes (jake brake). DD15 Engine. 60% Rubber on tires. Mileage: 457,286.

Price: \$70,000. 1-800-721-2774 (PBM)

2024 Peterbilt 548 cab & chassis with 4,000 gallon aluminum tank & NVE 887 pump package (Total of 4 units coming in April) Stock #14088

www.VacuumSalesinc.com, (888) VAC-UNIT (822-8648). (PBM)

2005 Keith Huber Dominator, 4,000 U.S. gallon, dump type unit, with a Wittig RFL100 hydraulic driven vacuum pump. www.VacuumSalesInc.com.

(888) VAC-UNIT (822-8648). (PBM)

New 4,000 U.S. gallon, aluminum, vacuum tank. Mounted on a 2023 Freightliner M2-106 cab and chassis w/ a NVE Challenger 887 vacuum pressure pump package. Stock# 14056 (888)VAC-UNIT (822-8648) www.vsirentalslic.com. (PBM)

Pre-owned 1984 Mack R686ST cab and chassis with a 3,000 U.S. gallon, carbon steel, vacuum tank unit. (Stock # 6115C).

**SERVICE AND REPAIR** 

www.vacuumsalesinc.com (888)VAC-UNIT (822-8648)

#### •

(PBM)

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

#### **SLIDE-IN UNITS**



Slide In Queen has units ready to ship. Call us today at 833-4-SLIDEIN (475-4334). 300-1,500-gallon, ready to work, units for your portable restroom, septic or grease business. Contact us today! 833-4-SLIDEIN (475-4334) CO (P07)



550-gallon steel slide in, 100-gallon poly water tank. Masport HXL-3V vacuum pump w/9-HP Honda engine. 30' of 2" waste hose, 50' garden hose on hose reel. Toico water pump, 3" discharge. 7,000-Ib GVWR tandem axle trailer. \$22,000. Call Jamie 800-558-2945, salesinfo@imperialind.com. (PBM)



Used Cresent tank 700 waste 300 fresh with Masport hxl3 with lift gate. 720-436-3910 (PBM)

TANK DEPOT has slide-ins AVAILABLE, ready to ship. Sizes from 300-1,500-gallon with pump package options. Call us today! 833-475-4334. CO (P07)



NEW aluminum slide-in tanks.
2 available. 600-gallon (400/200)
450-gallon (300/150). Honda motors,
Masport pumps. Call JR @
720-436-3910 or Mike @
720-478-4796, CO (PBM)

#### **TANKS**

Pre-owned 3,600 U.S. gallon, carbon steel, vacuum tank. Stock# 0668V

www.vacuumsalesinc.com (888)VAC-UNIT (822-8648). (PBM)

Pre-owned 2,500 U.S. gallon, carbon steel, vacuum tank. Stock# 3600V

www.vacuumsalesinc.com (888)VAC-UNIT (822-8648).



(PBM)

Any size tank can be custom built.
Slide-in tanks in all sizes. Plug and Play
vacuum pumps are also available. Call
Rodney Lane 270-832-3793 for
pricing. (PBM)

Tanks in stock and available for immediate purchase. Prices start at \$16,000 for a 2500-gallon tank. Complete and ready to place on your truck. Call J Eagle Tanks 1-800-721-2774 (PBM)



Complete Steel Vacuum Tanks available 800-5,000-gallon. All prices are not the same. We deliver anywhere. J Eagle Tanks 800-721-2774

J Eagle Tanks 800-721-2774 www.Jeagletanks.com (PBM)



Tanks in stock, ready to ship out or let us install it for you. Restroom, septic, grease in stock with mounting kits. Call 888-6VACTANK today! (PBM)

PLACE YOUR AD ONLINE AT WWW.PUMPER.COM - IT'S ALWAYS THERE TO MEET YOUR BUSY SCHEDULE



**Used VAC Tanks.** 2500 to 4700gallon - Starting at \$7,900. Gasco Triplex 3364-AL **269-751-5167. (PBM)** 

#### **TANK TRAILER**



This is a fifth-wheel type 1973 Heil stainless steel 5,800-gallon tank trailer. This trailer is perfect for yard storage use only. Can be pulled empty to your yard. I can not deliver. If you are a portable toilet company this would be perfect since there are 4 three inch ports on the top for multiple off loading. (see photo for example), Hoses are not included. Tires are still good and all hold air. This is an open tank with no baffles or divider walls. There is one 4 inch valve on the back to empty the tank. Inside is washed out and ready for use. This is listed on ebay for more photos, \$8,500 or best offer. Located in northeast New Jersey. Contact 201-376-2058, I also have an insulated vard use only stainless trailer that is 4,500-gallons for \$5,500. (P06)

