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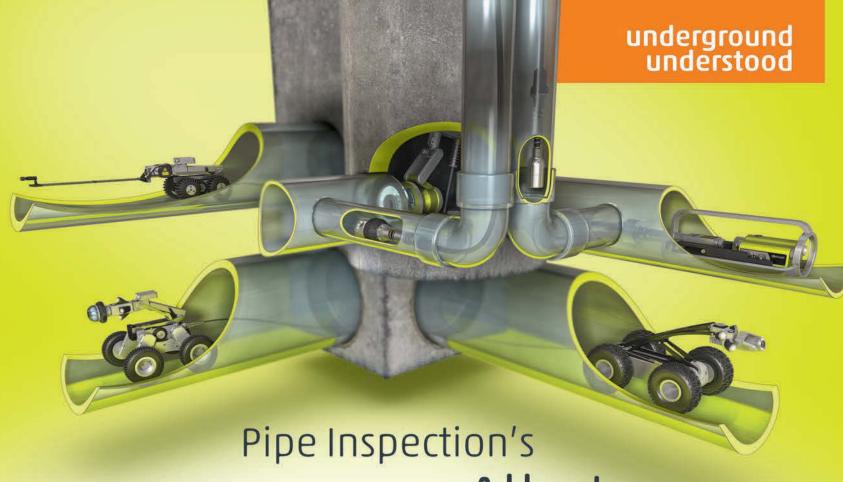
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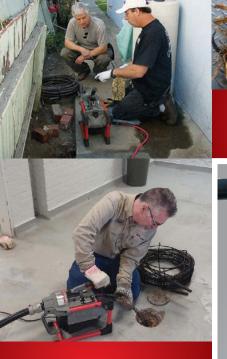
Snowbridge Inc. owners Chris (left) and Bill Tatro take a break for a photo on a job site. Snowbridge, located west of Denver in Colorado's ski country, has based its success on preventive maintenance and providing a wide range of services to stay busy year-round. (Photo by Carl Scofield)

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Covered by US Patent Nos. 7,343,937; 7,448,413; 7,588,055; and 7,753,081

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# Luke Laggis editor@cleaner.com

# No Single Formula

Success comes in many forms, and there are many paths that can lead you to it

By Luke Laggis

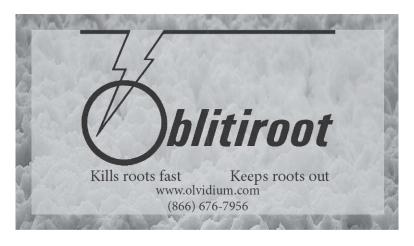
here's no single formula for success in this industry. In fact, 10 contractors may very well give you 10 different definitions of success. One of the great things about this industry, however, is the opportunity it provides anyone who is willing to work hard and treat customers fairly.

For Snowbridge Inc., high up in the snowy mountains of Colorado ski country, success has meant being very proactive about procuring business. The company, profiled this month, has worked hard to establish preventive maintenance contracts, and has expanded its menu of services to be able to handle just about any call.

Chris Tatro, vice president and co-owner of the firm, says preventive maintenance is the company's bread and butter. Snowbridge has been upselling maintenance contracts to its commercial customer base since the company was founded in 1976

Both of these companies have chosen diversification over specialization, and both have found success with that approach. It may not be the best approach for your business, but there are certainly lessons to be learned from their stories regardless of the direction you take.

The reasons are threefold: Snowbridge's commercial customer base includes a lot of seasonal businesses that stand to lose big if a clogged drain shuts them down peak season; they help the company maintain steady cash flow; and they position Snowbridge as a preferred contractor when emergencies arise.



Selling customers on the preventive-maintenance concept has never been difficult, Tatro says. And it's particularly easy to convince customers about the merits of preemptive action after they endure a Friday night shutdown.

The company provides many services aside from drain cleaning: septic tank pumping; septic system installations, repairs and inspections; grease trap cleaning; and trenchless pipe repair.

Snowbridge doesn't have an abundance of any one kind of work, so the company offers a lot of different services to stay busy year-round. Offering diverse services provides other benefits, too. First of all, customers prefer a contractor that offers one-stop shopping because they don't have to call multiple companies to get work done. Second, it gives the company better control over scheduling because crews don't have to wait on other contractors. And third, it creates independent revenue streams that can help offset slow times in other service segments and minimize the need for subcontractors.

Diversification has also been a big key to success for Pat Brown at Roto-Rooter of Sioux City, Iowa, the other company profiled in this month's issue. When Brown bought his franchise in 2001, it was strictly a drain cleaning outfit.

For Brown, diversification wasn't an option, it was a necessity. He quickly tired of sending work to other contractors and knew he needed to diversify in order keep that business in-house.

Today, the business serves three states, providing underground work on water, sewer and septic systems, septic installation, drain cleaning, jetting, CCTV inspections and general plumbing. When hydroexcavation gained popularity, Brown invested in a hydroexcavator from Vac-Con and jumped into the market. Combined with the other services, it has provided a comfortable niche in the territory.

One of the things Brown has done differently is marketing. While some companies rely on referrals or truck graphics to get their name out, he budgets around \$50,000 each year for his promotional efforts, primarily television advertising.

Both of these companies have chosen diversification over specialization, and both have found success with that approach. It may not be the best approach for your business, but there are certainly lessons to be learned from their stories regardless of the direction you take.

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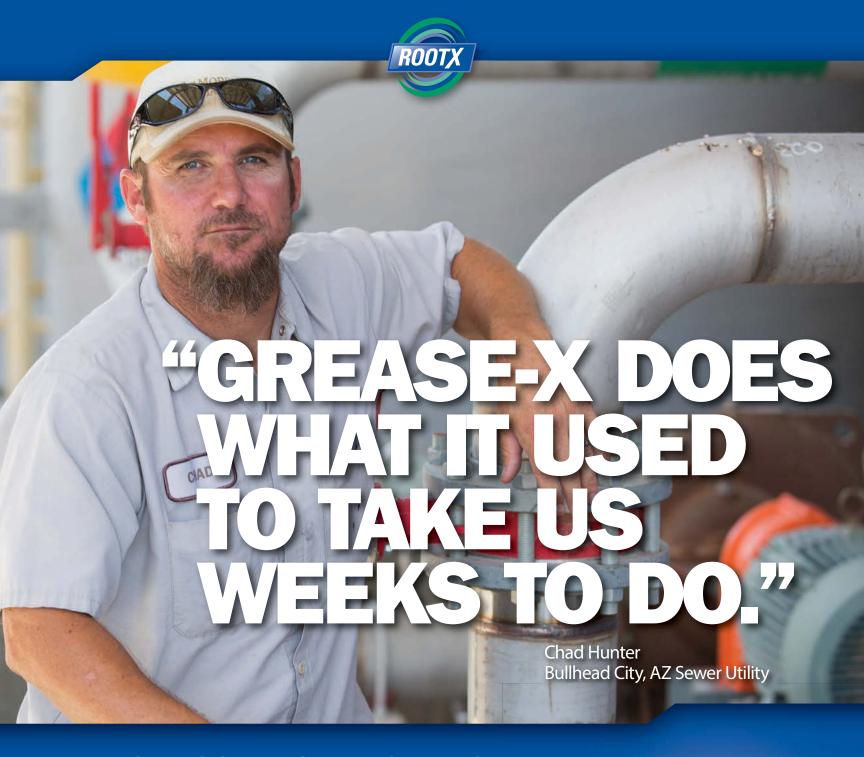
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# **High-Load Crashes on the Rise**

Unfortunately, bridge strikes are not uncommon. For instance, one railroad overpass in North Carolina was hit 13 times in 13 months — once a month! The good news? Using proper GPS systems can prevent these costly and sometimes deadly — crashes. Learn about new standards for commercial-driver navigation systems, and see how simple updates can prevent high-load accidents. >> www.cleaner.com/featured

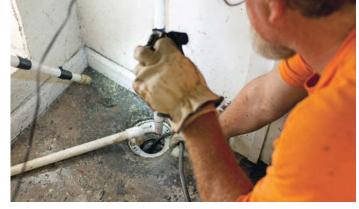


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# **Top Truck Care Tips**

You finally made the leap and invested in your dream pickup truck. Your service vehicle. Your mobile office. It's much more than just a pickup. It serves

as your day-to-day workhorse, taking you to meetings with potential clients and jobs where other prospective customers see it. You don't get a second first impression, so keep these suggestions in mind to maintain its pristine appearance and preserve what might be your greatest source of income. >> www.cleaner.com/featured



**OVERHEARD ONLINE** 

**11** Diversification can promote repeat business — you'll be a one-stop shop — and word-of-mouth referrals. ""

> Are You a One-Trick Pony? >> www.cleaner.com/featured

### WHAT'S YOUR EXCUSE?

# Sick of "Sickness"

A swarm of bees? Christmas shopping? These are just a few of the bizarre excuses employees use when calling in "sick." Find out what a CareerBuilder survey says are the top five craziest excuses employers have heard from employees. We want to know: What's the strangest excuse you've

either used or heard from an employee? >> www.cleaner.com/featured

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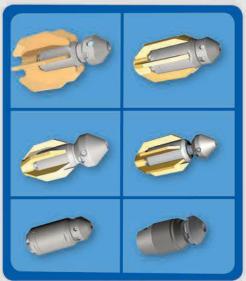
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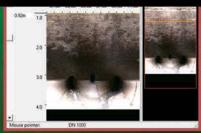
Other manhole inspection methods are slow, clumsy, and unsafe compared to PANORAMO® SI. With its unique ability to capture every inch of the manhole from multiple angles - you will never miss an observation.



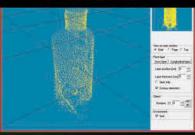
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BY KEN WYSOCKY

# **SLOPE-SIDE** SERV

PHOTOGRAPHY BY CARL SCOFIELD

### SNOWBRIDGE TAKES A PROACTIVE APPROACH TO KEEPING ITS CUSTOMERS' LINES CLEAR IN COLORADO'S SKI COUNTRY

xpensive disruptive emergency calls for clogged drains take their toll on customers and drain cleaners, too. That's why Snowbridge Inc., a welldiversified drain cleaning business in Breckenridge, Colo., emphasizes preventive maintenance contracts for commercial customers.

"We concentrate on preventive maintenance - it's our bread and butter," says Chris Tatro, vicepresident and co-owner of the firm along with his brother, Bill, who also serves as company president. "We clean customers' lines anywhere from once a month to once a year."

Snowbridge has been up-selling maintenance contracts to customers ever since Chris and Bill's father, Bill Tatro Jr., and mother, Cheryl, founded the company in 1976. The reasons are threefold: Snowbridge's commercial customer base includes a lot of upscale hotels, ski resorts and restaurants that stand to lose big financially if a clogged drain shuts down their business on a weekend during peak season; they help the company maintain steady cash flow; and they position Snowbridge as a preferred contractor when emergency work does

"But we rarely receive emergency calls," Chris explains. "We make sure we do a thorough job every time we're on a job site."

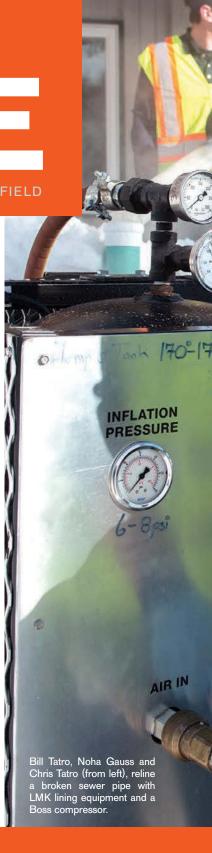
Selling customers on the preventive maintenance concept has never been difficult, he says. And it's particularly easy to convince customers about the merits of preemptive action after they endure a Friday night shutdown, for example.

"A backup on, say, a Friday night is a major hit to a restaurant or resort's bottom line." Bill notes. "Most businesses around here are seasonal ... ski resorts and hotels have about 20 weekends a year from November through April to make a good chunk of their annual revenue. So every time we get an emergency call from a new customer, we fix their problem, then try to sell them on a maintenance contract. They usually see the value in it."

Preventive maintenance also benefits Snowbridge by minimizing emergency calls, which makes it easier to control job scheduling. "It's a lot easier to go out at 9 a.m. on Tuesday to clean a line than on a Saturday night," Bill points out. "Customers can plan their day around it, too."

### **DIVERSITY SPELLS SUCCESS**

Snowbridge provides many services aside from drain cleaning: septic tank pumping; septic system installations, repairs and inspections; grease trap cleaning; and trenchless pipe repair. Drain cleaning and trenchless pipe repairs account





for about 70 percent of the company's annual gross revenue; septic and grease trap pumping account for the remaining 30 percent.

"Most businesses around here are seasonal ... ski resorts and hotels have about 20 weekends a year from November through April to make a good chunk of their annual revenue. So every time we get an emergency call from a new customer, we fix their problem, then try to sell them on a maintenance contract. They usually see the value in it." Bill Tatro

To understand why Snowbridge is so diversified, simply consider the company's location in Breckenridge, a ski-resort community nestled in the Rocky Mountains, about 80 miles west of Denver. Breckenridge is a remote

community with a small year-round population that swells when tourists arrive during the skiing season. As a result, Snowbridge must go farther afield for business, catering to customers as far as 75 miles outside of Breckenridge, and offer them a multitude of services to sustain business volume and avoid the bane of contractors: expensive equipment that sits idle.

"We don't have a lot of any one kind of work to do, so to stay busy yearround, we have to offer a lot of different services," Bill explains. "We couldn't survive just pumping septic tanks or doing inspections. Sometimes it feels like we do way too many things, and other times it feels like we don't do enough."

Offering diverse services provides other benefits, too, Bill says. First of



Bill Tatro and Noha Gauss dig out and inspect an old septic system on a bank-owned property.

all, customers prefer a contractor that offers one-stop shopping because they don't have to call multiple companies to get work done. Second, it gives the company better control over scheduling because crews don't have to wait for, say, a tardy excavation subcontractor to arrive for a septic system installation. And third, it creates independent revenue streams that can help offset slow times in other service segments and minimize the need for subcontractors.

"We like to be the only company a customer needs to call," Bill says. "What starts off as a drainline problem might turn out to be a broken sewer pipe, which we can fix for the customer and keep that revenue in-house. ... Some of our best jobs come from service calls. Many times, service diversity

CONTINUED >>

# WEATHER, ALTITUDE CREATE DIFFICULT CONDITIONS

Every drain cleaner faces obstacles of one kind or another on a daily basis. But employees at Snowbridge Inc., based in Breckenridge, Colorado, encounter some unusually challenging situations based on the area's topography and geography.

Take the brutally cold winters, for instance. Breckenridge and surrounding service areas sit an average of 9,500 to 10,000 feet above sea level, and temperatures often dip to 10 or 20 degrees below zero. That creates steady work thawing frozen pipelines in winter. Toughest job ever? Clearing out about 1,200 feet of a sanitation district's frozen 4-inch force main that runs between a treatment plant and a lift station. That job took about four days, doing 400- and 500-foot runs with a water jetter mounted inside a heated and insulated jetter truck built by US Jetting.

Frequent snowfalls also make winter driving a risky proposition, especially in high mountain passes. But environmentally, the hardest thing to deal with is the cold weather, says company president and co-owner Bill Tatro. "All our equipment is designed to suck water into it or shoot water out of it, so when hoses freeze, it makes things difficult," he says.

The high altitude creates operational problems, too, because the thin air robs power from truck engines, pumps and the like. "In general, everything we use has to be a little bit bigger and possess a little bit more horsepower than what you'd run at lower elevations," he says, noting that Snowbridge's vacuum trucks are equipped with 400 cfm pumps. "Diesel engines must be turbocharged or they don't work well."

A vacuum-truck blower that pulls 27 inches Hg at sea level pulls only about 16 or 17 inches at high elevations, and a traditional vane pump generates about 30 to 40 percent less vacuum power, explains Chris Tatro, vice-president and co-owner. That makes some pumping operations pretty interesting.

