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ON THE COVER

Shane Buck is the third-generation owner of Buck's Plumbing and Sewer Service in Cookeville, Tennessee. He has grown the company considerably since taking over after his father's retirement. (Photo by Martin Cherry)

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'89 CUSCO TANKER

(161) Dump, full open rear, self-contained, 6 axles, 5500 gal., 6B Cummins, Hibon SIAV50 blower



'01 MACK/CUSCO HIGH DUMP

(919) E7 Mack, 8 spd, wet/dry/high dump/ not SS, Roots 1021 blower, 27" HG



'96 KENWORTH/PRESVAC

(920) Cat 3406, 13 spd, 3,500 gallon, full open rear door, NVE Challenger vacuum pump



'99 International/Guzzler Dry Vac

(916) Cat C-10, 8 spd, Roots 1021 blower, Guzzler dry vac, 1/2 open rear door



'90 CUSCO VACUUM TANKER

(162) Self-contained, 6 axles, blower/vane, 5500 gal., twin disc clutch, 6B Cummins, full open rear door



'07 VOLVO/VACTOR COMBO UNIT

(302P) Volvo, combo unit, jet/vac Vactor 2100



'99 International/Guzzler Dry Vac

(917) Cat 2013 C-10, manual spd, dry vac, ½ open rear door, Roots 1021 blower



'96 AUTOCAR/SUPER PRODUCTS DRY VAC

(975) Cat 3406, 8 spd, ½ open rear door/high dump, dry vac/SS tank, Roots 1021 blower



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Embracing Opportunity

The decision to take a risk and grow should be well thought out, but sometimes it pays to just trust your gut

like to think I'm a practical decision-maker. I can point to dozens of things I've made calculated, thoughtful decisions on, from the car I drive to the credit card I use.

But if I'm honest, a lot of my equally impactful decisions (switching majors in college, moving back home to northern Wisconsin) weren't always made with careful, faultless logic.

Part of me doesn't like to admit that. But letting your heart have some say isn't always a bad thing. Needs and wants change, and more important,





goals change. My goals for my life are completely different than my plans 10 years ago. But that is without a doubt a good thing.

I spent quite a few years after college figuring out what I actually wanted to do. I was so jealous of people who knew their path early on and pursued it single-mindedly. I was good at a lot of things, didn't feel particularly great at too many, and was deeply passionate about even less.

I still worked hard at what I was doing and was always committed to where I was at the time — but where I wanted to be and what I wanted to do was always changing. However, that little bit of aimlessness led me back to my hometown, where I eventually applied to work for a company that I'd heard of but didn't really know much about.

I started out as a proofreader at COLE Publishing, doing one of the things I have always consistently loved: reading. The fact that I was reading magazines about the water and wastewater industries didn't make it any less fun for me. In fact, I enjoyed it — it was my first job where I was literally learning something new every day.

Eventually I moved on to a digital editor position, writing and editing content for our publications' websites that supplement the magazines. I was nervous at first because I was happy proofing. I was good at it, and it's hard to leave something comfortable for the unknown. But practical decision-makers also focus on choosing the right thing to do, and the move was the next logical step.

After working as a digital editor for a few years, it didn't occur to me at first to even contemplate the position of editor for *Cleaner* magazine when it became available. When it did cross my mind, I immediately dismissed it. I didn't feel ready. I was again at a comfortable place where I knew what I was doing and wanted to stick with it.

But after taking some time to consider it, I realized being nervous about something challenging doesn't mean it's a bad idea. I just respected the position and was worried about doing it justice. I wasn't bored with my current workload, but I also want to keep learning and improving at what I do, so I decided to go for it.

Fortunately for me, the former editor, Luke Laggis, sits about 20 feet from me and can help me out with my many questions. My goal is to continue his legacy of providing you with great stories that hopefully help you learn and grow in your business. My years proofing those stories and my digital editor role have given me a tremendous respect for this industry — and I know I have a lot more to learn.

I don't say all this in the hopes that you'll find my story inspiring. It's far from that. But I hope the next time you're faced with a decision to stretch yourself a little or stick with what you know, you'll view that challenge as an opportunity and embrace it. It's worth it.

I hope you enjoy this month's issue. **c**

Send your comments, questions or opinions to Kim Peterson at editor@cleaner.com.

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PRO TIPS

Prep for Trade Show Season

What industry trade shows are you looking at attending in 2019? Attending a trade show can provide a welcome break from the daily routine, but anyone who mistakes a trade show for a vacation isn't reaping its full benefits. Check out these tips on how to get the most out of the wide range of resources that trade shows offer. >>cleaner.com/featured





Win Over a Prospect Who Is Considering Multiple Estimates

How often do you encounter potential clients who tell you that they are collecting multiple estimates and will get back to you? For the customer, it makes them feel like they are logically deciding based on the merits of each estimate. But all too often they simply end up focusing only on price, likely because all the other parts are too confusing. This online exclusive covers strategies you can use to increase the likelihood that you'll get a return call from the client, even if you happen to be the highest estimate. >>cleaner.com/featured

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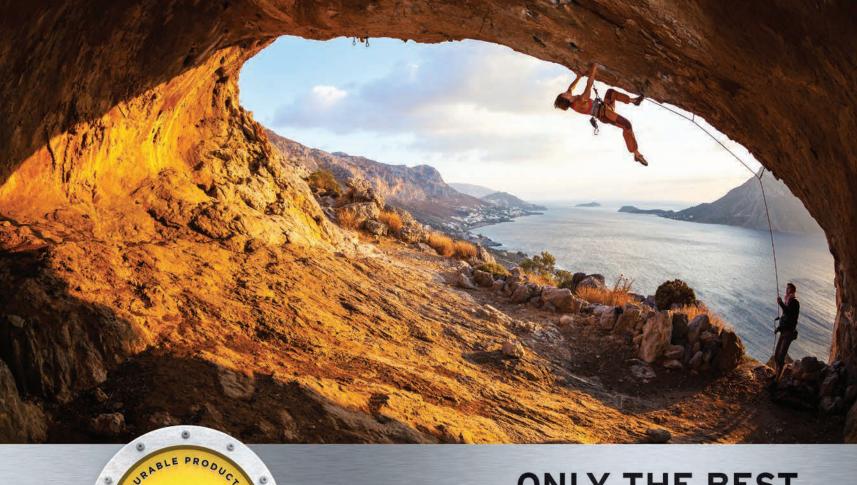
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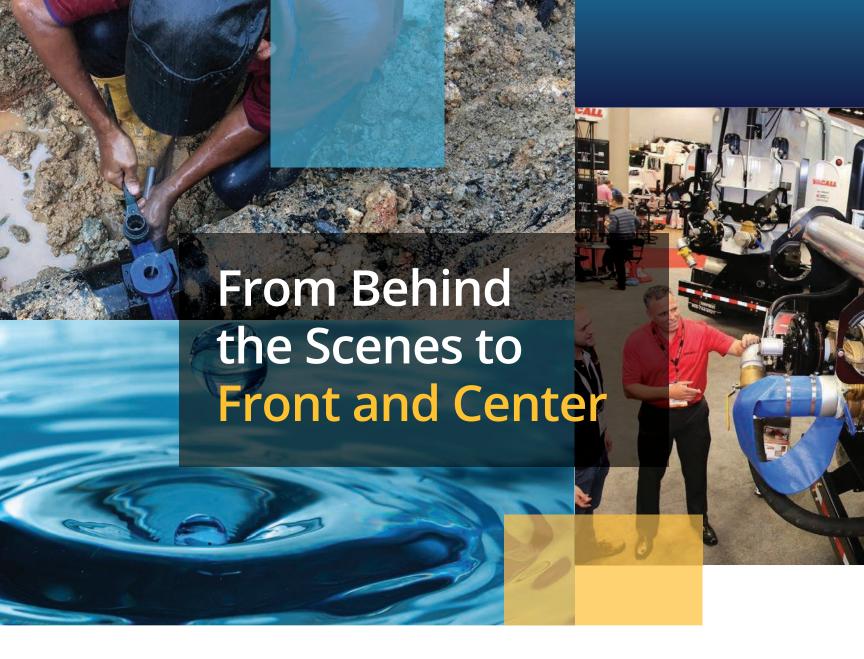












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Tax Reforms **May Change Your Future Filing**

With new federal tax rules in effect for 2018, it's important to examine your tax liability and make any necessary end-of-year adjustments

By Erik Gunn

s the year winds down, once again it's time to put your books in order for the tax season.

And with the sweeping federal tax bill Congress passed and President Donald Trump signed late last year, there may be some changes to your routine for your 2018 federal taxes.

The new law has implications both for your business and your personal finances, points out Gregory J. Sell, tax attorney at the Milwaukee business law firm Davis & Kuelthau.

As always, this column is no substitute for consulting with your financial advisor, who can give you guidance based on your specific circumstances. But when the time comes to have that conversation, here are some things to keep in mind.

PASS-THROUGH INCOME

Let's talk about the effects on business first; although, as you'll see, they might show up on your personal tax return too.

We assume that your business is either formally incorporated, probably as a limited liability corporation or an S-corporation, or possibly set up as a

As a partnership, a sole proprietorship, or an S-corporation, your business is what is commonly called a "pass-through" entity. For tax purposes, the income flows entirely through to the owner, and the tax liabilities are factored into your overall personal tax filing.

Under the previous law, the top income tax rate business owners paid on their business-related earnings was 39.6 percent. The new law sets the top income tax rate at 37 percent. In addition, it provides a deduction for the taxable portion of the business income of 20 percent.

That deduction, Sell explains, has other potential calculation limits phasing in when taxable income exceeds \$315,000 for joint returns and \$157,500 for all others. (And if taxable income exceeds \$415,000 for joint returns and \$207,500 for all others, specified service professions, including

lawyers, doctors, accountants, and others, are denied the deduction entirely.)

Another important thing to remember is that the deduction applies only for income tax purposes, Sell points out. It doesn't affect how other income-related liabilities — such as Social Security and Medicare tax — are calculated.

CORPORATE OUESTIONS

The net effect of the lower pass-through tax rate under the new law puts the overall rate for their income at about 30 percent, Sell explains. While that's certainly lower than they enjoyed up to now, consider that the traditional C-corporation — usually much bigger companies — got an even bigger break. Their top tax rate, which had been 35 percent, dropped to 21 percent.

With that change, "being a C-corporation is more attractive than it used to be," Sell acknowledges. "Some S-corporations are thinking of switching to becoming C-corporations."

Sell cautions that will be more complicated and will require careful evaluation to decide whether it's right for you.

So if you're already in the market for a major new piece of equipment, and you know your business

can sustain the purchase, check with your accountant to see whether this is the time to make the move.

First of all, it's simply too late to do that for 2018, he says. In fact, as you're reading this in December, if you even want to consider that for next year, you will need to start exploring the idea right now, whether you want to go through with that change in the end or not.

IRS rules allow such corporate-classification changes only in the first 2 1/2 months of the calendar year, according to Sell. That means you need to take what is left of December to start studying it, and you'll need to get it done before the middle of March. That may not be anywhere near enough time to think through all of the implications of such a change and whether it's really best for your business in the long run.

One reason to look more closely at such a conversion might be if you are contemplating selling your business in the near future.

Sell points out that the complexity of the process and the need to carefully examine all potential ramifications argues against making a hasty decision. Not only that, but once you make such a change, you're stuck with it for at least five years under federal regulations.

In short, this is definitely a question you don't want to consider without a detailed conversation with your financial and legal advisors.

FASTER BUSINESS DEDUCTIONS

Another change in the new federal law may affect how you think about equipment purchases, Sell says. Simply put, new provisions make it even easier for you to realize big tax breaks faster when you make new capital expenditures.

The main benefit is that bonus depreciation rules under the new law let you deduct 100 percent of the expense right away (instead of 50 percent under the old law) rather than spread the depreciation deduction out over time.

Changes to Section 179 raise the limit on capital expenses that can be deducted under that portion of the code to \$1 million in a year, but only for companies that spend \$2.5 million or less on all such expenses in a year. So if you're already in the market for a major new piece of equipment, and you know your business can sustain the purchase, check with your accountant to see whether this is the time to make the move to acquire it before the end of the year.

Neither of these federal changes alter how states may treat such expenses, so you'll need to make sure you understand what those implications are as you weigh these sorts of decisions.

ON THE HOME FRONT

Finally, there are a few implications for your personal income taxes, too.

For many taxpayers, the new law does seem likely to reduce some of the paperwork at year's end. The big reason: The federal standard deduction is now at a whopping \$24,000 per household.