#### **TOOLS**

T&T Tools: Probes, Hooks. Probes feature steel shafts with threaded and hardened tips. The insulated Mighty Probe™ tested to 50,000 volts. Top Poppers™ open manhole covers easily. Free catalog. www.TandTtools.com. Phone 800-521-6893. (PBM)

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

#### **TOYS**

Septic pumper and vacuum die-cast toy trucks in your choice of colors and logos. Several cabs available. Call 603-899-6842, write to Granite State Collectibles, 89 Kimball RD, Ridge, NH 03064; or www. granitestatecollectibles.com. (PBM)

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

1989 Petrosteel 5,500 gallon, carbon steel, Vacuum tank trailer. Stock# 1146C

www.vacuumsalesinc.com (888)VAC-UNIT (822-8648) (PBM)



1991 Presvac Systems tractor trailer tanker. 5,000-gallon capacity. Contact for further details. \$10,000 OBO. 912-222-7626. GA (PO6)



In stock, 6000- and 6300-gallon aluminum single-compartment Imperial vacuum trailers. Call Cory 800-558-2945 Ext. 426 (PBM)

#### TRUCKS (DUMP, SEPTIC, MISC.)

Great starter tradesman truck! 2008 black, Chevy 3500HD Duramax Diesel. Extended cab, toolbox and ladder rack equipped. More details and questions please contact Brad at 608-330-3626. Photos upon serious inquiry, thank you. Asking \$25,000. WI (P06)



For Sale: 2008 Freightliner M2 Business Class pump truck with JUGGLER vacuum system for service of grease traps and septic tanks. Mileage 294,086. Asking \$45,000 OBO. Truck is located in CT. Please contact Russell at 860-690-2709 with questions and purchase interest. (P06)



1987 GMC Cues Camera Truck -74,144 miles. OZ2 camera, Gold cable, spare cameras and extra parts. Granite XP software new 2022. Onan generator. Asking \$40,000. Phone 815-239-

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1480. (P06)



2004 Peterbilt model 379 New 5000-gallon steel tank installed in 2008 The pump is NVE506 challenger New C15 Cat 550HP with a new clutch installed 5/20/14 Only 122K on new cat motor Steerable drop axle The truck is in good running shape Current mileage is 685,625 The price is reduced to \$50,000 Call Jason Herring at 845-629-0028 or email at herring@herringseptic.com We have all the records for everything that has been done and additional pictures. (P06)



2009 International, Cummins, automatic Allison, 4,000-gal. sewage and 200-gal. fresh water w/ gas jetter and 300' hose. 475k miles, running daily.

\$85,000 OBO. Text best 713-992-0916. TX (P06)



2007 Freightliner Columbia 112
Pre-Emissions Mercedes MBE 4000,
450hp, Diesel, 10 speed manual Mileage
500,642 New Tires with Aluminum
Wheels. New Carbo Steel 3500 gallon
tank. New JUROP R260 VAC-PUMP.
Newly installed heated valves and tank
float with 333 Ft of hose. WELL MAINTAINED AND READY TO GO. \$85,000 or
bring serious offer Rene Strawser,
614-483-8500 (P06)



1988 \$2300 International; L10 Cummins 8 speed transmission. Set up for installing and hauling pipes, risers, fittings, and tools for septic systems. Runs good, needs some TLC. Mileage: 320,000 approx. (636) 583-5564. (PBM)

2004 International DT466 4300, 239,000 miles. Portable Toilet Pump Truck. 1125/350/125 Tank. Under GVWR 26,000. \$24,500. Chadh@rentnsave.net. Text or call 507-412-1184. MN (P06)



2005 Hino Grease Trap Pumper /
High Pressure Jetter Cleaning Truck - - Mileage: 161,0020 - - - Ideal Truck for
Restaurants, Schools and Super Market
Grease Trap Cleaning and Jetting - - Price: \$25,000 - - - Contact: Frank
King 978-452-7750. (PBM)



2011 Ford F350 extended cab, 4x4, auto, 6.7 power stroke, new aluminum tank, 300 waste, 150 fresh Honda 5.5 aux engine, RV wash down system, Brand new hoses. HXL 2 Masport pump. 720-436-3910 (PBM)

