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PRODUCT FOCUS:



30

TECH PERSPECTIVE:

SIMULATORS MAKE TRAINING EASIER FOR THE NEXT GENERATION

24

A CONTINUAL EVOLUTION

Diverse services allow Michigan company to keep growing

12

PROFILE:

FATHER-SON TEAM STAY A STEP AHEAD BY ANTICIPATING DEMAND

18



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Contents

APRIL 2019

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FOCUS: Site Preparation and Remediation



FEATURES

18 **PROFILE: HYDROEXCAVATION Gambling on Growth**

Father-son company maximizes growth by anticipating demand and staying a step ahead.

By Jared Raney

30 **PRODUCT FOCUS: Site Preparation and Remediation**

By Craig Mandli

36 **SUCCESS STORIES: Site Preparation and Remediation**

By Craig Mandli

26 **SAFETY FIRST: Cooperation Prevents Catastrophe**

Utilities, municipalities and contractors need to work together to avoid cross-bore disasters.

By Sheila Joy

28 **SMART BUSINESS: One of Your Workers Is Nothing but Trouble. What's Next?**

Replace the drawn-out 'progressive' discipline model with a cleaner, easier approach that respects the employee and your manager while resolving problems.

By Sue Bingham

COLUMNS

8 **BELOW THE SURFACE: Taking Care of the Entire Site**

Don't shy away from using the more traditional equipment as well as your current vacuum excavators and drills.

By Cory Dellenbach, Editor

23 **SHOP TALK: A Brighter Future**

LED technology reduces power consumption while increasing the brightness of hazard and warning lights.

By Del Williams

24 **TECH PERSPECTIVE: Training the Next Generation**

While still in its infancy, simulated training can help solve operator shortage and help keep current operators certified.

By Jared Raney

IN EVERY ISSUE

10 **@digdifferent.com**

Visit daily for new and exclusive content.

34 **The Latest: Products**

This Issue's Feature: Additive adds life to boring bits

By Craig Mandli

36 **The Latest: News**

37 **Happenings**

COVER STORY

12 **PROFILE: REMEDIATION A Continual Evolution**

Remediation and industrial cleaning are mainstays of the Taplin Group's diverse services.

By Giles Lambertson

ON THE COVER:

Charles Gipson, Taplin Group foreman, uses a Guzzler Guzzcavator hydrovac to locate utilities on a job site in Kalamazoo, Michigan. The company offers multiple services including industrial cleaning, underground infrastructure cleaning, asbestos and lead abatement, oil and gas field operation, environmental emergency response and remediation, and civil construction. (Photography by Amy Voigt)

NEXT ISSUE: MAY/JUNE 2019

FOCUS: Utility Locating and Surveying

- Profile: Crawler Pipeline Services
- Tech Talk: Saving the inspection data
- Safety First: Staying connected in confined spaces

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Advertiser Index

April 2019



Cat Pumps 2

GapVax, Inc. 39



Kaiser Premier LLC 25

Milwaukee Rubber Products, Inc. 17

Radius HDD 9



Rival Hydrovac Inc. 27

Soil Surgeon, Inc. 29



Super Products LLC 11

TRIC Tools, Inc. 3



UltraShore 27

Vac-Con, Inc. back cover

Vactor Manufacturing 5

Vermeer MV Solutions 7



Water Cannon, Inc. – MWBE 6

Marketplace 38



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CORE SAWS

Taking Care of the Entire Site

DON'T SHY AWAY FROM USING THE MORE TRADITIONAL EQUIPMENT AS WELL AS YOUR CURRENT VACUUM EXCAVATORS AND DRILLS

BY CORY DELLENBACH, EDITOR

With April already upon us, that means the warmer months are nearly here. The snow is melting, and you're hopefully already starting to get some calls about upcoming work.

It's time to get those vacuum excavators, directional drills, trenchers and other similar equipment ready to roll, but don't forget about that yellow iron sitting in your yard too.

That's right, for many of you the busy season will start off by doing site preparation work. You know, the time when you get to use the excavators, bulldozers, front-end loaders and whatever else is sitting out there.

STRESSING SAFETY

Some of that site prep work will likely include trenches for pipe bursting or tunneling operations. Because of that, I want to stress safety again. All too often I see photos in my email or on social media of contractors working in trenches with no form of safety. No shoring boxes, dirt piles right next to the trench and so on.

We hear about trenching accidents happening often in this industry — far too often.

Right now, before the busy season really hits, is the perfect time to go over all of that safety stuff with your crews. What they should and shouldn't be doing out here, what gear is required and so on.