Deductions for real estate and local and state taxes are now capped at a total of \$10,000 per household, Sell says.

So when you add up the other personal deductions — contributions to charity, mortgage interest, health care costs, and all the rest — and then add no more than \$10,000 in the deduction for state and local taxes, if the total still falls below \$24,000, you will no longer need to itemize for those deductions.

Sell suggests that the change in state and local tax deductibility is likely to end one strategy some taxpayers use: double-paying their property taxes every other year to boost their itemized deductions in those years, then taking the standard deduction in the alternating years. "Once they hit that \$10,000, they don't get any additional benefit," he says.

Of course, if other deductible expenses that aren't capped, such as charitable contributions and mortgage interest, can bring their overall deductions above the \$24,000 standard deduction in a given year, some taxpayers might still opt for that play under the new law.

Even with that strategy, though, "If you're under \$24,000 in itemized deductions, you're not going to get any extra benefit by prepaying anything."

WHAT'S NEXT?

So as the new year approaches, consider what implications all these changes have for your business and your taxes. Pick up the phone and schedule some time with your accountant for a quick review and an understanding of the law to guide you in any important year-end decisions.

And once you've considered your 2018 tax moves, take a moment to think further ahead and decide what you might want to do differently when 2019 arrives. **c**





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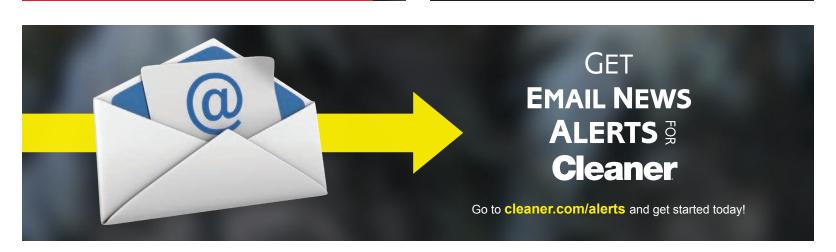
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SINGULAR SINGULAR Northern Wisconsin control Counterintuitive business it comes to diversified ser

By Ken Wysocky



Many drain cleaners strive to become full-service outfits that can satisfy customers' every demand. Not Brian Smith

Instead, the owner of X Rooter Sewer & Drain Cleaning in Rhinelander, Wisconsin, prefers a more narrow focus: unclogging and inspecting drainlines.

"You can simplify your life by doing one thing and doing it really good," explains the 55-year-old contractor, who established his company in 1996 and has accrued more than 30 years of plumbing, mechanical and drain cleaning experience. "I attribute a lot of my success to focusing on one type

"I did buy a septic pumper truck years ago and cleaned septic tanks for a year," he continues. "But I knew it was a mistake after several months. . . . It took me away from my business objective of simplifying and specializing in doing one thing really well. Diversifying can hurt your customer service. By trying to do everything, it gets harder to control everything, from more technicians to more equipment to just more general problems and inefficiencies. I just find it easier to do one thing well and efficiently."

Another key to Smith's success is his knack for customizing equipment and developing creative workarounds for problems such as broken drain machine cables, which might derail other drain cleaners for hours. The customized equipment and innovative approach to problem-solving increase efficiency and productivity, which in turn boosts profit margins.





Attention on retention: Investing in employees

Brian Smith considers himself lucky because he has two solid drain cleaning technicians in the fold at X Rooter Sewer & Drain Cleaning, the company he owns in Rhinelander, Wisconsin. Jon Beske has been with the company for about 10 years, and Jake Paquette has nearly two years under his belt.

Smith's secret to keeping good employees is simple: Higher pay, two cost-of-living pay increases a year and solid training that helps technicians maximize their pay. Smith starts employees at \$12 an hour, then bumps that up to \$15 an hour after a three-month probationary period. Then employees get cost-of-living raises in fall and spring to keep up with any inflation that occurs.

"And as they progress and get more experience and more efficient, I also give them interim raises of 1 or 2 an hour," he says. "The only way to keep employees nowadays is to make sure you pay them enough to stay.

"The main problem is that drain cleaning is not a glory job," he notes. "It's hard work that's pretty low on most people's job lists. I had

one employee that called himself a professional turd herder." Then there's the olfactory issue; some people just don't have the stomach for the odors that come with the territory. "A lot of guys don't even make it for three months," he says. "There's no hard feelings if they leave."

But for those who stay and are motivated by money, Smith has another tool in his tool belt: comprehensive drain cleaning training. The way he looks at it, well-trained technicians can knock out jobs faster, which can have a significant impact on their pay when they work overtime.

"If they work overtime work on weekends, I give my guys a bonus of \$15 per job, on top of time-and-a-half pay," he says. "So if they can knock out an average job in an hour, they can make \$45 to \$60 an hour on weekends. In fact, a lot of times they're in and out in 25 to 30 minutes on easier jobs. We bring the right equipment and get the job done, with no time wasted trying to upsell customers on other services."

Smith says it takes a minimum of a year for technicians to learn how to properly and efficiently operate a RIDGID K-7500 drain cleaning machine,

"We average about an hour per job," he says. "We're not there to upsell other services; we just bring the right equipment and get the job done."

The approach seems to be working just fine. Smith says his revenue has increased by 450 percent since he started the business, with about 8 percent annual sales growth. In addition, the company now employs seven people, up from one when he first struck out on his own. He says the company is the drain cleaning leader in the market it serves, a roughly

50-mile radius around Rhinelander in north-central Wisconsin. "About 70 percent of our business comes from word-of-mouth referrals," Smith says. "We also often get hired as subcontractors to do drain cleaning work for local plumbers."

SPECIALIZED SERVICE

After setting up a plumbing supply store for W.S. Patterson Co. (now owned by First Supply) and then working for a mechanical-contracting firm in northern Wisconsin, Smith switched gears and worked for a local plumbing and drain cleaning company. He switched careers again around 1993 and worked for a county landfill, maintaining leachate and gas-control systems that he'd installed during his stint with the mechanical-contracting company.

In 1996, he decided to start his own company. He initially called it Expert Rooter, then shortened it to X Rooter because people seemed to have a hard time remembering the name. "I basically got tired of being mired down with too many tasks and not being able to focus on one thing and do it well," he explains. "I did a lot of research and decided to focus on drain cleaning.

plus another two years to learn what he calls "the finer details." Rookies also must work with a qualified technician for a year before they're allowed to operate one on their own.

Doesn't that hurt short-term efficiency? Yes, he concedes. But it's a price he's willing to pay to get better productivity in the long run, which also translates into better customer service and satisfaction. "I had to retrain myself from square one to develop my own tools and techniques to be faster and more efficient," he explains, noting how comprehensive training pays off. "I'd say I spent three to five years and ruined a lot of cables and cutters trying to figure out ways to do things different — work better and more efficiently."

"A lot of guys go into what I call the 'glory trades,' like heating and air conditioning. But I wanted to get into a field

"I attribute a lot of my success to focusing on one type of work.

Brian Smith

with less competition, where I could specialize and do a better job than anyone else — be super efficient and provide great customer service."



"I'm always taking things apart; I'm just hard-wired that way. To solve problems, you have to stop and look at things from a mechanical sense and figure them out."

Brian Smith

>> Jon Beske (right) removes the cover to a septic tank as Jake Paquette looks on.

≥ Beske pulls a Vivax camera system onto a job site while Paquette carries in a RIDGID K-7500 drain cable machine.



Over the years, Smith developed a preference for RIDGID equipment, which he says is durable and aids his goal of efficiency and productivity. The company owns three K-7500 drum machines; three smaller K-3800 drum machines, one K-60 midsize sectional machine, one K-40 sink and shower drain machine, and numerous RIDGID power tools.

To inspect drainlines, Smith relies on one Vivax-Metrotech pipeline inspection camera and a Gen-Eye unit made by General Pipe Cleaners/ General Wire Spring. He also plans to invest in an Insight Vision Cameras inspection camera system to perform sewer lateral inspections, primarily related to pending real-estate transactions. He also owns a BuzzBox pipe locator made by Prototek.

In addition, the company owns two Water Cannon Inc. - MWBE hotwater pressure washers that Smith converted into higher-power water jetters, basically by adding a bigger hose to each; he also retrofitted one unit with a more powerful pump (10 gpm and 4,000 psi) made by General Pump (owned by Interpump Group). That latter unit is skid-mounted inside a Chevrolet 3500 cube van with a 300-gallon water tank; the 13-foot box body was made by Morgan. The other is a cart-mounted model (4 gpm at 4,000 psi).

The company runs three other service trucks: a 2003 Chevrolet 1500 Express van, a 2011 Chevrolet 1500 Express van, and a 2001 Chevrolet Suburban 2500.

INNOVATIVE APPROACHES

An ability to think outside the box and develop new approaches to drain cleaning has also been instrumental to Smith's success in improving efficiency and profitability. "I'm always looking for ways to do things better," he says. "I'm always taking things apart; I'm just hard-wired that way. To solve problems, you have to stop and look at things from a mechanical sense and figure them out."

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For example, he developed a tool of sorts for retrieving snapped cables, which saves him time and his customers money by avoiding, say, breaking up a basement floor to retrieve a cable and cutting head. In essence, Smith heats up the end of a small section of 3/4-inch-diameter cable and bends it into a hook. Then he attaches it to the end of a cable with a small offset coupling and sends it down the line in reverse, so the cable is spinning counterclockwise.

The hook eventually meets the broken cable and starts twisting around it, tightening its grip the more it twists, Smith explains. "After it grabs it and winds around 10 or 20 times, I put the drive head in neutral and it'll start to pull at the same time. It'll pull the broken cable out and release the cutter from any obstructions through (counterclockwise) rotary action.

"You can try to use a retriever, but it will only grab if it goes in clockwise," he continues.

"And if the cutter went in going clockwise, a retriever can only get it out by going counterclockwise, but they don't make one that does that. In this business, you run into some strange situations and sometimes you have to figure things out rather than bust up a factory or basement floor. ... Necessity sometimes really is the mother of invention."

In other instances, Smith buys cutting heads that aren't designed to work with his RIDGID K-7500s and modifies them so they can clean 4-inch lateral lines more effectively and with less risk of breaking the pipes.

"A lot of guys in the industry won't use a 4-inch-diameter cutter in a 4-inch pipe because it can be difficult. ... They can get stuck or turn sideways and then the cable gets out of control because of the high torque," he says. "So they use 3-inch cutters instead, which don't clean the pipes as well.

"But by adapting 4-inch cutters to go on a 3/4-inch-diameter cable on our K-7500s, we can use a 4-inch circular-saw cutter in a 4-inch pipe without damaging the pipe. Sometimes we still can't get a 4-inch cutter down a 4-inch line because the opening is too small or it first has to go through a 3-inch pipe. In those situations, we put in a smaller cutter with an offset on it so it spins elliptically and hits pipe walls all the way down. I make the offsets myself." That technique works well in drainlines with a lot of offset joints; it doesn't catch on every offset joint and still cleans the entire pipe, he says.

CONTROLLED GROWTH

Smith foresees more growth potential for his business and would like to add two more employees and another service vehicle by next spring. But he prefers slower and steadier growth to dramatic jumps in business, in order to maintain a high level of customer service. "My goal is around 5 percent revenue growth a year," he explains. "I don't like real fast growth because it makes it too hard to properly train people. Then that leads to customer dissatisfaction because technicians aren't well-trained.

"I always tell my guys I'd rather they do a job right than do it fast," he adds. "Callbacks are bad for our bottom line and make customers unhappy."



🌣 The staff of X Rooter Sewer & Drain includes (front, from left) Ethel Craig, Olive Smith and Donna Zimmerman; (back row) Ryan Miller, Brian Smith, Jon Beske and Jake Paquette.

Smith also doesn't see any need to expand farther geographically in order to grow, which would help keep fuel and other travel-related costs in check. "There are more and more people moving up here from southern Wisconsin and northern Illinois," he says. "They're turning summer cottages into yearround residences. So some resorts are starting to run year-round, too. That all contributes to more business.