"You have to keep in mind that sometimes we're up at 12,000 feet, pumping grease traps and septic systems at resorts, as well as pumping out outhouses for ski resorts and the U.S. Forest Service," he says. "At times, we may have to use 90 feet of hose, which makes it even tougher. Or a tank we're pumping out might be located 30 or 40 feet below the truck."

To counteract the reduction in vacuum power created by longer, uphill hose runs, crews use a pressure-lift device called the Power Booster, made by Pressure Lift Corp. Typically placed between the first and second sections of hose, it acts like an air pump, generally adding supplemental vacuum power of about 20 cfm at 90 psi, Chris says.

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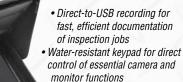


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#### **EQUIPMENT DRIVES PRODUCTIVITY**

Providing a variety of services requires an array of equipment. On the drain-cleaning side of the business, Snowbridge owns two US Jetting 4025 water jetters (4,000 psi at 25 gpm). The older of the

two is truck-mounted and the other is enclosed inside an insulated, heated 14-foot box body, made by Supreme Corp. and mounted on a 2007 Sterling Acterra truck chassis. The truck also carries a 600-gallon water tank, and an onboard heater powered by the truck's diesel engine keeps the hoses thawed and ready to work in Colorado's brutal winters.

"We don't have a lot of any one kind of work to do, so to stay busy year-round, we have to offer a lot of different services. We couldn't survive just pumping septic tanks or doing inspections."

Bill Tatro

The company also owns a self-fabricated trailer jetter, made from a Harben Inc. pump (4,000 psi at 8 gpm) and paired with a 180-gallon water tank. "We use it for general drain cleaning," Bill notes. "It offers us more versatility because it can be towed behind any of our general vehicles – it doesn't require a dedicated vehicle." For effective jetting, the Tatros prefer Warthog rotating nozzles made by StoneAge Inc.

In addition, Snowbridge owns a pipe relining system made by LMK Technologies; a 40-ton pipe bursting machine made by Pipe Genie Manufacturing Inc.; a Pipe Patch line repair system made by Source 1 Environmental; a propane-powered Brute cart jetter (4,000 psi at 6 1/2 gpm) manufactured by JETTERS NORTHWEST, a division of Seattle Pump & Equipment Co.; a Spartan Tool 717 electric mini-jetter; and a lightweight hand-held Blue Clean jetter made by A.R. North America Inc. (1,900 psi at 1.9 gpm).

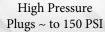
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Derek Prust inspects a sink drain.

"The hand-held jetter is great because it weighs only 42 pounds, so we can carry it with one hand and carry tools and a bucket in the other hand," Chris explains. "We use it a lot in hotels where we can't park close to a building, or when we need to be out by 8 a.m. ... It's also nice because we don't have any hoses strung throughout a busy building. We do a lot of sink lines with it."

"We got the line open enough so it would drain. Then we did confined-space entry into a manhole on the downstream end of the mainline and jetted out the gravel. We must've pulled out 20 or 25 5-gallon buckets filled with gravel."

Bill Tatro

On the septic side of the business, the company owns a 1992 Mack truck with a 3,000-gallon steel tank made by Cusco Fabricators Inc. (a Wastequip company) and equipped with a 400 cfm Masport pump, a full-opening rear hydraulic door and a vibrator unit; and a 2000 International 4900, equipped with a 2,000-gallon steel tank and a 400 cfm pump made by Jurop s.p.a. Tatro says that owning one smaller truck was a necessity because many remote customers are accessible only via narrow roads and entry points.

#### **READY FOR CHALLENGES**

While preventive maintenance is a staple service, Chris says his crews

thrive on unusually challenging jobs, like the time Snowbridge employees discovered about 300 feet of a hotel's sewer mainline clogged by 1-inch gravel, courtesy of a construction error.

"They brought the hotel online and quickly found one of their mechanical rooms filled with water," Bill recalls. "We got the line open enough so it would drain. Then we did confined-space entry into a manhole on the downstream end of the mainline and jetted out the gravel. We must've pulled out 20 or 25 5-gallon buckets filled with gravel."

Adds Chris: "That's the kind of drain-cleaning work we really like to do, the sort of jobs people give up on or no one thinks you can do, or that no one else is even willing to try. We have a lot of big equipment

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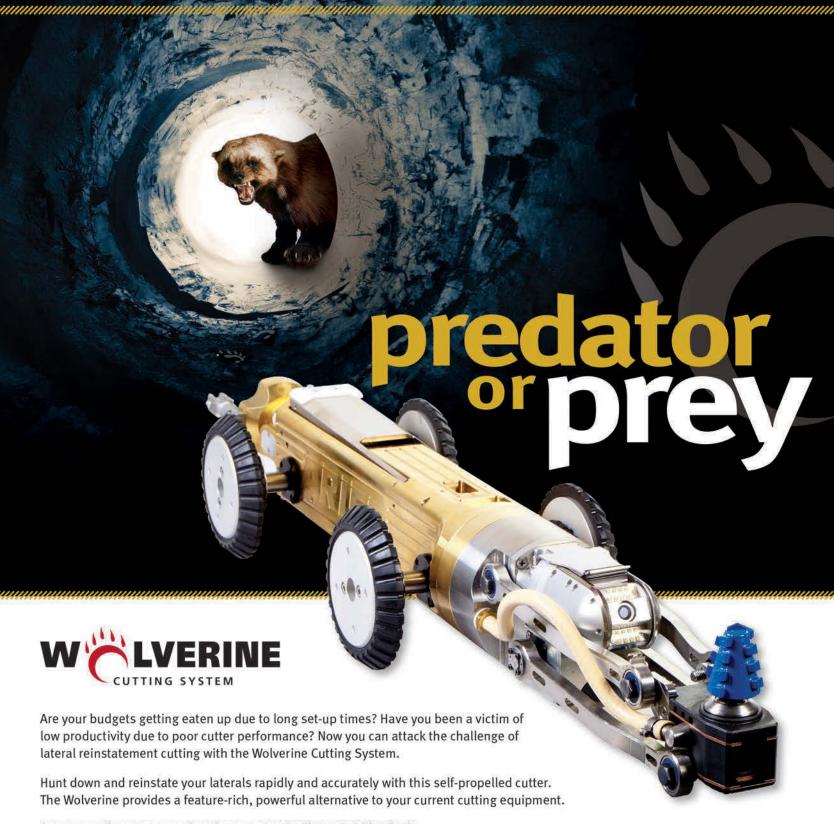
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# Natural Advantage

Consider this burgeoning domestic fuel option as you weigh the decision to upgrade parts of your fleet

By Jim Kneiszel

■ he next time you buy a dump truck or medium-duty flatbed or semi tractor-trailer, will you be sticking with tried and true diesel engine technology or looking toward an emerging natural gas-powered rig? A lot of factors should go into your choice of a familiar diesel system - which comes with the drawbacks of more pain at the pump and high-maintenance emissions components – or to become an early adopter of a technology using a now-abundant North American fuel source.

A significant number of small-business fleet owners are sitting on a parking lot of aging on-the-road vehicles. Conservative company owners who run work trucks hard and use them every day may have put off new truck purchases after the 2007 and 2010 changes to emissions systems. And they may have stayed out of showrooms as the economy has started its recovery.

But now, many of those work trucks are at or past their end-of-life date and need to be replaced. And as contractor companies are getting busier with infrastructure work and the economic upswing, the last thing they want is to have crews idled by breakdowns involving older trucks.

### **NO FOREIGN OIL**

Many American business owners like the idea of using domestic energy supplies to power their fleets and reduce the nation's reliance on foreign oil. And if those same business owners could save on fuel bills while eliminating the problematic maintenance of emissions equipment on their diesel trucks, they'll start to take notice of natural gas.

Oklahoma-based Seaboard Foods and its subsidiary, High Plains Bioenergy, just invested in a natural gas fleet of Kenworth trucks to transport its B99 biodiesel product and live hogs to its food processing plant. The company purchased two Kenworth T660 trucks with Cummins Westport ISX12 G heavy-duty natural gas engines for the biodiesel transport and 43 T800 short hood day cabs using the same powerplant for hauling animals.

"We see adding CNG-powered Kenworth trucks as a great opportunity to further our commitment to sustainability and environmental stewardship," says Terry Holton, president and CEO of Seaboard Foods. "The availability of a 12-liter natural gas engine really makes it possible for our operation to run CNG-powered trucks because it provides the right amount of power and torque for the loads our trucks carry."

According to the U.S. Department of Energy, 112,000 vehicles are powered by natural gas in this country, and 14.8 million worldwide. According to the department's Alternative Fuels Data Center, CNG is best for highmileage vehicles that operate in a limited territory. The LNG options are better for vehicles that have longer hauls, according to the department.

In the LNG technology, gas is cooled to a cryogenic state, at -260 degrees F, changing it from a gas to a liquid. The fuel is kept in liquid state in big, dual-walled stainless steel tanks until it's conveyed to the engine for burning. In CNG technology, natural gas is kept at 3,500 psi in storage tanks until it's fed into the engine. Storing either fuel on the truck requires expensive tankage.

There is also, however, the advantage of less maintenance.

"You don't have the diesel emissions system to maintain, and cleaning the filters and replacement. When you tell [truck buyers] that, their eyes get huge," Holton says. "You've got their attention when you start talking about diesel emissions."

Here are a few questions to help you determine if your business is a good candidate for using a natural gas-fueled truck:

"You don't have the diesel emissions system to maintain, and cleaning the filters and replacement. When you tell [truck buyers] that, their eyes get huge. You've got their attention when you start talking about diesel emissions."

Terry Holton

### Do you have established fueling stations in your area?

The infrastructure of fast-fill natural gas fueling stations necessary for these trucks is in its infancy, but there are areas of the country where it's better established. Check around your shop location and the areas where you drive most to see if you'd have access to enough fuel stations to make the conversion practical. Keep in mind that if natural gas trucks grow in popularity, fueling stations should proliferate as well. So even if natural gas doesn't seem to be the best option for you today, it might make more sense down the road.

### Do you put on enough miles to maximize fuel savings?

With diesel prices hovering around \$4 per gallon, you could expect to save about 25 percent or more on fuel costs going with natural gas. While 80 percent of the diesel and natural gas engine componentry is identical, the fuel storage and delivery systems in natural gas trucks drive up the cost of the trucks. Douglas was hesitant to give examples because every truck specification will be different, but you'll have to consider whether you'll be dollars ahead going with the more expensive new technology offset by lower fuel costs. Another thing to consider is whether you think the price of diesel fuel will continue to rise and if natural gas will continue to be a cheaper alternative.

most part, is something that wasn't fully realized until the last few years. The magnitude is significant and the price associated with it is very good, too. It's a cheap and abundant fuel source that works well in heavy trucks." c

### Will your truck have enough room for the expanded tankage?

Fuel tankage takes up significantly more space on natural gas-powered rigs. According to Douglas, tanks for LNG engines take up twice the amount of space as diesel fuel tanks, and tanks for CNG engines take up four times as much space as traditional diesel tanks. Like diesel trucks, these tanks can be mounted on the frame rail, but they can also be installed behind the cab. So there is some flexibility on installation depending on how you use your trucks.

#### Does your state offer incentives for conversion?

The federal government at one time offered attractive incentives for truck buyers to switch to natural gas, but that went away a few years ago, according to Douglas. But he says a number of states, including California, Oklahoma, Pennsylvania and Texas, continue to offer grants and rebates for upgrading to natural gas trucks. To search the incentives offered in each state, check out the U.S. Department of Energy website: www.afdc.energy.gov.

### Are you more comfortable with the old reliable diesel?

Many truck buyers will want to stick with the technology they know best, and that's OK. Douglas says manufacturers continue to improve diesel technology to make the engines more efficient and reduce pollution. "Diesel is not going anywhere," he says. "But for certain segments of our industry and applications, natural gas may be an alternative that people will be considering."

Another option is hybrid technology, combining a diesel engine and electric motor to save fuel. This option makes sense for trucks working in a lot of stop-and-go traffic; for example, Coca-Cola uses 700 medium-duty delivery trucks using hybrid Kenworth engines. Some companies weigh the potential benefits of being early adopters to technology and make the jump.

#### **NATURAL GAS OUTLOOK**

Douglas says the impact of natural gas on heavyduty trucks is going to be profound.

"Natural gas today is such a huge game changer for North America," he says. "This resource, for the



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# Sponge it Up

Unusual industrial cleaning method enables Wisconsin contractor to dive into new markets and boost his eco-credibility

By Ken Wysocky

hen crews at Lakeside Painting Inc. head for an industrial plant to do tough paint-preparation cleaning, they go armed with bags of sponge pellets. Sounds like a joke waiting for a punch line, right?

Even Joe Pangburn, the president and owner of the company based in East Troy in southeastern Wisconsin, admits he was a bit doubtful at first when he heard about this unusual cleaning system made by Sponge-Jet Inc. But he was totally sold once he saw the system make short work of a particularly grimy cleaning project inside a Milwaukee factory.

"Sure, I was skeptical," admits Pangburn, who bought his first Sponge-Jet machine four or five years ago. He now owns two 85 L Feed Unit blast pots and one ME/MR 30 separator/recycling unit. "I thought it would be more expensive than other media systems, too.

"But I was also very intrigued," he adds. "Sponge-Jet came in and did a demo at the plant and it worked exactly like the company officials said it would."

Here's how it works: A Sponge-Jet blasting pot, powered by an independent air compressor (up to 300 cfm at 100 psi), blasts a dirty surface with a stream of the tiny synthetic sponge pellets impregnated with abrasive bits of aluminum oxide grit. Upon impact, the pellets flatten and expose the abrasive. When they rebound off the surface, the pellets expand and create a vacuum that traps what would otherwise become airborne particles.

Before Pangburn heard about Sponge-Jet, he used power washers when possible, as well as dry ice, corncob, sand and walnut shell pellets. His company primarily cleans factory and plant ceilings, as well as the structural supports that hold them, before repainting them.

"Most of these ceilings are very dirty from the processes used, like heattreating, or from cutting fluids in machine shops, as well as from normal dust and dirt," he explains. "If these surfaces are even a little bit oily, that impedes paint from adhering, so we have to get it off.

"Often enough, we can't use water because it gets into everything from outlets and electric motors to bus bars," he continues. "And plants can't afford to completely shut down just because a small portion of a facility needs to be painted."

Moreover, water filled with contaminants must be collected and properly disposed of, which can be expensive and time-consuming. Other dry media clean effectively, but create large amounts of dust, which is potentially explosive, not to mention that it gets inside everything. The sponge pellets reduce the amount of dust and boost safety for both Lakeside crews and employees working at the facility they're cleaning, Pangburn notes.

In addition, other types of cleaning media typically can't be reused. And if the paint is lead-based, the media and paint chips and other debris must be disposed of properly, and contractors typically pay by the pound to do so.

EQUIPMENT: FFATURES:

OWNER: Lakeside Painting Inc., East Troy, Wisconsin Sponge-media blasters made by Sponge-Jet Inc. FUNCTION: Industrial cleaning and/or removal for paint preparation

Blast pressure up to 300 cfm at 100 psi; feed rate of up to 10 pounds per minute

COST: About \$25,000 for the feed units and about \$18,000 for the recycling unit



ABOVE: Roger Goodell, one of the job foremen, fills the blast pot of his Sponge-Jet machine with recycled sponge media.

BELOW: Goodell uses sponge media to remove dirt and grime from an exposed structural ceiling to prepare it for painting.



That gets expensive, Pangburn says.

Sponge pellets, on the other hand, can be recycled over and over; a recycler unit made by Sponge-Jet utilizes a motor that vibrates a series of screens, with progressively smaller openings to separate large pieces of debris, sponge pellets, and dust and other fine materials. It also cleans the sponge pellets.