#### **TV INSPECTION**

2016 Aries Pathfinder TV Inspection Trailer System number 246928, Onan Generator 2,395 Hours, Aries Master Controller with Xbox remotes to control Camera and Tractor, Camera PE3510 s/n 15127706 Wiper camera with zoom, Tractor Steerable Pathfinder 6"-24"pipe TR3300 s/n 15127713. See this link for more information and pictures. https://www.equipmenttrader.com/listing/2016-Bravo-Aries+Path finder+Trailer-5025616849 Asking \$82,500.00 If interested call 316-644-2320 (P06)

New IBAK Mainline pipe line inspection system with Orion & Samp; Nanopan & Samp; tilt cameras, T66 & Samp; T76 tractors, BS7 control unit, 1,000 foot cable, LISY lateral launch Mounted in a 14' commercial FRP conversion box van With power retractable rear canopy & Samp; wall heater — Mounted on a Ford E-450 (coming in March) Stock# 14085 www.vacuumsalesinc.com (888)VAC-UNIT (822-8648) (PBM)

#### **VACUUM LOADERS**

2015 Peterbilt 567 tri-axle (automatic) with a Tornado F3Slope Hydrovac unit with Robuschi RBDV-125 blower Stock# 0461C

www.vacuumsalesinc.com (888)VAC-UNIT (822-8648)

(PBM)

#### **WATER BLASTING**

NLB 20K waterblaster has been under cover for a couple of years but was running and pumping correct pressure \$25,000.00 0B0 other items from sale that I have. email randyjholmes@outlook.com (P06)

# INDUSTRY **NEWS**



#### Satellite Industries opens new facility

Satellite Industries celebrated the opening of its new manufacturing facility for the deodorizer and consumables division in Cedar Park, Texas, in the Austin metropolitan area. The event featured a ribbon cutting, facility tours, food and entertainment. The facility features a climate-controlled lab and production areas ensuring no moisture contamination and automated powder blending. In addition, increased warehouse space with multiple shipping bays allows for storage of more deodorizers, consumables, restrooms, hand-wash units, truck and trailers.

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#### Isuzu's Brian Table joins NTEA board

Isuzu Commercial Truck of America announced that Brian Tabel, the company's executive director of marketing, has been selected to serve a three-year term on the board of directors of The Association for the Work Truck Industry.



**Brian Tabe** 

# Franklin Electric launches new employee resource group

Franklin Electric formed a new employee resource group dedicated to providing an avenue for women to grow both professionally and personally through education, networking and advocacy. Known as Franklin Women's Network, the group's goal, according to a release, is to "build a welcoming, inclusive community, provide professional alliances, equip Franklin women with relevant development tools and resources, and guide Franklin women to identify and achieve career milestones."

# Onsite Wastewater Mega-Conference slated for Oct. 22-25 in Virginia

The National Onsite Wastewater Recycling Association has announced that the 2023 Onsite Wastewater Mega-Conference will be held in Hampton, Virginia, Oct. 22-25. The Mega-Conference is a collaborative effort between NOWRA, the National Association of Wastewater Technicians, the State Onsite Regulators Association and NOWRA's Virginia affiliate, the Virginia Onsite Wastewater Recycling Association. The conference theme this year is "Clean Water for Healthy Communities." An exhibit hall will be open and education sessions will be held Oct. 23 and 24, with optional field trips scheduled for Oct. 25, and an optional pre-conference workshop on Oct. 22. For more information, go to www.nowra.org.



#### National backhoe Roe-D-Hoe champion crowned

The NOWRA National Backhoe Roe-D-Hoe championships were held at the 2023 WWETT Show in Indianapolis, as 175 entrants tested their backhoe skills through an obstacle course of basketballs, bowling pins and golf balls. Five finalists and the Iowa state champion competed for the top three prizes in the finals. Jordan Boley of Robins, Iowa, took first place in the competition and also was the Iowa state champion. He won \$1,000 in cash and a commemorative belt buckle. Other top finishers included Albert Breech of Lucasville, Ohio, second place; and Lawrence Triolo of Sandy, Utah, third place. Winning honorable mentions were Dan Shriver of Marianna, Pennsylvania; Adrin Keiper of Wadsworth, Ohio; and Mark Shepard, Stilwell, Kansas. The event sponsor was LongWave UV (formerly SALCOR).

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