"Plus a lot of the plumbers and septic guys around here are so busy they don't have time to do drain cleaning anymore," he adds. "They're starting to specialize in installations and repairs, which also makes their lives easier (than continually dealing with emergency drain clogs). Overall, I don't see things slowing down for at least another 15 to 20 years." c

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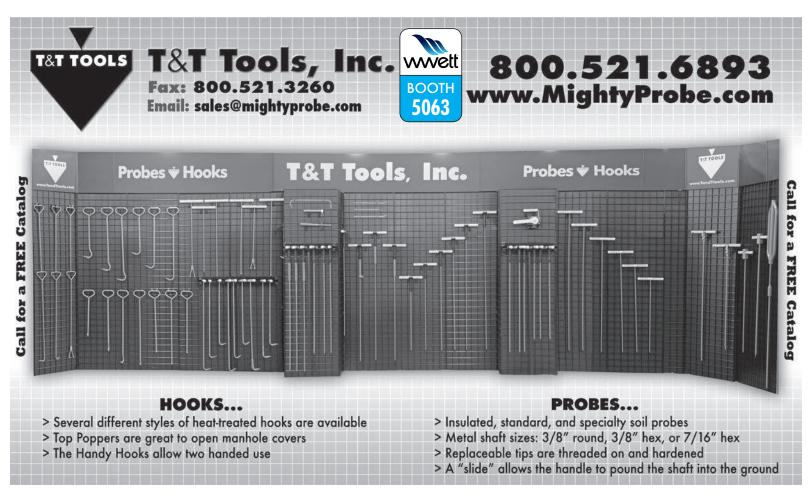




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You Can't Do It All

Knowing how to delegate frees you up to focus your energy on business growth and the big picture

By Eric Bloom

ne of the great things about being a small-business owner or manager is that you can assign various tasks to other people instead of having to do them yourself. This may sound like a rather cavalier statement, but

As the boss, to do your job efficiently and effectively, you must delegate necessary duties to your staff. If you don't delegate, you will be overworked and your staff will be underutilized. In fact, you do a disservice to your staff if you don't delegate because this inhibits employees' ability to learn new things and grow professionally.

Like all management activities, delegation must be done in a thoughtful, ethical and forward-thinking manner. To that end, consider the following tips when delegating tasks to your staff, contractors, vendors and others.

1. Clearly define what can and cannot be delegated

Be mindful of what should and should not be delegated. For example, specific tasks may contain proprietary information that should not be shared at your crew's organizational level. There are also tasks your employees may not be qualified to perform, thus setting them up for failure. Lastly, don't just dump unwanted activities onto your staff to get them off your plate. Your team will eventually figure this out, and it will hurt your credibility as the boss.

Delegation is a powerful tool to maximize your team's productivity, enhance its skill set, help it grow professionally, and free you up to perform higher level tasks. All that said, make sure that you are delegating the right tasks for the right reasons.

2. Create a prioritized delegation plan

After figuring out what work to delegate, your next step is to develop a plan outlining what tasks should be given to which staff member. You should consider the following:

- Who is fully qualified to perform the task?
- Who could perform the task with proper instruction and mentoring with the goal of enhancing his or her skill set?
- Who should not be given the task because of his or her skills, weaknesses, or for other reasons?
- · Who deserves the task based on seniority, past performance and relevant considerations?
- The visibility and importance of the task to your company.

Delegating the right tasks to the right people is not always easy or popular, but if you do it with transparency, fairness and consistency, and for the good of the company, your staff will learn to respect your decisions.

3. Provide clear instructions, and define expectations

There is nothing worse than being delegated a task, receiving no instructions on how the task should be performed, not being told what is expected, working diligently to complete the task, and then being told You do a disservice to your staff if you don't delegate because

this inhibits employees' ability to learn new things and grow professionally.

it isn't what the boss wanted. Give specific instructions about what needs to be done and your expectation of the end result. This combination of instructions and expectations establishes criteria as to how your employee will be judged when the task is completed.

4. Provide a safety net

When delegating tasks — particularly if it's a new experience for the employee being assigned the task — you must be willing to provide appropriate support to help assure success, for both the employee and the task. This means creating a safety net by providing the necessary resources and training and allowing time to properly perform the delegated tasks.

5. Let go, and allow people to do their work

If you delegate a task and then micromanage it to the extent that you have actually performed the task yourself, it's not delegation. Neither should you totally divest yourself from the delegated task because you are still ultimately responsible for all work performed by your employees. The trick is to walk that fine line between being overbearing and nonparticipatory.

6. Give credit to those doing the work

As the boss, you should adhere to the philosophy of "it's the team's success or my failure." This philosophy causes you to raise the visibility of your staff's good work, which motivates your employees and helps instill their loyalty toward you and the company. This approach is a reminder that you are ultimately responsible for employee growth and company performance and productivity.

7. Actively solicit feedback from your team

Ask members of your team if they believe you have delegated the right tasks to the right people. This helps you grow as a manager, improves team performance, and shows you are willing to accept suggestions, which makes you more approachable with ideas to grow the company and improve efficiency.

THE BOTTOM LINE

For some business owners, learning to delegate workload is going outside a comfort zone. Many started a business because they enjoy the work of operating equipment, driving a truck or dealing with customers. Your willingness to take this leap of managing employees will build a better, more profitable company as well as advance the professionalism of your crew. **c**

ABOUT THE AUTHOR

Eric Bloom is president and founder of Manager Mechanics, a speaker, and author of Productivity Driven Success: Hidden Secrets of Organizational Efficiency. He can be reached through www.mrproductivity.com.



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t's rare that a small business survives past two generations of ownership.

In fact, an estimated 90 percent of third-generation, family-owned businesses are destined to fail. But Shane Buck the owner of Buck's Plumbing & Sewer Service in Cookeville, Tennessee - definitely bucks the trend, no pun intended. Since 2011, when he took ownership of the company that has roots dating back to his grandfather, the late Lester Buck, in 1960, revenue has increased 30 percent. Moreover, the company's roster of productivity- and profitability-enhancing equipment has grown considerably.

The main driver behind that growth should catch the attention of drain cleaning contractors: The acquisition of a local septic tank pumping company, Buckeye Septic Tank, that coincidentally was started by Shane Buck's greatgrandfather, Walter Reed, in 1948. Septic tank pumping, installations, and repairs now account for about 40 percent of the company's revenue, while serviceand-repair plumbing and drain cleaning generate the remaining 40 and 20 percent, respectively.

Another factor behind the company's growth is the legacy that Buck inherited: a reputation for honest service at a fair

price. Buck's Plumbing is the oldest family-operated company in Cookeville, which is about 80 miles east of Nashville. And should the business ever fail, Buck says it's not going to happen on his watch.

"I treat customers the way I like to be treated, and that's why we're successful," he says emphatically. "That's how my grandpa did it and how my dad did it (his father, Jerry Buck, is retired now), so it's a family tradition. I don't want our reputation to slip because that's what has kept us around so long."

DEEP ROOTS

Shane Buck, 43, has been working in the plumbing and drain cleaning industry since he was a child, when he used to help out his dad on jobs after school and then later during summers. "I wasn't just a 'runner' either," he notes. "He had me doing actual work, to the extent that I could."

After earning a business degree at Tennessee Tech University in Cookeville in 1999, Buck worked



Bobby Johnson drags a hose into place while pumping a septic tank with a truck built out by House of Imports.

as a full-time lead technician for his father, who had started Buck's Plumbing in 1973. After Lester Buck died in 1994, Jerry Buck merged Buck's Plumbing with Cookeville Sewer Service, the company founded in 1960 by Lester Buck. Shane Buck then bought Buck's Plumbing after his father retired in 2011. "I still get calls from people who were my grandfather's customers," Buck says.

At the time, the business owned just two plumbing service trucks and also performed both residential and commercial drain cleaning. But when Buck took control of the company, he also saw an opportunity to expand it at the same time because his great-uncle, Earl Reed, had shut down Buckeye Septic Tank.

"I wanted to keep it in the family," he says. "You could say it was for both sentimental reasons and the fact it was a good business opportunity. There wasn't much competition at the time, and we were always getting calls from people anyway, asking if we cleaned septic tanks. But we didn't have the equipment to do it.

Buck's Plumbing & Sewer Service LOCATION: Cookeville. Tennessee **OWNER:** Shane Buck **ESTABLISHED: 1960 EMPLOYEES:** 6 **SERVICES:** Cleaning sewer and drainlines; plumbing service and repair work; installing, repairing, and pumping septic tanks **SERVICE AREA:** 50-mile radius around Cookeville bucksplumbingandsewerservice.com



"I treat customers the way I like to be treated and that's why we're successful. That's how my grandpa did it and how my dad did it, so it's a family tradition."

Shane Buck



Craig Carter grabs tools and a hose to drain and remove a water heater tank at a customer's home.

Shane Buck and Craig Carter replace the wax ring for a toilet.

I saw good revenue potential, plus we could keep it in the family."

Buck also was intrigued by the thought of becoming a full-service, one-stop shop that could handle area customers' drain, plumbing and septic needs. "It all ties together. I wanted a company that could provide enough services that customers wouldn't have to call multiple businesses to get things fixed. It made sense to me to be able to just do it all."

Moreover, septic tank owners also need plumbers and drain cleaners, and vice versa, so the businesses easily cross-promote each other. Furthermore, pumping out septic tanks also leads to septic system repairs, not to mention installations when older systems fail, he adds.

How could Buck jump into septic tanks without any experience? First of all, a Buckeye Septic Tank employee stayed on board after Buck bought the company. Second, between watching other people install tanks and taking the classes required to earn a license, he was able to figure it all out. "For installations, a friend of mine helped me out at first," he explains. "After you do one or two installations, you pretty much know how to do it. Plus I've been doing plumbing work since I was 7 or 8 years old."

EMPHASIS ON DIVERSITY

Providing an array of services requires a variety of equipment. On the plumbing and drain cleaning side of the business, Buck's runs three service vehicles: a 2015 Ford Transit and 2004 and 2008 Dodge Sprinters. Each truck carries drain cleaning machines made by MyTana Mfg., Electric Eel and RIDGID, as

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well as power tools made by DeWALT Tool and Milwaukee Tool.

The company also owns a leak detection system made by MyTana Mfg., a pipeline inspection camera system made by Amazing Machinery, and a used trailer-mounted water jetter used primarily for commercial work. A Moro USA pump generates pressure of 1,900 psi and flow of 7 gpm.

On the septic pumping side of the business, Buck's owns four vacuum trucks: a 2001 Kenworth built out by House of Imports with a 4,000-gallon steel tank and a National Vacuum Equipment pump, a 2004 Sterling truck with a 4,000-gallon steel tank and a Jurop/Chandler pump, a 1999 International outfitted with a 2,500-gallon steel tank and a Transway Systems pump, and a 1997 Freightliner self-fabricated by Walter Reed with an 1,800-gallon steel tank and a Moro USA pump.

The company also installs between three and four dozen septic systems a year, Buck says.

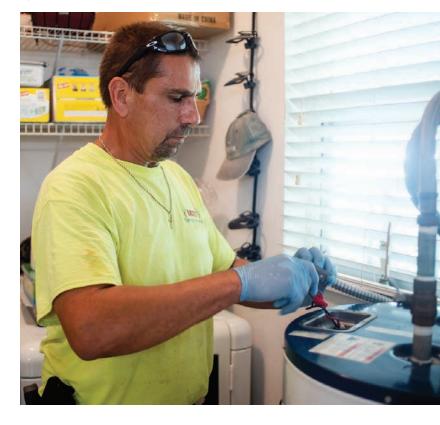
By nature of its large tank, the Kenworth pump truck is the fleet's biggest revenue generator. The large tank minimizes time-consuming disposal runs to waste treatment facilities, which reduces fuel and other expenses and increases productivity. Furthermore, it's large enough to handle large clusters of septic tanks in state and federally owned parks and campgrounds. "We do their maintenance work, things like cleaning tanks and sewer lines," Buck says. "It's not uncommon to pump 30,000 to 50,000 gallons of waste at some of those facilities."

EMPLOYEES MAKE THE DIFFERENCE

Buck emphasizes that along with good equipment, the company's employees are critical to its success. His sister, Jamie Fox, serves as the company's office manager, and his wife, Kim, handles the accounting. Rounding out the staff is Bobby Johnson, septic route driver and plumbing technician

Shane Buck delivers a new water heater for a residential installation job.

➤ Along with septic tank cleaning, Buck's also provides plumbing service such as water heater replacement and installation.



CONTINUED >>



Smart equipment purchases make diversifying affordable

Plumber and drain cleaner Shane Buck, the owner of Buck's Plumbing & Sewer Service in Cookeville, Tennessee, attributes part of his company's success to its wide variety of good equipment that allows him to serve as a one-stop shop for customers.

