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June 2013

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Profile: In Her Father's Footsteps By Marian Bond



On the cover: Master plumber Ray Freese, franchise owner Kim Miller and General Manager Tim Ottls are the driving force behind the success of Roto-Rooter of Fort Worth. The business has focused on bringing in the right people, upgrading equipment and going after larger contracts in an effort to fuel growth. (Photos by Glen E. Ellman)

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- Profile: The Kandey Company fosters growth
- Safety First: Protectina against West Nile
- Tough Job: Replacing a strip mall lateral line

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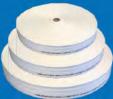
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Get the Message



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CUSTOMER FEEDBACK CAN HELP YOU EVALUATE YOUR BUSINESS AND ELIMINATE RECURRING PROBLEMS THAT LIMIT YOUR POTENTIAL

BY LUKE LAGGIS

earing from readers is always a positive experience, whether they're calling to thank me for a story or to tell me about something they're upset about. In journalism, it's often said that any feedback is good feedback, regardless of the opinions shared, because you know the readership is engaged.

Sure, it's more enjoyable to hear from a reader who says a story gave him a new perspective on his business, or that a story opened up a new line of thinking that hadn't been considered before. That's the best kind of feedback to hear, but it's not always the most productive. We all want to think we're doing a great job, and hearing it from someone else validates our efforts.

But often it's the criticism that makes the biggest impact and provides the most useful assessment of our work. I got a call the other day from a contractor in New Hampshire who was upset because he felt we were focusing too much on certain services and were featuring too many of the same types of companies. His criticism was valid because that's what he saw when he was reading the magazine. I could have argued or politely disagreed, but instead I listened and promised to take a good look at our coverage and make sure we were covering the things that are important to the whole industry. His criticism was helpful because it put a potential problem on my radar and allowed me to evaluate those concerns.

In your business, it can be much the same. Your technicians might spend 20 minutes unclogging a simple residential drain line, in the process becoming heroes to the elderly couple whose basement was backed up with sewage. Their thanks and appreciation make everyone feel good, and it's good to know that you have happy customers.

Still, it's those really difficult jobs, the ones where everyone might not be thrilled with every step in the process or with problems encountered along the way, that really teach you about yourself and your business. Hearing about the

things that customers aren't satisfied with can be the greatest feedback you'll receive because it can allow you to identify a problem you may have been unaware of, be proactive about fixing it, and ensure that you never upset a customer in the same way again. That's a good way to improve your business and help it grow.

Still, it's those really difficult jobs, the ones where everyone might not be thrilled with every step in the process or with problems encountered along the way, that really teach you about yourself and your business.

Roto-Rooter of Ft. Worth, profiled in this issue of Cleaner, follows every service appointment with a phone call to make sure the customer is satisfied with the work. It's an extra step to ensure customers are happy, in addition to demonstrating an extra level of care, and it helps build relationships. It also provides instant feedback and allows the company to address any issues with the customer or internally - with immediacy.

It's a policy that has served the company well, and it can serve yours well, too. Make sure your customers are happy, and when they aren't, make sure you identify and solve the problem before it leads to more unhappy customers.

Enjoy this month's issue.



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IN HER **FATHER'S** Footsteps

A FORT WORTH COMPANY EXPERIENCES GROWTH AND UPDATES EQUIPMENT WHILE CARRYING ON THE VISION AND PRIDE OF A LONG-ESTABLISHED FIRM BY MARIAN BOND

Since she first began working at Roto-Rooter of Fort Worth in 1987, Kim Miller knew she wanted to eventually own her own franchise, so when her father and company owner Bob Davis decided to retire in 2008, she embraced the opportunity to carry on the family tradition.

"I was extremely excited about the business part of the operation," Miller says. "I enjoyed the accounting, being involved with advertising and marketing, and that Roto-Rooter is family-oriented. Working for my dad allowed me to see every aspect of that side of affairs."

While Miller has no hands-on (or in the field) experience during her tenure with the company, she has confidence in her team, including Operations Manager Tim Ottis, Plumbing Manager Ray Freese (her son-in-law), and Safety Superintendent Rusty Eaton. While weathering the downturn in the economy, Miller has seen industrial/municipal work increase slightly to 53 percent of the business, with the balance in residential. (continued)





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unprepared.





Above and Left: John Shipp, Luis Gutierrez and Victor Mendoza (from left) use a 2001 Clean Earth (now Vacall) Safe Jet Vac to clean out a storm drain.

good hires and we began preaching to our guys to get on board with our vision for growth."

After winning the bid on a large industrial project, Ottis admits they were initially a bit overwhelmed, but within a few weeks, they had settled into the groove and were performing to expectations.

In addition to basic services, the company provides maintenance on storm drains, lift stations, manhole to manhole (video inspection, cleaning and lining where possible), confined-space entry and pipe bursting.

ON TOP OF THE GAME

"Typically the problems we find in pipe maintenance are age-related," Ottis says. "With the clay pipe, there is heavy root penetration. A lot of buildup with dirt and debris in storm drains. We see old concrete pipe and SDR 35. Some municipalities don't keep up with maintenance. They don't have the equipment to do it on their own, and they are calling us in because we are able to take care of the problems."

"The technicians need to determine the problem and the proper nozzle, and this will make life easier for the tech and the customer."

Tim Ottis

The company routinely deals with everything from 4-inch to larger 24- to 36-inch concrete pipe. Soil is typically clay, which tends to stick to everything and cause problems. They also encounter a lot of rock, so repairs involve conventional excavation after using hydroexcavation to locate other nearby underground lines. In tight places, a tunneling crew will use chipping hammers and jack hammers to break up the hard ground.

TOOLS OF THE TRADE

Meeting high demands calls for top-of-the-line equipment. Jetters and camera equipment play a starring role in the overall script for this Roto-Rooter, with four to five calls for a jetter service per day.

Crews use two Mongoose model 184 Jetters by Sewer Equipment Co.

(continued)

profile

ROTO-ROOTER OF FORT WORTH

SERVING ALL OF FORT WORTH AND ADJOINING COUNTIES

OWNER: Kim Miller
ESTABLISHED: 1960
ANNUAL SALES: \$3.8 million

SERVICES: Plumbing, drain cleaning, CCTV, jetting, pipe bursting

EMPLOYEES: 29

In 2011, the company put a focus on upgrading equipment across the board with a planned expenditure of up to \$3.2 million, and they are generating a gross revenue of \$3.8 million.

THE COMEBACK

Along with a stagnant economy in 2009, some municipalities had purchased their own pipe maintenance equipment, and there was a decided drop in industrial work for the company as clients opted to drop annual maintenance contracts. Miller's team went to work securing more of that important business with major industrial and commercial entities as well as the smaller towns and cities in need of pipeline inspection, maintenance and repair. She credits her team, including service technicians out on the road, with putting the word out. The company's strong reputation aided in the recovery.

Ottis came to the company in 2010 with 22 years experience with Roto-Rooter. Within a short time, Miller tabbed him to head up operations, with the goal of putting those larger pieces of underused equipment to work.

"We had a combination truck with an 1,800-gallon debris tank and two 1,000-gallon water tanks, and we were not using that," Ottis says. "We began submitting bids for larger projects that we had not pursued for some years, and focusing on those contracts we did have. We also were fortunate to find some



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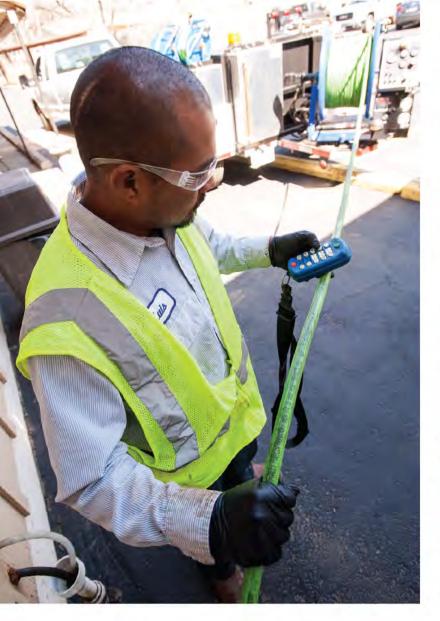
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of America. The units are powered by CAT diesel engines and produce 4,000 psi/18 gpm. Both machines feature wireless remote systems with water on/off, throttle up/down, and reel in/out functions. For larger jobs, there is also a 1999 O'Brien (Hi-Vac Corporation) jetter truck with a 600-gallon water tank, 2,500 psi/50 gpm, for 10- to 18-inch sewer and storm drains. They prefer nozzles from Enz USA.

"We might want to use a larger skid-type nozzle where it will push the debris as it is propelled forward. Another nozzle will be used when the debris is on the bottom," Ottis says. "Sometimes the buildup will be on the side walls of the pipe. We will have five to six different heads. The technicians need to determine the problem and the proper nozzle, and this will make life easier for the tech and the customer. Most often our senior technicians will be operating this type of equipment."

The company recently added a 2012 Western Star 4800SD vacuum truck with a 4,200-gallon stainless steel, two-section vac tank, equipped with front lift and full rear-opening door. It has a 1600 cfm Robuschi TRB-DV85 blower package, and the jetter system is a CAT 660 hydraulic drive (3,000 psi/10 gpm) purchased through Tank Technologies & Supply Co.

Ottis and Miller confer regularly about the direction of the company, and the requisite equipment to bring on board. With large combination trucks, Ottis says the most important features are the size of the tank, the washdown capabilities, jetting capabilities and the size of the engine.

"Horsepower alone makes a big difference," he says.

Technician Luis Gutierrez uses a Mongoose Jetter model 124 built by Sewer Equipment of America to clean out the mainline at a commercial building. The Mongoose can be remotely controlled up to 1,200 feet away from the unit.

Inspection equipment includes a Rovver 5.0 Pipeline Video Inspection System by Envirosight, Rovver 900 fully steerable crawler with six wheels, and pan-and-tilt color video camera with remote focus and motorized cable reel. All of this is contained in an Envirosight tandem axle mobile trailer purchased through Green Equipment in Fort Worth. They also have an assortment of camera equipment from Hathorn Corporation, including four Magnum DVR control boxes, and several SeeSnake camera systems and NaviTrack Scout locators from RIDGID.

The broad array of camera equipment enables the company to deal with just about any type inspection, including smaller lines. Ottis says that they want to be able to offer the customer every option during an inspection.

While they typically subcontract lining work, they handle pipe bursting themselves and rely on the C20 and C25 systems from TRIC Tools, Inc.

"We did a 24-inch liner on a 200-foot line. We brought in a contractor from out of state and we worked closely together. That line was 12 feet deep and ran under the building and made a hard right turn at one point before discharging into a field. The project went without a hitch."

Tim Ottis

NEW CUSTOMERS

Having the right equipment may be essential, but Ottis says their biggest challenge with industrial and commercial work is getting a foot in the door initially. Often a call will come from an industrial customer, an apartment complex or a municipality that may use another contractor who isn't available for an emergency situation. Securing these customers can lead to regular maintenance contracts.



Victor Mendoza and John Shipp install a Stoneage Warthog nozzle on the end of the jetter hose to break up the clog in the drain.

SPIRIT AND VISION

Kim Miller, who set up her own corporation as Tri-Star Legacy, Inc. dba Roto-Rooter of Fort Worth, has adapted the entrepreneurial spirit she witnessed as her father, Bob Davis, grew his company from a one-man shop.

"This is what we have focused on over these last few years, but it's kind of scary," she says. "I wanted to make the company grow. I wanted to give all credit to my dad. He taught me well.

"I work very closely with my team," she says. "I am also here every day, and I have an open-door policy. I know the employees and want them to know they can always come to me with any issues."

A major challenge is finding qualified service technician candidates, and Miller relies on Operations Manager Tim Ottis and Plumbing Manager Ray Freese to conduct the interviews and make those calls.

"We are looking for licensed plumbers, and they are hard to find," Miller says, "You would think that with the economy down there would be more qualified people. We are looking for professional people, people who want a career in the trade. We have one trainee right now and I wish I had three more just like him."

Miller says she would like to see more trade school opportunities.

Service technicians with the company are given a responsible job. They are sent out to take care of the customers and to ensure that when a problem arises, Roto-Rooter will get the call.

Miller adds, "We want them to build these relationships, just as we want to build relationships here with our employees."

Ottis and Miller both had praise for their technicians, and their policy is to have one or two technicians assigned to a major client when possible so a relationship can be built.

"This way the technician knows the customer and the property, and the customer knows the technician," Ottis says.

THE RIGHT SOLUTIONS

While pipe bursting is primarily used for their residential business, when a situation requires relining, they will bring in a subcontractor, and they have had some successful projects in this regard.

"One good example was a lining job for a food processing company that had built over an original storm sewer drain. Every time it rained, that particular line had enough cracks and breaks in the bottom that the rainwater would surface in the middle of the plant, which had to be kept very clean. We did a 24-inch liner on a 200-foot line. We brought in a contractor from out of state and we worked closely together. That line was 12 feet deep and ran under the building and made a hard right turn at one point before discharging into a field. The project went without a hitch," he says.