Spend a day going through safety meetings or, better yet, 15 minutes every morning doing a rundown of the jobs that day and what to be aware of.

PREPARING FOR THE JOB

The site preparation time is also when you get a chance to go over the project with either the general contractor or subcontractors on the job. Find out where they are going to be staged and where they want your equipment.

Getting this communication handled early can save plenty of headaches in the future. If something does go wrong, you then know who to go to.

YOU CAN DO IT TOO

Yes, this is one of our few issues where the focus is on more of the traditional excavation equipment and tools in our Product Focus, but don't skip those pages because of that if you only focus on vacuum excavation or directional drilling.

Chances are you've ran across instances where that equipment would have come in handy. Take a look at what's out there and what could help your company in the long run.

TIME TO START WORKING

What projects are you taking on this year? Is there a big job you'd like to tell our readers about that your company is handling this spring and summer? Or maybe one from the last couple years?

We're looking for more Down & Dirty submissions. Send me an email at editor@digdifferent.com or call me at 715-350-8436 and tell be about that project.

Enjoy this issue! ▼



THE SITE PREPARATION TIME IS ALSO WHEN YOU GET A CHANCE TO GO OVER THE PROJECT WITH EITHER THE GENERAL CONTRACTOR OR SUBCONTRACTORS ON THE JOB. FIND OUT WHERE THEY ARE GOING TO BE STAGED AND WHERE THEY WANT YOUR EQUIPMENT.

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INDUSTRY WISDOM

Successful Contractors Offer Advice

Applying another person's experiences to your own is a great way to learn. This online exclusive takes a look back at the contractors who were profiled in the magazine in 2018 and some of the best pieces of advice they shared. Read their stories and see if it sparks any ideas on how you can improve your own business.

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BRIDGING THE GAP

Adjusting to Generational Differences in the Workplace

We're living in a time where many different generations occupy the same shifting workplace. Things like exponentially increasing technology can expand the generational divide and make it challenging to keep everyone functioning as a team. This online exclusive looks at how you can tweak your management style to ensure your team stays intact no matter its age diversity.

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STAYING ON TRACK

Tracked Hydrovacs Provide Environmentally Friendly Solution

GreenWay Environmental was featured in the March issue. In this online exclusive, read more about a key aspect of the company — its tracked


hydroexcavators that allow it to more easily access and work in environmentally sensitive areas. To showcase the benefits, owner Troy Peterson highlights a job in Egan, Minnesota, that the company took on last year.

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A CONTINUAL EVOLUTION

REMEDICATION AND INDUSTRIAL CLEANING ARE MAINSTAYS OF THE TAPLIN GROUP'S DIVERSE SERVICES

STORY: GILES LAMBERTSON PHOTOS: AMY VOIGT

Steve Taplin has been cleaning up since he was a kid. His father and mother started a cluster of companies in Kalamazoo, Michigan, under the name of A&B Sewer Cleaning and Taplin was well on his way to learning the ins and outs of the business by 16.

A&B evolved from residential sewer and septic work to municipal sewer cleaning and industrial services and eventually to other related enterprises. For 30 years, Taplin worked hands-on across this spectrum of services. He watched the original company evolve into several successful companies. In the 1990s, he spun off an environmental remediation services company of his own, sold it, bought it back and eventually reassembled the original mix into a new and expanded family of Taplin companies.

Today, he is satisfied with how things turned out, though he can't say he foresaw all the twists and turns. "I only know I was taught to recognize opportunity and

to capitalize on it and have tried to convey that to the people who work for me and with me."

Under a corporate umbrella of Taplin Holdings, he now runs the Taplin Group (industrial services, underground infrastructure, asbestos abatement and energy) and Taplin Enterprises (remediation and civil construction) — five subdivisions in all, each presided over by a vice president. Several Taplin family members (Taplin's brother, Mike, and some nieces and nephews) play key roles. Taplin consults with them in conference calls. "I'm trying to maintain that family-company feel."

THE BREADWINNER

Taplin's industrial services division is a key component of the company structure. In fact, Taplin calls it the hub. "It is the only division in the company that provides services to all the others. It is the bread and butter. It is pivotal to my business." The company began

industrial pipeline work back in 1969 when it was still A&B Sewer Cleaning. Today, the division employs 25 people and serves an eclectic mix of Michigan and Ohio industries.