But equipment is expensive, which can limit plans for expansion. Buck eases some of that financial strain with an artful combination of investing in used equipment, only buying equipment when he is sure he has enough work to pay it off, and keeping an eye out for great deals.

A good example of the latter is the company's 2004 Sterling pump truck with a 4,000-gallon steel tank and a pump built by Jurop/Chandler. The truck initially had been repossessed by a bank; Buck found out about it through an advertisement. "At \$16,000, it was a steal — just couldn't pass it up," he says. "And I only put about \$4,000 into it."

In another instance, he bought a used water jetter from another drain cleaner. "He had two of them and he wanted to get rid of one," Buck explains. "There again, I pretty much stole that machine. They cost \$15,000 to \$20,000 new and I bought it for \$1,500. And I made my money back the first day I used it."

In retrospect, however, Buck says he should've bought the jetter sooner, a valuable tip for drain cleaners who sometimes are reluctant to make investments in new equipment because of the cost. "After I bought it and saw how much work I can do with it, I realized I should've bought one a long time ago," Buck says. "I passed up a lot of work because I didn't have the right equipment."

Buck considers himself a resourceful man, as evidenced by the rebuilt engine on his 1999 International pump truck, which features a 2,500-gallon steel tank and a pump made by Transway Systems. It took him about three months with the help of a relative who is a mechanic.

"That's how you learn how to do things," he says. "I've always been that way. I'm a hands-on kind of person. Rebuilding that engine taught me a lot about how engines work." But as the company grew and he had less time to fix things himself, he is tried to strike a better balance between doing things himself and hiring someone to help him out. "I make more money working, so sometimes it's worth hiring someone to do a job that they're really good at because they do it all the time."



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Craig Carter, plumbing technician Alex Agostin, and general laborer Brian Blaylock. (Blaylock's late father, Donnie, used to work for Buck's father back in the 1990s and also worked for Buck for several years.)

"You're only as good as your employees," Buck says. And since good employees are so hard to find these days, he truly values and appreciates their contributions to the company's growth. While bad employees come and go, the good ones who stay on are invaluable, he notes.

"Two years ago, I went through 13 drivers within a year. They either didn't show up on time, a couple of them quit, one or two tried to steal from me, and one or two failed drug tests." Managing such volatile turnover wasn't easy, he says, "But we had two good employees at the time, and between the three of us, we kept things afloat."

Between low unemployment and the fact that pumping septic tanks is not a popular job, finding employees is extremely difficult. "If there's a secret sauce, I'd sure like to know about it," Buck says.

"You're only as good as your employees."

Shane Buck

As such, Buck works anywhere from 65 to 70 hours a week on average and technicians routinely put in 45 to 50 hours a week. "There's so much work to do," he says. "Being diversified keeps us busy." While that's great for business, Buck says he struggles to find a good work-life balance, like many other smallbusiness owners.

"To get a day off, I literally have to leave town," he says. "I try to balance things as best I can. But I go to the office around 4:30 a.m. to do bookwork. I try to be home by 5 p.m.; sometimes it works and sometimes it doesn't. But it has to be done. There are too many families depending on me and this company."

EYE ON THE FUTURE

Buck anticipates continued growth for the company, but he expects it to come slowly because of how difficult it is to find quality employees. In addition, more growth will



Shane Buck and Craig Carter remove a manhole cover for a sewer cleaning job.

The Lansas 5-Line







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eventually require more equipment, which is hard to afford. "I have only so much money to play with to buy equipment," he says. "That's why it's taken me seven years to get where I'm at."

Plumbing service work is a likely area for growth because Cookeville is a rapidly growing community. In fact, statistics from the U.S. Census Bureau show that the micropolitan area of Cookeville has a population of 111,363 people and ranks eighth among the nation's fastest-growing micropolitan areas. (A micropolitan area is defined as a labor market centered on an urban area with a population of between 10,000 and 50,000 people; Cookeville's population is around 33,450 people.)

"I wanted a company that could provide enough services that customers wouldn't have to call multiple businesses to get things fixed.

It made sense to me to be able to just do it all."

Shane Buck

"There are houses going up left and right around here, so there's a lot of potential business in the years ahead," Buck says.

In the end, Buck is determined to keep the family business not just surviving, but thriving. Maintaining the tradition started and carried on by his grandfather and father means everything to him. And better yet, he loves what he does — hard work or not.

"This is all I've ever known ever since I started riding around with my

dad after school and during summers," he says. "I like meeting people and solving problems. And if you put those two together, that's pretty much what we do every day. Sure there are headaches along the way, but you've got to love what you do in this business. And I do love it — at least 95 percent of the time." **c**



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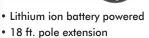
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The Silent Treatment

Quiet electric-powered robotic cutters reduce initial investment and maintenance costs and need less elbowroom on job sites

By Ken Wysocky

hen Chris Larson first saw a ProKASRO Electro robotic cutter at work in 2014 while on a business trip to Germany, he immediately recognized the financial benefits it could bring to C&L Water Solutions in Littleton, Colorado.

Now roughly four years later, the sewer maintenance and trenchless pipe rehab company owns three of the electric-powered units, used primarily to reinstate sewer laterals in newly lined mainline pipes. While the three units represent a sizeable investment — in the neighborhood of about \$900,000, which includes three fully outfitted trucks — they're slowly paying for themselves, due to reduced initial capital costs and lower operating expenses, says Larson, the company's chief operations officer. He's the son of company owners Larry and Chrystalla Larson.

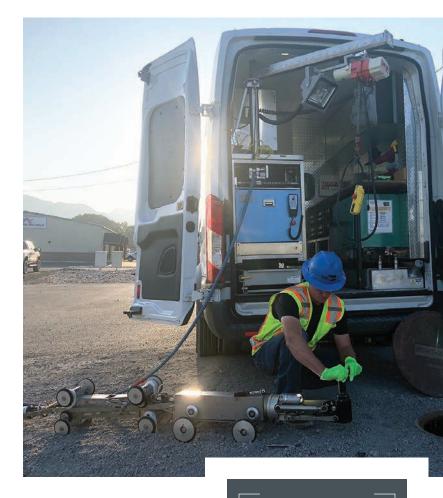
The electric tools (which also can run on a lithium battery) haven't significantly increased productivity because their performance is very similar to traditional hydraulic- or pneumatic-power robotic cutters. Instead, the benefits accrue from the ability to use smaller, less-expensive Ford Transit extended cab vans instead of larger box trucks; the latter are needed to hold all the components required to run a more conventional robotic-cutter system, he says.

Smaller trucks are more maneuverable, and their smaller footprint can mean the difference between parking

on the shoulder of a road or taking up a full lane of traffic and requiring a flagger on the job.

When paired with a fully outfitted Ford Transit XLT extended-cab van, the approximate cost of the entire system is between \$375,000 and \$400,000. That compares to more than \$500,000 for a fully outfitted box truck, Chris Larson says. To carry its first Electro robotic-cutter system, C&L uses a 2002 GMC 5500 truck with a 16-foot box body. But since then, it switched over to Transits.

The Transits are roughly \$25,000 cheaper than box trucks. The company also saves about \$15,000 more because the Electros require a



smaller generator (8 to 12 kW versus 30 to 40 kW). In addition, there's no need for an air compressor or a hydraulic pump, either of which can cost upward of \$20,000. (In a conventional setup, the generator provides for all lighting and system power needs and a PTO-driven air compressor or hydraulic pump runs the cutter head.)

Moreover. associated fuel and maintenance costs are lower than those generated by larger trucks. "There definitely are advantages to using smaller vehicles," Larson says. "Just think about a box truck, which gives you decreased fuel efficiency; needs bigger and more expensive tires, which can cost about \$1,000 more than smaller tires; and requires more expensive overall maintenance. Plus, there's all that extra room in box trucks that you

LOCATION: Littleton, Colorado

MACHINE: Electro robotic cutters made by ProKASRO Mechatronik

FUNCTION: Reinstating lateral lines in newly lined mainline sewers

FEATURES: Robotic unit with forward and reverse movement; independent motors for both drive axles; 2 kW electric motor; weighs about 84 pounds: measures 6 inches tall by 30 inches long by 5 inches wide: different wheel sets available for various traction needs

COST: Around \$375.000 with all accessories and a fully outfitted van

WEBSITE: www.clwsi.com

PROKASRO WEBSITE PAGE: www.prokasro.de/en

have to trim out with more lighting and flooring. That all costs money."

Another bonus: Smaller trucks are more maneuverable, and their smaller footprint can mean the difference between parking on the shoulder of a road or taking up a full lane of traffic and requiring a flagger on the job. "So a smaller footprint is good for easier traffic control and quicker job site



Christopher Coots, foreman at C&L Water Solutions in Littleton, Colorado, sets up a ProKASRO Electro robotic cutter to enter a manhole.

setups," he explains. "And the Transits still are strong enough to tow the same trailers our box truck tows."

In addition, the Transits are better suited for urban areas where narrow alleys and low overhead wires are common, he adds.

Features on the Electro robotic unit include forward and reverse movement; a pan-and-tilt camera; two independent 2 kW electric motors, one for each drive axle; and different sets of wheels for various traction requirements. It weighs about 84 pounds and measures 6 inches tall by 30 inches long by 5 inches wide.

Larson already was partial to ProKASRO equipment. That's because since 2007, C&L Water Solutions — which serves customers in Colorado, New Mexico, Utah and Wyoming — has used the

German company's UV light-cured pipe lining technology.

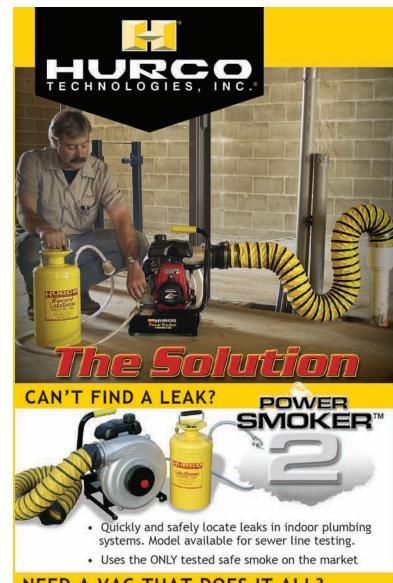
The Electros compare favorably powerwise with pneumatic- or hydraulic-powered units. While they produce fewer revolutions per minute, the Electros make it up by generating more torque. "So if they're programmed correctly, they're just as efficient as, say, a pneumatic-powered cutter," he says. Maintenance on electric motors is easier, too; all operators need to do is apply a spray lubricant on the top shaft bearing every day, Larson notes

One more benefit: The Electros are significantly quieter than traditional units, which helps when crews work in densely populated urban areas, he says. "In the middle of the night, sometimes pneumatic motors can get very loud, almost like a siren in a pipeline. People nearby can actually hear it in their homes. With electric systems, it's totally silent; you can't hear anything." That improves communication between crew members, which in turn increases job site safety.

Overall, Larson is pleased with how the Electros have performed. "They're relatively new to the United States, and they're going to keep making a big difference at our company. They certainly are money machines." C

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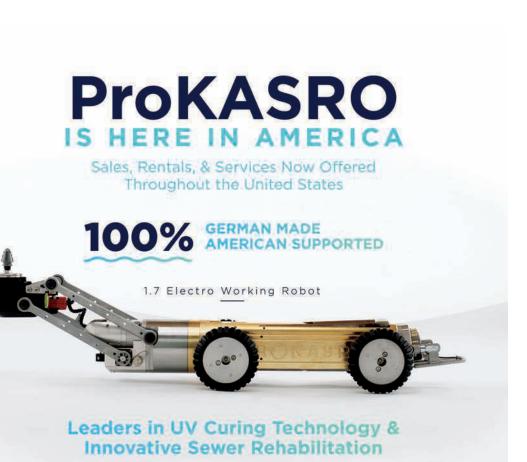


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Stay Connected

New technology provides clear, dependable communication for confined-space work

By Analisa Harangozo

ewer cleaning has a number of unique atmospheric hazards, thanks to the lack of natural air movement and an abundance of toxic and combustible gases. In an environment with hazards like these, communication with outside staff members and emergency medical services may mean the difference between life and death.

Good communication is essential at any sewer work site. All messages, instructions, and information relayed between confined-space entrants and outside attendants need to be sent, received, and understood clearly to be effective.