"This is how they make their living. If something is missing or not properly cared for, it affects everyone. It is like a chain reaction. It has to be in an operation like ours."

Tim Ottis

TAKING OWNERSHIP

Technicians take responsibility for equipment and make sure it is handled properly, cleaned and returned into inventory and ready for the next area of service.

"They do take ownership," he says. "When they take equipment out, they make sure nothing is missing and all is working. They do a walk-around before taking off - make sure all blinkers and tail lights are

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Members of the Roto-Rooter of Fort Worth team (front, from left) are Ray Freese, Bob Davis, Kim Miller and Tom Otis. Standing in front of two Model 184 Mongoose jetters from Sewer Equipment Co. of Amèrica are (from left) Howard Love, Victor Mendoza, Steve Hollaway, Chris Rodriguez, Michael Mendoza, Jeff Moore, JP Petty, Chad Molock, Mike Stanglin, Rusty Eaton, Luis Guiterrez, Mike Garretson, Tyler Moore, Eliott Burton, John Shipp, Jesus Espinoza, Steve Boyle, Bill Wise, Anthony Binder, Melissa Taylor, KJ Branum and Beth Byrd.

up and running, hoses are in good shape, that all nozzles are in place. And we have sign-in sheets where they log in and out when they take a particular piece of equipment.

"This is how they make their living," Ottis says. "If something is missing or not properly cared for, it affects everyone. It is like a chain reaction. It has to be in an operation like ours."

There is followup with a telephone call on every service rendered, with office staff checking to be sure every customer is satisfied with the job performance. Any issues are always dealt with promptly.

The company operates on a 6-acre site with a 4,000-square-foot service and warehouse building and a 5,000-square-foot office structure. Technicians all take their service vans home to assist in covering their 200-mile-radius service area, and two or three will be assigned night or weekend duty, as the business is a 24/7 operation.

Their staff includes two Master Plumbers (Ottis and Ray Freese), plus seven journeymen, in addition to tradesmen, apprentices, other field staff, a combination unit and pump truck specialist, as well as their office personnel.

Reese and Ottis conduct weekly meetings with technicians, and Miller is always available and frequently sits in. Safety meetings are conducted monthly by Rusty Eaton and there is additional training on confined-space entry as well as shoring and trenching.

Miller says they are always looking into other services they could offer to help grow the company, but they also want to streamline what they now

provide. "These are things we discuss a lot. We are anxious to make those kinds of decisions as we find our path to success with our vision and strategy." c

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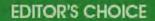


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BY LUKE LAGGIS

ur website got a new look this year, and we're packing it full of extra content you can't get anywhere else. In addition to everything you see on these pages, the site features a wealth of product and industry information, as well as original features you won't find in print. The following are just a few of the stories you're missing if you're not visiting cleaner.com.

3 TOOLS EVERY SERVICE VAN NEEDS

Service vans come in a variety of shapes and sizes. But whether it's a cabover design or a standard van, the key to your success is what you pack inside. In addition to saving on travel time, having the right tools on every truck eliminates calling in another technician who has a jetter or camera, or whatever you need and don't have. So before you head out on your next call, make sure you have these three tools in your truck.

LANZO EXPANDS TO BETTER SERVE GROWING CLIENT LIST

Lanzo Lining Services was born in 1993 when a customer approached the company and suggested entering the pipe lining business. The D'Alessandro family, co-owners of Lanzo Construction, saw the opportunity and agreed, and Lanzo Lining Services was established as a subsidiary. The company, now known as Lanzo Trenchless Technologies, recently announced the opening of a second headquarters in Detroit, Mich., in response to the company's expanding operations.

EDITOR'S BLOG: DEATH SENDS A MESSAGE: DON'T TAKE CHANCES WITH HYDROGEN SULFIDE

Workers face many dangers in the underground world of wastewater. Sadly, the life of one young worker was taken recently after he was overcome by fumes in a large sewer pipe in Tampa, Fla. According to the Tampa Port Authority, seven workers were involved, and all were taken to the hospital after being overcome by fumes inside the pipe. Unfortunately, 33-year-old Jesus Jimenez died from inhalation of the hydrogen sulfide fumes.

LATIN AMERICAN SEPTIC COMPANY RELIES ON QUALITY EQUIPMENT TO BREAK INTO SEWER CLEANING INDUSTRY

When portable restroom and septic pumping company owner Mario Moreno decided to expand his service offerings, he decided to get his feet wet with a custom rebuild rather than investing in a brand new combination unit. The 20-year-old Ecovisa-Saniport company has 50 employees in six locations in Northwest Mexico. The Ecovisa side offers septic cleaning and pumping and grease trap cleaning, while Saniport handles portable restroom rentals and service.

HOW MUCH IS EXCAVATION SAFETY WORTH?

A Philadelphia plumbing company got hit with a \$40,000 fine in April for excavation violations while installing a residential sewer line. The OSHA violations included the lack of a protective system, no barrier for the spoil pile, inadequate training and failure to have a hazard communication program. That's an expensive bill for shaving a few minutes off a job.

> Check out all these stories at www.cleaner.com/ec/2013/June.

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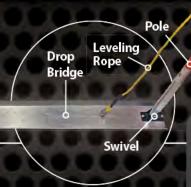


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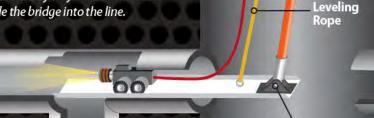
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Low-profile vacuum/jetting truck was an Expo show-stopper

BY ED WODALSKI

he tunneltrux low-profile vacuum/jetting service vehicle from Vacutrux Ltd. was an Expo show-stopper for cleaning contractors large and small, especially those who jet sewer lines but don't own a vacuum truck, says Derek Potma, customer service specialist with Vacutrux. The combination unit mounted on a 19,500-pound GVWR cab chassis was an option many hadn't previously considered.

"There are a lot of guys who do pipeline maintenance. They're in the plumbing business and do jetting, but not a lot of them have vacuum," Potma says. "They say they don't use it all the time, and when they do, they'll hire a vacuum truck for a couple jobs a year. Most of them, when they think of a vacuum truck, they think of a big sewer cleaner unit. The fact that this truck is pickup-size, it really makes people think they should have their own vacuum truck and not just do the jetting only."

"We really like the full tailgate for unloading at the dump site. It reduces time, allowing for more work hours and less time at the dumping station. We also like the onboard remote. All the components are exposed for easy servicing. It has all the features of a larger pumper truck, but very compact."

Claudio De Carli

The black-and-yellow-lettered vacuum/jetting truck owned by Claudio De Carli of Toronto caught the attention of Expo guest Kris Noble from John Noble Septic Service in Creemore, Ontario, who was searching the show floor for new ideas. "I'm always in the market for a truck," he says. "I can see all the different designs and options at the show and go home and figure out how I want to build it."

DeCarli, owner of Metro Jet Wash, says the low-profile truck, designed for cleaning catch basins, sumps and grease traps in underground structures, has helped his company increase profits and production.

"We really like the full tailgate for unloading at the dump site," he says. "It reduces time, allowing for more work hours and less time at the dumping station. We also like the onboard remote. All the components are exposed for easy servicing. It has all the features of a larger pumper truck, but very compact."

Featuring four-comer air ride technology, the body lowers to 76 inches from the top of the cab, or 72 inches on a lighter chassis, says Richard McKee, sales manager for Vacutrux Ltd.

"You can lift and lower this truck to get into underground garages. Instead of parking a big industrial vacuum truck on the road and running in 300 feet of



Vacutrux Sales Manager William McKee, left, explains some of the advantages of the company's new low-profile vacuum/jetting truck at the 2013 Pumper & Cleaner Environmental Expo.

hose, you can dispatch the smaller truck. It's more efficient in the city," he adds.

McKee says the truck brought a lot of interest at the Expo, which led to followup quotations and sales. "On the industrial side, there were a lot of big owner/operators who run fleets of hydrovacs or big industrial vacuum trucks and systems, but also the septic and sanitation guys who might have one industrial truck that could use a smaller GVW," he says. "It was interest from all different types of customers."

The truck's remote control, which operates from up to 300 feet away, enables the operator to engage and disengage the PTO, vacuum pump rpm and load valve as well as the pressure pump.

Mounted on a 2013 Ford F550 chassis (Dodge available), the truck is powered by a 6.7-liter Power Stroke engine with automatic transmission. Measuring 84 inches cab to axle with 165-inch wheelbase, the vehicle has a 720-gallon, two-compartment galvanized steel baffled tank (600-gallon rear debris/120-gallon front water), 16-inch flat-top hatch, fully-opening hydraulic rear door, 3-inch low-profile primary check valve, secondary moisture trap and oil-catch muffler Other features include a front telescopic hoist cylinder, tank vibrator with variable-speed control, top rub rails, checkered-plate tank protection and stainless steel hose trays.

"We constructed the tank out of prime carbon steel and hot-dip galvanized it (for corrosion protection)," McKee says. "The fenders are constructed of stainless steel."

The vacuum/jetting system has a Wallenstein 753HRVAP vacuum pump that delivers 350 cfm at 15 inches Hg (1,000 rpm), hydraulic drive package, Giant 10 gpm, 2,500 psi high-pressure washer, electric switch and hydraulic drive package. 800/305-4305; www.vacutrux.com.



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IWPC technician releases the steam from a freshly cured-inplace sewer liner from National Liner. (Photography by Jerry Bernard)

Walter Rozycki, senior project manager at IWPC, often serves as the point man when utilities in an eight-state region need help with failing sewers. IWPC is based in Detroit but serves a region that includes Ohio, Pennsylvania, Tennessee, Indiana, West Virginia, Virginia and Maryland. (Several of those states are being moved to a new division the parent company is forming to serve New England and the Northeast.)

"The thing that's surprising is that many of the older, larger-diameter sewers that were built of brick are in better shape than the concrete sewers you first started seeing in the 1940s and '50s."

Walter Rozycki

IWPC's main focus is pipe relining and pipe rehabilitation, and Rozycki says the company offers a variety of services that allow it to tailor the solution to the problem, age and construction of the sewer lines that need repair. IWPC offers IPR's proprietary EcoCast geopolymer cementitious spincast lining for pipes 36 inches and up (as well as manholes and large storm sewers), sliplining, CIPP lining (liner materials supplied by Applied Felts), and chemical and cementitious grouting. IWPC also does sewer inspection, spot repairs and cleaning.

Even though IWPC concentrates on sewer lines, the Detroit operation is also a licensed installer for RS Technik's RS BlueLine CIPP for water mains and force mains. RS Blueline has been certified to meet NSF/ANSI Standard 61 for drinking water.

PIPELINES OF ALL SIZES

Although some of IWPC's most notable work is done on large sewer lines up to 12 feet in diameter, Rozycki says the company also does a lot of work on smaller lines. "We have contracts with the City of Detroit to do all of their CIPP work. There is a lot of 8-, 10-, 12-inch stuff and we are working on lines all the way up to 60 inches. We've got over 1 million feet of CIPP installed in Detroit."

To keep pace with the Detroit contracts and other projects, IWPC has seven lining crews normally comprised of seven people each. If an out-of-town project or a large-diameter sewer requires the use of special on-site wet-out equipment, the lining crews can expand to as many as 10 people.

IWPC also has seven television/cleaning/grouting crews with four to five people each.



Crew members Kendra Rutgers, left, and Dale Eddy cut a hole in a liner for the air-steam fitting as other crew members set up for the lining job.

And the Detroit operation has a fleet of 12 jet-vac trucks - supplied by both Vac-Con and Guzzler — each operating with a two-man crew.

IWPC operates its main wet-out plant in Detroit with a staff of 10 people. Other members of the Detroit team include seven mechanics who maintain the company's trucks and equipment as well as 14 people on the office staff, including Rozycki.

EQUIPPING THE CREWS

To equip its lining crews, IWPC assembles its own trailers equipped with large, specialized boilers, and equips its crews with portable wet-out tables to handle the scale of the material they are installing. The Detroit operation equips boiler trailers for its own crews as well as for the other divisions of IPR across the country. Some of the trailers offer crews the capability to cure by steam or water. IWPC's mechanics also design and supply their division and the rest of IPR with the specialized installation trucks required for application of EcoCast linings.

For television inspection and grouting work, IWPC crews operate trucks



assembled by either Telespector, a company based just outside Detroit, or CUES, an Orlando-based company. Rozycki says most of the company's liner tapcutting equipment is purchased from CUES.

"Our people are trained in sewer rescue and first aid skills, similar to what you would teach a first responder. Because in some communities, even the local first responders aren't trained to go that deep underground and enter the sewer."

Walter Rozycki

Since IWPC's work is primarily done in northern states, the crews are also equipped with large tents to enclose the working area and maintain the proper conditions for wet-out of CIPP liners. Climate control for impregnated CIPP liners is important, and when IWPC crews are working in another state, the company has a fleet of refrigerated trucks and trailers deliver the liners to the work site while maintaining a constant temperature to prevent them from curing. On site, the material is then inverted and applied and cured by either steam or water.