Job requirements determine how many times the pellets can be recycled. If an operator uses very abrasive, heavier-grit pellets, a skilled operator might be able to reuse pellets three or four times; if they use less-abrasive, finer-grit pellets, then an operator might get seven or eight recycles, he says.

"The heavier grits break down faster," he explains. "Blasting at the correct air pressure combined with the proper feed rate is critical to minimizing media breakdown"

Eventually, the sponge pellets break down and require disposal. But Pangburn points out that his crews will use dramatically less media than with other methods – an average of five to eight times less debris than sand-blasting, he estimates. Plus, the media is much lighter, which pays dividends when it comes to disposal fees.

Sponge-Jet makes almost two dozen different kinds of sponge-media abrasives designed to clean a variety of surfaces. On one end of the cleaning spectrum, Pangburn says his crews once used sponges impregnated with minuscule plastic beads to remove a powder-coated finish that was mistakenly applied to a machine in a chocolate-making plant. "They wanted the coating off the machine but didn't want the metal below it profiled, or abraded," Pangburn explains. "It worked perfectly ... blasted off the powder coating but left the steel very smooth."

Thanks to the Sponge-Jet units, Pangburn says he now takes on jobs he had to refuse years ago.

"These machines absolutely have helped us expand our customer base," he says. "We have a solution to a problem for which very few other guys have a solution ... the units allow us to clean surfaces that can otherwise be very problematic. Without them, we might be subbing out the blasting to someone else - or just turning away work. And nobody wants to do that." c

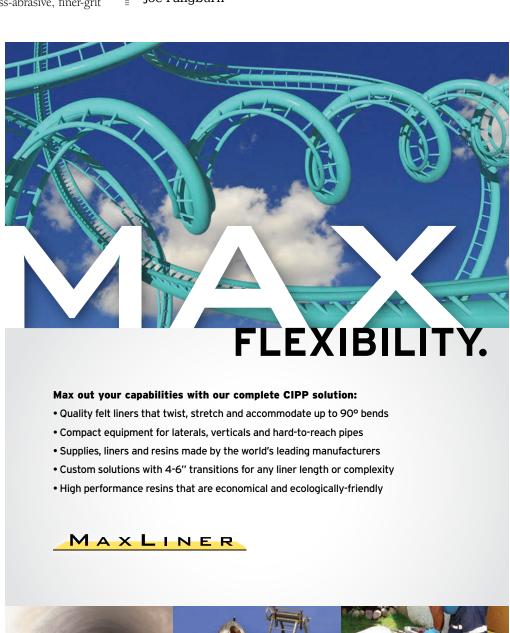
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"These machines absolutely have helped us expand our customer base. We have a solution to a problem for which very few other guys have a solution ... the units allow us to clean surfaces that can otherwise be very problematic."

Joe Pangburn

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at Brown had industry experience, but he'd never owned a business or even worked as a drain cleaner. He served as national sales representative for the Roto-Rooter Corporation in the 1990s, then spent two years with Vermeer before deciding it was time to buy his own Roto-Rooter franchise.

Brown graduated college in 1990 with a degree in mass communications, but quickly realized he preferred plumbing to broadcasting. He went to work at the Roto-Rooter headquarters in Des Moines, Iowa, in 1995, and four years later moved on to Vermeer, where his responsibilities included training technicians how to use new industry technology.

In his travels, Brown had become acquainted with the owners of Roto-Rooter of Sioux City. When he was ready to make the transition, he picked up the phone and asked if they were interested in selling, and the conversation began.

That was in 2001. The franchise was pretty basic, offering primarily drain cleaning. Brown wasn't satisfied with the limited menu of services, and quickly tired of sending work to other contractors. He believed there was ample opportunity to expand services and grow the customer base.

"We would identify the problem and then tell the customer they needed to call somebody else," Brown says. "I thought that was foolish."

#### TRI-STATE CERTIFICATION

By the time 2014 rolled around, he had his underground contractor license (2004), his master plumber license (2009), and was licensed as a septic installer in three states.

"We would identify the problem and then tell the customer they needed to call somebody else. I thought that was foolish."

Pat Brown

Sioux City has some hard and fast regulations regarding wastewater infrastructure, and new technologies such as pipe bursting and relining are not permitted. The primarily clay and cast-iron pipe in older systems must be replaced with the same pipe. Newer neighborhoods with PVC lines rarely experience problems.

In Iowa, Brown does underground work, water, sewer and septic, as well as plumbing, drain cleaning, CCTV inspections and jetting. In Nebraska, he does underground work, septic installation, as well as CCTV inspections, jetting, drain cleaning and

plumbing. In South Dakota, the company does septic installation, drain cleaning, CCTV inspections and jetting, but no plumbing.

When hydroexcavation gained popularity, Brown invested in a hydroexcavator from Vac-Con and began serving the growing market. Combined with the other services, it has provided a comfortable niche in the territory.

The Roto-Rooter franchise had been in the neighborhood for over 60 years, and in order to convey his story and all the new services the business had to offer, Brown turned to television advertising. He appeared in or narrated many of the spots, which often featured technicians at work. Customers got the message, and they came to recognize the technicians – and sometimes Brown himself – when they showed up at their doors.

Brown says he budgets around \$50,000 each year for his promotional efforts.

#### **OPPORTUNITY ABOUNDS**

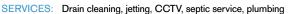
Finding qualified technicians who understand the job is a challenge for Brown. New hires train for two to eight weeks alongside a service manager.



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> OWNER: Pat Brown OWNED SINCE: 2001 ESTABLISHED: 1939



FMPLOYFFS: 10

CUSTOMER BASE: Residential, municipal, commercial

"There are three things I stress in hiring," he says. "The first two are that this requires hard work and long hours. The third is that I pay very well. When it comes to weekend and overnight work they tend to forget the first two things and why I hired them.

"We don't have a large population to pull from, and we have attrition." People who have been in the industry and have the knowledge are no longer with us. Back in the 1990s, I would talk to service technicians in my other job and say that they can control how much money can be made. Being on call is part of the whole thing - where the financial advantage can be. In our shop with a small force we try to have each tech take one weekend a month, which greatly enhances their take-home pay."

Technicians can park their service vans at their facility, or take them home, which is an added perk.

"There are three things I stress in hiring. The first two are that this requires hard work and long hours. The third is that I pay very well. When it comes to weekend and overnight work they tend to forget the first two things and why I hired them."

Pat Brown

#### **ESTABLISHED KNOWLEDGE BASE**

Service manager Paul Crow oversees industrial cleaning, vacuum pumping and all underground work.

"The smartest thing I did when I bought this franchise was keep Paul Crow on staff," Brown says. "When you buy an existing business, you can sell off equipment and buy new, you can hire new staff, bring others on board. Paul can fix anything. He can open any drain. Keeping him with all that knowledge was the main reason we survived as a company. You need someone who has seen it all. His knowledge, work ethic and customer service skills make him the gold standard and an inspiration to all other techs."

Crow has a long history and heritage with Roto-Rooter, from his greatgrandfather Harry "Tuck" Fisher who was a franchise owner in Burlington, Iowa, and then working for his grandfather Gerald Fisher in that Roto-Rooter franchise, and finally for his uncle Tom Fisher, who owned Roto-Rooter of Sioux City.

"Paul also designed and built our in-house 2009 Peterbilt pump truck, from chassis to finished product," Brown says. He became a licensed septic inspector for the state of Iowa in 2010 and became NASSCO PACP certified in 2013.

Kyle Streeter, cable service manager, uses a handheld locator to mark underground utilities outside a client's house.



Kyle Streeter, who oversees the drain technicians, and journeyman Joe Drake, both of whom have been with the company several years, are also key members of the staff.

#### **ONE-STOP SHOP**

Brown finds that customers – an even mix of residential and commercial/ industrial clients - appreciate and are more comfortable dealing with a single entity for multiple needs. Many times they are not sure whom to call to solve a problem, and often an initial call to solve a particular issue will lead to something else. If a mainline is plugged, they go to open it up. They may put the camera in to locate the problem and discover a repair or replacement is necessary.

A rural customer may call about a septic system with a tank that isn't

#### ONE OF THE GUYS

Pat Brown enjoys working in the field, and "speaking bluntly," he says it is much more interesting than sitting behind a desk directing others to do the job.

"I don't have 25 employees," he says. "I have 10, and many days I need additional manpower in one or the other part of the business. I may jump into the pump truck or jet truck, or into a hole to put a sewer line together. I have to be able to do all segments. We don't want to suffer for lack of manpower. The customer never knows the difference one way or the other who I am. In the economy today we have to deal with less as far as manpower goes.

"Actually jumping into my pump truck is one of the fun things. I can talk with the customer. Educate the customer. If there is a problem, I can identify it. Let them know about it. They laugh once they know I'm the owner. Some have seen me on our television ads."

Brown says the most satisfying aspect of operating his Roto-Rooter franchise is going to a residence, dealing with a customer who is upset and worried about the situation, and then getting everything back in good working order.

"It's like mowing the lawn, and when you are done you have this nicely groomed yard. Drain cleaning is not any different because you have this nasty gross material, but when you are done it is a clean, functioning plumbing fixture. The customer is happy. You see the customer at the grocery store, or at church, and they will say things are working well. That is very satisfying."

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draining, and then call again two weeks later with the same issue. Upon returning they may find the leachfield needs attention, which they can handle in-house.

"Customers learn the problem, then have to decide if they will fix it or live with it," Brown says.

"We are still striving. You have to move ahead, or you are dying. We always have to look for the next equipment that emerges.

We need to service our marketplace."

Pat Brown

A recent contract with Sioux City involved televising and inspecting storm drains running through the town and under Interstate 29 prior to scheduled repair work and resurfacing.

The CCTV equipment is an important asset. There is an extra charge to the customer, but service technicians only suggest it when it is obvious they need to show the customer what is actually going on. He says they use the cameras on about 25 percent of their jobs.

Cameras are maintained at the office, and when called for the technicians will check out the equipment for that specific job, which helps avoid accidental damage. Otherwise, service vans are fully stocked.

Crow heads a three-man crew that runs their jetters. They're in service every day, and like the cameras, are a vital part of the business.

"The bottom line is we want to offer everything from A to Z for our customers," Brown says.

#### **BELLWETHER BOOST**

Roto-Rooter of Sioux City hits the road with five Chevrolet 3/4-ton vans, a 2006 E-250 Ford and a 2008 Ford F-450 dually for plumbing/excavation. The 2,000 psi/80 gpm Vac-Con sits on a 2002 International 9400 chassis with a 12-yard debris body.

Cameras include a Pearpoint P494 and five RIDGID SeeSnake inspection cameras, all equipped with 512 Hz sondes for pipe locating. There are also two Radiodetection pipe locators, an RD7000 and RD4000.

When it's time to jet out a line, the company relies on a 2003 US Jetting 4018-300 trailer jetter mounted on a 2003 Isuzu NPR, and a 1998



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Pat Brown uses a truck-mounted jetter (US Jetting) to clear sludge and debris in a sewer line.

4,000 psi/18 gpm PipeHunter Boss mounted on a 1998 GMC W-4500. Additional equipment includes a Kubota U45R excavator and a 2004 Bobcat T190 skid-steer. along with Roto-Rooter machines and equipment from Vermeer for underground water lines.

The company has two lots in an industrial area of town, and their facility includes a 7,000-squarefoot garage. One section is heated to house equipment, and the other includes office space and an area to park service vans.

While the company has grown over the past 13 years, Brown believes there is always more to gain.

"We are still striving," he says. "You have to move ahead, or you are dying. We always have to look for the next equipment that emerges. We need to service our marketplace. And we have competitors, no question about that. Since 2001, we have attended the Pumper Show [Pumper & Cleaner Environmental Expo Internationall, which has

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# The Salary Pitfall

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

Before putting front-line workers on salary, make sure you're following the law

By Erik Gunn

t's not an uncommon belief: If you put your employees on salary, you won't have

Like a lot of seemingly simple solutions, it's wrong. That doesn't keep it from being widespread, however.

"Many employers, even sophisticated employers, make the mistake that simply paying people on a salaried basis exempts them from overtime," says Wisconsin labor and employment lawyer Sean Scullen.

There may be good reasons for switching someone from an hourly wage to an annual salary, but there are also serious pitfalls that could put your business at risk. So if you want to make the change just to save money, think again – and read on.

#### **EXEMPT, OR NOT?**

The real difference in how employees are categorized isn't between "hourly" and "salaried," says Scullen, the National Chair of the Labor & Employment Practice Group of the law firm of Quarles & Brady, headquartered in Milwaukee with offices in Florida, Arizona and Washington, D.C.

"Anyone can be paid on a salaried basis," Scullen says. "The real question is whether employees are exempt from overtime requirements under federal or state law."

The federal Fair Labor Standards Act requires employees to be paid 1 1/2 times their "regular rate" (generally determined by dividing all compensation earned by an employee in a work week by the total number of hours worked) for every additional hour they work in one week over 40 hours - in other words, time and a half.

To be exempt from that requirement, an employee must be paid on a salary of not less than \$455 per week. But that alone doesn't pass the test, Scullen points out. The FLSA also requires that an exempt employee's duties fall within one of a limited group of exemptions. The most common are the so-called "white collar" exemptions involving "executive," "administrative" or "professional" duties.

"They'll save money in the short term, but all it takes is an employee or two to complain to the Department of Labor," says Bruce Elliott, manager of compensation and benefits at the Society for Human Resources Management in Arlington, Va.

#### **COSTLY MISTAKE**

Suppose you classify a particular employee as salaried, and a federal administrative law judge rules your decision was wrong. Further, let's say the judge finds that your wrongly classified employee should have been paid for 100 hours of overtime work in the last year. You could owe the worker the equivalent of 150 times his or her regular rate.

But it doesn't stop there. You may be required to pay the employee's

attorney fees (as well as your own legal fees, of course). And the federal law also provides for an additional damage award of up to 100 percent of the unpaid wages - in this instance, another 150 times the employee's regular rate.

And don't think that because your business is very small it isn't governed by federal labor laws. Where the FLSA is concerned, very few businesses are immune, Scullen says.

"Anyone can be paid on a salaried basis. The real question is whether employees are exempt from overtime requirements under federal or state law."

Sean Scullen

It can get even worse. "There are robust timekeeping regulations around hourly paid employees," Elliott notes. Even if just one or two employees complain, that could trigger a full-blown audit of your entire operation by the labor department. If your timekeeping records aren't in order to show you've paid hourly employees appropriately, including overtime when it has been worked, you could face additional penalties.

That also doesn't take into account the cost of compiling the data you need to respond to an audit request. "And if the organization hasn't kept timekeeping records, the burden of proof is on the employer to prove that the employees didn't work overtime when they claim they have."

#### **EXCEPTIONS TO THE RULES**

It is possible to put workers on a salary, but still keep the records so that they earn and are paid overtime when their workweek exceeds 40 hours. Elliott sees little point in that sort of arrangement, however, especially considering that even for those employees, you'll need to keep accurate time records so that they're paid overtime when they qualify for it.

"It's easier to categorize them as hourly-paid so you can reconcile hours worked to compensation," Elliott says.

But it bears repeating: To be truly exempt and therefore not eligible for overtime pay, a salaried worker must have duties that fall within one of the legal exemptions. Those include responsibilities for managing workers, performing administrative work as the exemption defines it, or performing professional duties: work that requires specialized knowledge typically acquired in a prolonged course of study, such as accounting or engineering.

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#### **BONUSES AND COMMISSIONS**

Hourly or not, Elliott says bonuses and commissions can be a useful tool for motivating front-line workers, especially those whose jobs offer opportunities to sell an additional service or product to the customer.

Straight sales commissions can be easier to figure in this way, he points out. Annual profit-sharing or other forms of bonuses are another alternative.

One caution, however, Scullen warns: Employers who fail to take nondiscretionary bonuses or commissions into account when calculating overtime do so at their peril. While outside salespeople may be exempt from overtime requirements, other nonexempt employees who are paid commissions or nondiscretionary bonuses must have such payments included in their overtime calculation. That typically requires a difficult retroactive calculation, he says.