COMMUNICATION CHALLENGES

Confined work sites such as manholes, storage tanks, wet wells, water tanks, pumping stations, and grit and sludge chambers present many communication challenges. The tight spaces in these environments sometimes only allow one worker to fit, which means relying on technology to communicate with co-workers above ground. Ambient noises — such as those from the respiratory protection equipment necessary to minimize a municipal worker's exposure to toxic gases — can keep workers from recognizing alarms or other warning sounds. Municipal work sites also can interfere with electronic devices, and wet environments can be hard on a lot of communication equipment.

In an emergency, your workers may also be struggling to clearly communicate while experiencing anxiety and labored breathing. Radios are popular communication systems, but their reaches in confined spaces are limited because of electronic interference, battery strength and signal strength, as well as other issues. Cellphones face similar problems, and

yelling, banging on a pipe, or tugging on a rope isn't effective in general, let alone in an emergency.

CON-SPACE COMMUNICATIONS SYSTEMS

"Underground drain cleaning work is challenging and requires clear communication to maximize efficiency and safety," says Rick Pedley, PK Safety CEO.

In an emergency, your workers may also be struggling to clearly communicate while experiencing anxiety and labored breathing.



Hard-line communication systems provide a clear, dependable lifeline to the surface and help ensure your confined-space entry teams get the job done and make it out safely.

The General Industry Kit from Con-Space Communications is designed to be simple, but durable, which is great for workers who will get their equipment wet, dropped in mud, and pulled along corners, but who still need them to work.

Reliable communication is a must for all workers whenever they are doing any type of confined-space entry work. (Photo courtesy of PK Safety)

"I USED TO HATE MY TECHS."

"As a former military member, I knew I wanted a company that ran like clockwork, one that didn't require me to do everything myself for it to be done right. I just couldn't get it there. I was sure my employees were the problem. I actually hated them! Then, one change ... changed everything.

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The throat mic straps directly around the throat and takes its sound from the vibration of the speaker's vocal cords, making the speaker understandable and clear even when wearing a respirator mask. The equipment includes a headset and an alarm button for the entrant.

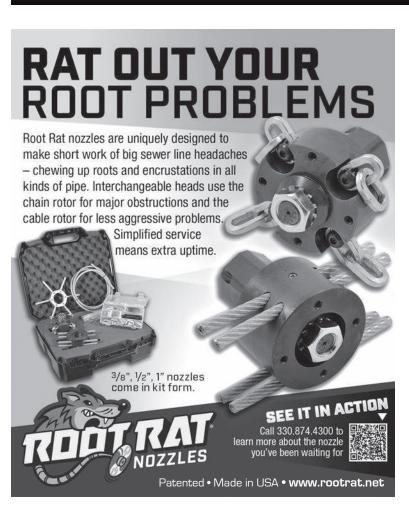
The CSI-1100 Mini Modular Base unit can handle two workers and run for up to 200 continuous hours on four regular AA batteries, which means no outside power source or wires to worry about getting tangled. The system can be expanded by adding splitters that don't diminish sound quality, and the attendant's headset attaches to a mini module power supply that keeps the attendant connected when the entrant needs to relay information about a hazard or accident.

The CSI-2131 Power Talk Box offers hands-free communication for both the entrant and attendant sides of the line, which is crucial in environments

where maneuvering requires the use of both hands and where a worker might need to call for help but is unable to press a button. The waterproof unit has a cable sheathed in thermal plastic cable coated to resist many oils, solvents, and chemicals, and it offers a speaker harness that holds the throat mic ear speaker in place. Safety is the priority of any device taken into an enclosed space, but a comfortable fit under a hard hat or other personal protective equipment doesn't hurt, especially when it encourages your team to wear the devices properly.

Going into a sewer or other permit-required confined space by yourself doesn't mean you should go alone, and the right communication equipment ensures you're always in touch with co-workers and in compliance. **c**









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Business Diversification -Septic Pumping, Plumbing

By Craig Mandli









CABLE DRAIN CLEANING MACHINES

1 / ELECTRIC EEL MODEL C

The Model C dual-cable sectional drain cleaner from Electric Eel runs up to 200 feet of 1 1/4-inch, self-feeding dual cable in 8- or 10-foot sections that require no handling when rotating. It spins cable at twice the revolutions per minute of a continuous cable machine for cleaning 3- to 10-inch lines for distances up to 200 feet. One-man operation means less time and labor expense. A heavy-duty, 1/2 hp motor comes standard, and 3/4 and 1 hp motors are also available. A custom-designed and manufactured gearbox ensures higher quality, lower cost, and parts availability. The heavy-duty, fully adjustable safety clutch keeps cable and tool breakage to a minimum and provides overload protection. A fold-down handle allows for easy transportation, storage and use in crawl spaces. Its carry handle allows for balance and easy transport. 800-833-1212; www.electriceel.com.

2 / GENERAL PIPE CLEANERS/ GENERAL WIRE SPRING METRO

The Metro power drain cleaner from General Pipe Cleaners/General Wire Spring has a capacity of 75 feet of 5/8-inch Flexicore wire rope center cable and works in 3- to 6-inch lines. Its narrow profile is easier to load into trucks and works in tight places and on stairs. It has a fold-down handle, stair climbers, a truck loading wheel and a tough frame on 10-inch heavy-duty wheels for easy transport. Automatic feed moves the cable into and out of drains fast, and the variable-speed control drives and retracts cable at up to 20 feet per minute. The power cable feed and guide tube combination keeps hands clean and free from the spinning cable. 800-245-6200; www.drainbrain.com.

3 / GI INDUSTRIES TCM 5000

The high-speed TCM 5000 pipe cleaning machine from GI Industries combines high-flow air/water flushing and brushing at variable speeds to provide the operator more control in various applications, creating a jetter and cable machine in one package. The variable-speed (0 to 1,750 rpm) control allows operators to use cleaning/drill heads or devices from other manufacturers. It provides contractors greater flexibility in deciding which tools are correct for their application. These systems can clean 1/2- to 24-inch lines at over 150 feet on a single unit. 800-724-1944; www.giind.com.

4 / GORLITZ SEWER & DRAIN MODEL GO 68HD

The Gorlitz Sewer & Drain Model GO 68HD heavy-duty electric drain cleaning machine is available in two different versions — with an open steel reel or enclosed polyethylene drum — and can be outfitted with an optional power feeder. It comes with a standard configuration of 150 feet of 11/16-inch hollow-core cable, which should reach most blockages with a single reel, and weighs 185 pounds. Adding a loading ramp and electric winch to any vehicle makes transportation quick and simple. It is designed to clean pipes from 3 to 8 inches in diameter. 877-446-7548; www.gorlitz.com.

5 / PIPE LINING SUPPLY RENSSI HIGH-SPEED CABLING AND TOOLING

Renssi High-Speed Cabling and Tooling from Pipe Lining Supply is used to attack roots, scale and lateral reinstatements. The cabling can be used with a hand drill or many cable caddy sizes with a clutch for easy control by the operator. A minimal amount of training is needed to perform drain clearing and cleaning at a high rate of speed up to 10 times faster than alternative methods. The secret is in the ability to attach a camera

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system to the cable, allowing the operator to see what he or she is doing and not spend time cleaning areas that don't need it. 888-354-6464; www.pipeliningsupply.com.

6 / RIDGID K-5208 SECTIONAL MACHINE

The RIDGID K-5208 sectional machine weighs 54 pounds, 30 percent less than the K-1500 sectional machine. It has a 3/4 hp motor and cable that can spin up to 700 rpm for drains 2 to 8 inches in diameter and has a tool-less clutch adjustment to quickly switch between 7/8- and 1 1/4-inch cable sizes. It comes with a decoupling tool for disconnecting cables efficiently and a cable feeder with guide tube for easy loading and unloading into an enclosed cable carrier. In-field clutch serviceability minimizes downtime, while a carrying handle allows for easy transport. Designed with high-strength square steel tubing and rubber feet for enhanced stability, it includes a fluid management system with a reservoir to catch fluid for later draining. The enclosed cable carrier and cable feeder enhance cleanliness by reducing exposure of cables on the job site. 800-769-7743; www.ridgid.com.

FRANCHISE SYSTEMS

7 / 1-800-PLUMBER

1-800-Plumber is a plumbing and HVAC franchise that offers an industry-leading software system along with the easily recognized and remembered branding that makes your franchise easy for customers to contact. The software also provides customers a consistent experience with upfront pricing through Pricebook within their own app. It has five locations nationwide and anticipates opening several additional locations this year. 281-412-4284; www.1800plumberfranchising.com.

8 / ROOTER-MAN

Rooter-Man is a national plumbing, sewer, and drain cleaning franchise that offers a low-cost solution to franchise ownership (top 25 inexpensive franchises ranked by Entrepreneur magazine), with a flat-rate pricing system and no percentage-based royalty fees on sales. Franchisees are granted an exclusive franchise license for their chosen territories and become part of a team of independent dealers working together under a nationally recognized trademark and brand. Benefits include equity in a national brand, proven marketing, low franchising overhead, professional training, ongoing support and exclusive discounts on equipment. 800-700-8062; www.rooterman.com.

9 / ENZ USA ROTODRILL BEND

At 2 3/4 inches long, the Rotodrill Bend nozzle from Enz USA is a powerful cleaning tool that can easily negotiate traps and bends. The highpowered rotating jet provides thrust power and is effective for moving debris and tree roots and clearing blocked pipes. The nozzle pushes itself through pipes via a tapered front. It cleans and cuts its way down the pipe as it's retrieved, adding efficiency. It can operate on flow as low as 4 gpm while cleaning pipe ranging from 3 to 6 inches in diameter. It is available in 1/4and 3/8-inch connections. 877-362-8721: www.enzusainc.com.

10 / HYDRA-FLEX AQUA-ROCKET

The Aqua-Rocket industrial turbo nozzle from Hydra-Flex is constructed with a stainless steel housing and a tungsten carbide tip and seat to withstand harsh environments and provide long life. Equipped with a high-temperature, drop-resistant rubber cover and available repair kits, all components are designed for longer life and lower overall operating costs. It blasts a zerodegree water jet at 1,500 to 4,000 psi while rotating at an optimal speed to form a 22-degree, cone-shaped spray pattern. Its optimized stream quality results in greater impingement, allowing the user to attack the toughest dirt and grime. 952-808-3640; www.hydraflexinc.com.













PLUMBING PRODUCT

11 / MILWAUKEE TOOL 10L PIPE WRENCH

The 10L pipe wrench with POWERLENGTH handle from Milwaukee Tool is a 10-inch pipe wrench with an extended-length handle. Due to its OVERBITE JAW with additional teeth, the wrench delivers a large grip surface, keeping the material centered in the jaws even in challenging pipe and fitting configurations. The tool's slim jaw profile, paired with its extended length, allows for access in the tightest spaces. It has a dual-coil spring design for longer tool life and a handle that offers a comfortable fit in the hand for extended use. 800-729-3878; www.milwaukeetool.com.

PORTABLE JETTER

12 / AMAZING MACHINERY BOSSJET PRO BOX JETTER

The BossJet Pro Box Jetter from Amazing Machinery can be mounted in many configurations. It comes with a Honda or Kohler engine, a triplex plunger pump and a Hannay Reels electric hose reel. All units are encased in a high-density aluminum box frame with an access panel on the side for exhaust release and ease of service. It comes with 200 feet of 1/4-inch I.D. jetter hose and laser and spin jet nozzles. It is designed to clean and clear 2- to 6-inch pipes. Options include a foot pedal, trap kit, remote reel and portable restroom head attachment for the smaller lines. All units include a washdown gun and wand, four pressure washer tips, and a chemical injector for easy cleanup. 800-504-7435; www.amazingmachinery.com.

PRESSURE WASHERS AND SPRAYERS

13 / MYTANA MFG. M30 MAXBLAST

The M30 MaxBlast gas-powered jetter from MyTana Mfg. maximizes portability without sacrificing cleaning power and efficiency. Its 390 cc

Honda motor with electric start removes blockages with 4 1/2 gpm at 3,000 psi in 1 1/2- to 6-inch lines. Safety features include a 10-amp recharge system and thermal pump protection and a detachable hose reel to leave exhaust outside during indoor jetting. With 1/8- and 3/8-inch hoses, it's designed to combine the power of a mainline jetter with the convenience of a mediumline jetter. It comes with stair glides and 10-inch pneumatic tires with swivel castors with locks, so it's easy to load, maneuver, disassemble and use. 800-328-8170; www.mytana.com.