CENTURY-OLD SEWERS STAND STRONG

Since many of the cities in the region IWPC serves are older, Rozycki says his crews often find themselves working in sewer lines up to 100 years old or more. But he says the older brick sewers are not necessarily the lines that

"The thing that's surprising is that many of the older, larger-diameter sewers that were built of brick are in better shape than the concrete sewers you first started seeing in the 1940s and '50s," he says.

Rozycki says brick-lined tunnels were better able to withstand the flow of wastewater, while early concrete sewers proved susceptible to substances in

ABOVE: Crew member Courtney Verway, field manager Angie Miller, crew member Dale Eddy, crew member Scott Diffen, foreman Kyle Howell and crew member Clint Adkins prep an 18-inch liner from National Liner. The Hurst Boiler-equipped custom flatbed trailer will handle the curing process. BELOW: Crew worker Scott Diffen catches the blown out liner at the far end so he can fold it over and set up the steam fitting for curing.



the waste stream. Hydrogen sulfide has been a key factor in the degradation of concrete sewers in many locales.

The IWPC manager says one reason early concrete and clay sewers began to fail was the early degradation of joint sealant material that allowed for increased infiltration and root intrusion. The brick sewers were continuous and didn't have that kind of problem. (continued)

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GOING WITH THE FLOW

When his crews go underground to work on some of the largest sewer lines serving the Upper Midwest, Walter Rozycki has two things in mind: worker safety and worker efficiency. That's why the senior project manager for Inland Waters Pollution Control likes to work on solutions.

One of those solutions is a raff-like craft his crews can take down a 4-foot manhole and assemble into a floating platform to carry up to five workers and their equipment. It's a design that started as a sketch on the back of a napkin during a lunch with his brother, Rick, who developed and patented the Hydrosled, designed to clean large-diameter sewers with no personnel in the sewer and using the force of existing flow for propulsion.

IWPC's raft is fabricated from stainless steel to withstand the demands of underground work.

"It's kind of like a pontoon boat," Rozycki says. "But we can break it down to go down a small hole and they can assemble it at the bottom. There are no nuts and bolts, just pins to hold it together."

The raft can be set up to be between 6 and 8 feet wide and from 12 to 24 feet long. The crew capacity depends upon the working size of the raft and the weight of the equipment it is carrying. In late 2012, IWPC crews were using the raft to work on the Oakland-Macomb Interceptor Drain project, a rehabilitation contract involving about 10 miles of interceptor ranging from 9 to 12.8 feet in diameter and running 70 to 110 feet underground.

One of the key uses of the raft is for chemical and cementitious grouting. Rozycki says IWPC has worked with Telespector to adapt its grout mixing and pumping equipment to run off of lithium batteries



A technician uses IPR's proprietary EcoCast technology on a pipe rehabilitation project. EcoCast is one of several pipe, tunnel and manhole rehabilitation technologies IWPC offers its customers. (Photo courtesy of Inland Waters)

so the system can be taken down to the site of the grouting, instead of running a hose down the manhole and up to 1,000 feet through the sewer.

The raft can also be used for spot repairs, relining, cleaning and other work in large sewer lines with active flows.



IWPC, through IPR, is now capable of relining potable water lines with its RS Technik epoxy resin CIPP installation system certified for drinking water systems.

"It's really surprising how these bricks have almost become polished from the wastewater or stormwater flowing through them," Rozycki says. "They have really stood up over time."

STAYING SAFE UNDERGROUND

With much of its work performed in large pipelines, IWPC faces the added challenge of training and equipping its employees for the hazards of working 100 feet underground. Much like mine operators, Rozycki says, "We have to abide by all confined-space entry regulations set by OSHA."

"We often handle projects that are unusual. We are solution providers. We can be a one-stop deal, if that is what the customer wants. We can do everything from the initial investigation to final remediation."

Walter Rozycki

IWPC conducts its own safety training program to comply with OSHA regulations and other industry standards. The training focuses on the work environment as well as the operation of specialized equipment used by company employees.

Often, the training offered to IWPC employees goes beyond government requirements.

"Our people are trained in sewer rescue and first aid skills, similar to what you would teach a first responder," Rozycki says. "Because in some communities,

(continued)



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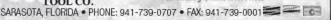
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even the local first responders aren't trained to go that deep underground and enter the sewer."

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IWPC sometimes serves as the construction manager for large sewer rehabilitation projects, overseeing the work of multiple contractors. When a

contract calls for services IWPC does not normally handle, it will first turn to its sister divisions to handle some jobs.

Within IPR's national network, IWPC can provide a myriad of additional trenchless services not normally performed in its region. These include: pipe bursting, water bursting, and spiral-wound pipe and culvert rehab, just to name a few. So when a job calls for that type of service, it only takes a phone call to secure an experienced and qualified installation team to perform the task.

Because of the great variance in the age of the systems his company works on and the unique challenges geology, infrastructure and construction in each system, Rozycki says IWPC can't take a one-size-fits-all approach to the business.

"We often handle projects that are unusual," Rozycki says. "We are solution providers. We can be a one-stop deal, if that is what the customer wants. We can do everything from the initial investigation to final remediation." c

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Laying Old Ways to Rest

PIPE BURSTING SYSTEM INCREASES CONTRACTOR'S PRODUCTIVITY AND PROFITABILITY WHEN REPLACING BROKEN SEWER LATERALS

BY KEN WYSOCKY

or years, Air Services/All Service Plumbing in Springfield, Mo., replaced broken residential sewer lateral lines the conventional way: excavating customers' well-groomed lawns or busting up driveways, sidewalks and patios to install new lines.

But that all changed in mid-2011 when the company invested about \$30,000 in an UnderTaker trenchless pipe replacement system made by Spartan Tool, LLC. The unit not only doubled line replacement productivity and boosted profitability, it also gave the company a marketing edge by offering customers an attractive alternative that few competitors could provide.

"It used to take us two days to replace a line, by the time you dug it, laid the pipe, backfilled it, hand-raked it, seeded it and 'strawed' it," says J.R. Gardner, the company's general manager. "Now it takes us a half a day to one full day ... so most times, it cuts the time in half. That's huge. The more you do it, the faster you get at it. We've got it down pretty good right now."

The UnderTaker is a pipe bursting system that generates up to 30 tons of lateral pulling force. Here's how it works: A hydraulically powered cylinder

pulls a bursting head through the existing line, shattering it. At the same time, it's also pulling along seamless, code-approved, high-density polyethylene pipe (HDPE) that replaces the old line. It can burst 4- or 6-inch pipe (with optional 2- and 3-inch bursting heads available, and lay up to 5 feet of new pipe per minute.

money machines

MACHINE: UnderTaker trenchless pipe replacement system,

made by Spartan Tool, LLC

FUNCTION: Bursting broken 4- to 6-inch lateral lines while simultaneously laying HDPE replacement pipe

FEATURES: Hydraulically powered cylinder that generates up to

30 tons of lateral pulling force; 4- or 6-inch bursting

head; 13 hp electric engine

COST: About \$30,000





LEFT: Todd Farell (left) and Mark Baysinger of Air Services/All Service Plumbing use the Spartan Tool UnderTaker trenchless pipe replacement system on a residential lateral line. (Photos courtesy of Air Services/ All Service Plumbing) ABOVE: The UnderTaker trenchless pipe replacement system by Spartan Tool. (Photo courtesy of Spartan Tool)

The unit is powered by a 13 hp electric engine. It weighs 210 pounds fully assembled, with no individual component weighing more than 70 pounds. The footprint of the pulling unit measures 22 inches long, 22 inches wide and 32 1/2 inches tall. It's easy to move around and assemble/disassemble; Air Services/All Service Plumbing carries it in a 12-foot box truck with a rear power lift gate.

"Instead of excavating, say, up to 100 feet of sewer lateral line from a house to the street, we only dig a hole that's 2 feet wide and 4 feet long at the building and another hole the same size at the street," Gardner explains. "Then we can pull a new line from the house to the street or from the street to the house, whatever is easiest to set up. It definitely saves time."

The HDPE pipe, which carries a 50-year warranty, is a great selling point, Gardner notes. "You can drive a truck over it and it won't break," he says. "Once people see how tough it is, they're willing to pay more for it. If they plan on staying in their home for a while, it's the last lateral line they'll ever have to buy."

"The worst thing is going into a sales presentation with just one bullet. If you go to the gunfight with one bullet and they say no, then what are you going to do? People love to have options."

J.R. Gardner

But the biggest selling point centers on taking wholesale lawn excavation or destruction of a perfectly good deck, patio, driveway or sidewalk out of the lateral replacement equation. That greatly improves customer satisfaction, Gardner says.

Moreover, Gardner says he can charge a premium price for a pipe-bursting job - even if there are no physical obstacles in the way. People are willing to pay more to have most of their nice-looking lawns remain undisturbed, especially in neighborhoods with highend homes.

"I feel it's my duty to be able to offer our customers options," Gardner says. "If it were my home, I'd want options. The worst thing is going into a sales presentation with just one bullet. If you go to the gunfight with one bullet and they say no, then what are you going to do? People love to have options."

Depending on various factors, the cost of a pipe bursting job can be cheaper than a conventional replacement or up to 50 percent more expensive, especially if unforeseen circumstances lead to removal of sidewalks, patios and the like. To keep customers expectations in line, Gardner says the company's bids include the cost of replacing pavement, just in case the pipe bursting job unexpectedly goes south.

But that hasn't happened yet, and Gardner has nothing but good things to say about how the UnderTaker breathed new life into his company's lateral replacement business.

"We're doing roughly twice as many jobs as before, and charging more money, too," he points out.

"The unit has more than paid for itself. It's the workhorse of our plumbing department and it drives a lot of our revenue. We're sure glad we bought it." c

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Dangerous Business

SAFE HYDROEXCAVATION REQUIRES AN UNDERSTANDING AND RESPECT FOR ALL THE POTENTIAL RISKS

BY DOUG DAY

ary Toothe has seen enough injuries and deaths in his years to realize that hydroexcavation involves much more than a water hose and vacuum. "There's a huge void in training," says the training manager for Federal Signal's Environmental Products Group, who also spent decades in private business dealing with such equipment.

The most common mistake, he says, is sending an operator out alone. If something goes wrong, yelling for help is the only option. "There's not much else you can do."

Trenching and excavation violations are another common safety mistake, according to Toothe. "If you're going more than 4 feet down, you're covered by the OSHA standards," he says. "You have to worry about benching or sloping, and you need shoring or a shield system if someone is getting into the hole."

"Hydroexcavation should be used primarily to loosen the material so the vacuum can pull the dirt out of the hole. It is not meant to dissolve soil. That's both inefficient and unsafe."

Gary Toothe

OSHA requires that a competent person be on site during such excavation, someone who knows how to classify soils and knows the requirements. "If there were a competent person on site, a lot of situations wouldn't develop because people would know better," Toothe says.

Adding water to the situation makes it more dangerous. He adds, "If you add too much water, you're destabilizing that which you're trying to create.



You're supposed to keep everything 2 feet back, but if you're not benching or sloping, that 2 feet can easily give way."

That's why you should never stand within 2 feet of the hole. If you have to be that close, Toothe says you should use proper fall protection, such as tying off to the truck.

The risks of vacuum and high-pressure water injuries are recognized by most people, though they may not understand the level of risk. A typical hydroexcavator operates at around 3,000 psi. "That is certainly enough to damage the human body," he says.

An operator must also understand how much pressure the underground utilities can take. "Part of the training I do is about determining what you're trying to locate, what else may be in the area, and setting your pump pressure so you can't possibly damage any utilities you're trying to locate," Toothe says.

Fiber optic cable can handle 1,500 psi even with direct contact. But at less than 3 inches, 2,000 psi can damage the cable. "That's a lot of money if you take it out," he warns. HDPE gas pipe can suffer damage at 2,000 psi. Even coated steel gas pipe can be damaged at the typical 3,000 psi.

The vacuum presents risks, as well. Toothe investigated an accident in which a man's arm was caught in the hose up to the shoulder. "He was working by himself," he recalls. "When they finally got him out, the vacuum had sucked all the muscles and ligaments from his upper arm into his lower arm below the elbow. Above the elbow was just bone and skin."

While some people may consider safety a trade-off with efficiency, Toothe disagrees. "Hydroexcavation should be used primarily to loosen the material so the vacuum can pull the dirt out of the hole," he stresses. "It is not meant to dissolve soil. That's both inefficient and unsafe."

In fact, he adds, safety devices can make you more efficient. "I can move more water at 1,500 psi than I can at 2,000. By selecting the right tip, the right pump and nozzle configuration, I can actually be more productive at the same time I'm being safe."