One way to avoid that recalculation on a year-end bonus is to pay the bonus as a percentage of the employee's total annual compensation (including overtime).

Elliott says the FLSA requires that when nondiscretionary bonuses for hourly workers are calculated in terms of annual gross pay, overtime hours must be included, not just the straight time wages over the year.

#### PREVENTING DISASTER

So how do you avoid problems from overtime violations, or any other violation of the Fair Labor Standards Act?

Scullen recommends a proactive strategy for employers: Conduct your own audit of wage-and-hour compliance to identify and correct potential concerns before a lawsuit is filed or the Department of Labor knocks on

A knowledgeable labor and employment lawyer can help you review your compensation plans and employee classifications and guide you in their proper implementation. At the same time, working with legal counsel can help ensure that your internal audit is protected from easy discovery by a plaintiff's attorney – because it will then be covered under the attorney-client or attorney work-product privileges, Scullen explains.

The U.S. Department of Labor has numerous fact sheets and guidelines in the FLSA requirements, including a series of online tests you can run through to get a quick assessment of whether a worker's circumstances or assignment qualifies that person as exempt under the federal law. You can find fact sheets at www.dol.gov/whd/fact-sheets-index.htm and one of those online tests at www.dol.gov/elaws/esa/flsa/scope/screen9.asp, along with links to other specialized tests.

And most of all, do your homework before trying to save money through a specious strategy.

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		MAN/DIST. OF PORTABLE JETTERS	CABLE MACHINES	DRUM/REEL CAPACITY RANGE	PIPE DIAMETER RANGE	PRESSURE RANGE	VOLUME RANGE
See ads pages 23, 49	ALLAN J. GOLEMAN GO. 5725 N Ravenswood Ave., Chicago, IL 60660 773-728-2400 • (f) 773-728-2499 www.allanjcoleman.com • info@allanjcoleman.com	<b>V</b>	V	25' - 200'	1 1/4" - 10" 3/4" - 12"	1350 - 4000 PSI	1.3 - 65 GPM
See ad page 53	AMAZING MACHINERY, LLC 2160 S Lee Hwy, Cleveland, OH 37311 800-504-7435 • 423-472-2527 • (f) 800-504-7436 www.amazingmachinery.com • sales@amazingmachinery.com			50' - 500' 25' - 150'	1" - 16" 1 1/2" - 12"	1200 - 4000 PSI	2.1 - 15 GPM
See ad page 85	AMERI GAN JETTER 6908 Pine Grove Rd., Knoxville, TN 37914 866-944-3569 • 423-472-2527 • (f) 423-472-2531 www.americanjetter.com • andy@americanjetter.com	V		50' - 500'	1 1/2" - 8"	2000 - 5000 PSI	4 - 10 GPM
See ad page 78	CAM SPRAY 520 Brooks Rd., Iowa Falls, IA 50126 800-648-5011 • 641-648-5011 • (f) 641-648-5013 www.camspray.com • sales@camspray.com			100' - 500'	2" - 24"	1500 - 5000 PSI	2 - 30 GPM
See ad page 73	GENTRAL OKLAHOMA WINNELSON 5037 NW 10th St., Oklahoma City, OK 73127 888-947-8761 • 405-947-8761 • (f) 405-947-1934 www.centralwinnelson.com • krjones@winnelson.com	V	V	Up to 325'	Up to 12"	Up to 3500 PSI	6 GPM
See ad page 83	CHEMPURE PRODUCTS CORP. PO Box 740, Bolivar, OH 44612 800-288-7873 • 330-874-4300 • (f) 330-874-4448 www.rootrat.net • lloyd@chempure.com			100' - 400'	2" - 12"		
See ad page 56	GOAST MANUFACTURING 3985 W 12th Ave., Eugene, OR 97402 800-541-7015 • 541-684-0743 • (f) 541-485-3617 www.coastmanufacturing.com • sales@coastmanufacturing.com		V	35' - 150'	1" - 10"		
See ad page 32	DRAIN GABLES DIRECT 6615 Maumee Western Rd., Maumee, OH 43537 800-421-4580 • 419-838-6090 • (f) 800-752-8254 www.draincables.com • sales@draincables.com			25' - 250'	3/4" - 10"	1500 - 3000 PSI	2 - 10 PSI
Quracable  Manufacturing Company  See ad page 63	DURAGABLE MANUFACTURING 300 Ashworth Rd, West Des Moines, IA 50265 800-247-4081 • (f) 515-223-4220 www.duracable.com • sales@duracable.com	V	V	Up to 250' Up to 150'	2" - 10" Up to 10"	Up to 3000 PSI	1.4 - 8 GPM
See ad page 57	SOLUTION SPRING STATES			100' - 300'	1" - 8"	1500 - 3000 PSI	1.7 - 4.7 GPM
<b>General</b> PIPE CLEANERS See ad page 2	GENERAL PIPE CLEANERS 1101 Thompson Ave., McKees Rocks, PA 15136 800-245-6200 • 412-771-6300 • (f) 412-771-2771 www.drainbrain.com • info@drainbrain.com	V	V	30' - 400' 25' - 150'	2" - 12" 1 1/4" - 10"	1500 - 3000 PSI	2 - 12 GPM
See ad page 61	GORLITZ SEWER & DRAIN, INC. 10132 Norwalk Blvd., Santa Fe Springs, CA 90670 877-446-7548 • 562-944-3060 • (f) 562-944-7630 www.gorlitz.com • sales@gorlitz.com	V	V	50' - 300' 35' - 150'	1 1/4" - 8" 1 1/4" - 8"	1500 - 3500 PSI	2.2 - 8 GPM

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		MAN/DIST OF PORTABLE JETTERS	MAN./DIST. OF CABLE MACHINES	DRUM/REEL CAPACITY RANGE	PIPE DIAMETER RANGE	PRESSURE RANGE	VOLUME RANGE
See ad page $\Pi$	JETTERS NORTHWEST 2222 15th Ave. W, Seattle, WA 98119 877-901-1936 • 206-283-5252 • (f) 206-284-8638 www.seattlepump.com • info@jettersnorthwest.com	<b>V</b>		50' - 600'	1 1/2" - 24"	1500 - 4500 PSI	1.3 - 23 GPM
See ad page 80	KEN-WAY CORPORATION 930 Roberts Rd., Sparta, WI 54656 800-533-0551 • 608-269-3752 • (f) 608-269-8129 www.ken-way.com • info@ken-way.com			25' - 150'	1 1/4" - 8"	1500 - 3000 PSI	1.5 - 4 GPM
See ad page 17	MONGOOSEJETTERS 1590 Dutch Rd., Dixon, IL 61021 800-323-1604 • 815-835-5566 • (f) 815-284-0452 www.mongoosejetters.com • sales@mongoosejetters.com	V		250' - 1000'	2" -72"	2000 - 4000 PSI	12 - 80 GPM
See ad page 85	MTECH 7401 First Place, Cleveland, OH 44146 800-362-0240 • 440-646-0996 • (f) 440-646-9953 www.mtechcompany.com • sales@mtechcompany.com	V		300' - 600'	4" - 60"	2000 to 4000 PSI	12 - 80 GPM
See ad page 39	MYTANA MFG. CO., ING. 746 Selby Ave., St. Paul, MN 55104 800-328-8170 • 651-222-1738 • (f) 651-222-1739 www.mytana.com • mytana@mytana.com	V	V	Up to 300° Up to 150°	1 1/2" - 8" 1 1/2" - 12"	1200 - 3000 PSI	2 - 8 GPM
See ads pages 47, 56	NLB GORP. 29830 Beck Rd., Wixom, MI 48393 800-328-8170 • 248-624-5555 • (f) 248-624-0908 www.nlbcorp.com • nlbmktg@nlbusa.com			200' - 500'	5/8" - 11/8"	10000 - 20000 PSI	
NozzTeq See ad page 67	NOZZTEO INC. 1497 Main St., #354, Dunedin, FL 34698 866-620-5915 • 603-413-6583 • (f) 603-413-6744 www.nozzteq.com • info@nozzteq.com	<b>V</b>		Up to 200'	3" - 8"	2000 - 5000 PSI	15 - 80 GPM
See ad page 7	RIDGE TOOL COMPANY 400 Clark St., Elyria, OH 44035 800-769-7743 • 440-329-4650 • (f) 440-329-4862 www.ridgid.com • ridgidinfo@emerson.com			25' - 300' 90' - 250'	1 1/4" - 10" 3/4" - 10"	1350 - 3000 PSI	1.4 - 5.5 GPM
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S PARTAN See ad page 92	SPARTAN TOOL, LLG 1506 W Division St., Mendota, IL 61342 800-435-3866 • 815-539-7411 • (f) 888-826-2371 www.spartantool.com • ndessing@spartantool.com	V	V	115' - 600' 25' - 250'	1 1/2" - 36" 1 1/4" - 10"	1000 - 4000 PSI	2.2 - 50 GPM
See ads pages 34, 89	THE CABLE CENTER, INC. 8318 Olive Blvd., St. Louis, MO 63132 800-257-7209 • (f) 314-432-8024 www.thecablecenterinc.com • thecablecenterinc@gmail.com	<b>V</b>	~	25' - 400'	2" - 13"	1500 - 3000 PSI	2-12 GPM
	TRIPLER SPECIALTY 6925 W Beaver St., Jacksonville, FL 32254 800-356-9661 • 904-786-1826 • (f) 904-786-0911 www.triplerspecialty.com • sales@triplerspecialty.com			50' - 200'	1 1/2" - 4"	1500 - 4000 PSI	2.1 - 4 GPM
See ad page 90	WATER GANNON ING. 4044 W Lake Mary Blvd., Units 104-424, Lake Mary, FL 32746 800-333-9274 • (f) 888-928-9274 www.watercannon.com • sales@watercannon.com	V		50' - 550'	1 1/2" - 12"	1200 - 7000 PSI	2 - 12 GPM



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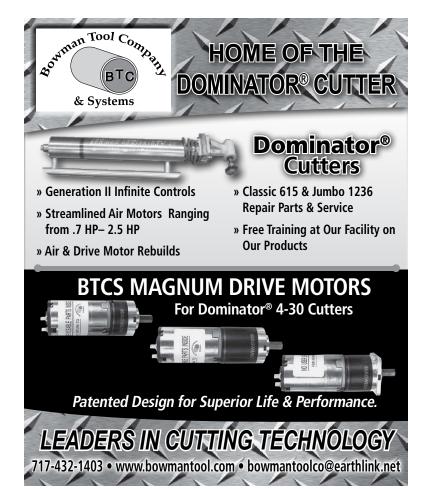
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## **Know the Type**

Understanding and adapting to different personalities is key to effective communication

#### By Ted Gorski

xcellent communication skills are critical in today's business world. People are regularly asked to do more with fewer resources while also dealing with the stresses of downsizing and/or tightening budgets. To remain effective, business owners and managers need nearperfect communication skills regardless of their own communication type.

Understanding the style of the person you are communicating with can make the difference between getting your message across and getting it across well.

Consider these four communication styles and how you can effectively communicate with each one:

#### THE AGGRESSOR-ASSERTER

These are your CEOs in attitude. They are very competitive, goal-oriented, demanding, task-oriented and fast-paced. To these people, time is money and money is time. You know where you stand since they are blunt and direct in their communication. Their biggest fear is losing control and they ask the "What" questions. The Aggressor-Asserter has key strengths that include providing momentum, providing focus and making quick decisions. Their "on top of it" approach to projects can keep the rest of the team on target or even get it done early. However, this must be balanced as their weaknesses include overstepping their assignments, taking over tasks that have been assigned to others (and not necessarily because they can do them better, they just want to get them done).

To effectively connect with the Aggressor-Asserter, you must:

- Be brief, direct and concise.
- Provide options.
- Use a fast, quick pace.
- Focus on results and return on investment.
- Avoid providing lots of details.
- Provide short answers.
- · Look them straight in their eyes.
- Be truthful.

#### THE SOCIALIZER

These individuals are charismatic, enthusiastic, persuasive, lively, loud, talkative, friendly, people-oriented and very social. Their biggest fear is social rejection and they ask the "Who" questions. The Socializer is a great motivator. In the most organizations, these are on the sales team. They are very creative and enjoy brainstorming. They do not keep track of time well and sometimes work tight to deadlines. They enjoy being the center of attention.

To effectively communicate with a Socializer, you must:

- Allow time for social interaction.
- Put details in writing or email.
- Have a fast-paced, positive approach.

- Use a whiteboard in your discussions (Socializers are quite visual).
- Use phrases like "Picture this" or "Do you see."
- Avoid a harsh, aggressive tone.

Understanding the style of the person you are communicating with can make the difference between getting your message across and getting it across well.

#### THE MEDIATOR

These individuals are calm, level-headed, great listeners, team-oriented, introverted and loyal. They make decisions in a consensus manner. Mediators like to marinate on questions — you will not get an answer immediately. They dislike conflict so they will internalize and tolerate it. As a result, this internalization builds until they explode. Their biggest fear is loss of stability and they ask the "How" questions. Team and project managers typically fall into this style.

Weaknesses include being hesitant in their approach, which slows decision-making. They are going to try to keep everyone happy at the expense of their happinesss. Mediators are hard-working, humble and do not pat themselves on the back. They make great teachers/trainers and mentors due to their calming and supportive nature.

To effectively connect with a Mediator, you must:

- Be patient and logical.
- Use a steady, low-key approach.
- Involve Mediators in the planning process.
- Praise them privately.
- Allow time for "marination of ideas." You will not get a quick answer.
- Start conversation with a warm and friendly greeting.
- Keep your tone of voice at discussion level.

#### THE ANALYZER

These individuals are meticulous, detail-oriented, introverted and taskoriented. These individuals can be considered perfectionists and they are suspicious of others. They may answer a question with a question. Their biggest fear is criticism of their work and they ask the "Why" questions. Key strengths of the Analyzer include being detailed-oriented, superb problem solvers and providing the team's reality check. Weaknesses include having tunnel vision on projects and looking for the perfect solution.

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To effectively communicate with the Analyzer, you must:

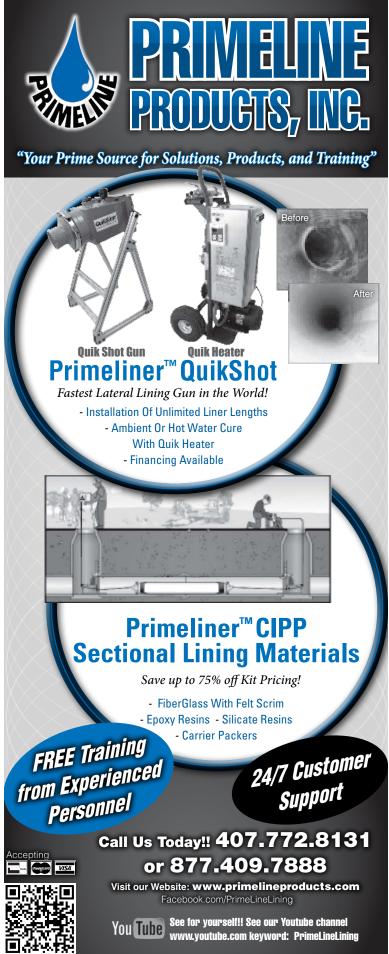
- Be organized and logical.
- Support your position using facts.
- Make sure that each point is understood before moving to the next
- Not use the phrase "Let me give you some constructive advice."
- Use words such as process, data and procedure.
- Realize that Analyzers are motivated by quality and data.