14 / WATER CANNON INC. - MWBE PRESSURE WASHERS

Pressure washers from Water Cannon Inc. - MWBE feature a recirculation module that cools water when the trigger gun is closed. The triplex ceramic plunger pump is designed for commercial and professional daily use. To protect wear parts, it includes an overheat safety valve that will open and close automatically to allow the recirculating higher-temperature water to be released, allowing cool water to replace it. 800-333-9274; www.watercannon.com.

PUSH TV CAMERA SYSTEMS

15 / ARIES INDUSTRIES SEEKER 2.0

The portable Seeker 2.0 from Aries Industries provides quality video with integral recording and a large keyboard. The easy-to-use, contractor-grade system operates in pipes of 3 inches or larger. The stand-alone system requires no external wiring. The reel contains 200 feet of small-diameter, lightweight cable for inspecting long pipe runs. Self-leveling straight view or pan-and-tilt cameras are available. The control unit, housed in a rugged case, provides integral recording. A large touchpad keyboard allows easy titling and fault annotation. Visibility of the 6.40-inch LCD screen is enhanced with the light-shielding cover. A hard-shell storage case accommodates optional accessories, including a sonde for line location, skids and a pressurization kit for the camera. The unit can also be used in an inspection truck or trailer with video transmitted through the vehicle's mainline cable. 800-234-7205; www.ariesindustries.com.

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16 / CPI PRODUCTS UNIVERSAL ROLLER SKIDS

Universal Roller Skids from CPI Products fit most push cameras and improve performance and protection in pipes from 3 to 16 inches in diameter. The key to selecting the correct skid is to measure the outside diameter of the camera and then select the correct roller size for the pipe to be inspected. Using a plastic roller skid can save money by protecting a push camera from debris inside pipes and keep the lens from impacting the walls of the pipe. A properly sized and fitted roller skid also keeps the camera centered for an improved image and reduces the amount of debris that obstructs the camera lens. 413-443-0925; www.cplasproducts.com.

17 / CUES MPLUS+ XL

The CUES MPlus+ XL push system is designed for easy operation with an all-in-one setup and flexibility by quick removal of the control unit to be used separately. It includes a coiler configuration and pan-and-tilt camera for mainline and larger pipeline applications up to 500 feet. It integrates video observation coding, observation coding interface and digital recording into an easy-to-use package. The lightweight system includes large, durable wheels for portability and a balanced footprint for stability. It is manufactured to handle rigorous field use. 800-327-7791; www.cuesinc.com.

18 / ENVIROSIGHT VERISIGHT PRO

The VeriSight Pro from Envirosight has a stainless self-leveling camera with shadowless, variable LED illumination that captures crisp video footage regardless of pipe material. With supplied centering devices, it inspects lines 2 to 9 inches and snakes through multiple bends for maximum range. An integral tri-band sonde (33 kHz, 512 Hz, 640 Hz) works with almost any locator. Its welded steel coiler comes with 130, 200 or 330 feet of pushrod. The entire system runs continuously for six hours off internal rechargeable lithiumion batteries or off main or vehicle power. Its multilanguage controller displays footage on an 8-inch TFT LCD and captures up to 90 hours of MPEG-4 video on an SD/SDHC card or USB stick. It lets the user zoom 3x, captures images in JPEG format from both live and recorded video, and offers a 16-page text writer with full QWERTY keyboard. 866-936-8476; www.envirosight.com.

19 / FORBEST PRODUCTS FB-PIC3188XX/4188XX

The FB-PIC3188XX/4188XX portable lay-flat camera system from Forbest Products comes with a 1-inch waterproof color camera head or 1-inch selfleveling color camera head with a built-in 512 Hz sonde transmitter, stainless steel spring kit, and bright LED lights. It comes with 130 feet of 5.3 mm or 200 feet of 6 mm fiberglass cable, with a high-resolution 7- or 10-inch color control station with USB and SD recording. Typing and editing is optional for the 10inch multifunction control station. The lay-flat design is convenient for one user to operate the camera independently. 877-369-1199; www.forbestusa.net.

20 / INSIGHT VISION CAMERAS OPTICAM

With the Opticam from Insight Vision Cameras, the technician is ready to start inspecting in a matter of seconds by simply plugging in the video interconnect cable and plugging in power from AC, DC or battery. A large, 10.4-inch LCD screen allows the user to see in vivid detail and move videos or pictures of inspections onto a USB drive with one-touch recording or snapshot including audio with speaker and microphone. They can also stream an inspection to an iPhone or Android device. A QWERTY keypad lets the user type in pipe issues such as cracked pipe and roots. They can also enter information about the company and project. It comes with a modular 1.3-inch self-leveling color camera head with 12 super-bright LED lights. 800-488-8177; www.insightvisioncameras.com.

21 / PIPELINE RENEWAL TECHNOLOGIES CLEANSTEER 40

The Cleansteer 40 from Pipeline Renewal Technologies uses highpressure water for propulsion, steering and cleaning as it captures live inspection video from inside lateral lines. It can traverse multiple bends in pipe, steer through branches, and levitate above debris, helping municipal contractors and commercial plumbers locate failed pipes, cross bores and blockages, as well as perform cleaning. Six propulsion nozzles generate the power needed to pull its own flexible hose through multiple bends, and a side nozzle on the camera can be aimed to steer through diverging pipes and hover past obstacles. An optional forward-facing nozzle can be pulsed to clear debris and other obstructions. The system works with any high-

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pressure water source, including pressure washers and combination trucks. Its 1/2-inch hose comes in lengths from 115 to 190 feet. **866-936-8476**; www.pipelinert.com.

22 / RAPIDVIEW IBAK NORTH AMERICA ORPHEUS HD

The ORPHEUS HD inspection camera from RapidView IBAK North America offers full 1920x1080 resolution, providing clean, crisp HD video along with high-resolution pictures. It is ideal for large-diameter pipelines 6 inches and up, and it offers pan-and-tilt capabilities, 10 times optical zoom and 12 times digital zoom, laser measurement, autofocus, and powerful LED lighting. The camera uses lights set into the camera head at an angle that specifically illuminates inside pipe joints and gaps, allowing the user to see clearly without obscuring shadows. With its higher resolution, the user can zoom closer and inspect up into laterals while maintaining high picture quality. 800-656-4225; www.rapidview.com.

23 / RATECH ELECTRONICS PAN N' TILT PUSH CAMERA

The Pan n' Tilt push camera from Ratech Electronics can be used for pipes and drains as small as 4 inches in diameter. It can be used as a retrofit to existing systems or as a stand-alone unit. It rotates fully 360 degrees and 210 degrees up and down, allowing users to view the pipe condition easier and in greater detail. An optional, steerable gooseneck can assist. Combining this camera with a control unit such as the Elite SD enables recording capability using SD/USB drives and allows MPEG video capture and JPG image capture of pipe inspections. Also included is a 512 Hz sonde, an on-screen text display overlay system, electronic distance counter, time, date and eight-page memory. It comes with 200 to 400 feet of Gel Rod cable. 800-461-9200; www.ratech-electronics.com.

24 / RAUSCHUSA MINCAM360

The 2-inch minCam360 remote-controlled, pan-and-tilt push camera from RauschUSA has digital zoom and a tri-band sonde with selectable frequencies. The Bluetooth remote includes a joystick for camera control. The cable reel is equipped with 200 feet of cable (with up to 300 feet available),

and the removable batteries run for four hours. Its RID steering skid enables it to push into 45-degree Y and 90-degree T branches in the pipe. The 8.4-inch, sunlight-readable monitor enables recording video, voice and photos directly to an SD card. This system is designed as a capable standalone inspection system, including a text generator for detailed reporting capabilities and an on-screen distance counter. Applications range from 3-to 20-inch pipe diameters with all centering accessories. 717-709-1005; www.rauschusa.com.

25 / VIVAX-METROTECH TYPE-CP

The **Type-CP** inspection system from **Vivax-Metrotech** has 200-, 300- or 400-foot reels with stiff pushrod that's flexible enough for easy entry and turns. The 1.6-inch D34-CP self-leveling camera provides 700 pixels of resolution to inspect up to 6-inch pipes. It includes the vCam-5 control module with an 8-inch color LCD; transmitting sonde; full-function keyboard; internal microphone; AC/DC power; rechargeable batteries; distance counter; camera LED brightness control; and digital recording to the USB thumb drives, SD cards or internal hard drive. The control module ships ready to use with LACP software such as POSM, WinCan or MuniXS. **800-446-3392**; **www.vivax-metrotech.com**.

26 / WOHLER USA VIS 700

The VIS 700 high-definition inspection system from Wohler USA provides flexible features needed for a variety of inspection applications. It offers razor-sharp, high-definition images; zoom; a focus function via joystick for precise inspection; and the ability to stream live images and video via wireless LAN. It comes with a removable touch-screen monitor with adjustable handgrip; automatic screen rotation; on-screen keyboard for notes; a voice-over recording option; an easy-to-clean, removable pushrod; and variable pan-and-tilt speed via joystick. 978-750-9876; www.wohlerusa.com.

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TRUCK/TRAILER JETTERS

27 / EASY KLEEN PRESSURE SYSTEMS GROUNDHOG JETTER

The **Groundhog Jetter** from **Easy Kleen Pressure Systems** is designed to blast through clogged pipes with a 35 hp Vanguard engine that provides 12 gpm at 3,500 psi. It is compact and easily transported in a pickup truck or van, with trailer options available. It includes a fully welded, powdercoated 2-inch steel tube frame, drilled and tapped, which houses the 200-gallon water tank. It comes with an accessible breather and 10-gallon fuel tank, General Pump with gearbox drive, 12-volt powered hose reel with 300 feet of 3/8-inch jetter hose, hose guides, super swivel and foot-pedal control, emergency shut-off valve, and an hour meter. Optional remote features include hose reel-in, motor off/speed control and pressure on/off. **800-315-5533**; www.easykleen.com.

28 / GAPVAX GJET

The **GJet** truck jetter from **GapVax** offers 500- to 3,000-gallon stainless steel water tank options and 40 to 100 gpm water pump options along with a front-mounted hose reel, various toolbox options, room for a vice or crane, and 10-foot tube trays. **888-442-7829**; www.gapvax.com.

29 / HOT JET USA HOTJET II

The **HotJet II** sewer and drainline jetter from **Hot Jet USA** is a dual-purpose machine that cleans drains and serves as a high-powered, hot-water pressure washer. It can be used to clean drains up to 300 feet long and 12 inches in diameter. It has a 35 hp Vanguard engine by Toyota, delivering 10 gpm at 4,000 psi using hot or cold water, mounted on a diamond plate tandem-axle trailer, and powder-coated for durability. **800-624-8186**; **www.hotjetusa.com**.

30 / JETTERS NORTHWEST EAGLE 200

The Eagle 200 midsize trailer jetter series from Jetters Northwest is available in 12 gpm/3,000 psi (model Eagle-200/3012) with 1/2-inch I.D. jet hose or the 9 gpm/4,000 psi (model Eagle-200/4009) with 3/8-inch I.D. jet hose. It comes with either a Kawasaki (liquid-cooled) or Kohler (aircooled) fuel-injected engine, an industrial-duty trailer with brakes for safety, and an A-frame tongue that allows it to be towed when full of water. Flattop fenders allow for additional mounting surface. Chrome wheels give it a sharp appearance. It comes with a super-duty triplex UDOR U.S.A. pump, 12-volt power-wind hose reel with wind-speed controller, 200-gallon water tank, large 60-inch lockable tool storage bin, 300 feet of jetting hose on the main 12-volt reel, 100 feet of 3/4-inch water-supply hose on a second reel, adjustable pulsation control, and four jetting nozzles. 877-901-1936; www.jettersnorthwest.com.

31 / MONGOOSE JETTERS BY SEWER EQUIPMENT MODEL 184

The Model 184 jetter from Mongoose Jetters by Sewer Equipment has a tubular steel frame, corrosion-resistant prepainted subassemblies, state-of-the-art controls, a strong hose reel, high-quality diesel engine and the Mongoose Run Dry Pump. 877-735-4640; www.mongoosejetters.com.

32 / NLB 335 DHW

The **335 DHW** hot-water jetting unit from **NLB** has a dependable triplex pump capable of 15 gpm at 3,500 psi. A Kubota v3600 66 hp engine provides the power in a direct-drive configuration that eliminates the PTO and PTO maintenance. Its 700,000 Btu burner unit addresses the demands of the many cycles, long hours and transportation requirements in the life of a typical hot-water unit. An overhead-mounted water tank is easy to winterize and has integrated water lubrication lines and a 75-micron inlet strainer that can be rinsed or cleaned, eliminating the traditional filter. A rupture disk has also been eliminated from the unit's design and replaced with a self-resetting pop-off valve, saving time and money for the operator. **800-227-7652**; **www.nlbcorp.com**.