While some companies provide training with a truck purchase, the responsibility lies with the employer "There are certain things you can do and certain things you ought not do," says Toothe. "Rather than learn them the hard way, let's talk about it so you can come out of the blocks safely and efficiently." \square

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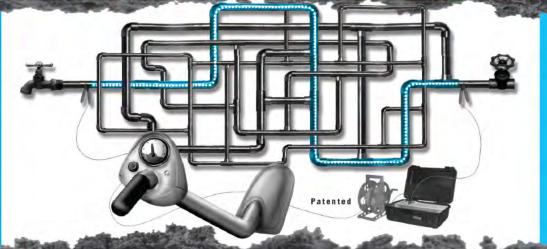
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Tech Perspective looks at technology-related issues and provides information and advice that cleaning professionals can apply to equipment selection and to their daily work in the field. Industry members are welcome to offer ideas for this column, Please direct them to editor Luke Laggis, editor@cleaner.com.

Ready for the Test

ULTRASONIC THICKNESS GAUGES PROVIDE AN ACCURATE METHOD FOR CONTRACTORS TO DETERMINE THE WALL THICKNESSES OF TANKS AND PIPES.

BY PETER KENTER

isual inspection and routine maintenance are the two keys to ensuring the longevity and safe operation of liquid-containing tanks. When the remaining thickness of a tank wall is in doubt, ultrasonic testing can provide a definitive measurement, either at a given point, or across a broader spectrum of locations.

An electronic ultrasonic thickness gauge (UTG) can test the wall thickness of materials, including steel, aluminum and plastic, and determine the effects of corrosion or erosion on any tank structure. Initially, such devices were used inside a tank to ensure that any coating on the tank exterior wouldn't skew the measurements. The advantage of the UTG is that it can provide an accurate measurement where access to the tank is limited to the outside - even through paint or other coatings.

"We produce a basic model, the PosiTector UTG, that's suitable for truck tank inspection and designed to be simple to use and ready to go out of the box. The default material setting for the tester is for steel and it works accurately on determining the thickness of the material to a depth of 5 inches." Scott Bate

The technology works by sending a pulse of high-frequency sound waves into a solid material. When the pulse detects a different material, such as air

or water, the pulse is reflected back to the probe. The gauge then assesses the speed of the pulse through the material to determine its thickness.

The first hand-held thickness gauges were developed in the 1970s. The development of digital and increasingly miniaturized components has led to the creation of a broad array of sophisticated battery-powered, hand-held devices.

TRUCK TANKS TESTED

Bruce Heck, owner of Alberta Tank Truck & Supply Ltd. in Drayton Valley, Alberta, has been inspecting truck tanks for the better part of a decade. While his business concentrates primarily on tank trucks serving the gas and oil industry, the testing procedures and principles are identical to those that would be used for trucks that transport sewage or water.

Heck says ultrasonic testing is generally employed in his business as part



An electronic ultrasonic thickness gauge can test the wall thickness of materials including steel and plastic and determine the effects of corrosion or erosion on any tank structure where access is limited to the outside. (Photos courtesy of DeFelsko)

of a broader routine truck inspection, or within a full safety inspection to certify a truck to transport dangerous goods.

"If the owner suspects there's a problem with a tank because of corrosion

on the outside, or if the tank has been scraped, we occasionally provide just an ultrasonic inspection to help them to determine whether the tank should be repaired or scrapped," he says.

Heck uses an Olympus ultrasonic tester that provides a reading of the thickness of both the paint on the tank and the tank material itself. That allows him to test tank thickness from the outside of the tank, rather than the inside. The tank does not need to be emptied to perform a successful test, since the device can differentiate between steel and whatever the tank may be carrying.

"The tester will give me separate readings on the thickness of the paint and the thickness of the tank material," he says. "But it won't tell me how thick they both are together."



PosiTector

GEL BRIDGES GAPS

Heck uses an ultrasonic couplant gel applied to the surface of the tank to ensure the tester probe makes sufficient contact with the tank material, eliminating the slight gap of air between the probe and the surface to be tested. Various devices use different types of gel, including water, oil, glycerin and propylene glycol. However, the gel must be applied to the surface of the material, not the transducer face of the probe. The gel also reduces abrasion on the surface of the transducer, extending its service life.

When testing, the thickness readings are supplied immediately.

"We start by checking the tank in the spots where we believe it's likely to become more thin," he says. "Generally, we test the top third of the tank where vapor will corrode the interior surface, because liquids don't often corrode the inside of a tank below liquid level. Vacuum trucks are also typically eroded where gritty material enters the tank. If we find a spot that's too thin, we'll do more tests at other spots to help determine if that tank should be repaired or discarded."

The cost of the ultrasonic inspection is charged out at shop labor rates, usually bringing the final cost to less than \$100, Heck says.

Contractors can perform ultrasonic testing themselves, using hand-held testers provided by a wide range of suppliers.

One such company is DeFelsko Corporation, a manufacturer and supplier of ultrasonic testers based in Ogdensburg, New York.

"We produce a basic model, the PosiTector UTG, that's suitable for truck

USING ULTRASOUND TO DETECT PIPE THICKNESS

The same ultrasonic technology used to detect tank thickness can also be used to detect the thickness of steel and plastic pipe walls.

However, the smaller the diameter of the pipe to be measured, the more important it is to place the transducer of the ultrasonic thickness gauge (UTG) accurately.

"When measuring the thickness of pipe walls, the proper placement of the transducer is important," says Scott Bate, technical sales with UTG probe manufacturer DeFelsko. "On pipe diameters larger than 4 inches, it's recommended to place the probe parallel to the long axis of the pipe. For smallerdiameter pipes, it's recommended that two measurements be taken, one with the probe perpendicular, and another with the probe parallel to the long axis of the pipe. The smaller of the two measurements should be recorded as the thickness for that area."

Bate warns against placing the transducer on the pipe in a diagonal position.

"The laws of physics don't favor an angled approach," he says. "After years of real-world testing, we've found angular readings disrupt the path of the echo and send back inaccurate signals."

tank inspection and designed to be simple to use and ready to go out of the box," says Scott Bate, technical sales with DeFelsko. "The default material setting for the tester is for steel and it works accurately on determining the thickness of the material to a depth of 5 inches."

ADJUSTING FOR MATERIAL

However, the probe can be set to measure the thickness of cast iron, aluminum and plastic tanks as well. The adjustment essentially represents a change in the speed at which sound travels through that particular material.

The probe comes calibrated by the manufacturer right out of the box. However, before using the probe on the material to be tested, it should first be used to measure a material sample of known thickness.

"This could be a flat bar of metal that you've independently measured, or you could use a calibration step block," says Bate. "It's a series of steps rising along a short metal bar, with the thickness measurement stamped on each

A drop of ultrasonic gel must also be applied to the step block when verifying the calibration of the gauge.

"To perform an accurate test, the tank surface should first be cleaned of grease, road salt, dirt, rust or scale," says Bate. "Otherwise, the tester will simply measure the thickness of the rust, scale or corrosion."

If corrosion or scaling is severe, a wire brush or grinder may be necessary to remove excess material. If the surface remains irregular, application of additional gel to the rough areas can help to provide an accurate reading.

The scan should also avoid structural irregularities in the tank, such as welds. If the reading is being taken along the curved part of the tank, the gauge should be pointed directly to the center of the tank.

"The gauge always provides the most accurate reading when placed at a 90-degree angle to the material to be tested," he says.

SCANNING THE SURFACE

Bate notes that the pattern of application of the ultrasonic gel can allow the operator to perform either a spot thickness reading or a reading across a broader expanse of the tank's surface. This helps to narrow down problem areas, particularly those where erosion or corrosion has affected individual points of the tank.

"If you spread the gel across the range of the surface you're interested in and then set the tester to scan mode, you can pass the probe across the length of that gel," he says. "The scan takes 20 readings per second and provides an average reading of the tank thickness across that range, in addition to the thickest and thinnest points in that part of the tank."

The meter can also be set to emit an audible signal if the thickness of the tank material falls below a preset level at any measurement point.

Whether a contractor chooses to invest in an ultrasonic tester largely depends on the number of trucks in the fleet and frequency of inspections. The basic hand-held model from DeFelsko — the PosiTector UTGC1 — currently sells for \$995.

"It's definitely something that can be used accurately by a truck contractor without any specialized training," says Bate. c



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Narrow Your Focus

GET MORE DONE IN 12 WEEKS THAN MOST PEOPLE AND BUSINESSES DO IN 12 MONTHS

BY BRIAN MORAN

n an effort to improve, most companies and individuals will search for new ideas and strategies. They will seek out new marketing techniques, sales ideas, cost-cutting measures and customer service enhancements, hoping that these new approaches will deliver better results.

The number one factor holding individuals and entire companies back from achieving what they are truly capable of is not a lack of knowledge, intellect or information. It's not some new strategy or idea. It's not additional training. It's not a larger network of "connected" people. It's not hard work, natural talent or luck. Of course all these things help, they all play a factor, but they are not the things that make the difference.

You've no doubt heard the saying that knowledge is power. Knowledge is only powerful if you use it, if you act on it. It benefits no one unless the person acquiring the knowledge does something with it. And great ideas, well, great ideas are worthless unless they are implemented. The marketplace only rewards those ideas that get implemented. You can be smart, you can have access to lots of information and great ideas, you can be well-connected, work hard and have lots of natural talent, but in the end, you have to execute.

Execution is the single greatest market-differentiator. Great companies and successful individuals execute better than their competition.

The barrier standing between you and the life you are capable of living is a lack of consistent execution. Effective execution will set you free. It is the path to accomplish the things you desire.

THE 12-WEEK YEAR

One of the things that gets in the way of individuals and organizations effectively executing and achieving their best is the annual planning process. As strange as this is going to sound, annual goals and plans are often a barrier to high performance. This doesn't mean annual goals and plans don't have a positive impact - they do. There is no question you will do better with annual goals and plans than without any goals or plans. However, this annual process inherently limits performance.

The trap is referred to as "annualized thinking." At the heart of annualized thinking is an unspoken belief that there is plenty of time in the year to make things happen. In January, December looks a long way off. We mistakenly believe that there is plenty of time in the year, and we act accordingly. We lack a sense of urgency, not realizing that every week is important, every day is important, every moment is important. Ultimately, effective execution happens

Forget about a year, let's redefine a year: A year is no longer 12 months; it is now only 12 weeks. There are no longer four periods in a year; that's old thinking. Now, there is just a 12-week year, followed by the next 12-week year, ad infinitum. Each 12-week period stands on its own — it is your year.

The 12-week year creates a new end-game date — the point at which you

assess your success (or lack thereof). It narrows your focus to the week and more to the point, the day, which is where execution occurs. The 12-week year brings that reality front and center. When you set your goals in the context of a 12-week year, you no longer have the luxury of putting off the critical activities, thinking to yourself that there is "plenty of time" left in the year. Once 12 weeks becomes your year, then each week matters; each day matters; each moment matters.

Execution is the single greatest market-differentiator. Great companies and successful individuals execute better than their competition.

The result is profound. Most people experience about a 30 percent increase in productivity in their first 12 weeks when operating on the 12-week year platform. Here are three steps to help you achieve more in the next 12 weeks than most will in 12 months:

1. Set a 12-week goal – Start by establishing a 12-week goal. Annual goals are helpful, but they lack immediacy and urgency. The shorter term creates focus and urgency.

Get focused on what you want to make happen over the next 12 weeks. The goal should be an outcome - income, sales production, dollars saved, pounds lost - and represent significant progress towards your longer-term vision. Limit your goals to a maximum of three, and make certain each goal is specific and measurable.

2. Build a 12-week plan - This is so much more effective than traditional planning because it is more predictable and focused. The key here is less is more. A 12-week plan embraces the notion of "lets be great at a few things versus mediocre at many."

For each goal, you will need to identify tactics. Tactics are the daily and weekly actions that drive the accomplishment of the goal. If the goal is the "where," then the tactics are the "how." Here again, less is more. Keep it focused on the critical few. Identify the four or five actions that you need to take daily and weekly to accomplish your goal, those are your tactics.

3. Apply the weekly routine – Having a goal and a plan is helpful, but it's not enough. The key to your success is executing your plan. To ensure you execute at a high level, adopt the weekly routine. If you do the following three things on a weekly basis, you can't help but get better.

THE WEEKLY ROUTINE

Plan your week. Take a few minutes at the beginning of each week to plan your week. Use your 12-week plan to ID the tactics that are due this particular



week. The weekly plan is not a glorified to-do list; rather, it reflects the critical strategic activity that needs to take place this week in order to achieve your 12-week goals.

Score your week. At the end of each week, you will want to score your execution. In the end, you have greater control over your actions than you do your outcomes. The most effective lead indicator you have is a measure of your execution. You are scoring your execution, not your results. Calculate a weekly execution score by dividing the number of tactics completed by the number due.

Meet with a peer group. Did you know you are seven times more likely to be successful if you meet regularly with a group of your peers? Find two to three other people who are committed and willing to meet for 15-20 minutes each week. In your meeting, report on how you're doing against your goals and how well you're executing. Encourage and challenge one another.

That's it, only three simple steps. Plan your week, score your week, meet with a group of peers. How easy is that? Do them, and you will improve guaranteed. Here's the catch: The steps are easy to do, and even easier not to do. So make a commitment to engage with them for the next 12 weeks, and watch what happens.

ABOUT THE AUTHOR

Brian Moran, president and founder of Strategic Breakthroughs, has amassed over 30 years of expertise as executive, coach and consultant. His new book, The 12 Week Year is a powerful guide to creating results through focus, commitment and accountability.