“We are pretty fortunate,” Taplin says. “It’s not like we are in Gary, Indiana, working only for a steel mill. We work with pharmaceutical companies and automotive plants and petrochemical sites and others.” To meet client needs, the division has its own fleet of equipment, some of it custom-designed to accommodate such diverse tasks as paint shop cleaning and slag removal, hydroex-

“I WAS TAUGHT TO RECOGNIZE OPPORTUNITY AND TO CAPITALIZE ON IT AND HAVE TRIED TO CONVEY THAT TO THE PEOPLE WHO WORK FOR ME AND WITH ME.”

Steve Taplin

cavation and plant decommissioning, hydroblasting at up to 40,000 psi, and turbovacuuming. Truck-mounted Guzzler industrial vacuum systems play a big role in the division’s day-to-day work.

Though his company does not work with radioactive material, Taplin says the industrial division does transport 40,000 gallons of flammable liquid five days a week. “We’ve been at industrial cleaning a long time and do our best to be equipped with what a client needs for a job.”

This preparedness includes being able to respond to emergency contamination events, something as small as spillage of a hundred gallons of diesel fuel. One iteration of Taplin companies was an environmental cleanup firm Taplin started. “I got pretty good at remediation,” he says, and his company still carries on the work. In 2010, the emergency team responded to a broken pipeline situation — more than 1 million gallons of heavy crude oil was spilled into a tributary of the Kalamazoo River.

Taplin Group Kalamazoo, Michigan



OWNER: Steve Taplin

NUMBER OF EMPLOYEES: 160

SERVICES OFFERED: Industrial services, underground infrastructure cleaning, asbestos and lead abatement, oil and gas field operations, pipeline, environmental emergency response and remediation, contractor and commercial services, and civil construction

SERVICE AREA: Principally Michigan, Indiana and Ohio, but periodically in other states

WEBSITE: www.taplingroup.com

Taplin Group foreman Charles Gipson uses a Guzzler Guzzcavator hydrovac unit to locate utilities on an industrial site.



While much of the industrial services work is concentrated in industrial areas in Michigan, Indiana and Ohio, the environmental cleanup work is apt to occur anywhere. Taplin recalls some years ago when crews were simultaneously remediating sites in New Jersey and California. Today, while the company has a project office in San Antonio, only its three staffed Michigan offices have equipment yards.

DIVERSE SERVICES

About one-third of the 160 employees in the combined companies work in the underground infrastructure division, which encompasses a host of

services. They can be broadly grouped into three categories: pipeline location and assessment, maintenance and repair, and cleaning. Utility company projects, both commercial and residential, account for a lot of the underground work, he says. "Identifying conflicts between gas mains and sewers is a big part of the business. Probably 30 guys work on that. And TV work is a major component."

Taplin traces a surge in utility inspection work back to 2010 when an explosion in San Francisco killed eight residents and leveled a neighborhood. A federal jury subsequently found a local gas and electric company guilty of violating safety standards. The rupture in the natural gas line occurred in a pipe installed in the 1950s that, after the blast, was determined to be substandard. Subsequent gas-leak explosions in Pennsylvania and New York City ratcheted up public concern.

"Utilities across the country were told to upgrade systems of a certain age. So there is quite a demand to locate, inspect and upgrade lines and, when utilities put in their services, to be sure they don't hit sewer connections," Taplin says. "When you think about how many underground gas mains and sewer connections there are, obviously there is a lot of camera work to be done."

The division also performs man-hole inspections. Therefore, between horizontal pipes and vertical access entry points, technicians constantly call on their GIS equipment to precisely map underground structural components and CCTV cameras to visually inspect them. Sonar and laser profiling hardware and software solutions are utilized to assess the infrastructure's condition.

The company depends on cameras by CUES and RapidView IBAG North America. A favorite unit, according to Taplin, is the CUES LAMP II lateral launch model. It's a self-propelled robotic camera unit that can navigate pipe going with or against the flow and, when encountering a lateral pipe, can launch a second mini pan-and-tilt camera to explore it.

Inspection work often leads to cleaning work, and every underground cleaning company has a favorite story about discovering something that wasn't supposed to be in a system. Taplin's story dates from 1977 when the company worked a site in Pennsylvania. Its discovery, however, was with the naked eye.

A dam had broken upstream and overwhelmed stormwater lines serving a community. As Taplin tells it, employees were bucketing out muck from the pipe when, amid the debris, they came upon a hand grenade. "No one wanted to touch the grenade, so

The star of the show

In the fall of 2017, Steve Taplin traveled to Liechtenstein, a tiny European principality snuggled between Austria and Switzerland. It wasn't just a pleasure trip. The owner of Taplin Group flew there to check out a sewer cleaning truck.