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33 / VAC-CON HOT SHOT

The **Hot Shot** high-pressure water jet machine from **Vac-Con** is designed for removing stones, bottles, cans, grease, sludge, and other debris from sanitary sewer and/or storm drainlines. Engineered for one-person operation, all high-pressure water and hose reel controls are located at the front of the machine for ease of operation and increased safety. Models are available with 1,000- and 1,600-gallon water tanks. Options include variable flow, articulating hose reel, polyethylene water tanks, 30 gpm at 3,000 psi water pump system, auxiliary engine or hydrostatic drive, cold-weather recirculation system, side-mounted toolboxes, air purge system, hose footage counter, arrow board, strobe lights, inspector cam, high-pressure spray bar, hose rewind guide, 600 psi handgun system with 25-foot hose, and a selection of nozzles. **855-336-2962**; www.vac-con.com.

34 / VACTOR RAMJET 850 SERIES

The RamJet 850 Series truck jetter from Vactor has a choice of front or rear hose-reel locations and productivity-enhancing options. An integral aluminum rear shroud with heavy-duty, see-through Lexan windows is available. Large service access doors on both sides of the shroud enable easy greasing, maintenance and service. The rear shroud keeps the hose and components warm and protected for quick setup and cleaning in extremely cold conditions. It comes standard with a certified flow of 0 to 80 gpm at a variable pressure up to 2,500 psi at the hose reel to clean any size of line. An optional JetRodder water pump-heated cabinet keeps the pump and plumbing covered and protected. 800-627-3171; www.vactor.com.

VACUUM TRUCKS/PUMPS/ACCESSORIES

35 / BUCHER MUNICIPAL EASEMENT REEL

The easement reel from **Bucher Municipal** enables operators to reach remote locations and get jetting tasks done in terrains that a conventional combo unit cannot reach. Built on a Hinowa caterpillar track crawler with a 11.7 hp Honda engine and equipped with an adjustable undercarriage, operators get easy and safe access to remote locations. And with a hydraulically operated fold-down hose reel, the unit is extra stabile during jetting tasks.

The unit can be operated safely by just one operator. It has 656 feet of 1-inch jetting hose and comes with an LED work lamp, a beacon, and a tool tray. It is built in modules, ensuring operators can choose different options, such as a wheelbarrow, pile drill, grab and many other options. 312-705-3818; www.buchermunicipal.us.

36 / CAT PUMPS 4DX SERIES

The Cat Pumps 4DX Series high-pressure pump comes with premium DC electric motors for on-the-go pressure wash power. The pump and motor assemblies provide 1 to 3 gpm at pressures from 400 to 1,000 psi and operate on any standard direct current source. Convenient integrated unloaders accurately set and maintain system pressure. Reliable and easy to service, the built-in unloaders divert water flow during bypass, reducing load on pump and motor and increasing system life. Crankcase oil is prefilled so pumps are ready to use out-of-the-box. Multiple build-to-order configurations are available. 763-780-5440; www.catpumps.com.

37 / HAMMELMANN HDP SERIES

HDP 146 and HDP 196 sewer cleaning pumps from Hammelmann offer flows up to 160 gpm and pressures of 3,200 psi. They have a compact design with optimum space utilization and an integral reduction gear. Horizontal or vertical models are available, with reversible pump heads, central- or side-suction connections, discharge connections on both sides, left- or right-hand drive shafts, and operation at any angle. Water ends are suitable for recycled water. Pumps have high-grade solid ceramic plungers, wear-resistant valve seats, low flow velocity over suction and discharge valves, packing seal sets within rust-resistant stainless steel sleeves, a slow plunger speed, industrial drive-ends specifically designed for continuous duty, a pressurized oil lubrication system, and clockwise or counterclockwise rotation. 800-783-4935; www.hammelmann.com.



38 / HANNAY REELS VAC-9000 SERIES HOSE REEL

With a heavy-duty construction, the VAC-9000 Series from Hannay Reels is designed to handle 2-inch through 4-inch I.D. hose. The reel is designed for longer lengths and large diameters of vacuum hose with a gear-driven crank rewind or chain and sprocket drive powered by an electric, hydraulic, or compressed air motor. The reel's outstanding feature is its multiwrap configuration, which is used when single-wrap reels are too large in diameter or cabinet/mounting space requires a wider or lower configuration. In addition to the VAC-9000 Series, Hannay Reels offers durable reels for a variety of applications, including many suited for the sewer and waste industry. 877-467-3357; www.hannay.com.

39 / PIK RITE STEEL 3.600-GALLON VACUUM TANK

The Pik Rite steel 3,600-gallon vacuum tank is designed for strength and reliability. Its 3-inch internal plumbing keeps the exterior clean and simple. The vacuum pump mount is attached to both frame rails and supports pumps from any of the major pump manufacturers. It includes four sight eyes in the waste compartment. The tank interior is equipped with walk-through baffles and a 20-inch rear manway for easy clean-out. The LED running light kit is installed with a fully molded wire harness. Operator work lights and a strobe light are mounted on the top rear lighting bracket. Polished aluminum hose trays, and the low hose hooks are coated with protective super liner. 800-326-9763; www.pikrite.com.

40 / WESTMOOR CONDE HD

Conde HD vacuum/pressure pumps from Westmoor are built in a variety of sizes from 35 to 230 cfm. They incorporate a slide valve/changeover valve, which is compact, low profile and works easily, according to the maker. Automatic oilers never need adjustment. They can be driven by a variety of power sources, including a gas or diesel engine package, PTO, right-angle drive or a hydraulic pump. They are double shafted and can be set up for clockwise or counterclockwise rotation. 800-367-0972; www.westmoorltd.com. ©



Vac-Con launches new interactive site

Vac-Con announced the release of a new version of its EXPLORE VAC-CON interactive website. It offers 360-degree video tours and images, giving users the ability to demonstrate a Vac-Con machine at any time, from anywhere. In addition to the website, the company released new literature for its primary product portfolio. The new EXPLORE VAC-CON site can be viewed at www.vac-con.com/salesadvantage.

Vac-Tron Equipment wins Companies to Watch Award

Vac-Tron Equipment announced it was a 2018 winner of the Florida Companies to Watch Award. The company was selected from more than 500 nominees in the statewide program managed by economic development group GrowFL, in association with the Edward Lowe Foundation. Vac-Tron Equipment's management team, competitive market position, and strong community involvement were among several factors that put them in contention for the award.

Custom Truck One Source announces acquisition

Custom Truck One Source announced the acquisition of Great Pacific Equipment, a distributor of construction and utility equipment serving the Southwest region of the U.S. With offices in Fontana and Bakersfield, California, Great Pacific Equipment's existing management will partner with Custom Truck One Source to grow the business in the region. This acquisition marks the ninth one under the Custom Truck One Source brand since its formation in February 2015.

Pipe Lining Supply adds new technical rep

Pipe Lining Supply announced the appointment of Augustus "Gus" Bozzano II to the position of technical representative serving the Northeastern U.S. He will support the company's customer base with training, advice, and sales for CIPP lateral lining and AIPPR pipe coating projects for drain, waste and vent in Philadelphia and the surrounding areas.



Augustus "Gus" Bozzano II

Electric Eel celebrates 60th ARA Rental Show

Electric Eel will be exhibiting at its 60th annual ARA (American Rental Association) Rental Show in Anaheim, California. Established in 1939, Electric Eel has supported the rental industry from its early days, first with the original dual-cable sectional mainline machine to today's full line of drain and sewer cleaning machines including sectional units, drum machines, high-pressure water jetters and a full line of pipeline inspection and location products.

Avanti International announces new leadership

Avanti International announced the appointment of Britt Babcock, P.E., as president. He has been with the company since 2011 and most recently served as vice president of sales. Babcock has over 25 years' engineering, construction, sales and management experience. He will be based at Avanti International's headquarters outside of Houston. Frank Aguilar, who had been serving as interim president, will resume his position as vice president of operations. **c**



Britt Babcock



SPOTLIGHT

A powerful hydrovac for tight quarters

By Craig Mandli

The consensus when choosing a hydrovac truck is typically "bigger is better." Large tanks allow for a truck to sit at a job for a long period of time before having to go to a dump site, and larger trucks typically have a higher capacity for power, which gets the job done efficiently no matter what obstacles are presented. However, with the tighter quarters found in urban areas, these large trucks don't always make sense logistically. That's where the SmartVac comes in.

SmartVac Hydrovacs was launched in 2014, and the company's goal was to develop a hydrovac truck that would be reliable, have a lower operating cost, and be much easier to operate than what was available on the market.

"We wanted a truck that was so easy to operate you could send it out with an 18-year-old with almost no training," says Braydon Dowler-Coltman, a business development representative for SmartVac Hydrovacs. "This meant that the truck had to be de-



signed to protect itself from abuse and damage."

SmartVac Hydrovacs began building advanced single-axle hydrovac trucks with the equivalent power of a large tri-drive vehicle. Having only one axle allows the vehicle to be operated by a wider range of drivers, as they only need to carry a Class 5 license and air brake ticket in Canada. It also reduces the cost of purchasing, operating and maintaining the truck. Not every job requires a big truck, and many big trucks are so heavy they are unable to haul more than the SmartVac without being overweight.

This truck has the capacity to work in tight quarters and maneuver under a multitude of circumstances. The main difference between SmartVac and other single-axle hydrovacs comes down to weight and power. SmartVac is a lighter and more powerful truck, thus it can carry a higher load while still being road legal, and it can dig faster.

The unit's Roots RAM 624 blower needs about 120 hp. It can be run by a single touch screen or remote control. The truck is also made for use in all climates, and its winterization package purges all lines with the touch of a button. It has an engineered cabinet that lowers sound output to 84 dB, noise level equivalent to that of a blender. It also includes the SmartBoom, a safety feature integrating sensor technology on the boom to detect any overhead obstructions, such as power lines, errant wires and environmental interference. 403-786-9966; www.smartvac.ca.









RANGER DESIGN MAX STEP VAN STEP

The Max Step from Ranger Design is a van step that attaches to the frame of the vehicle in the back, providing easy access to the cargo space or roof rack. Made with anti-slip tread plates, the Max Step is built to provide a rugged grip in any type of climate. A line of reflective tape across each step also ensures visibility, day and night. It is manufactured to TUV standards and protected by an anti-corrosive finish to guard against weathering and early deterioration. It has a 300-pound weight capacity and can be quickly fastened to vans without factory steps. 800-565-5321; www.rangerdesign.com.

WATER CANNON INC. - MWBE FLAT-SURFACE-MOUNT PRESSURE WASHER The 100- to 300-foot hose reel flat-surface-mount pressure washer from Water Cannon Inc. - MWBE is made from heavy-gauge steel and has a powdercoat finish. It is available with several mounting options including a hose guide welded to the hose reel frame, making it stronger and eliminating the extra load to the bushings, decreasing wear over time. An improved hose coupling allows for straight in-hose attachment, removing difficult installations and possible kinking. The reels come completely assembled in the box. 800-333-9274; www.watercannon.com.

WARRIOR TRENCHLESS THERMOFORM PIPE LINING SYSTEM

Thermoform pipeline rehabilitation products from Warrior Trenchless Solutions is a PVC-A pipe lining system designed for the rehabilitation of existing underground pipes. There are no harmful emissions and it does not rely on any chemical reaction during installation. The factory-controlled production process creates a unique, patented PVC alloy compound. The highly flexible material allows it to expand and fit tightly into the host pipe regardless of any imperfections in the pipe. Available sizes range from 4 to 36 inches in diameter. Warrior also provides technical and product support to Thermoform installers. 716-601-7760; www.warriornodig.com.

VIVAX-METROTECH VCAM-6 HD INSPECTION CAMERA

The vCam-6 HD inspection system from Vivax-Metrotech includes features such as text writer, voice-over, locatable sonde and traceable pushrod as standard equipment. The standard reel is available with 200, 300 or 400 feet of pushrod and choices of 1.3- or 1.8-inch self-leveling HD camera. The system includes a daylight-viewable control module with a 9.7-inch HD LCD monitor, distance counter and internal rechargeable batteries with five-plus hours' battery life. Video recording and JPG format pictures can be saved to the internal 1 TB hard drive. The control module has built in Wi-Fi to stream live video and snapshots to smartphone apps or directly to a computer for recording to the hard drive.