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Erik Gunn is a business writer in Racine, Wis. Readers may direct inquiries to him by contacting this publication at 800/257-7222 or emailing editor@cleaner.com.

BY ERIK GUNN

he prices of gasoline and diesel fuel continues to bounce around, driven by everything from volatile weather to volatile world politics. Considering plumbers and drain cleaners rely on their vehicle fleet to do business, keeping your fuel costs low — and, equally important, keeping them stable and predictable — will likely rank right up near the top of any list of business concerns.

It's no easy job. But it's also a lot less complicated than you might fear.

Track your usage. It's an old maxim that you can't fix what you can't measure, and there isn't much that's easier to measure than how many miles you drive and how much gas you burn. So if you aren't keeping track of those, start now.

The simplest way is to give each vehicle a record book. Have drivers record daily odometer readings and miles driven, and also log every fill-up. That information alone will determine which vehicles in your fleet are the most efficient, and which ones are guzzlers you might want to replace.

If you like technology, there are fancier ways to do this, like smartphone apps and various Web-based services to help you keep data and measure your fleet's fuel economy. Many of these services charge a fee, so you'll want to

and monitor the results closely before deciding if they're right for your fleet.

Plan your work. When you get an emergency call, of course, you can't do this. But for the routine day's driving, consider how you can sort the visits in the most fuel-efficient manner — driving from stop to stop in a loop, for instance, and minimizing repeated back-and-forth trips.

And look at other aspects of your operation to see if you can extract more efficiency. Take supplies — do you have a systematic way of monitoring and reordering supplies so that you're making, say, one trip to the supplier each week instead of several? And are there other ways you can make a trip do double-duty?

Train your team. It's important that you and your employees understand the role a driver's habits can play in how you use fuel. Stop-and-go driving may be impossible to avoid in city traffic. But jackrabbit starts, speeding and frequent or extreme changes in your speed that could otherwise be avoided with just a little care all contribute to worsening gas mileage.

In addition, unnecessary idling wastes fuel. Many municipal public works departments are instituting "no-idle" policies for their drivers. You should too.

A well-tuned engine burns fuel more efficiently, and properly inflated tires give you better mileage, too. The U.S. Department of Energy says proper maintenance alone can boost your gas mileage by as much as 4 percent.

Change your buying practices. This is the most complicated solution - or really, group of solutions.

Some businesses buy fuel in bulk quantities for a price preset in advance under a contract. That can help you lock in a favorable price.

But there are also some risks in that approach. First, you're gambling that the price will only be going up, when — as has happened with fuel a lot — it could go back down. Second, the contract terms typically set a limited term for the contracted price and require you to purchase the entire amount you've contracted for in that period. You'll be bound by that even if an unexpected circumstance reduces your need for fuel.

Another option is a "maximum price contract." The buyer locks in a price at the higher end of a range, putting a ceiling on what the business will have to pay for fuel. But if the price goes down, the buyer's cost can go down, too.

Don't be afraid to start small and work up from there. But also, remember one other important point:

Don't get crazy about it. As with any other money-saving challenge, there are limits to how much you can do. So be realistic - don't go overboard. Spending 20 hours a week calculating how you can shave a tenth of a mile off your weekly rounds is worthless. So is driving all over town to find the gas station that is undercutting everyone else by 2 cents a gallon this week.

calculate the cost against the potential benefit. One free service is fuelly.com (www.fuelly.com/about/), which has a simple, easy-to-use interface.

These services can make it much easier to track your vehicle fuel use and related data. On the other hand, if you simply want to use a pencil and paper,

Maintain your fleet. A well-tuned engine burns fuel more efficiently, and properly inflated tires give you better mileage, too. The U.S. Department of Energy says proper maintenance alone can boost your gas mileage by as much as 4 percent — and if you fix a serious problem, such as a faulty oxygen sensor, your mileage could improve by as much as 40 percent.

Making sure your tires are inflated properly can give you another 3.3 percent mileage boost. The Department of Energy says you can lose gas mileage at a rate of 0.3 percent for every drop in tire pressure of 1 psi in all four tires.

Finally, making sure you use the recommended grade of motor oil in your vehicle can result in an improvement of another 1 to 2 percent in your mileage. Some mechanics recommend synthetic oils for improving fuel economy. Because synthetic oils are more expensive, you may wish to give them a trial







It's one thing to get rid of your oldest, most fuel-hungry truck. But buying an all-new fleet just to get better mileage is spending a lot up front for a long, slow payback. So would be a hasty conversion of all your trucks to compressed natural gas, for example.

Fuel costs are an inevitable part of your business. But with a little thought and common sense, you can make it a bit less of a burden.

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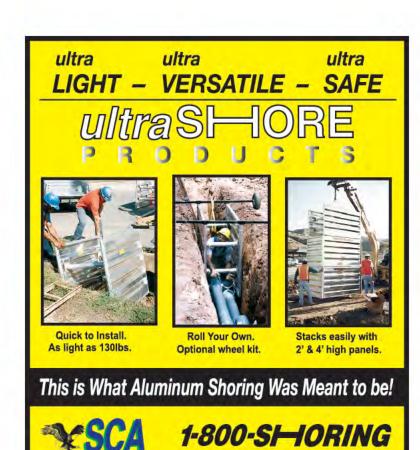
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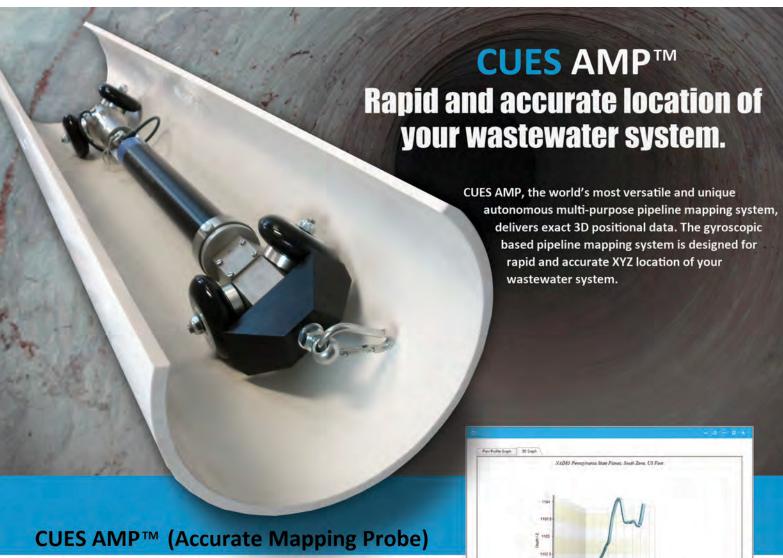


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1. TRUCK-MOUNTED JETTER

The TM Series of truck-mounted drain and sewer jetters from Cam Spray is built on a heavy steel platform that can be forklifted into place and secured to the bed of a trailer or truck body. They are designed for cleaning up to 10-inch-diameter drainlines, with available custom packages that will clean up to 24-inch lines. Features include DC- or hydraulic-powered reels, 325-gallon water tank, low water shut-off, power pulse, powder-coated heavy frame and foot control of reel. 800/648-5011; www.camspray.com.

2. INDUSTRIAL VACUUM TRUCK

The Omnivac series of industrial vacuum trucks from Cusco, a Wastequip brand, offers the additional filtration of a complete bag house and air cannon pulsation cleaning system, providing suction capability for fine, dry material. It also has a complete secondary vacuum system that uses an air-cooled 360 cfm vacuum pump that provides an easily controlled source of pressurized air for offloading purposes. It provides a smaller, more efficient source of vacuum for applications that do not require the full 1,400 cfm capability or where blower operations are restricted. It offers customers the flexibility to send the right size machine to suit the job requirements. 800/490-3541; www.wastequip.com.

3. BOOM ELBOWS

Custom Boom Elbows manufactures both 70-degree and 90-degree boom elbows for a variety of hydroexcavator manufacturers. Both elbows feature a 25.1-inch circumference and 8-inch diameter with flanged ends. All models are built with a 1/2-inch wall thickness. Products are heavy-duty to ensure quality and durability. 604/835-0199; www. customboomelbowsbc.com.

4. HIGH-FREQUENCY LOCATING SYSTEM

The 830R/T (receiver/transmitter) system from Ditch Witch can trace poor conductors, such as ungrounded tracer wire, and effectively locate short lengths of utility infrastructure. Features include gain control, auto depth, and visual and audio feedback to use in identifying and tracing metallic pipe or cable, water, and gas distribution lines. It has an IP65 environmental rating, so it can stand up to the rigors of the construction site and the toughest weather conditions. The battery lasts 150 hours on the transmitter and 75 hours on the receiver. Adaptive filtering ensures that it is highly responsive in all modes of operation, providing left-to-right guidance quickly regardless of mode or operator style. Peak Verify mode gives operators an additional way to verify locations. 800/654-6481; www.ditchwitch.com.

5. ROTATING NOZZLE

The Golden Jet Bulldog rotating nozzle from Enz USA is designed for operation with recycled and freshwater. An integrated oil-free braking system results in low wear and tear, and in controlled numbers of rotation. The nozzle cleans root intrusions, grease, solids and heavy debris. It is available in 1/2- to 1 1/4-inch connecting threads. The cleaning pipe diameter ranges from 2.5 to 24 inches. 877/369-8721; www.enzusainc.com.

HYDROEXCAVATOR TRUCK

The HV-55 HydroVax hydroexcavator from GapVax is constructed of ASTM A572-Grade 50 steel and has a 12 1/2-cubic-yard debris body and water tank options ranging from 400 to 1,400 gallons. Features include a positive displacement vacuum pump rated at 5,250 cfm with 28 inches Hg. The filtration design includes five cyclones, which prolongs the life of the filter bags and eliminates the threat of material entering the vacuum pump.













The tailgate is fully opening with a field-adjustable hinge and dual cylinders and also has four fail-safe, individually adjustable locks that assure a complete seal. 888/442-7829; www.gapvax.com.

INDUSTRIAL VACUUM LOADER

The Guzzler NX industrial vacuum loader from Guzzler Manufacturing was designed for cleanup and recovery of a wide range of materials, including solids, dry bulk powders, liquids, slurries, and thick, heavy sludge. Its Robuschi blower delivers 5,435 cfm, with vacuum capabilities up to 28 inches of mercury. The larger, injection-cooled blower allows the operator to load more material at a lower engine rpm, conserving fuel and reducing noise levels. The machine delivers ultra-quiet operation without the expense or weight of a sound shroud. The cyclone and bag houses are configured to maximize efficiency and reduce overall truck weight. An increased filter area, combined with offline cleaning, extends bag life while forcing carry-over back to the debris tank. 800/627-3171; www.guzzler.com.

8. COMBINATION JET/VAC TRUCK

The Aquatech F-10 from Hi-Vac features a front-mounted reel designed by Aquatech. The 180-degree rotating front-mounted reel facilitates easy unit placement. Reel capacity is designed and engineered for up to 800 feet of 1-inch hose. The top-loading boom powers up and down and extends to 26 feet from the pivot point. The single-engine drive dramatically decreases fuel consumption, maintenance expense, weight on the chassis, and the initial chassis price. The water pump consists of a continuous flow, triplex reciprocating design and is rated up to 80 gpm at 2,000 psi. An optional unloader valve allows for complete control of water flow and pressure independent of the vacuum power. Tanks are constructed of high-strength, UV-stabilized polyethylene, with optional fixed internal baffled aluminum tanks. 800/752-2400; www.aquatechinc.com.

SEWER WORKER PROTECTION SYSTEM

The Vanguard System from Hydro Products is a sewer worker protection system designed to dramatically reduce worker exposure to viruses and bacteria commonly found in wastewater and sewer lines. The

system automatically reduces wastewater contaminants by up to 98 percent (established by an independent lab study) by washing the jet hose with an antiviral, antibacterial solution as it is removed from the manhole. In addition, the manhole tool's design allows the jet hose to remain on its roller while vacuum tubes are inserted into the manhole. Finally, a compact wash gun allows workers to wash down and sanitize commonly touched sewer truck surfaces. 800/781-3164; www.vanguard-systems.com.

10. HOSE AND NOZZLE GUIDE

The Lateral Launcher from Logiball guides a 1/2- or 3/8-inch hose and nozzle into the lateral connection from the mainline sewer. Winched in tandem with the CCTV camera, the 0-90 VDC motor is used to rotate the guiding arm and nozzle into the lateral connection. With the pump turned on, the back jets propel the hose into the lateral for cleaning and cutting roots. Laterals have been cleaned up to 70 feet from the connection. It features stainless steel and aluminum construction, an industry standard three-pin male connector, optional 1/2-inch nozzle and hose, a replaceable guiding arm, and 10- and 12-inch skids. 800/246-5988; www.logiball.com.