The truck is a product of equipment manufacturer Kaiser Premier, which at the time did not manufacture its sewer cleaners in the U.S. but now has a plant in Colorado. The company is a respected maker of sewer and industrial cleaning equipment (as well as a one-of-a-kind "mobile walking excavator" that comes into its own on steep slopes and other unstable sites). Taplin was especially interested in the company's AquaStar truck.

Taplin companies have long utilized vacuum trucks in their cleaning and hydroexcavation work. Yet Taplin decided he should look at additional solutions to job site challenges. "We need efficient means to execute our work," Taplin says. One of the efficiencies that took him to Liechtenstein was AquaStar's ability to recycle its water.

"Recycling is important," he says. "When you think about how much time you spend on a man-hole, periodically stopping to

run for water or to set up a hose at a hydrant, you start to see a downside. And then you get in some areas where water conservation is a selling point. Some municipalities, because of the age of their system, don't want you pulling water from every hydrant, so you find yourself driving clear across town for water."

The truck's 755-gallon water tank is recycled through the company's patented ROTOMAX system and can be jetted out at 132 gpm at up to 2,900 psi. It can carry almost 1,000 feet of jetting hose and 55 feet of suction hose. It is relatively quiet because its vacuum pump is located in the freshwater tank. The AquaStar boasts 25 percent less fuel consumption than other truck units because a Kaisertronic mechanism adjusts suction power to the vacuum rate, easing off when it can do so without impeding flow.

Taplin says the truck is easily operated and has delivered as advertised. "I also would say — Americans don't like to hear comments like this — they have been cleaning sewers in Europe a hell of a lot longer than we have in the U.S."

A Taplin crew member works with the company's Kaiser Premier AquaStar unit on a job site near Kalamazoo, Michigan.



The company's Guzzler hydrovac unit is a big player in the division's day-to-day work.

a bomb squad was called out and safely retrieved it," Taplin recalls. "It wasn't a toy. I don't think we ever did figure out where it came from."

CLEANING MACHINES

Taplin's underground division uses a variety of hydrovac and jetter equipment, much of it from Vactor.

"We bought our first Vactor truck in 1975. We've known that brand for a very long time," he says. Vactor combination sewer cleaning trucks



"THERE IS QUITE A DEMAND TO LOCATE, INSPECT AND UPGRADE LINES AND, WHEN UTILITIES PUT IN THEIR SERVICES, TO BE SURE THEY DON'T HIT SEWER CONNECTIONS."

Steve Taplin

BELOW: Inspection work often leads to cleaning work (CUES camera inspection system).





ABOVE: Steve Taplin, left, president, with Gary Dixon, senior site supervisor. Taplin believes in a family-company atmosphere and is hopeful that his business will carry on his legacy. RIGHT: Taplin was already learning the ins and outs of the industry at the age of 16 while working for his parents' company.

are mainstays of his fleet, including the model 2115, a 500 hp unit with a 15-cubic-yard debris body and 1,500-gallon water tank that rides on dual rear wheels. Some 60 trucks constitute the Taplin underground infrastructure fleet, including support equipment.

Six or eight times a year, the company cleans large-diameter pipe — 48 inches and larger — for one of its cli-

“WE’VE BEEN AT INDUSTRIAL CLEANING A LONG TIME AND DO OUR BEST TO BE EQUIPPED WITH WHAT A CLIENT NEEDS FOR A JOB.”

Steve Taplin

ents. The bigger pipe typically is scoured with 200 gpm of water at 2,500 psi. “You need force and volume to convey a large amount of material out of the pipe. The biggest pipe we’ve cleaned to date was 13 feet in diameter.”

But not all of the company’s sewer cleaning machinery is massive. Taplin has lovingly refurbished and restored a 1971 O’Brien trailer jetter, something of a Taplin family heirloom. “You wouldn’t be able to tell it goes back to 1971. It’s very unique, and we still use it. We pull it around with a forklift.”