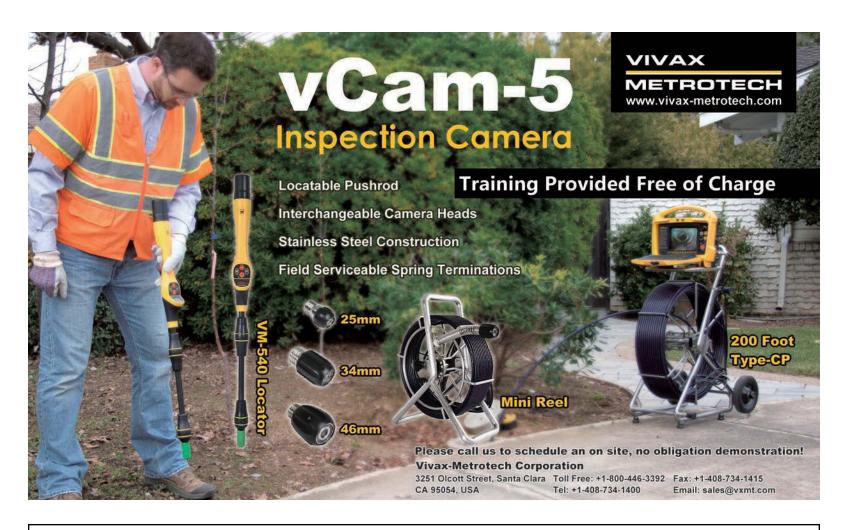
Communicating effectively with the various types is an art. Understanding a person's style allows you to create harmony and avoid confusion. Developing your "adaptitude" - your ability to adapt your communication style to the listener – is a critical element of being an effective team member. When you are able to recognize the various styles and adjust your approach, your life will be easier and void of the common communication "ills." c

#### **ABOUT THE AUTHOR**

Ted Gorski is a Professional Certified Coach (PCC) and president of Get Your Edge LLC. For more information, visit www.GetYourEdge.com.









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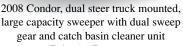
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## First Time's a Charm

New exhibitor gets plenty of attention with a time-tested Gorilla hose

By Craig Mandli

oodyear Engineered Products Yellow Gorilla nitrile rubber multipurpose hose from Veyance Technologies is certainly not a new product, but according to Karina Robinson, product manager for Veyance, when you have a great product, "there's no need to reinvent the wheel."

This heavy-duty nonconductive 500 psi-rated hose can be utilized to convey air, water, oil, petroleum-based solvents, and sprays in industrial, construction and agricultural applications that require high oil resistance. While the 2014 Pumper & Cleaner Environmental Expo was her company's first as an exhibitor, Robinson says the Gorilla product is known across the wastewater services industry as a multipurpose product that could likely serve the majority of the thousands in attendance.

"The Gorilla hose serves those in construction, agriculture, aggregate and can be used for plant washdown, in addition to septic pumping and cleaning, and general to heavy-duty applications," says Robinson. "Its versatility is one of the big reasons why it's been the leading hose available under the Goodyear brand for so long. It is oil- and abrasion-resistant, and crush-proof. It's a premier product for anyone in need of a heavyduty hose in potentially volatile environments."

Its tube is made of nitrile synthetic rubber and its cover is made of yellow Carbryn (carboxylated nitrile) synthetic rubber, with a Rubber Manufacturers

Association (RMA) Class A, high oil resistance rating, which means that both components undergo a maximum volume change of plus-25 percent, and will maintain at least 80 percent of their tensile strength after exposure to oil.

The cover is also Mine Safety and Health Administration (MSHA) approved (2G-14C/14) as flame resistant. The hose is reinforced with spiral Flexten (aramid) synthetic yarn for heat resistance and the strength necessary to reach and maintain its maximum pressure rating of 500 psi, and is capable of functioning effectively at temperatures ranging from -20 to 190 degrees F. It is rated with a minimum electrical resistance greater than one 1 megohm per inch of hose length at 1,000 volts, and it comes equipped with two factoryinstalled steel male NPT couplings. It is available in 3/16-inch diameter all the way up to 2 inches.

"It's a product that just covers so many different areas," says Robinson. "At this show, we've talked to a lot of septic cleaners and pumpers, but also those who jet and clean sewers and also hydroexcavators. Veyance offers a diverse selection of hose products and Gorilla is one of the top products produced."



Mario Bedard, a research and design engineer with Veyance Technologies, discusses the company's popular Gorilla nitrile rubber multipurpose hose with an Expo attendee. The 2014 Expo was Veyance's first as an exhibitor. (Photo by Craig Mandli)

Robinson says the Veyance crew also spends a lot of time at trade shows educating potential buyers on how to select industrial hoses. The company uses the STAMPED method to help determine the type of hose needed: S =Size (inside and outside diameter, and length); T = Temperature (maximum and minimum temperatures of material being transported); A = Application (industry or process); M = Material (to be conveyed, type and concentration); P = Pressure (maximum working pressure); E = Ends (type of end connectors or couplings on the hose); and D = Delivery method (volume and velocity).

Robinson was surprised by the variety of industries and hose needs represented at the Expo. Not only did she talk about the popular Gorilla hose, but also many other hose products that serve other industries.

"I think if we had it to do over again, we would have brought more of our large-diameter hose offerings," says Robinson. "A lot of people here have asked about big-bore hose, which is a big part of what we do. We'll definitely be back next year, and with a lot more for people to see, including our large selection of material-handling and vacuum hoses." 800/235-4632; www.goodyearep.com. c





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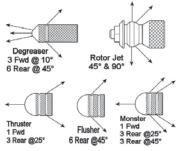
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## Residential and **Commercial Sewer** and Pipe Maintenance

By Craig Mandli

Drain cleaners use a variety of tools to get clogged pipes flowing again. Here are several cable machines, jetters, hose and hose reels, nozzles, and jet/vac trucks used to clean lines, and TV inspection systems used to locate blockages.

#### **CABLE MACHINES**

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The TorqueMasterTM750 mainline drain cleaning machine from Coast Manufacturing has a double-welded, powder-coated tubular steel frame and an easy-start 3/4 hp dual-capacitor motor. The main shaft drive is fabricated from stress-proof steel, with sealed ball bearings on the shaft and drive arm bearings that never need



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195 rpm and can efficiently run either 3/8- or 1/2-inch cable. It has a telescoping handle and wheels to make it easy to maneuver, and can run both 16- and 19inch reels, making it ideal for use on sinks, bathtubs, shower and floor drains. 877/244-0556; www.duracable.com.

#### SECTIONAL DRAIN AND SEWER CLEANING MACHINE

The Model C 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. One operator can effectively clean 3- to 10-inch-diameter lines at distances up to 200 feet. A heavy-duty 1/2 hp motor comes standard, with 3/4 and 1 hp motors available. A custom-designed gearbox ensures



parts availability. A 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. It also has a carry handle for balance and easy transport. 800/833-1212; www. electriceel.com.

#### **HEAVY-DUTY DRAIN CLEANING MACHINE**

The Model GO 68HD heavy-duty electric drain cleaning machine from Gorlitz Sewer & Drain is available in two different versions, either with an open steel reel or enclosed polyethylene drum, and can be outfitted with an optional power feeder. The standard configuration is 150



Gorlitz Sewer & Drain

feet of 11/16-inch hollow-core cable, which should reach most blockages with a single reel. The unit weighs 185 pounds, and a loading ramp and electric winch can be added to any vehicle to make transportation quick and simple. It is designed to clean pipes from 3 to 8 inches in diameter. 562/944-3060; www.gorlitz.com.

#### COMPACT DRAIN CLEANER

The Junior drain cleaner from Ken-Way Corporation weighs 24 pounds without cable. An optional easy-move cart allows for transport in large buildings. Its small footprint makes for easier access under sinks and in small spaces. It accepts three different drums, allowing use of 1/4-, 5/16-, 3/8-, 13/32- and 1/2-inch cable for cleaning house drains and process line pipes from 1 to 4 inches.



The drums are interchangeable, and are switched by removing two wing nuts and sliding the belt off. No adjustment of the machine or motor is needed. It is powered by a 1/4 hp motor equipped with a ground fault interrupter cord and air-powered foot switch. 800/533-0551; www.ken-way.com.

#### FLEXIBLE LEADER CABLE

The LE151 Super Flex leader cable from MyTana Mfg. Company is a flexible cable used for leading main cables down a sewer or drainline with twists, turns, elbows, offsets, sweeps and other irregularities. Many contractors keep several leaders available for use

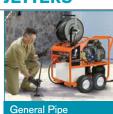


in special situations. For instance, leaders with a slight bend 8 to 10 inches from the end can help force a single blade to the outside of the pipe. The leader is suitable for 3/4-inch cable, and is available with a choice of fittings to attach to existing cables and blades. Leader cables are available in other sizes. 800/328-8170; www.mytana.com.

#### PORTABLE PRESSURE WASHERS/JETTERS

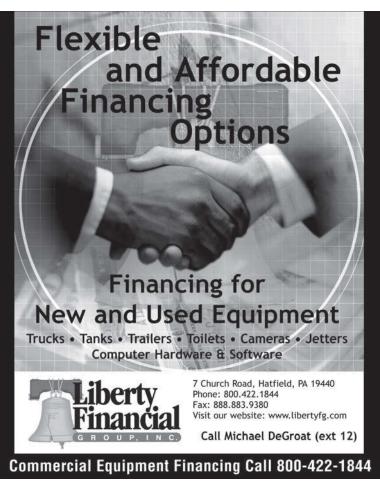
#### WATER JET DRAIN CLEANING MACHINE

The JM-3080 Jet-Set water jet drain cleaning machine from General Pipe Cleaners can clear grease stoppages, sand, sludge and ice clogs. It generates 3,000 psi at 8 gpm, and Vibra-pulse on demand helps the hose slide easily down long runs and around tight



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bends. A 20 hp Honda engine with electric start and 2-to-1 gear-reducer drives the pump, while a 12-gallon buffer tank protects the jet if the water supply can't match the pump demand. 800/245-6200; www.drainbrain.com.

#### **HYBRID HYDROJETTER**

The Model 727 cart-mounted hybrid hydrojetter from Spartan Tool can be run on either gasoline or propane by flipping a lever. It can be operated indoors and outside, without any loss of pressure or flow. It produces 3,000 psi, providing enough pipecleaning pressure to scour any line up to 6 inches in diameter, while its 4 gpm of flow moves debris downstream. Pulse technology reduces line friction, allowing it to maneuver the corners of drainfields,



Spartan Tool

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

#### **ROLL-CAGE-PROTECTED** PRESSURE WASHER

Roll-cage-protected two-, three- and fourcylinder water-cooled Kubota pressure washers from Water Cannon are available in pressures up to 7,000 psi. They come with a 50-foot hose, wand, trigger gun and QC nozzles, and include forklift channels, a removable roll cage with lifting hooks, an optional wheel kit and an onboard long-run fuel tank



Water Cannon

that meets or exceeds EPA regulations in all 50 states. 800/333-9274; www. watercannon.com.

#### **EASEMENT MACHINE**

The Easement Machine heavy-duty, allterrain rubber-tracked power carrier from KWMI Manufacturing is used in conjunction with a highpressure hydraulic sewer cleaner to allow access to easements, ravines, wooded areas, wetland areas, narrow alleys, and behind homes and buildings. It travels at up to 5 mph, and weighs 2,900 pounds for gas and 3,200 pounds for diesel with reel and hose. It has a variable-speed reel, water-pressure



gauge, removable reel, reel guide with foot counter, narrow 46-inch design for tight areas, low 3 1/2 psi ground pressure tracks, and a 27 hp Kohler engine. Options include 600 feet of 1-inch 2,500 psi hose, hydraulic tilt bed, work light or plug-in spotlight, and 26 hp Kubota diesel engine. 800/503-0076; www. easementmachine.com.

#### **TRAILER JETTERS**

#### **HEAVY-DUTY TRAILER JETTER**

The 51T Series trailer jetter from American Jetter offers a wide range of power to 80 hp and flows from 8 to 18 gpm up to 5,000 psi. Power is provided by a 40 hp Kohler gas engine, or 80 hp using a dual-engine option. Low water



shut-off prevents pump damage if the optional 600-gallon tanks run low.

Standard hose reel speed control allows for precise cleaning in both directions. The wireless remote option allows for water ON/OFF, engine shutdown and hose reel control. The heavy-duty square tubing trailer offers standard electric brakes on both axles. 866/944-3569; www.americanjetter.com.

#### VERSATILE TRAILER JETTER

The Brute-150 trailer jetter from JETTERS NORTHWEST has a flow rate of 9 gpm at 4,000 psi, allowing it to run several tools for cutting roots and grease in pipe up to 6 inches. It has a 150-gallon water tank on a tubular-frame trailer with



full-size 15-inch wheels, a V-Twin OHV Engine, super-duty triplex pump, and 300 feet of 3/8-inch jetting hose on a hand-rewind reel (a 12-volt power rewind is available). All jetting controls are mounted near the hose reel, including flow control, pressure adjustment, adjustable pulsation and a panel-mounted pressure gauge. A large tool bin elevates the jetting reel for easy reach and provides lockable storage. 877/901-1936; www.jettersnorthwest.com.

#### **REMOTE-OPERATED** TRAILER JETTER

The Model 184 trailer jetter from Mongoose Jetters has a tubular steel corrosion-resistant pre-painted sub assemblies, updated controls, highquality diesel engine and a Mongoose run/ dry pump. It has a 180-degree industrial



rotating hose reel that has a locking point every 7.5 degrees. A wireless remote feature allows users to operate the machine from the top of a roof or inside the house. The unit allows jetting on high- and low-pressure applications for easy cleanup using the 4,000 psi dump gun feature. 800/323-1604; www. mongoosejetters.com.

#### **HOT-WATER JETTING UNIT**

The lightweight, compact Model ET 800 hot-water jetting unit from Woma Corporation is capable of delivering up to 11,600 psi and 5.5 gpm. Hot water often allows the same applications to be accomplished with less energy, and therefore



lower pressure/flow, meaning less horsepower and lower costs. Removal of coating is accomplished without the need for chemicals or abrasives. Typical cleaning applications include paint and graffiti removal, applications removing grease and oil films, as well as cleaning applications in the food industry, which may require hot water to kill germs and bacteria. 800/258-5530; www. womacorp.com.

#### **HOSE REELS**

#### COMPACT MANUAL-REWIND REEL

The 1000 Series from Hannay Reels is a compact manual-rewind reel. Applications include high-pressure washdown and sanitizing. It is designed to handle single 1/4-, 3/8- or 1/2-inch ID hose. It is lightweight, yet durable and has an e-coated frame for extra protection in demanding environments. A direct-crank rewind is permanently attached, and its exterior



mounting holes enable easier installation. It features a redesigned pin lock

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and a standard adjustable cam-lock brake. It handles pressures to 3,000 psi and temperatures from 20 to more than 400 degrees F. 877/467-3357; www. hannay.com.

#### HEAVY-DUTY HAND CRANK REEL

The Series HC80000 hose reel from Reelcraft has a lightweight cast aluminum base rated at 40,000 psi tensile strength. It is ideal for industrial and truck mount applications, with options that include a heavyduty lock pin to prevent de-spooling when the reel is not in use, and an adjustable drag screw to prevent backlash when operating. Components are individually powder coated prior to assembly for corrosion resistance. 800/444-3134; www.reelcraft.com.



#### **HIGH-PRESSURE HOSE**

#### **JETTER HOSE**

Standard jetter hose from **Draincables Direct** has a green high-abrasion and fungus-resistant polyurethane cover with a 4,000 psi rating. It has braided high-tensile synthetic fiber reinforcement with a temperature range of -40 to more than 122 degrees F, and a seamless polyester inner core. A full line of jetter hose from 1/8 inch ID to 1/2 inch ID in lengths from 25 up to 500



**Draincables Direct** 

feet in 4,000 psi are available. Sizes of 1 inch and over in variable psi are also available for special orders. 800/421-4580; www.draincables.com.

#### MATERIAL-HANDLING HOSE

TUFTEX material-handling hose from HBD/ Thermoid is designed for gravity or positive and negative pressure applications, and is supported with a strong, spring steel wire helix. It is highly resistant to abrasion and other environmental conditions, and comes in types MH-1, MH-2



and MH-3, so technicians can select the one that best fits the application. It effectively operates in a wide temperature range from -40 to 250 degrees F. It is available in a wide variety of inside-diameter sizes and lengths. 800/835-0682; www.hbdthermoid.com.