11. AXIAL BLOWER WITH CANISTER

The 12-inch Plastic Axial Blower with Canister from Allegro, distributed by Milwaukee Rubber Products, features a polyethylene housing and canister assembly designed to be both lightweight and quiet. It is made of corrosion-, UV- and chemical-resistant polyethylene in "safety orange." The quick-connect clipping system allows workers to attach the canister, toolfree, to the input side for powerful extraction or output side for ventilation. Added features include molded carry handle and 15 or 25 feet of PVC-coated vinyl and polyester ducting, which stores easily within the storage canister. 800/325-3730; www.milwaukeerubber.com.

ROTATING JETTING NOZZLE

The Typhoon 10 self-rotating jetting nozzle from NLB Corp. utilizes high-pressure water to clean 5/8- and 3/4-inch pipe. Designed to produce rotating action from the nozzle instead of the barrel, it forces the water jets up













front where they are most effective. The nozzle comes in two 10 gpm speeds (up to 15,000 psi and up to 24,000 psi) and two 20 gpm speeds (up to 15,000 psi and up to 20,000 psi). All models are made of high-grade stainless steel for durability and rotate at 7,000 rpm. They feature an NLB seal design to reduce leakage and can be ordered with four jets for polishing, or five jets for cleaning and cutting. Two more Typhoon nozzles are available for larger pipes. 800/441-5059; www.nlbcorp.com.

13. CUTTING NOZZLE

Lumberjack cutters from NozzTeq are low-torque, variable-speed, multipurpose cutting nozzles powered by common sewer jetting or combination trucks. The cutting chains rotate at speeds of 10,000 to 50,000 rpm, depending on pressure and flow rate. They are designed to cut roots, but also clear concrete, tuberculation, grease, protruding laterals and other obstructions. Low torque means they won't get stuck, won't harm host pipe, and won't spin off the hose end. They have sealed, grease-lubricated bearings, and are water-cooled so they don't need daily maintenance. The cutter drive shaft and turbine are made of hardened steel, and the supply tube is made of stainless steel, so the nozzle lasts for 7-15 years of heavy use, and is easy to rebuild. Six models clear pipes from 3 up to 48 inches. 866/620-5915; www. nozzteq.com.

14. PIPE LINING SYSTEM

The Nu Drain system from Nu Flow Technologies creates a protective, structural pipe inside an existing host piping system without the need for digging or destruction. The system can line inside infrastructure and underground pipe. It uses a liner saturated with epoxy to create a barrier that can span missing sections of pipe, creating a seamless, jointless pipe-withina-pipe that is used to rehabilitate deteriorating sanitary drain and storm sewer lines, including mechanical systems, with minimal disruption. The technology is best suited for pipe 1 1/2 to 10 inches in diameter and larger custom sizes, while accommodating multiple 45- and 90-degree elbows. It can be installed through one or two access points. 905/433-5510; www. nuflowtech.com.

15. FOAMING ROOT CONTROL

Oblitiroot, a foaming sewer line root control product from Olvidium, has been formulated to use the maximum amount of the active ingredient, Dichlobenil, currently allowed by the EPA. It comes in two pouches which, when combined, can be applied through the clean-out or in the toilet bowl. Because it begins to foam only after the two parts are stirred or agitated together, the rooter-plumber applying the product can flush when desired so as to prevent toilet bowl overflow. 855/782-4531; www.olvidium.com.

COMBINATION TRUCK

The PAT 949 Combination Truck from Polston Applied Technologies is a multipurpose cleaning truck that provides a complete, stand-alone cleaning system for large-diameter lines, digesters, grit chambers, lift stations, water treatment plants, ponds, lagoons and other difficult-to-clean environments. It delivers up to 425 hp, giving maximum horsepower to each of the components and enabling it to pump/separate sand and water at up to 2,500 gpm. This power provides the capability to remove sand and grit at depths of more than 27 feet, and to clean large-diameter pipes. It features an extra-long hydraulic knuckle boom crane, with up to 49 feet of reach from the center and 180-degree rotation. 866/862-7271; www.polstonprocess.com.

17. SECTIONAL LINING MATERIALS

PrimeLine Products, Inc. offers sectional pipe lining equipment and materials "a la carte" so technicians can pick and choose the items they need. Material items are offered in bulk quantities, which means a considerable cost savings. There are thousands of installations worldwide. Products meet or exceed all ASTM standards. 877/409-7888; www.prime-line.net.

18. ROOT-CUTTING NOZZLE

The RR3000 Root Ranger nozzle from RIDGID uses a single rear-facing turbojet to blast a concentrated stream of water that shears root obstructions from the drain wall. It is capable of clearing lines up to 8 inches, and can completely clear lines larger than the one it originally entered. It comes standard with 200 feet of hose. 800/769-7743; www.ridgid.com.















19. ROOT INTRUSION FORMULA

RootX uses a foaming herbicidal formula to clear sewer lines, drains and septic systems blocked by roots. It kills roots on contact and inhibits re-growth, even at the top of the pipe, where 90 percent of intrusion occurs. Root debris begins to decay within 12 weeks, and nine months later, the roots are virtually gone. RootX doesn't contain copper sulfate or metam sodium, and it's EPAaccepted for use in all 50 states. 800/844-4974; www.rootx.com.

20. SAFETY SEWER DRAIN

The Safety Sewer Drain eliminates the mess and threat of contamination when removing the clean-out on a plugged drain. Made of clear polypropylene, the device fits over a 4-inch clean-out. Sewage drains through a valve-controlled hose into a bucket for disposal. It also can be adapted to work on a 3-inch cleanout. 906/753-4002; www.safetysewerdrain.com.

21. HYDROEXCAVATING TOOL

The Soil Surgeon hydroexcavating tool from The Soil Surgeon Inc. is designed to fit any sewer combination truck equipped with a telescopic 6- or 8-inch boom. The tool has a 1-inch water connection. The operator controls water pressure and power with truck controls. Features include 6-foot Tuff Tube with handles fabricated to the tube to guide the unit down for potholing or side to side for trenching. Six jets boring inward cut the soil, while six jets boring outward bring the tube down. Bumpers on the bottom protect the jets and lines the tool might contact. 949/363-1401; www.soilsurgeoninc.com.

22. HIGH FLOW HYDROJETTER

The high-flow Ultimate Warrior hydrojetter from Spartan Tool features 3,000 psi of sewer cleaning pressure to knock debris from pipes up to 24 inches in diameter, coupled with 35 gpm of water flow to flush loose debris down the line. Its 600-gallon water tanks allow technicians to carry enough water to the job site to clean blockages. It meets or exceeds trailer standards throughout the U.S. and Canada. It is powered by an 84 hp turbo-charged Kubota engine and features a Giant brand pump. 800/435-3866; www.spartantool.com.

23. HYDROEXCAVATION HEADS

The HX-101 single-head hydroexcavation assembly from StoneAge provides a replaceable single OCIH 1/4-inch NPT carbide nozzle at 0 degrees. Using a single nozzle channels all of the pump's power in one direction for the most digging power. The head has a 1/2-inch NPT inlet connection to attach to the operating wand. The included high-visibility urethane guard is replaceable with three bolts. 866/795-1586; www.stoneagetools.com.

24. HYDROVAC TRUCK

The F4 hydrovac truck from Tornado Hydrovacs can carry 13 cubic yards of mud and more than 2,000 gallons of fresh water. Components include a water tank from which the technician excavates, a mud tank to which the excavated spoils are held, a water pump, a boiler to heat the water, and a positive displacement vacuum blower to pull the spoils to the tank via a boom. 877/340-8141; www.tornadotrucks.com.

25. PROTECTIVE GLOVES

ProOperator protective gloves from TST Sweden AB are tested and certified for pressurized liquids, such as water and hydraulic fluid. They withstand the same levels of pressure as the company's other ProOperator clothing - 500 bar for rotary and flat jet, and 200 bar single jet. They are waterproof and have a special coating to provide good friction for secure grip









on tools. They also have high ratings for cut-resistance, abrasions, tears and punctures, making them ideal for work in harsh environments. The gloves are made using durable Dyneema fiber, and have a shelf life up to three years. www.tst-sweden.com.

26. ONE-PIECE CLEANING NOZZLE

One-piece stainless steel cleaning nozzles from USB - Sewer Equipment Corporation are neither bonded nor screwed together, enhancing strength and reducing the chances of failure under pressure. Their Advanced, Optimized 3D Hydro Mechanics, located in the lower part of the chamber, eliminates pressure in the upper portion of the nozzle and prevent explosion in a sewer line or manhole. The water coming from a pressurized hose is immediately guided directly into channels and one-piece ceramic nozzle inserts, resulting in an efficient jet pattern. They remove sand, mud, silt, grease and obstructions from sewer and stormwater lines. 866/408-2814; www.usbsec.com.

27. COMBINATION MACHINE

Vac-Con combination machines are available in configurations from 3.5to 16-cubic-yard capacities, with hydrostatically driven two- and three-stage centrifugal compressors, or several optional positive displacement blowers up to 27 inches Hg. High-pressure, smooth-flow water systems are offered up to 120 gpm and 3,000 psi, with cross-linked polyethylene water storage tanks with total capacities up to 1,500 gallons to handle the cleaning of smallor large-diameter pipe. These machines can be equipped with a 180-degree articulating front-mounted hose reel in capacities up to 1,000 feet, and highpressure hose diameters from 5/8 to 1 1/4 inches. Front- or rear-mounted telescopic booms are available with up to a 10-foot extension, and 8- and 10-inch tube diameter. 904/284-4200; www.vac-con.com.

28. LARGE VOLUME HYDROEXCAVATOR

The HXX Hydroexcavator from Vactor Manufacturing provides a safer, easy-to-use alternative for potholing, waterline repair, slot trenching, directional drilling, sign and pole installation, pipe and line installation and other large-volume excavation. It provides up to seven hours of continuous operation with the on-board water. Lower water flow results in less operator fatigue and a cleaner, more precise digging process. Features include a 12-cubic-yard debris body fabricated from corrosion- and abrasion-resistant steel; a 1,200-gallon high-density polyethylene (HDPE) water tank that retains heated water temperature longer, reducing the likelihood of freezing during operation in harsh winter weather; and a top-mounted, 7-foot hydraulic extendable boom that provides 320-degree rotation. Heated pump cabinets and a built-in boiler allow it to work on frozen ground in subzero temperatures. 800/627-3171; www.vactor.com.

29. POSITIVE DISPLACEMENT COMBINATION CLEANER

AllJetVac P Series combination sewer cleaners from Vacall use a positive displacement blower system to create the jetting and vacuum forces to efficiently open and maintain critical sewer lines. The blower system is powered by the chassis engine, which reduces fuel consumption, slashes service time and eliminates emissions. The AllSmartFlow CAN bus control system allows the operator to precisely control vacuum forces as well as water flow, using only the proper quantity of water, reducing unnecessary refill trips. Debris tanks have 6-, 8-, 10- or 12-cubic-yard capacities, while 1,000-, 1,200- and 1,500-gallon water tanks are available. They have a frontmounted, pivoting hose reel and an 8-foot, 6-inch extending boom with 180-degree rotation. 330/339-2211; www.vacallindustries.com.



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RAPID INSPECTION DEVICE USES ACOUSTICS

A major federal facility in Missouri wanted to develop a picture of flow conditions in its wastewater collection system.

SOLUTION

CH2M HILL's Lawrence, Kan., office chose the Sewer Line Rapid Assessment Tool from InfoSense to identify blockages and conduct a broad flow condition survey to prioritize cleaning. The transmitter, placed in an open manhole, transmits tones. In a downstream manhole, the receiver compares the tones with sounds it should hear in a clean pipe. If the signal is degraded, algorithms analyze it and present the operator with a simple assessment in real time on a scale of zero to 10. The acoustic inspection takes less than three minutes without contacting the waste stream.

RESULT

Two technicians working independently inspected 400 segments totaling more than 70,000 feet in 11 days. They found several blockages, but overall the system needed little cleaning. Had the facility chosen to purchase the inspection device, the labor saved by not cleaning 100 percent of the system would have paid for it. The technology won the 2012 Water Environment Federation Innovative Technology Award. 877/747-3245; www.infosenseinc.com.



SINGLE-ENGINE CAMELS INCREASES FUEL EFFICIENCY

PROBLEM

The dual-engine combination sewer cleaners Tampa-based VacVision Environmental used to service the Florida Department of Transportation were no longer reliable. "We spent hundreds of thousands of dollars each year for repairs," says managing partner Wes Kingery. "Because the machines used proprietary parts, we also faced extensive delays when trying to complete them." Besides repair costs, fuel prices and lost revenue from almost daily breakdowns were cutting into the company's profit margin.

SOLUTION

VacVision replaced the old machines with single-engine Camel sewer cleaners from Super Products. The design reduces noise levels and maintenance.



RESULT

VacVision reduced fuel costs by more than a third. "The Camels are enhancing our reputation because customers know we will clean their sewers efficiently and promptly," says Kingery. 800/837-9711; www.cameleasy.com.