800-446-3392; www.vivax-metrotech.com. c



Business Diversification - Septic Pumping, Plumbing

By Craig Mandli

DRAIN CLEANING MACHINE CONQUERS TOUGH ROOT MASS

PROBLEM / A homeowner from Manistee, Michigan, called about a sewer line backup that resulted in water and sewage in the basement. Salmon Sewer & Plumbing responded, and the technician found an enormous volume of roots causing the blockage in the line. The roots were large and the clog was so bad that the technician knew it would be a difficult job.

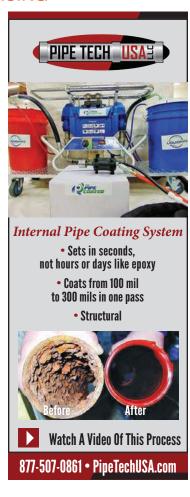
SOLUTION / The technician knew the Spartan Tool Model 1065 drain cleaning machine was tough enough to conquer these roots. The unit has heavy-duty power for 3- to 10-inch lines up to 250 feet. The outer drum keeps dirt contained for customers' peace of mind while the independently rotating inner drum prevents cable kinking and buckling, yet allows quick torque buildup. The Dial-A-Cable power feed allows for quick cable changes and feeds cable in and out automatically.



RESULT / The technician pulled roots from the line both in the basement and the outside clean-out. Once the root mass was removed, the water receded and the line ran clean. "I've used many other machines in the past that never would have gotten this out of there, but the Spartan 1065 pulled it right out," the technician says. "The right cable and machine really do make that much of a difference." 800-435-3866; www.spartantool.com. C















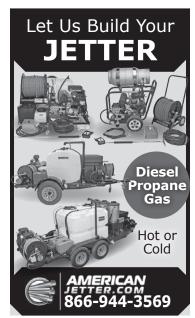










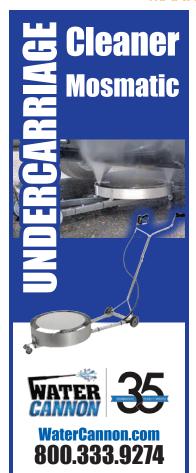




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COMPUTER SOFTWARE

FreeServiceReminderSoftware.com, FreeServiceDispatchSoftware.com, FreeRouteManagementSoftware.com.

DRAIN/SEWER CLEANING EQUIPMENT



2003 Sterling Vactor 2100, 13,000 miles. 12-yard fan machine. 80gpm @ 2,000psi. For more pictures and a complete description,

Call 216-889-4400, OH or text 216-298-7936

C12



> ronsrooter@yahoo.com Call 270-554-3711 or 270-556-4275, KY

Used and rebuilt cable machines in stock: RIDGID K-7500, K-40, K-60, K-1500, Spartan #1064, #300, #100, Electric Eel model #C machines. The Cable Center: 800-257-7209. (CBM)

EQUIPMENT & TOOLS



Alkota 630,000 BTU dry steam unit, diesel driven. Year: 2017 - only used twice. 240v electric water pump. Unit comes on wheeled cart. Includes 200 feet of steam hose and manifold. \$10,000 CDN

gp@cpltech.com

C12

JET VACS



2006 Sterling Super Products Camel 200 dump body, Myers DP80 water pump, Roots 624 blower, extendable boom. Excellent condition. 41,500 miles. \$65,000

559-284-0401 c₁₂



800-627-0778

C12



1999 Sterling Vactor 2100, 12-yard fan machine, 80gpm @ 2,000 psi. Excity unit, clean and work-ready. \$34,900

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2011 Vac-Con V390LHA combination cleaning truck. Low miles, great condition. 1998 Vactor 2110-36PD ex-city owned, low miles See details of these units and CCTV inspection trucks at www.empireequip.com. Contact Craig at 714-639-8352. (CBM)

2001 Vac-Con VPD42HA/1300 sewer-cleaning unit mounted on a Sterling LT9501 with 131395 miles. 380hp Cat C12 in-frame rebuild at 101115 Miles. Fuller 10-speed manual transmission, 120gpm FMC Quintuplex water pump, recent reman 165hp Cummins 8.3 auxiliary engine, recent reman Roots/Dresser 827 blower, cold-weather recirculation ,16-cubic yard-debris tank, 1,300-gallon water tank, 30'x8" Aluminum telescoping boom tube (great for catch basins), 500' x 1-1/4" hose on articulating reel. \$40,000. Call Mark 708-475-7116, IL (CBM)

2007 Volvo with a Vactor 2115 combination unit. (Stock# 5903C) (888) **VAC-UNIT (822-8648) www.vsirentalsilc.com** (CBM)

JETTERS-TRAILER



The Industry's Most Versatile Trailer Jetter Model# HJ2TA1030HW, tandem axle trailer, 35hp Vanguard 10gpm @ 3,850psi, 325-gallon water tank, 300' hose, General Pump. Fully loaded! List \$36,995. On sale for \$32,995.

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2002 O'Brien trailer jetter Model 3515, 4,293 hours. Completely refurbished. Asking \$12,900 OBO

Contact Keith at 1-800-340-7080, NH

2002 O'Brien hydro jetter, good overall condition ready to use. Similar to Model 7040-SC, it has 1" hose and some extra head attachments with it, works great. John Deere diesel with 442 hours, tandem axle, good tires. It was our town's old jetter and the help said that it was better than the new one they bought. Too big for our needs. Asking \$12,900. Call Richard at 802-384-0014. (C12)

2000 O'Brien tandem axle with Continental TM27 72hp engine and Meyers C40-20 40gpm/2,000psi pump. 500' of 3/4" hose with lateral cart mount at front of trailer. \$5,500 0B0. Call 517-206-8289 if interested. (C12)

JETTERS-TRUCK



1992 Ford F750 jetter truck. 428 gas engine, 1,200-gallon water tank, approx. 800' foot hose, 25,835 original miles. In running condition. Call or email for more information \$10,000 0B0

poolspaving@centurylink.net 937-539-1943, OH C12

1978 Ford F700 with 5,000 original miles, 0'Brien sewer jet 65 gallons @ 2,000 psi. Starts and runs well. Pump in great shape, no leaks. Minor leak on tank. Start it and go to work. \$5,000. 609-977-5765. Other equipment for sale @ https://drive.google.com/drive/folders/1vngfmphmjcgsfhyagua3mj wda v2mft?usp=sharing (C12)

Spartan skid-mounted jetter, 14gpm @ 3,000psi. Giant LP400 water pump, Lombardini 4-cylinder diesel engine, 1,925 hours. Approximately 175-gallon water tank. Complete unit weighs approximately 2,000 lbs. without water. Will fit in most full-size pickup trucks or vans. In working condition. For more info or questions, and pricing, call 423-340-1650. (C12)

1993 IH 4600 with a SRECO 1,500-gallon jet unit 65gpm @ 200psi. Only 5,500 miles. (Stock# 1585V) (888) VAC-UNIT (822-8648) www.vsirentalsilc.com (CBM)

LOCATORS

Used RIDGID NaviTrack, Gen-Eye Model 100 and Goldak Model 4400. The Cable Center 800-257-7209. (CBM)

PIPELINE REHABILITATION

Quik-Shot Lining System, great condition only 1 1/2 years old. Quik-Shot gun, roller, boiler, heads for 4" and 6". Miscellaneous tools, some material. \$16,500. Call 847-590-9200, Chicago IL (C12)

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OVERSTOCK SALE on Picote DC1000E epoxy for Picote lining system. Selling 25% below manufacture rate. Must go!

267-249-3774. PA



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C03

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PUMPS

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

RENTAL EQUIPMENT

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

SEPTIC TRUCKS

2003 International 4400, 2,200-2,500 gal-Ion tank, 7 years old, 150+ feet of hose. \$37,500. naomimunson@ymail.com; 815-252-8737 (C12)

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TOOLS

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

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

TV INSPECTION



CUES pipe inspection unit with 16' box, 2004 Ford E450 with 88,000 miles. 7.3 diesel, new tires, roof/dash heat & a/c, Honda generator. 2018 WinCan software with all hardware updated to 2018 NASCO specs. 1,000 ft. reel gold cable, steerable OZ2 Pipe Ranger with lift, lights and spacers. Second camera with two track crawlers, full toolbox, winch lift, pike poles, etc. Numerous new parts. motors and cables included. Site ready, not picked apart!\$80,000 CDN

204-688-5220, Manitoba c₁₂



CUES truck w/Summit System, LAMP 2, 0Z2 with built-in sonde, and Ultra Shorty 21. All purchased new in Dec 2015. System is mounted in a 2004 Chevy 3500 DRW with 12' body and full CUES Evolution style interior. Everything runs great. \$115,000 OBO

Call Tom 619-797-7371, CA CBM

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TV INSPECTION



CUES CCTV-Grout-Laser camera truck on 2016 Dodge Ram 5500 Cummins diesel chassis. 16' cargo box. 10,000-watt quiet diesel Onan generator, 2 P&T LED cameras, transporter, rearview camera, 1,000' cable, grout system and chemical Cat pumping system. GraniteNet software. Laser profiler and measurement system. Purchased NEW 10/2016. 23,518 miles and 1,145 generator hours.\$275,000

863-984-8727, FL dkelecy@groundws.com C12

Aries CCTV Inspection Truck: 2002 Ford E350, 5.4 Triton V8, 59,484 miles. Aries PCU, Dell operating system. New Onan commercial 7,000-watt generator. Pipe Tech pipeline inspection software, camera and transporter negotiable. Call for more information and more pictures. \$15,500. Mark 708-475-7116, IL (CBM)

CUES CCTV Inspection Truck: 2000 Freightliner MT45 walk-in, Cummins 5.9, 71,086 miles. CUES PCU, Dell operating system, truck-mounted CUES grouting system. Onan 10.0 GenSet diesel generator. Software, camera and transporter negotiable. Call for more information and more pictures. \$19,500. Mark 708-475-7116, IL (CBM)

GREAT START-UP TRUCK! 2002 Ford E450 UEMSI TV inspection truck. 16' box, V10 gas engine, 123K miles. Includes Dell PC with Windows operating system, Reel and some cable, power winch, two monitors. Studio has heat and a/c. \$5,000. Generator, software, camera and transporter not included at this price. Mark 708-475-7116, IL (CBM)

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Used SeeSnake Camera Systems in all sizes; Used General Wire Spring Camera Systems in all sizes; Used machines in all sizes. We want your trade! The Cable Center: 800-257-7209. (CBM)

Used and rebuilt camera kits in stock: RIDGID Mini Compact, Mini Color, Standard Self-Leveling, General Gen-Eye I, II and III, Aries Seeker, and SRECO kits. The Cable Center: 800-257-7209. (CBM)

USED Envirosight ROWER Sewer Inspection Crawler: Overhauled with new parts and ready to run. Includes automatic cable reel, pan/tilt/zoom camera, steerable 6-wheel-drive tractor with various wheel sets, controls, and accessories. \$20,000. Call 973-252-6700. (CBM)

IRIS crawler camera pipeline inspection system – Demo unit. Available for demos, purchase or rentals. **(888) VAC-UNIT (822-8648) www.vsirentalslic.com** (PBM)

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Looking for a used CUES grout truck with a 5-hose system and 60-gallon tanks. 2000 model year or newer. Call Joe or George @ 800-565-5570 (C12)

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

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WATERBLASTING



For Sale: Manufacturers DEMO Unit, less than 100 hrs. of operation. 2016 WOMA Model ET 800 hot/cold water high-pressure jetting unit, delivering 11,600 psi @ 5.5 gpm, pressure is fully adjustable and unit can be operated in either hot or cold water mode with water temperature fully adjustable up to 208 F. Unit is skid mounted and includes sound-attenuating cover, high-pressure hose 50 ft., jetting gun and Orbimaster nozzle. Asking price: \$70,000 – any reasonable offer will be entertained.

Contact Bob 856-245-9387, WA Robert.Carvajales@karcherna.com



2011 NLB Model 305 water blaster, 305hp Caterpillar engine. 2,135 hours with 18 hours since NLB rebuild. 10,000psi at 44ppm with conversion kit to go to 20,000psi at 23gpm. Large assortment of new nozzles and hoses — 95% of them never used. Large tank cleaner (never used) and full turtle protective suit and lapping table included. No work in my area when only have one machine. All invoices available. Absolute cherry unit. Over \$155,000 invested. MUST SELL! Sacrifice for \$90,000 OBO. Photos available. Call for more pics of hoses and accessories. Will ship anywhere.

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