The 55-year-old company president is not the only Taplin employee with longevity in the business. Some of his superintendents have worked there for 20 years or more, and some equipment operators have been at the company for a long time too. Taplin is hopeful that his family business will carry on his legacy with another member at the helm. His 19-year-old son Hunter is studying business at Michigan State University and “has expressed some interest.” ▼



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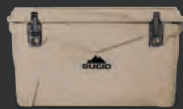
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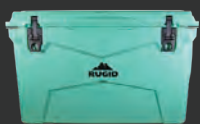
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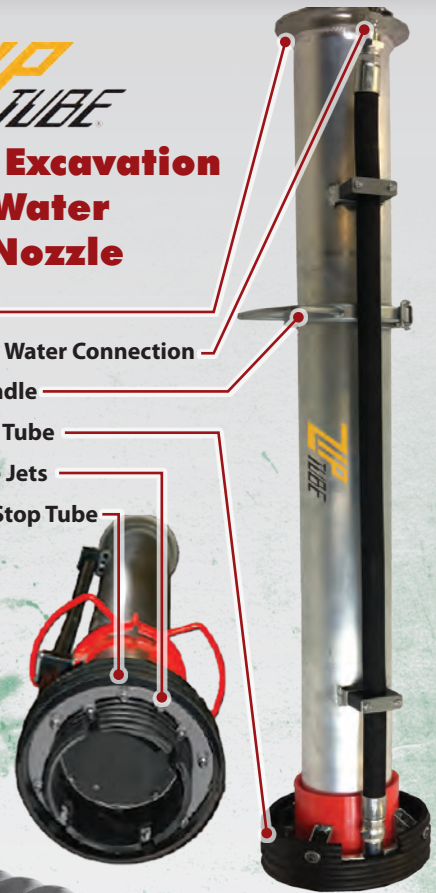
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HYDROEXCAVATION

Profile



A crew member with JG Environmental hydroexcavates for utilities around an electrical substation.

GAMBLING ON GROWTH



FATHER-SON COMPANY MAXIMIZES GROWTH BY ANTICIPATING DEMAND AND STAYING A STEP AHEAD

STORY: JARED RANEY PHOTOS: JEREMY DREY

Not many people were starting new businesses at the peak of the 2008 recession, but Jim Guerin took that leap.

Defying popular wisdom, Guerin resigned from his longtime, well-paying job to start his own operation and achieved remarkable success with a single guiding principle: Take chances at the right time.

Using skills he cultivated as a business development strategist for a large wastewater management company, the owner and president of JG Environmental in Lancaster, Pennsylvania, started his own outfit purely as a brokering operation — bidding, planning and coordinating jobs without actually owning or operating any of his own equipment. He made a run of it that way before taking the plunge into full-fledged environmental waste operations.

“It was a big personal financial risk for me, but the timing was good because the poor economy was prompting potential clients to reevaluate the cost of their current environmental service contracts,” Guerin says.

The decision reveals a knack for planning ahead that has helped him find success running his own company.

“I wanted full responsibility and the ability to make decisions regarding the direction of the business,” Guerin says. “I saw room in the market, and since the timing was right, I decided to take a leap and start my own business.”

ROUNDTABOUT BEGINNING

Guerin’s first dive into entrepreneurship was a car wash. The venture wasn’t exactly a success, but it led to a conversation with an operator who was pumping the car wash basin. He discovered that the wastewater management company had no sales department, prompting a bold decision.

“I became their first sales guy and worked my way up to sales manager and then business development,” Guerin says.

After 11 years, he took his leave in 2007, citing growing discontent with his level of control in the company, and founded JG Environmental. “I started off thinking I

was going to be a broker,” he says. “I told my wife, ‘We don’t need employees. We don’t need equipment. I know what I’m doing.’”

Guerin would go out and find jobs, then plan and bid them, subcontracting all the hands-on work to various environmental companies. It worked for about a year. Eventually, clients started asking why they needed a middleman for jobs when they could go straight to the contractors. He realized it wasn’t a sustainable business model, and in 2009 he bought his first truck.

“I had the experience, but mainly at sales, not hands-on as far as the truck. I had seen it done so many times, and I’ve always been a hard worker,” Guerin says, citing early work as a farm and moving company laborer. “Now I have that experience doing the work myself.”

AN UNEXPECTED ADDITION

Guerin’s son, Jim Guerin II, helped during breaks while attending the University of Delaware, starting as a laborer while the company was still brokering and eventually running a truck as they transitioned. After graduating, he joined the company full time, eventually becoming part owner and operations manager.

JG Environmental Lancaster, Pennsylvania

OWNERS: Jim Guerin and Jim Guerin II

FOUNDED: 2008

EMPLOYEES: 15

SPECIALTIES: Industrial tank cleaning, vacuum excavation, bulk waste hauling and processing; full-service environmental waste removal

WEBSITE: www.jgenvironmental.net



Brendan Perry, field service technician, drains the liquid from a GapVax hydroexcavator at a job site in Columbia, Pennsylvania.