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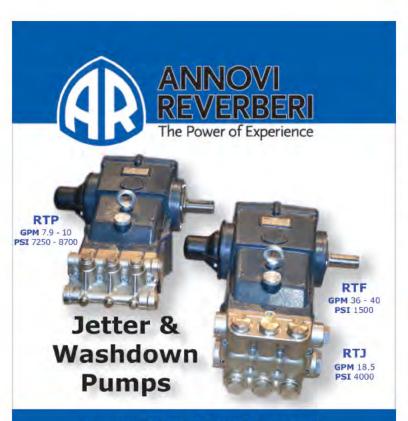


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RAPIDVIEW NAMES MARKETING MANAGER, BEGINS EXPANSION

RapidView named Scott Sayger marketing and communication manager. He has 10 years experience in marketing and public relations, radio and television production and Web design. The company also began an expansion and remodel of its Rochester, Ind., facility. The project, which will double the size of the current facility, includes a larger warehouse, van build-out area, repair



and service center, vehicle delivery and showroom, media room and sign shop, office space, fitness room and break room. The five-phase project is scheduled for completion this fall.

HINO RECEIVES TRUCK AWARDS, EXPANDS DEALER NETWORK

Hino Trucks ranked highest in the customer satisfaction with mediumduty engines category and highest in customer satisfaction among conventional medium-duty trucks according to the J.D. Power and Associates 2012 Medium-Duty Truck Customer Satisfaction Study. Hino's Class 5 diesel-electric hybrid model 195h also was named the American Truck Dealers Association 2013 Medium-Duty Commercial Truck of the Year. In February, the company signed its 200th dealer in the United States and plans to add dealer points in 12 priority markets this year.

ENVIROSIGHT NAMES REGIONAL SALES MANAGER

Pipe inspection equipment manufacturer Envirosight named Christopher Helliwell western regional sales manager. He will oversee sales from California to Vancouver, British Columbia, and east to Idaho, Colorado and Texas.

COXREELS OBSERVES 90TH ANNIVERSARY

Coxreels, a third-generation family-owned business, observes its 90th anniversary this year. Established in 1923 as Cox Air Gauge, Coxreels manufactures professionalgrade hose, cord and cable reels.



MR. ROOTER PRESIDENT RECEIVES WOMEN IN FRANCHISING AWARD

Mary Kennedy Thompson, president of Mr. Rooter, received the Bonny LeVine Award for women in franchising from the International Franchise Association. Kennedy Thompson has served as president of Mr. Rooter since 2006. Since that time, the number of company franchises has increased 39 percent.

MCELROY RELEASES CATALOG. REFERENCE GUIDE

McElroy issued its polyethylene pipe fusion catalog and reference guide. The catalog features product introductions, information on calculating fusion gauge pressure, facer blade replacement charts and pipe size reference charts. Copies are available for download at www.mcelroy.com/catalog.

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Piercing tool's interchangeable heads add increased productivity

BY ED WODALSKI

The Vermeer Hole Hammer pneumatic piercing tool manufactured by the McLaughlin Group can be fitted with either a standard replaceable head or spring-reset moving head assembly. The multiple-head design enables contractors to use one tool in a variety of soil conditions. The tool can be powered by most standard towable air compressors delivering 150 psi, depending on the diameter.

The standard replaceable head is made of solid, heat-treated steel for conditions where production averages one foot per minute, while the moving head is designed for rocky or hard ground. The wear components of the rebuildable heads have a 12- to 18-month lifespan, depending on use.

Another unique feature is the tool's quarter-turn, air-on reverse design, says Jeff Wage, vice president of sales for the McLaughlin Group. "When the operator is shooting the tool and needs to reverse the tool, just by turning the external hose one-quarter turn anticlockwise (to the left), the tool will continue running and change the direction of the piston," reducing lost time on restarts.

Designed to create compacted bore holes up to 75 feet long, the tool's piston head ensures full striking force is delivered upon impact. Residual energy helps the tool body travel through the bore path.

"Delivering all that force to the nose in front of the tool improves bore accuracy and productivity in clay or rocky soils," Wage says. "A spring mechanism resets the head. So blow after blow, the head is reset to its start position."



The tool's ribbed body also provides added grip in loose soils. "We take the extra time and expense to machine the outside diameter of the tool body," Wage says. With the piston inside the hammer cycling at 400 blows a minute, the tool wants to swim or oscillate in loose ground, he adds. "By adding that surface feature over a third of the outside of the tool body, it has more gripping force, stabilizing the tool for increased accuracy and productivity."



Made of high-grade alloy steel, heat-treated and machined to tolerances of 0.001 inches, the piercing tool is available in 2-, 2 1/2- and 3-inch diameters. The tool's rear tail hose is field-serviceable. Wear rings on the striker and valve reduce steel-on-steel wear. The tool's modular design enables components to be rebuilt, extending its overall life. 888/837-6337: www.vermeer.com.

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full-flow swivel and Nitrile, non-toxic, food-grade seals. 800/269-7335; www. coxreels.com.

HAMMERHEAD 34-INCH PNEUMATIC HAMMER

The 34-inch pneumatic piperamming hammer from HammerHead Trenchless Equipment can install casing 48 inches to 180 inches in diameter in drainage culvert and washover applications. It also can be used for pipe assist or pipe extraction, guided



pilot bore ramming and horizontal directional drilling. 800/331-6653; www. hammerheadtrenchless.com.

PLUMBSTAR RADON SUMP DOME

The PlumbStar USA Original Radon/ Sump Dome from Jackel provides an odorfree and gas-tight fit over an existing sump or sewage basin. The cover, which can reduce the concentration of radon gas below 4.0 pci/L, fastens to the floor and allows for easy servicing



of a sump or sewage pump. It also can support 1,000 pounds, eliminating the threat of falling into the basin. 574/256-5635; www.jackelinc.com.

PLASTICS PIPE INSTITUTE **DESIGN SOFTWARE**

Online plastic pipe pressure design software for water distribution, transmission main systems and force mains from the Plastics Pipe Institute enables industry professionals to perform calculations in accordance with AWWA and ASTM standards. The free Web-based program assists in the selection of appropriate pipe class for the required design life. Standards used in PPI PACE include AWWA C900, C901, C905, C906, ASTM F714 and D2241. Principal authors for the



project were Dr. Karl Lawrence and Dr. Mark Knight. www.plasticpipe.org.

METABO CARBIDE-TIPPED DRILL BIT

The Ultra-X carbide-tipped SDS-Plus drill bit from Metabo Corp. is designed for use in a variety of concrete, masonry and stone applications. The bit has a 4- by 90-degree solid carbide head that reduces vibration for



precise drilling. The flute design prevents lockup when rebar is encountered and removes dust through its short, wide channels. Bit diameters range from 3/16 to 9/16 inches with drilling depths from 2 to 16 inches. 800/638-2264; www.metabousa.com.

TORCUP INDUSTRIAL TORQUE WRENCH

The Slimline Ratchet Link industrial torque wrench by TorcUP has a torque range of 395 ft-lbs to 3.950 ft-lbs for use on fasteners from 1 to 3 1/8 inches. The wrench fits in areas less than 1 inch wide. Powered by an electrically or pneumatically driven hydraulic pump, torque can be applied by one operator. 610/250-5800; www.torcup.com.



CAIG BARRIER HAND LOTION

Hand-E-Glove barrier hand lotion from CAIG Laboratories is applied before beginning tasks for soap-and-water cleanup and keeps skin from drying and cracking when applied under work gloves. 858/486-8388; www.caig.com.



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CONDUX MICROFIBER BLOWER

The Gulfstream 200 microfiber-optic cable blower from Condux International is designed for FITH and Enterprise microfiber installations. The portable unit offers single-hand operation for the installation of microfiber from 0.8 mm to 5.5 mm in diameter in microduct from 3 mm to 12.7 mm. The blower can be powered by a small compressor at maximum pressure of 175 psi. 800/533-2077; www.condux.com.



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FC-Cutters from RIDGID are designed to cut ABS and foam-core PVC pipe. Available in two options for cutting 1 1/2- and 2-inchdiameter pipe, the cutters feature an extended handle for leverage and one-rotation cuts that don't leave burrs. 800/769-7743; www.ridgid.com.



HINO TRUCKS DEALER NETWORK APP

The dealer network mobile application from Hino Trucks includes a dealer locator with listing of dealerships based on a driver's current location or by entering a city, state or ZIP code. Other features include HinoWatch roadside assistance, truck



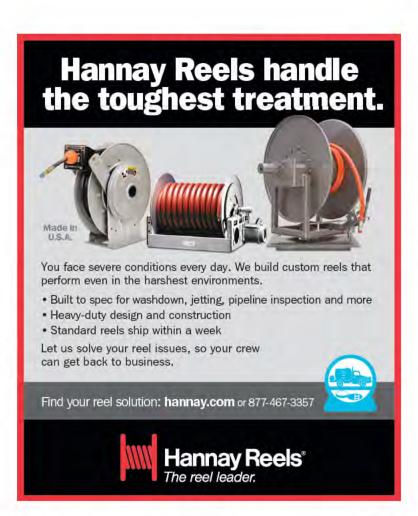
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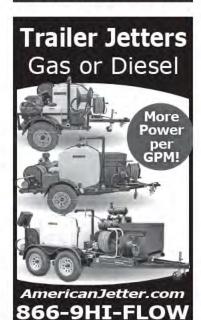
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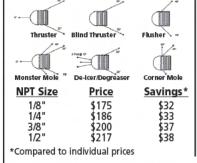
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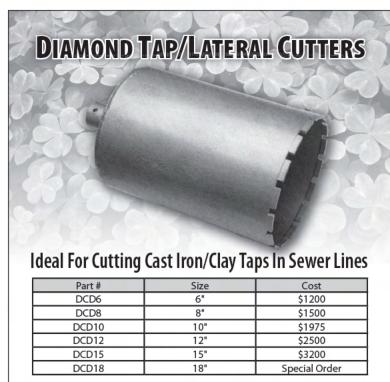


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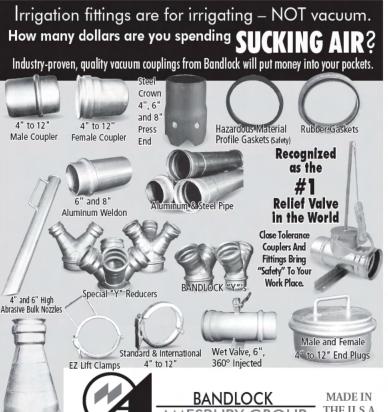


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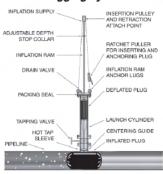




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Peabody Myers: 1987 Ford F-800 diesel jetter truck, 56,000 actual miles, 1,500-gallon, 36 gpm @ 3,000 psi, new tires, arrow board, extras. \$9,000 or best reasonable offer, retiring, clean title, pipes to 24 inches, photos available, Jim. 949-701-2687, (C06)

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

JET VACS

1991 Vactor, 3,600 CFM PD blower. Newly rebuilt water pump. 12-yd debris tank. Municipal trade. Very clean and well maintained, Asking \$24,500, Call Dave @ 800-381-9134 WI.

2007 Aguatech B5 on a Sterling LT7500: CatC9 engine with 40,300 miles, 60,000 GVW. Roots 824PD blower, 80gpm 2,000psi pump. 500 ft. new jet hose. Was a cityowned unit in excellent condition. Pictures at www.empireequip.com. \$134,500. Call 714-639-8352. (CPBM)

1994 Vac-Con, 16-yard debris tank, 1,250gallon water tanks. Telescoping boom with articulating hose reel, 3-stage vacuum. L8000 Ford chassis, 127,545 miles. \$45,000. Call 601-373-3736. (CPBM)

(5) Vac-Con trucks, 4 single, 1 tandem axle. 4 ready to work, lots of new parts. \$10,000 - \$45,000, Alan 603-387-4111. ruelsweeping@myfairpoint.net, NH. (C06)



2007 VACTOR 2100 Series: International Chassis, 18" PD Blower, 80gpm at 2500psi,12yd debris tank.

916-442-5400, CA

C07



1999 Vactor Model 2110: Freightliner FL80 chassis with Cat engine, 18K Front 23K Rear, Road Ranger Transmission, John Deere auxillary engine, single fan, extendable boom, 80 GPM Rodder pump. 1" hose, Aluminum tool boxes, Boom lights, Air Purge System, etc \$65,000

914-739-3300, NY



2003 Vac-Con International 7400: 6x4, 275hp dual engine, 1229 aux. engine hours, Roots 827 PD blower, 1000 gallons of water, 12-yd. debris tank. 133,141 miles.

616-949-2385, MI

C06





JET VACS

Vac-Con industrial machine mounted on a pre-owned 1999 International cab and chassis. (Stock #3918C) www.VacuumSalesInc. com, (888) VAC-UNIT (822-8648). (CBM)

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

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Wachs Trav-L-Vac 80: A system for buffalo or valve box cleanout. Gas powered, skid mounted. Used once. \$15,000 new. Asking \$5,000. Call 814-321-1450.