#### **HIGH-TEMPERATURE HOSE**

High-temperature hose from Piranha Hose Products is designed to withstand temperatures up to 190 degrees F. It is available in Series LLGR green-covered, 4,000 psi hoses, in ID sizes 1/4, 3/8 and 1/2 inch; and Series LLBU blue-covered



Piranha Hose Products

3,000 psi hoses, in 1/2-inch ID size. 800/250-5132; www.piranhahose.com.

#### PRESSURE WASHER HOSE

Goodyear Engineered Products Neptune pressure washer hose from Veyance Technologies is available in 1,500, 3,000, 4,500 and 6,000 psi working pressures. It is used for high-pressure washer and cleaning equipment applications. The hose is available in 1/4- to 3/4-inch sizes in most pressure ranges. It is available in reinforced braided construction, with a nitrile rubber tube and an RMA Class B (Medium Oil Resistance). 800/235-4632; www. goodyearep.com.



#### **PUSH TV CAMERA SYSTEMS**

#### HEAVY-DUTY INSPECTION CAMERA

The Viztrac II AM240-200 pipe inspection camera from Amazing Machinery features 200 feet of durable 1/2-inch push cable with fiberglass rod inner core, a 20-inch cage reel and attached water-sealed case containing the controls, a high-resolution 7-inch LCD monitor and wheels to increase mobility. It also has a 1-inch powder-coated lay-flat frame with upright rolling



stand; a 1 3/8-inch O.D. metal camera housing; nine dimmable high-output 5 mm LED lights; high-resolution color camera; scratch-resistant sapphire glass lens; high-grade 512 Hz sonde locator with an average range of 12 to 15 feet; and an integrated digital video recorder with remote control, compatible with most standard SD cards. 800/504-7435; www.amazingmachinery.com.

#### LIGHTWEIGHT PUSH CAMERA SYSTEM

The **SEEKER** user-friendly, contractor-grade examination tool from Aries Industries expects pipes from 3 to 24 inches in diameter and up to 300 feet in length. It can be operated as a stand-alone system or in conjunction with a CCTV truck to record all of the video to a PC or laptop. When used as a stand-alone unit, it is a self-contained system with no external wiring. Weighing as little as 40 pounds, it is easily transported to any job site and comes standard with



a built-in 512 Hz transmitting beacon and bright 6.4-inch LCD screen. It offers either a self-leveling camera with either a ball skid or a roller skid, or a self-cleaning pan and tilt camera with wireless control. Options include digital video recording, on-screen footage, wireless video transmission up to 300 feet away, rechargeable battery, PAL video and live-line tracing. 800/234-7205; www.ariesindustries.com.

#### MODULAR PUSH CAMERA

The modular design of the MPlus+ lateral and minimainline push camera system from CUES enables easy operation and facilitates quick removal of the control unit to be used separately for off-road or remote job sites or to accommodate compact storage. The unit includes video titling, video observation coding, digital recording and portability. The lightweight system includes large, durable wheels for easy portability and a balanced footprint for stability. 800/327-7791; www.cuesinc.com.



#### REMOTE PAN-AND-TILT INSPECTION SYSTEM

The VeriSight Pro 360 from Envirosight remotely pans and tilts to give the operator maneuverability when inspecting drain lines. A joystick on the control unit rotates the camera continuously and tilts it plus-or-minus 135 degrees. Versions are available with 130, 200 and 330 feet of push cable. Its digital interface displays realtime inspection footage on an 8-inch LCD, records up to 90 hours of inspection video to internal memory, and allows an operator to enter observation data for upload to WinCan. A customizable interface lets operators zoom 3X on live or recorded video, capture still images, configure



the 16-page text writer, browse thumbnail galleries, and select among several available languages. An integral tri-band sonde transmits at 33 kHz, 512 Hz or 640 Hz. 866/936-8476; www.envirosight.com.





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#### REMOTE VIDEO REPEATER

The Network Video Repeater from Forbest Products offers an option for a remote real-time view via the Internet, allowing operators to discuss an onsite issue with staff at the site. When a Forbest camera is connected to a laptop with Windows via this device,



Forbest Products

those in the office can view the real-time picture/video captured by the camera from a computer or laptop, iPhone or iPad or other terminal with Web connectivity. 650/757-4786; www.forbestusa.net.

#### LATERAL CAMERA SYSTEM

The Sonic lateral camera system from Hathorn Corporation has a 7.4-inch LCD video monitor, ABS plastic control box with machined aluminum panels, control box mounting stand, color stainless steel camera head, 512 Hz sonde transmitter, adjustable brake handle and a camera skid. Options include a selfleveling camera, 3/8- or 1/2-inch-diameter pushrod, USB recording, on-screen footage counter, 10-hour battery pack and 8-inch-diameter wheel kit. 905/886-2835; www.hathorncorp.com.



Hathorn Corporation

#### **VERSATILE INSPECTION CAMERA**

The PortaVision pipe inspection camera system from HammerHead Trenchless Equipment comes with an iPad 4 to view photos, edit videos and send files through email or cloud. It provides freeze-frame snapshots and the ability to narrate an inspection through a built-in microphone. It requires 110 volts or can operate up to six hours on a single charge of the lithium-ion battery. The waterproof color camera is self-leveling, and has a scratchresistant sapphire glass lens, light intensity control and a 4-inch centering guide, with 2- and 6-inch guides



available. It holds 200 feet of pushrod with a ballistic-grade woven fiber jacket. The 34-pound case can be carried, or a built-in transport cart with extendable handle and high-clearance wheels can be used. An optional Trapeze 50-foot black-and-white mini camera is available for small drains, clean-outs, or pipe 1 to 2 inches in diameter. 800/331-6653; www.hammerheadtrenchless.com.

#### **BATTERY-POWERED** PUSHROD INSPECTION SYSTEM

The P340+ flexiprobe pushrod video inspection range from Pearpoint/SPX has an onboard lithiumion battery to provide power for up to a full day's typical usage, enabling operators to work remotely. A push-button fuel gauge provides a quick indication of remaining power, even when the controller is switched off. Controllers feature slots for USB flash drives and compact flash cards. The controller can also be connected directly to a PC to copy or move files without the need for a separate card reader. It offers a choice



Pearpoint/SPX

of two stainless steel high-resolution cameras, capable of withstanding 11 bar of pressure. Users can zoom, pan and rotate images during recording and playback to focus in on problem areas. Still pictures can be taken at any time. Cameras combine focusable lenses with high video resolution and ultra-bright white LEDs. A range of pushrod reels are available from the extra-flexible 100foot P341 plumber's reel designed for commercial and residential applications, to the 500-foot P343 reel designed to push for longer distances. 800/688-8094; www.radiodetection.com.

#### COMPACT INSPECTION SYSTEM

The compact GatorCam4 inspection system from Radiodetection Corporation offers the convenience of a portable system that can be used in most weather conditions. The controller's integrated lithium-ion battery removes the inconvenience and set-up time of an external power lead. A push-button fuel gauge provides a quick indication of remaining power, even when the controller is switched off. It can be configured to suit most inspection requirements. A range of pushrods is available, from the extra-flexible 100-foot plumber's reel to navigate the bends and traps found in commercial and residential plumbing, up to the 500-



foot extra-stiff rod designed to push for longer distances. 877/247-3797; www.radiodetection.com.

#### **SMALL-DIAMETER PIPE** INSPECTION CAMERA

The POLARIS camera system from RapidView IBAK North America inspects smaller-diameter pipelines with its 3-Axis range of movement. Its navigating stick technology allows it to choose the direction of travel when encountering Ts or Ys in the pipeline. The system has upright picture control, pan, tilt and angle control, a wide angle (plus or minus 120 degrees) of view, LED lighting, low-light sensitivity



and a built-in laser measurement system for measuring defects inside the lateral. 800/656-4225; www.rapidview.com.

#### PAN-AND-TILT PUSH CAMERA

The Pan n' Tilt Push Camera from Ratech Electronics rotates 360 degrees and 210 degrees up and down, allowing technicians to view the pipe condition easily and in more detail. An optional



steerable gooseneck assists the camera. Combining this camera with a control unit gives recording capability using SD/USB drives, and allows MPEG video capture and JPEG image capture of pipe inspections. Features include a 512 Hz sonde, an on-screen text display overlay system, electronic distance counter, time, date and eight pages of memory. Standard Gel-Rod cable length supplied is 200 to 400 feet. 800/461-9200; www.ratech-electronics.com.

#### DIGITAL RECORDING MONITOR

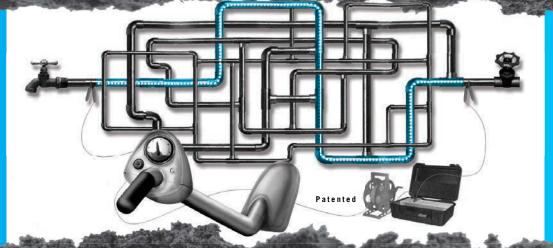
The hand-held SeeSnake CS6 digital recording monitor from RIDGID captures still images and video clips and allows users to quickly and easily edit, archive and deliver reports directly to customers through USB thumb drives or via print, DVD and online. It has a 5.7-inch daylight-readable LCD screen, a water-resistant keypad for direct control of camera and monitor functions, an onscreen keyboard for basic titling and text entry, and



microphone and speakers for adding voiceovers to and playing back over custom reports. It docks onto the SeeSnake Max rM200 camera system for transportation and storage, and is compatible with SeeSnake Reels. 800/769-7743; www.ridgid.com.

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#### PORTABLE MAINLINE INSPECTION SYSTEM

The Private Eye 2 portable mainline inspection system from RS Technical Services has a 15-inch TFT LCD flat-screen monitor, on-screen footage display, automated power adjustment and a digital video recorder to capture MPEG 4 video onto an SD media card. The command center is enclosed in a Pelican waterproof and crush-proof case that weighs 30 pounds, providing portability without sacrificing durability. It is compatible with all RST cameras and



RS Technical

tractors, and when combined with a compact portable reel loaded with single conductor cable, is capable of inspecting 4- to 200-inch-diameter pipelines up to 1,500 feet in length. Options include a DD Lite text writer, choice of data collection software and sun-readable monitor. 800/767-1974; www. rstechserv.com.

#### PIPE INSPECTION SYSTEM

The Type-CP inspection system from Vivax-Metrotech comes with either 200 or 400 feet of 12 mm Kevlar-reinforced pushrod stiff enough to inspect long distances and flexible enough for easy entry and turns. It comes with a choice of two interchangeable camera heads – a 1.8-inch D46-C self-leveling camera for 4- to 8-inch inspection, and a smaller 1.3-inch D34-C self-leveling camera for use in 3- to 6-inch pipes. Its vCam-5 control module has an 8-inch color LCD, transmitting sonde, digital recording via USB thumb drives, SD cards or to the internal hard drive, full-function keyboard, internal microphone, AC/DC



Vivax-Metrotech

power, rechargeable batteries, distance counter and camera LED brightness control. 800/446-3392; www.vivax-metrotech.com.

#### **VISUAL INSPECTION CAMERA**

The VIS 350 visual inspection camera from Wohler USA has a home function to maintain a sense of orientation when troubleshooting, as the position of the camera head is indicated on a vibrant display. Operators can take still photos and stream video. Its integrated locator transmitter pinpoints damage. It covers a wide range of applications, as its pan-and-tilt camera can inspect wastewater lines, house



Wohler USA

connections, flue gas systems, ventilation lines and false ceilings. It also comes equipped with two rechargeable batteries. 978/750-9876; www. wohlerusa.com.

#### **CAMERA SYSTEM**

The Xcam camera system has a 1.38-inch stainless steel camera head and 1/2-inchdiameter pushrod. It is capable of navigating 3-inch pipe with 90-degree corners. Recording is done onto a USB stick in MPEG file format that can be played back on any computer. A self-leveling camera head with



skid, 512 Hz sonde transmitter, adjustable lighting, internal microphone, 200 feet of push cable and a 10.4-inch monitor case are standard. Options include a portable battery pack and a text writer. 855/863-9226; www. xcamcameras.com.

#### CLEANING NOZZLES/SAFETY EQUIPMENT

#### PENETRATING NOZZLE

The PH (Penetrator Hex) Nozzle from **Arthur Products** has a pointed nose along with one forward-penetrating jet and three 20-degree rearward thrusting jets. It is available in 1/8-, 1/4-, 3/8- and 1/2-inch FNPT sizes, with operational pressure ratings of 10,000 and 15,000 psi. 800/322-0510; www.arthurproducts.com.



#### **ROOT CUTTING NOZZLE**

Root Rat cutting nozzles from Chempure Products are used with jetters from 11 hp to large truck-mounted models. Manufactured of hardened stainless steel, the cutters come with a toolbox with two interchangeable rotors one with cables and the other with chains. The combination kit includes extra chain, cable and



bearings. They need no repair or rebuilding other than bearing replacement, which can be completed in less than two minutes for under \$10 in parts. 800/288-7873; www.chempure.com.

#### ANTIBLAST CLEANING NOZZLE

The Bulldog Antiblast nozzle from Enz USA was designed to prevent blowing toilets while jetting in residential areas. It reduces the negative water pressure that arises ahead of the nozzle, or excess pressure following the nozzle if the installations are not correct or venting is not



working properly. The nozzle cleans in all directions. 888/369-8721; www. enzusainc.com.

#### AUTOMATIC TANK CLEANING HEAD

The XXL automatic tank cleaning head from Hammelmann Corp. removes hard scale buildup from large tanks, vessels and pipe interiors. It operates using high-pressure water so no other energy sources or extra cleaning materials are necessary. The nozzle arm rotates due to the reaction force of the water jets emitting from the nozzles mounted at each end of the spray arm. This rotational motion is transferred via a



built-in drive and reduction gear, which in turn rotates the cleaner around its vertical axis. By rotating in two axes the water jets can reach all parts of the tank interior. The rotation speed is controlled by a finger-adjustable induction brake magnet. The head can be operated with pressures up to 23,000 psi and flow rates exceeding 150 gpm. It can be easily converted into a pipe cleaning unit by fitting into a sledge cage with a pulling eye and kick plate for self-propulsion.

800/783-4935; www.hammelmann.com.

#### **PVC-ON-POLYESTER SAFETY SUIT**

DuraBlast double-coated PVC-on-polyester safety suits from Milwaukee Rubber Products are engineered specially for hydroblasting and excavation applications. They have high tear strength as the result of an open weave polyester scrim fabric sandwiched between two layers of flame-resistant PVC coating. Therm-O-Rad sealed seam construction offers chemical splash protection. A thick outside coating offers abrasion



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resistance, while a lighter interior coating protects the fabric from chemical contamination. The material is flame resistant and self-extinguishing with flameout and afterglow less than 2 seconds after removal of the ignition source. They feature hook and loop closures for hydroblasting applications. 800/325-3730; www.milwaukeerubber.com.

#### **TUBE-CLEANING NOZZLE**

TS-1 water jet nozzles from NLB Corp. have optimized flow for pipe and tube cleaning, and are rated at up to 15,000 psi. They can be ordered in five standard drill patterns and a variety of custom configurations. Some models



are designed for cutting and others for pulling. All drill patterns are precision machined, with straight-facing, forward-facing and/or backward-facing holes. The nozzles thread easily onto one of NLB's flex or rigid lances, and can be ordered in left- or right-hand threads. 877/652-7796; www.nlbcorp.com.

#### **SEWER-CLEANING NOZZLE**

The BL SWIPER sewer nozzle from NozzTeq is available in 1/2-, 3/4- and 1-inch sizes, and is made of stainless steel inside with a poly body outside that makes it safe to use in lined, imperfect and sensitive pipes. Its stainless steel tubes loop the water around a system along air channels that increase airflow and jet stream length in the pipe. The design reduces rpm



and pressure at the truck and thus at the nozzle to reduce the amount of blown toilets. It can be used on 4- to 12-inch lines with all pull-behind jetting units. 866/620-5915; www.nozzteg.com.

#### **ONE-PIECE CLEANING NOZZLE**

The one-piece FJ Penetrator stainless steel cleaning nozzle from USB - Sewer Equipment Corporation is neither bonded nor screwed together, enhancing strength and reducing chances of failure under pressure. Its Advanced, Optimized 3D Hydro Mechanics, located in the lower part of



USB - Sewer Equipment

the chamber, eliminate pressure in the upper portion of the nozzle and prevent explosion in a sewer line or manhole. The water coming from a pressurized hose is immediately guided directly into channels and directed into one-piece ceramic nozzle inserts, which do not require winglets or flow-straighteners, because of the hydromechanics in and out of the chamber. This results in an efficient jet pattern. They are precision engineered and manufactured according to DIN EN ISO 9001:2000. 866/408-2814; www.usbsec.com.

#### RODDING MACHINES/EXCAVATION EQUIPMENT

#### **EXCAVATION TOOL**

The Utility Air-Spade 4000 Series excavation tool from Guardair Corporation is designed for safe excavation around buried utilities. Electrically insulating materials, as well



as nonsparking materials, make excavating around high-voltage power lines and gas lines safe. The unit comes in two sizes – a 105 cfm unit with 4-foot barrel and a 150 cfm unit with 4-foot barrel. They feature supersonic nozzles that utilize compressed air to produce high-speed laser-like jets that move at twice the speed of sound for effective digging in tough soils. It can be used for digging down to pipes, utility locating and repair, keyholing, potholing, valve box cleaning and cable trenching. 800/482-7324; www.guardaircorp.com.

#### **ROD TURNING MACHINE**

The power Rod Turning Machine from Southland Tool Mfg. turns sectional steel rods in 5/16- or 3/8-inch diameter. It is equipped with a gasoline Briggs or Honda engine, and has a speedy chuck to engage the rod coupling in the hollow shaft. An instant-reverse transmission rotates the rods and cleaning tool in a clockwise



direction against the blockage. It is available in 3.5, 6.5 and 8 hp models. A full set of rods and tools are available with a carry-all trailer. 714/632-8198; www. southlandtool.com.

#### **GREASE TRAP/DRAIN MAINTENANCE**

#### DRAIN TREATMENT AND CLEANER

Safe, all-natural biological Drain and Grease Trap Treatment from Drainbo Products is formulated for use in all home drains. Naturally grown bacillus digest household waste such as grease, soap film, oils, proteins, fats and other commonly found proteins in the waste stream, ridding it from the lines. Used as a normal maintenance product, it keeps a drain's flow free and clear of buildup. It is safe to use with septic



systems, enhancing performance by increasing digestion in the tank through its seven-strain formulation and by digesting and removing the sludge deposited in the leach system. It is a USDA-certified biobased product. Private labeling is available. 877/372-4626; www.drainbo.com.

#### **JET/VAC COMBO UNITS**

#### MULTIPURPOSE HYDROEXCAVATOR

The HV56 hydroexcavator from GapVax is a multipurpose unit ideal for virtually any wet/dry vacuum project. It has a 15-cubic-yard debris body and water tank options from 350 to 1,200 gallons. Features include a positive displacement vacuum pump rated at 3,500 cfm with 28 inches Hg. The design prolongs the life



of the filter bags and eliminates the threat of material entering the vacuum pump. Options include a cold-weather recirculation package, sludge pump, auger unloading system, body pressurization system, remote pendants and wireless remotes, high rail package, washdown system, stainless steel body and a high-dump option. 888/442-7829; www.gapvax.com.

#### **COMBINATION MACHINE**

Combination machines from Vac-Con are available in configurations from 3.5- to 16-cubic-yard capacities, with hydrostatically-driven two and three-stage centrifugal compressors, or several optional positive displacement blowers with up to 27



inches Hg. High-pressure, smooth-flow water systems are offered up to 120 gpm and 3,000 psi, with cross-linked polyethylene water storage tanks with total capacities up to 1,500 gallons. They can be equipped with a 180-degree articulating front-mounted hose reel in capacities up to 1,000 feet, and highpressure hose diameters from 5/8 to 1 1/4 inches. Front-mounted telescopic booms are available with up to 10-foot extensions, and 8- and 10-inch tube











diameters. It can double as a vacuum excavator with an optional hydroexcavation package that allows the operator to reduce the volume of water, maintain the pressure for digging, and direct the flow through a conventional excavation hand wand. 904/284-4200; www.vac-con.com.

#### HIGH-DUMP COMBINATION **SEWER CLEANER**

The high-dump capability of the AllJetVac combination jet/vac sewer cleaner from Vacall - Gradall Industries allows the operator to raise the debris tank 76 inches above ground level and shift the tank horizontally 21 inches beyond the



rear bumper. After removing debris from clogged sewer lines, the operator can raise, shift and tilt the debris tank to dump material faster and more efficiently into municipal dewatering containers, avoiding the need for ramps. The tank movement and dumping is accomplished with a wireless remote control mechanism, affording the operator a clear view of the dumping process. The chance of spills can be further avoided with an optional slanting splash shield, extending from the debris tank. 800/382-8302; www.vacallindustries.com.

#### SEWER CLEANING SYSTEM

The 2100 Plus sewer cleaner from Vactor Manufacturing is equipped with a front operator control panel with two selector switches for the fan drive fan on/off and fan mode (low/medium/ high). Single engine fan hydrostatic drive



components are sized to maximize the life expectancy of the system. The system keeps the step-up transmission, resulting in a low required hydraulic motor speed. The single engine platform uses a centrifugal compressor, and a hydrostatic drive system provides constant torque. The configuration features a

split-shaft transfer case in the main driveline, which is efficiently engaged when directed by the operator. The transfer case is rated to 500 hp, with a 2:1 step-up transmission with splash lubricated support bearings, so the hydraulic motor can operate at half-speed compared to the fan, prolonging motor bearing life. The configuration also eliminates the need to change the design to meet future emissions requirements. 800/627-3171; www.vactor.com.

#### HYDRO/VAC UNIT

The POWERVAC hydro/vac unit from Vacuum Sales Inc. can be used in wet or dry environments for hazardous and nonhazardous applications. It is constructed from stainless and carbon steel (ASME DOT 407 - 412 certified), and



has positive displacement high-vacuum blowers, a capacity up to 4,600 cfm, vacuum up to 28.5 inches (95 percent) continuous, and pressure unloading with a rotary vane vacuum/pressure pump. It also has high-capacity intake and exhaust silencers, and filtration and vacuum lines. It is designed for continuous operation at maximum vacuum, with five bearings for belt or direct drive, oil lubricated bearings and gears, oil-free air discharge and air injection cooling, and requires no relief valve. A full range of rotary vane pumps is available with pressures up to 35 psi. 800/547-7790; www.vacuumsalesinc.com. c

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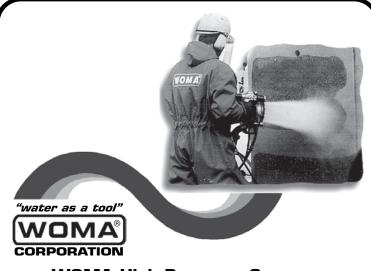
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#### INDUSTRY NEWS

#### Industry loses a pioneer

Francis "David" Magill Jr., Avanti International CEO, lost his battle with cancer on Jan. 19. David was a dedicated businessman and an early pioneer of the trenchless technology industry. He was Avanti's first employee and the company's first president, and he purchased controlling interest of the company in 1988. The company is now under the leadership of David's son, Daniel Magill.

#### Martin introduces factory-direct rental program

Martin Engineering introduced a factory-direct rental program for its line of industrial vibrators. All service and maintenance is covered by a monthly flat-fee with any failed units replaced by the manufacturer at no cost.

#### Trojan Battery redesigns website

Trojan Battery Co. redesigned its corporate website (www.trojanbattery. com). The site includes information on battery technology, maintenance practices, as well as the design of energy storage systems, new products and educational videos.

#### Southeastern Equipment receives Vacall sales award

Southeastern Equipment Co. was named the top-performing Vacall dealer in the United States for 2013. Based in Cambridge, Ohio, the company has been selling, servicing and renting heavy machinery since 1957.

#### Vidmar becomes part of Stanley Industrial & Automotive

Vidmar, a division of Stanley Black & Decker, is now part of Stanley Industrial & Automotive. The move represents the unification of 14 global brands. As part of the unification, the manufacturer of heavy-duty cabinets joins the Storage & Workspace Systems business unit with a new logo and tagline: Smart Versatile Storage.

#### McElroy adds North Africa distributor

McElroy added Soudure Plastique of Casablanca, Morocco, as its distributor in Northern Africa. The company specializes in polyethylene (PE) pipe equipment and electrofusion machines used in the gas and water industries.



#### Hino Trucks donates vehicle to technology center

Hino Trucks donated a cab-over truck to Canadian Valley Technology Center, a vocational school outside of Oklahoma City, after seeing the devastation left by the May 2013 El Reno tornado. The storm destroyed the school's diesel technology shop and three large diesel trucks that were used as teaching tools. The new truck, equipped with hydraulic disc brakes, provides students with a learning tool previously not available. c



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#### PRODUCT SPOTLIGHT

### Fuel-injected generator provides easier starts, long run times

By Ed Wodalski

The EU7000is (inverter and electric start) portable generator from Honda Power Equipment is designed for fuel efficiency, clean power output, quiet operation and longer run times.

Featuring electronic fuel injection, the push-button electric start generator (no choke) is powered by an OHV GX390 four-cyclinder engine that produces 7,000 volt amperes with 5,500 VA rated output and 120 or 240 volt output. The generator weighs 262 pounds, has a 5.1-gallon fuel tank and can operate for six hours at rated load or an estimated 18 hours at quarter load.

Separate triple chamber construction (exhaust, engine and intake) and fuel-conserving Eco-Throttle design enables the generator to operate at approximately 60 decibels (equivalent to human speech) at rated load, while inverter technology with a wave-form distortion factor of less than 2.5 percent allows it to power computers and other sensitive electronic equipment that require consistent electrical current with a stable sine wave or signal.

"Low noise output is critical for use in many home, work or recreational applications," says Tom Pernice, generator marketing manager, Honda Power Equipment. "By extension, some job sites are moving to more quiet generators to ensure both the comfort of those working on the site as well as those working or living near the site."



The generator is 47.2 inches long (excluding handle and wheels), 27.6 inches wide and 28.4 inches tall. It includes a wheel kit with semipneumatic tires and folding handles as standard equipment.

An iMonitor digital display provides hours of use, performance data, battery charging status and onboard diagnostics.

The generator requires only basic maintenance, as outlined in the owner's manual. 678/339-2600; www. powerequipment.honda.com.









#### FLIR IPHONE THERMAL IMAGER

The FLIR ONE thermal imager from FLIR Systems is designed to attach to an Apple iPhone 5, displaying a live image on the phone's screen. The noncontact device detects infrared energy and converts it into an electronic signal that is processed to produce a thermal image on the phone screen and perform temperature calculations. 866/477-3687; www.flir.com.

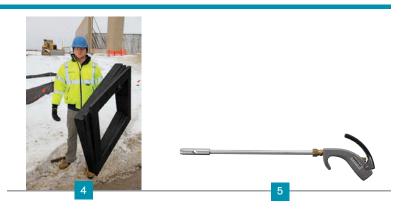
RIDGID LASER DISTANCE METER

The micro LM-400 Advanced Laser Distance Meter from RIDGID can read distances up to 229 feet. Features include a backlit, four-line display screen, inclination angle measurement system for indirect measurements in hard-toreach areas, advanced calculation that can instantly adjust units to inches, feet or meters and storage for saving up to 20 measurements. The meter is IP 54

dustproof, splash proof and has an automatic shut-off after three minutes of inactivity to prolong battery life. 800/769-7743; www.ridgid.com.

#### **NLB HIGH-PRESSURE SMALL** PIPE CLEANING NOZZLES

A new line of high-pressure waterjet nozzles from NLB Corp., designed for cleaning small pipes and tubes, are available in five styles and more than 200 models with standard drill patterns. Custom models are available. Included in the line are standard nozzles for applications requiring 15,000, 20,000 or 40,000 psi; multi-row nozzles for applications requiring 15,000 psi; button nozzles for applications requiring 15,000 psi; evaporator nozzles for applications requiring 15,000 or 20,000 psi; and rodder nozzles for applications requiring 15,000 or 20,000 psi. 877/652-7796; www.nlbcorp.com.





#### CRETEX SQUARE, RECTANGULAR MANHOLE GRADE ADJUSTMENT

Square and rectangular manhole grade adjustment systems from Cretex Specialty Products are made from engineered polymer, expanded polypropylene (EPP) and meet the loading requirements of AASHTO HS-25. 800/345-3764; www.cretexseals.com.

#### **GUARDAIR EXTENDED REACH SAFETY AIR GUN**

Laser series safety air guns from Guardair Corp. feature ergonomic contoured grips with comfort trigger in palm switch and pistol grip style both available with aluminum extensions from 6 to 72 inches in length. The pneumatic guns also feature all-metal construction, aluminum venture nozzle and 1/4-inch FNPT inlet. 800/482-7324; www.guardaircorp.com.

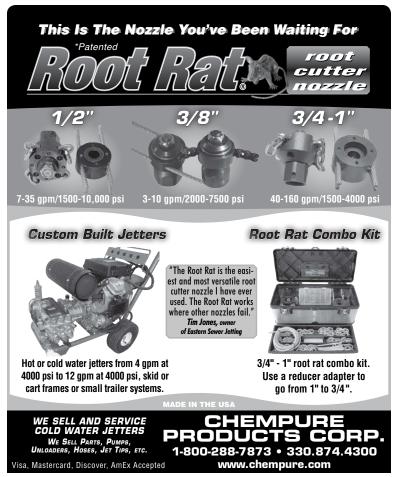
#### HIGH PRESSURE EQUIPMENT **VALVES WITH ERGONOMIC HANDLES**

Medium pressure valves with ergonomic handles from High Pressure Equipment Co. have an adjustable stem to eliminate backlash in the connection. The handle is available on 20,000 psi valves in 1/4-, 3/8- and 9/16-inch sizes as well as 15,000 psi NPT connections in 1/4-, 3/8- and 1/2-inch sizes. 800/289-7447; www.highpressure.com.c

What you learn on these pages could be worth \$1,000s.

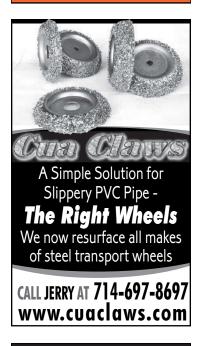
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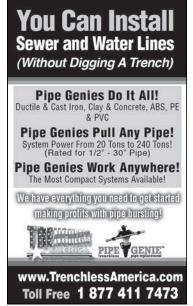






















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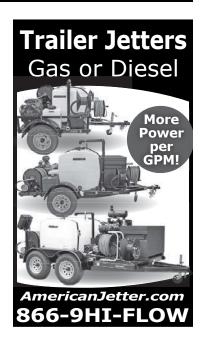




















## classifieds

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#### **DRAIN/SEWER CLEANING EQUIPMENT**

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.

Drain equipment for sale. Email winterseptic @jamadots.com for complete list. 906-492-3758

#### **HAZARDOUS WASTE UNITS**

New 3,200 U.S. gallon, carbon steel, DOT certified 407/412 vacuum tank; dump type with full open rear door and a Presvac PVB-750 vacuum-pressure pump installed on a 2014 Peterbilt 348 cab and chassis. (Stock #13577A-D) www.VacuumSalesinc. com, (888) VAC-UNIT (822-8648). (CBM)

#### **HYDROEXCAVATING EQUIPMENT**

GapVax HV55-0853 Hydro Excavator: 2013 Peterbilt, 485 Cummins ISX-15; 22' Boom; extreme cold weather package including burner and glycol injection; interior polymer coating in water & debris tank and filtration system and more! Call 888-442-7829 or inquiry@gapvax.com (C06)

#### **JETTERS-TRAILER**



Xtreme Flow Hot/Cold Jetter! Model #HJ2TA8536, tandem axle trailer, 35 hp Vanguard 8.5 gpm @ 3,600 psi, 325gallon water tank, 300' hose, General Pump. List \$34,995. On sale for \$29,995. Fully loaded!