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CIPP UV Curing Unit and Truck for Sale - Fully Equipped \$360,000 OBO For more information/pictures please contact Shaun @ 732-915-0234 or sga@progressivepipe.com. INCLUDED EQUIPMENT . 900' of UV Curing cable . Monitor/control unit (450/600 watt) . UV Lightchain with 8 bulb capacity • Curing end caps and accessories (6" -27" diameter) • 35KW onboard generator (wired to 50HZ) . High volume/low pressure Atlas Copco compressor • 2009 International Durastar Diesel truck (Low Mileage - 20K, GVW 25,900 lbs, automatic transmission, 16' box) CA-PABILITIES . Curing of UV FRP CIPP (6' to 27") • 450/600 watt curing capacity · Custom built onboard workstation and generator/compressor mount . No need to buy any further specialized equipment.

Contact Shaun: 732-915-0234 or sga@progressivepipe.com co6



Perma-Liner Top Gun F-18 Inversion Unit: Used only one time. Comes with five 6"-18" Inversion Heads, viper steam cure system with steam control unit and all related hoses. Also includes new never used Bowman Generation 2 reinstatement cutter with joystick control, 1,000 ft. of control cable, 500 ft. of continuous air hose and all related pipelining equipment. Paid \$138,500 4 months ago. Make offer. For more photos visit www.lndustrialWasteRecovery.com.

616-719-5595, MI

C06

One trade-in model of Pipe Genie heavy-duty, pipe bursting equipment. Excellent condition, looks new, 30-ton, 100 feet cable, full 2-year warranty. 877-411-7473. (CBM)

Pipe bursting equipment 4-inch to 6-inch. Good condition, 100' feet capability, Call 206-767-3311 - Ask for Chad or Rick Armstrong.

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



Now Hiring experienced CCTV Operators, Grout Foreman, Manhole Rehab Technicians and Vac Truck Operators. Must have valid drivers license and reliable transportation.

Contact Chris Schrader at All South Underground, LLC 813-925-3112 CRM

PLUMBING AND DRAIN TECHS WANTED: We are a top-quality company offering top pay. So if you have the experience and the desire to enhance your future then this is your lucky day! \$1,000.00 Bonus (Requirements need to be met). CALL 303-774-9224, www. drainsolvers.com

POSITIVE DISPLACEMENT **BLOWERS**

(2) New Sutorbilt PD blower, model GAFMBPA catalog no., 6 mp. \$2,500/each or \$4,500 for both, 714-639-8352, Pictures at www.empire equip.com.

PUMPS

Honda model WP40X, 8 hp, 4" with hoses. Honda 4 hp, 2" pump with hoses. The Cable Center: 800-257-7209.

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

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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.vsirentalsllc.com. (CBM)





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www.servicewithasmile.com Sewer Cam Reel and Camera Repair: Authorized for General Wire, Ratech, Vision & RIDGID. Quality service on all brands. Need more info? Just call Terry or Stan. Electronic Repair Co., Birmingham, AL 35206, 205-836-0454; email: part@ servicewithasmile.com.

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

Ritchie Yellow Jacket Recovery System & BULLET 7 cfm pump. The Cable Center: 800-257-7209. (CBM)

Bosch Brute hammer drill with cart irons. The Cable Center: 800-257-7209.

RIDGID model #300 with stand, RIDGID tristand vises, RP 330 ProPress kit. The Cable Center: 800-257-7209. (CBM)

TV INSPECTION

CUES K2 SYSTEM: Steerable Compact Pipe Ranger (CPR), OZ3 camera, 1000' gold cable, auto cable reel, CPU, CCU, wireless controllers, six different wheel sets, two different wheel spacer sets, tool and manual, Like new (app. 40 hours) at 20% off list. Call 866-936-8476 or emailoffice@envirosight.com.(CBM)

Factory-refurbished and updated Cyclops Valu-Pac: Straight-view color camera, transporter, powered reel, DVD rec/player, 17" LCD monitor, 420' TV/tow cable, controller with onscreen footage and data and new manhole hardware. Plug-and-play upgrade to pan-and-tilt camera is available. All this for only \$12,500. Check our website at cyclopsty.com, or give us a call at 830-249-9756 and talk to the guys that build 'em. (C06)

CUES Lamp 1 system 8 thru 12 for sale includes new 80 ft rod, double data, PIP. This is a complete unit and can be installed on your existing system. Price \$25,000 plus installation if required, Call Alan Grant 800-443-3761. (C06)

2007 Freightliner MT45: CCTV Aries 2007 Freightliner: Diesel pipeline inspection step-van with brand new command center, never been used, fully loaded sewer TV system in 18' step-van. Portable pathfinder, pan and tilt, Badger, LETS lateral launcher, pole camera, thermal image camera, DVD/VCR, PipeTech software, compressor, restroom, sink, generator, winch, plus much more! Finance\$199,999/OBO.

925-784-2837, CA

2012 CUES CCTV Trailer: Cargo Mate Blazer enclosed trailer with CUES Inspector General. Kuker trailer to mount Inspector General on for easements/ remote areas. Steerable transporter control box. Air-conditioning and heating (Dometic).

> Contact 916-442-5400 ask for Dave

C07

1996 CUES TV Seal Step Van Diesel: Onan diesel generator, 11,000 miles, City owned, Quad line, 8/10 packers, Graco pumps, power winch, 1K Gold cable. Complete system is operational. Pipe Ranger and OZ 2 available if required. POR. Call Alan Grant, Cobra Technologies 800-443-3761

IBAK TV Van. Please go to www.cctvvan.com.

Aries CCTV equipment: TR3000 Crawler, 360° pan and tilt camera with inclinometer, VL2001 data logger, power head for lights and tractor all, multi-conductor reel with 1200' of cable, Onan 33.3 amp 4.0 kw generator complete system, Western Mule fold away crane M-5Al. Complete system ready for work. \$7,500, 925-625-2279 ext.3019, solana@isd.us.com (C07)

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1998 CUES Mainline TV System: GMC Savanna 3500. CUES with Pro-Data on-screen titler. Honda generator, Sony combo DVD/VHS, 1,700' of M/C cable, pan & tilt camera with shorty transporter, \$29,500, 608-835-7767, WI. (CBM)

Used Camera Equipment: Pearpoint mainline system, 420 tractor, P489, P377, P420/06(big/ small), P448, P599w/cable Cues (2)Kangaroo Cutter, air reel, controller, (2)Overlays, (2)PCU, Inspector General Reel, (5) Night Owl pan/tilt, (5)Ultra Shorty 21 Rapid View - Ibak camera system Aries - TV/Cutter Many spare parts INTERESTED email monty@rckyms.com (C06)

VACUUM LOADERS

2013 Western Star cab and chassis, Power Vac 5300, 3,250 U.S. gallon, carbon steel DOT 407/412 regulations vacuum tanker with a Hibon PD blower, 5300 SCFM with vacuum to 28" mercury. Dump Type with full open rear door, and a Presvac PVB 750 vacuum-pressure pump. (Stock #13518V) www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648). (CBM)

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Wanted to Buy: Vactor 2100's and late model Guzzlers, Cash, 800-336-4369.

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40,000 psi Sapphire Nozzles, UHP hoses & replacement parts, Excellent quality & prices. 772-286-1218, info@alljetting.com, www. allietting.com.

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

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Partek TF-450 L-head, BSP like NEW condition, \$28,500. T-300/Perkins Diesel, tandem trailer, older unit in MINT conditon, 1388 orginal hours. 10K PSI, \$18,500. 559-269-1700. Ask for Phil. (C07)



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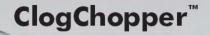


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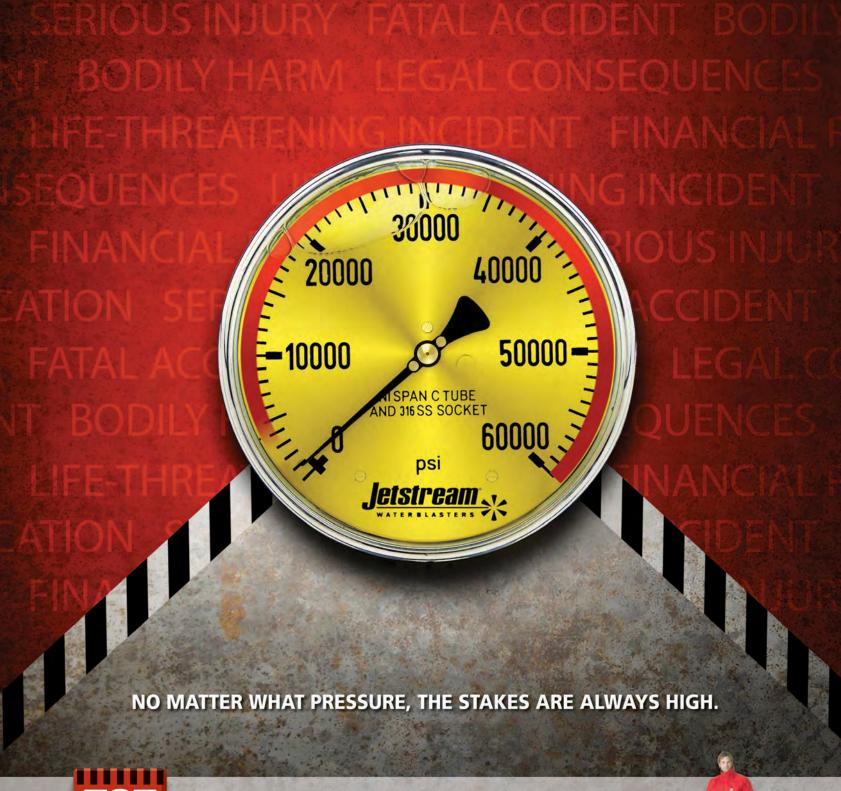


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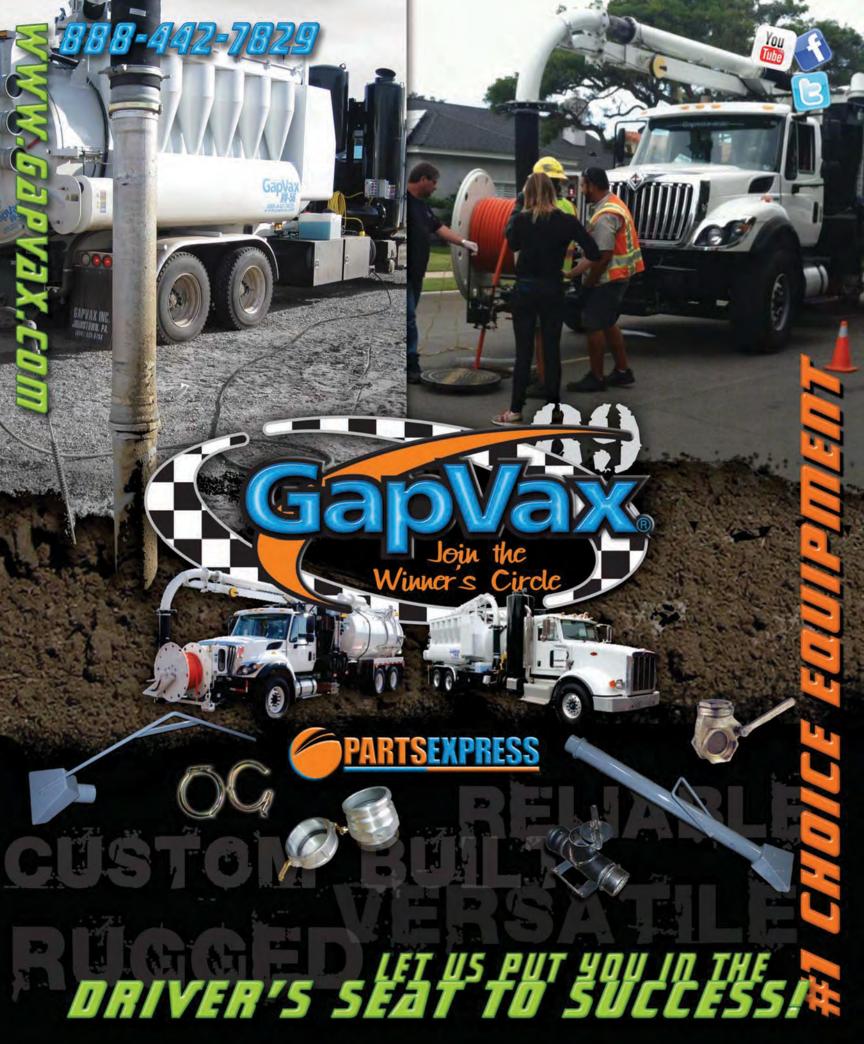
To learn more, contact FS Solutions or Jetstream of Houston, your authorized TST distributors.



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I remember a call I got a little while back. This customer had an UnderTaker and had it on a pipe replacement job, and his client happened to be holding an outdoor event the day he was there to do the job. On top of that, it wound up he needed help with a part unexpectedly or else he was going to have to go ahead and dig up the lawn.

But I was close enough that I was able to get there and get him what he needed without ever disrupting his client's event.

Tough Customer Preferred Product: The UnderTaker."

Lets you replace 4" – 6" pipes with minimal disturbance to trees, landscaping, streets and sidewalks. A compatible water-line slitter for replacing galvanized or copper water lines is also available.