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#### **JETTERS-TRUCK**

2001 Vactor Ramjet Jetter: 60gpm pump. Loaded with many options. Rebuilt and ready to go by authorized Vactor dealer. Call Jim 916-806-6224.

1999 Vac-Con Hot Shot Jetter: 1,600-gallon water. Extremely low hours/miles. Very clean. ex-municipality owned. Priced to sell. Call Andy 847-409-7058.

1984 Vactor 850 Jet Rodder: 40K miles on truck, less than 1,000 hours on pump. Includes nozzle assortment. \$16,500 OBO. Call Terry 734-365-4035 or 231-325-0052 (C06)

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

1994 Topkick Camel Jet: Auto, Myers 65gpm pump, Perkins diesel rear engine, 3/4 in. hose. khtrucks.com 972-938-1905 (C05)

#### **JET VACS**



2002 Model V311LHAD Sterling Vac-Con LT7500 with new CAT 3126 motor. Truck has 90,000 miles, Allison automatic transmission, Cummins B3.9 aux. motor. 3-stage vacuum to 11-yard hi-low debris tank. 1" jet reel to Cummins motor @ 80gpm capacity. 1,000-gallon water capacity. 60,000 base load cap. Shop serviced. Suspension completely replaced with new. Many new parts. Everything works great. Comparable to vehicles \$120.000+ in this condition. Call or email for more information. Priced to sell. .....\$76,500

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1998 Freightliner 6x6 Camel Jet-Vac sewer & catch basin cleaner, PD blower, C-10 CAT 335hp, HD4560 Allison auto., 40,000 rears/18,000 front. Southern municipal truck. All original paint, only 31,091 miles.

814-696-4343, PA

C05

1998 Ford Vac-Con: New 3-stage fan. 80gpm/2,000psi pump. 12-yard body, 1,200-gallon water capacity. Ford L-8000 chassis. Only 27,000 miles, one owner. Runs great. \$45,000. To view more details and pics email at environmentalts@gmail.com or Call Roberto 786-970-0010. (C05)

2005 10 yd. PD Vactor mounted on 2004 IH 7500 chassis. DT466 engine and Allison transmission. 1,500-gallon water capacity. 18" blower rated at 4,500cfm. 800' capacity hose reel with new hose and 80gpm @ 2,500psi water pump rating. Approximately 112,000 miles and 10,500 hours. Southern municipal truck. Ready to work. \$125,000. Call Todd @ 800-321-6929.

GapVax MC1007-0113: 1,000-gallon SS water tank, 7-cubic-vard debris body, cold weather package, 800psi washdown, and so much more! Call for more details 888-442-7829 or inquiry@gapvax.com



2007 International Vactor 2100: PD 18" blower. 80gpm at 2,500psi with telescoping boom. Hydroexcavation package and trash pump. 1,500 gallons of water and 12-yd. debris tank. International chassis, with 201,000 miles and 8,300 blower hours. ..... \$140,000

Call Dave 916-442-5400, CA CO6



1995 Ford Vac-Con V316: 3-stage fan, 16-yd. debris body, 1,300-gallon water, L-10 Cummins, Allison auto., Cummins diesel upper. Clean Southern municipal truck, only 33,280 miles. ...... \$39,900

814-696-4343, PA

C05

GapVax MC1510-0156: 1,500-gallon stainless steel water tank, 10-cubic-yard debris body, cold weather package; Glycol injection system, HX circuit, 800psi washdown, and more! Call for more details 888-442-7829 or inquiry@gapvax.com (C06)

GapVax HV56-0853 Hydro Excavator: 2013 Peterbilt, 485 Cummins ISX-15; 22' Boom; extreme cold weather package including burner and glycol injection; interior polymer coating in water & debris tank and filtration system and more! Call 888-442-7829 or inquiry@gapvax.com (C06)

1991 Volvo Camel 200: Tandem axle. Great condition. Ready for work. \$35,000. Green Bay, Wl. 920-655-7302 or 920-866-9109. (CBM)

2004 Vac-Con combo sewer cleaner: 11yard debris body, 80gpm pump. Extremely low hours/miles. Ex-municipal owned. Rebuilt and ready to go. Priced to sell this month. Call Andv 312-706-9692. (C05)

2003 Vactor 2100: 10-yard debris body, 80gpm pump. Extremely low hours/miles. Rebuilt and ready to go. Call Jim 916-806-6224. (C05)



1999 Vactor Model 2110: Freightliner FL80 chassis with CAT engine, 18K front, 23K rear, Road Ranger transmission, John Deere auxiliary engine, single fan, extendable boom, 80gpm Rodder pump, 1" hose, aluminum tool boxes, boom lights, air-purge system, etc..... \$56,000

914-739-3300 NY



1997 Vac-Con: 10-yd., 3-stage fan, 60gpm at 2,000psi, fresh paint & hoses. Super clean, work ready. Exmunicipal unit. 80k miles/low hours. PRICED TO SELL .....\$38,900

800-627-0778

C05

2002 Vactor 2100: 10-vards debris body. 60gpm pump, Holmes HR80 blower. Completely rebuilt by authorized dealer and priced to sell. Call Jim 916-806-6224.(C05)

2007 Vactor Model 2112 on a Sterling LT7500. 50,876 miles. Two-stage fan. 65gpm, 2000psi pump. Was a cityowned unit. Price \$157,500. Pictures at www.empireequip.com. 714-639-8352. (CBM)

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

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

2002 Vactor Model 2110PD on an International 7400. 61,650 miles. 80gpm, 2,500psi. Roots 824 blower. 600 feet of new jet hose. Was a city-owned unit. Price \$120,000. Pictures at www.empireequip. com. 714-639-8352. (CBM) 2002 Vac-Con Model V390LHA on Sterling Model LT7501. Three-stage fan with 65 gpm pump at 3,000 psi. Details on www.empireequip.com. \$79,900. 714-639-8352 (CBM)

2009 Vactor 2115: 15-yard debris body, 18" blower, 80gpm water. Fully loaded with options. Low hours and miles. Call Joe 312-208-6373. (C05)

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#### **POSITIONS AVAILABLE**

Pipeline Inspection/Robotic Cutter Operators Wanted - NYC/Long Island based company seeking ambitious, energetic pipe inspection truck operators with a minimum of two years experience. Must have knowledge of sewer systems, ability to read project prints and drawings as well as a strong understanding of computers. PACP credentials a plus. NYC/Long Island prevailing wages paid. Please forward resume to: pipedr1@gmail.com.

Vactor Operators Wanted - Experienced pipe cleaning operators for NYC/Long Island based company. Must have knowledge of sewer systems with ability to read drawings & project prints. Mechanical background a plus. Clean CDL a must, tanker endorsement a plus. NYC/Long Island prevailing wages paid. Please forward resume to: pipedr1@gmail.com

Central Indiana Hydro-Vac Operators Wanted: Clear Crossing, a Hydro Vac leader in the Midwest is growing and in need of self-motivated, detail oriented professionals. Mechanical background, trouble-shooting skills, clean driving record with a CDL and tanker endorsement required. Must be available to work flexible hours as needed. Interested candidates forward information to davidk@clearcrossingllc.com. Clear Crossing offers competitive wages, medical benefits and a 401k retirement plan.

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

SALES POSITION: Manufacturer of highend sewer nozzles seeks representative for East Coast Region - Virginia to Maine. Easy to sell with good demo. MUST love to travel. Salary plus commission, vehicle, etc. Send resume to resume@nozzteg.com or call 866-620-5915. (CBM)

CIPP Superintendent South Florida Trenchless Technologies Company, specializing in Cured in Place Pipe applications, is currently seeking a General Superintendent to oversee the field operations. Candidate should have at least four years' supervisory experience with Cured In Place Piping (CIPP). The person in this position will report to the company's location in South Florida. (Relocation assistance possible for the right candidate). Overall the position will be responsible for supporting the project management of CIPP processes with a focus on operational projects. Job Description PROJECT MAN-AGEMENT: • Provides technical support to crew foremen . Reviews plans and other technical documents • Answers questions regarding the scope and/or timing of the project . Monitors costs and project progress RECORD KEEPING: • Complete work orders and quotes based on the company's standard procedures and processes. . Coordinate scheduling with Logistics. TRAIN-ING: Train crew foremen and personnel as required. JOB SITE: • Ensure safety meeting is conducted and information is shared with all field technicians. • Ensure field technicians comply with all rules and requlations established by the company and the customer. QUALIFICATIONS EXPERIENCE & KNOWLEDGE: . Minimum of four years of supervisory experience in the field or a related area required. • Minimum of four years of experience with Cured In Place Pipe (CIPP) preferred. • Advanced knowledge of Industrial concepts, practices and procedures. • Knowledge in DOT General Driver Requirements and Hazardous Materials CERTIFICA-TIONS & LICENSES: • CDL Class A or ability to obtain one required . Ability to maintain insurability with the company's insurance carrier TRAVEL: Frequent travel and overnight stays required to project sites, training events and various company locations (75%). PHYSICAL: • Requires working both indoors and outdoors, exposed to all weather conditions. • Periodically exposed to industrial environments involving equipment, elevated work areas, confined spaces, noise, dust, hazardous materials and odors. . Frequently required to traverse multiple flights of stairs carrying equipment, lift/move up to 50 pounds, perform tasks requiring climbing, crawling, kneeling, crouching, pushing, pulling, lifting, carrying and gripping. You may submit your Resume by e-mail to 954joblist@gmail.com

#### **POSITIONS AVAILABLE**

Immediate full-time openings for jet-vac operators and cured in place pipe installers in Western South Dakota. WDOE, will train if necessary. Out of town travel may be required Monday-Friday. Call for more information. Ask for Josh 605-209-3303. (C05)

#### **PUMPS**

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

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

New, never used Myers D65-20 water pump. List price: \$17,992. Sell for \$9,750. New Rockford power take-off part number 4-11182 - \$700. 714-381-4141. (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)

#### SERVICE/REPAIR

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

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

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

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

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

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

#### TV INSPECTION



2010 Envirosight Supervision inspection system for sale, SVA350 reel, 140 crawler. Approx. 800' cable, Wincan, 1.5-year-old generator. Mounted in a 2002 Ford E450 city van, V10, auto..........\$89,900 0B0

317-773-7996, IN

C06

CRM



> Chris 803-394-0968, SC Chris@drainprosc.com

2011 IBAK Panoramo System including Panoramo 150 digital inspection camera for 6" to 12" pipelines, 1,640 feet of F/O cable, cable reel, BS7 control unit, and Panoramo PC mounted in a 14' box Chevy gas truck. Used system, former demo with minimal miles and hours. Box includes a/c, heat, operator's station, like-new cabinetry, sink, etc. \$199,000. Call Todd @ 800-231-6929. (C08)

2010 CUES OZIII pan, tilt, optical zoom camera w/controller, 2010 Ultra Shorty III transporter, 2002 Pipe Ranger wheeled transporter, 2011 Magnavox digital VDR and VCR, 2002 Inspector General with color monitor, CUES reel with 575' gold cable, 3 wheel kits. Asking \$17,900. Call John for more details at 207-873-5191 or email jijansen@watervillesd.com (C07)

1991 Chevy Step Van CUES TV grout truck: 55,000 miles, Quad hose, 5-4 cable, Onan generator. \$35,000. Contact Joe 419-408-1060 (C05)

SPRING SALE! 1999 Chevy 3500: UEMSI Camera system with tractor. Pan/tilt. Honda generator. Quigley 4x4. A/C equipped. 52,974 miles. Good condition. Ready to work. \$12,000 OBO. Call Bill 606-682-1690 (CO5)

Brand new Cyclops electronic camera systems mounted in good running used vans. Top-of-the-line system mounted in 2005 F250 with 1,000' of cable, \$61,200. Next, a basic system mounted in 2003 F250 with 1,000' cable, \$49,000. Last but not least, standard system mounted in 2001 F150 with 600' cable, \$51,200. Need a portable? We can help there too. Just give us a call @ 830-249-9756 and talk to the guys that build 'em or visit us online: cyclopstv.com (C05)

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

IBAK Portable System: IBAK Modular 1 System (midi system) – 2008 system with control unit BK 3, cable winch KT 180 with 600' of cable and Orion 2 (camera) with KRA 65.1 (tractor). For inquiries call 303-632-8236 or monty@rckyms.com (C05)

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)

1987 Chevy Step Van CUES TV grout truck with 53,000 miles. Quad hose with Kevlar 5-4 cable. All grout pumps tanks and control panels. Onan generator with 1,100 hrs. \$30,000. Contact Joe 419-408-1060 (C05)

2000 E 350 Diesel Cobra Video Inspection Van: 2000 E 350 Gas CUES TV Inspection van (3 available) CUES Lamp 1 Lateral Launch systems Take out City-owned. Will install in your truck. OZ 2 Cameras, CUES MH Camera (New), Pipe Ranger Crawlers Rental Trucks available for lease. 2011 Freightliner Sprinter Cobra demo truck for sale to customers spec. 1996 CUES TV Seal Step van Diesel /Diesel, Quad hose, City-owned, 11,000 original miles. Call Cobra Technologies 800-443-3761 or 770-435-8991. Ask for Alan Grant (CO5)

Aries dual mode thermal imaging pan & tilt color 360-degree continuous rotation sewer camera. Infrared mode finds hidden sewer laterals behind pipe liner. Pinpoint hidden lateral connections. \$19,500. 925-784-0330. (CBM)

New, never-been-used Aries TR3300 Pathfinder pan & tilt camera system. 6" steerable self-propelled tractor, 20" downrigger assembly, Saturn III HV color case unit video/keyboard/control module/DVD/VCR. Matches pipe contour, power forward/reverse, steer-left/right, superior maneuverability.Continuous-duty drive motors, 6" relined to 24" sewer lines. 512Hz detachable locating beacon. Rear-viewing camera quick retrieval - up to 200'/min. \$35,000 OBO. 925-784-0330 (CBM)

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

Envirosight Rovver system: CCU, cable reel, keyboard. Price under \$12,000. Call Andy 312-706-9692. (C05)

#### **VACUUM LOADERS**

2010 Vacall ATR1213, 12-yard debris body, 1,300 U.S. gallon water, Hydroexcavation machine mounted on a 2009 Sterling LT-9513 with a Hibon SIAV 8702 trilobe blower - 5,300 cfm. (Stock #2151V) www.Vacuum SalesInc.com, (888) VAC-UNIT (822-8648). (CBM)

#### WANTED

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

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Gardner Denver T-375M: Bare Shaft pump. Gardner Denver T450M Bare Shaft pump. Gardner Denver TF-375M 21 gpm @ 10,000 psi. Gardner Denver TX-450HB 21gpm @ 20,000 PSI. Gardner Denver TF-450MB 52gpm @ 10,000 psi. NLB 10-200. 34 gpm @ 10,000 psi. HT-150S 25 gpm max 10,000 psi max, Shell Side Machine, Wheatley 165: 30 gpm @ 10,000 psi. Wheatley 125 with aluminum bronze fluid end. Boatman Ind. 713-641-6006. View @ www.boatmanind.com. (CBM)

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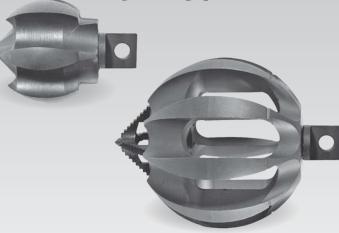
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