“I never thought it would be a father-son operation — never in my wildest days — I really didn’t,” the elder Guerin says. “I thought: He’s smart, smarter than me. I thought he would come out of college and do something else.”

Growing up around cars gave the younger Guerin an interest in machines and a proclivity for mechanical things, making him a perfect fit for the operational side of JG Environmental.

“He was significantly helping grow the business, through a lot of dedicated, hard work,” the elder Guerin says. “He became integral to the business, so I asked him to stay.”

While the elder Guerin focuses on managing the business end — bidding jobs and managing growth — his son quickly took on more responsibility and became the operations specialist. He spent only two years as a driver before transitioning into a leadership role.

“He’s vice president of operations, and it has become so easy. I just throw everything on him,” Guerin says with a laugh. “My job is basically to go out, bring the work in, and his job is to get it done.”

With Guerin’s talent for management and operations, the growth has been so explosive — with services now running the gamut of nonhazardous environmental waste removal — that the company is looking to restructure yet again, adding on to its processing facility.

“It was easy for (Jim II), three, four, five years ago, but now he has nine drivers, there are five field service people underneath him, and we also have a full-time mechanic. He’s responsible for all the equipment, and then we get a treatment facility, so what do I do? ‘Jim, you’re responsible for that.’” Guerin says. “We need more help, absolutely we need more help, which is part of the plan once we build the addition. We’re going to hire more people to take the processing off his hands.”

Guerin says working with family can be challenging because both personal and business relationships are involved.

A tanker for industrial liquid transportation sits at the JG Environmental shop as one of the company’s GapVax dry-wet units returns from a job.

“I WANTED FULL RESPONSIBILITY AND THE ABILITY TO MAKE DECISIONS REGARDING THE DIRECTION OF THE BUSINESS.

I SAW ROOM IN THE MARKET, AND SINCE THE TIMING WAS RIGHT, I DECIDED TO TAKE A LEAP AND START MY OWN BUSINESS.”

Jim Guerin



“I’m very fortunate — blessed — to be able to work with my son,” Guerin says. “I didn’t set out for it to happen, didn’t plan on it, but there’s a trust factor with your own blood that you never can quite get if you hire somebody. It’s really a pleasure for me to work with him.”

GAINING STEAM

The company started off leveraging the elder Guerin’s previous expertise in wastewater management, but eventually became a one-stop shop for any environmental waste needs, including bulk hauling and waste processing.

There were several large jobs that helped get the operational side of the company up and running. First was work in the Marcellus Shale, which became a hot spot in the early 2010s. There was an abundance of work cleaning everything from frac and vacuum tanks to drilling pads, in addition to bulk-hauling drilling spoils.

“I NEVER THOUGHT IT WOULD BE A FATHER-SON OPERATION — NEVER IN MY WILDEST DAYS.”

Jim Guerin

Jim Guerin, left, president, and Jim Guerin II, vice president of operations, with a GapVax hydroexcavator at the shop. JG Environmental, based in Lancaster, Pennsylvania, has grown steadily — at times exponentially — since its founding in 2008.



Mob legacy makes haulers’ lives difficult

An abundance of challenges comes with starting a business, let alone one in a saturated market in the middle of a major recession. For Jim Guerin, owner and president of JG Environmental, in Lancaster, Pennsylvania, one of his biggest challenges wasn’t the competition, but instead the red tape that accompanies environmental waste services.

“Getting our permit to be able to transport the spoils of hydroexcavation is important because each state requires different permits to haul on its streets and roads,” Guerin says.

JG Environmental has permits for Pennsylvania, New Jersey, Delaware and Maryland. Not all permits and certifications are created equal — case in point, New Jersey’s waste hauling permit.

“When I say it’s a challenge: It takes anywhere from two to three years to get a permit to operate in New Jersey,” Guerin says.

Part of the reason for the difficulty in that area dates back to the days of the mob, which used garbage hauling operations as fronts for

money laundering, using intimidation and violence to win lucrative bids, and often using falsified paperwork to appear legitimate.

“We get fingerprinted by the FBI; my son and I got fingerprinted. A full background check from the state police of New Jersey is dropped on you; so it took us a month to fill it out, then it takes eight months for them to evaluate it, and then questions start. It’s a very big process,” Guerin says.

After the initial process, to maintain the permit requires continuous reports, paperwork, and quarterly spot inspections.

“It’s difficult to get, and once you get it, then to keep it is not a picnic either,” Guerin says. “So that was a challenge, as well as getting the processing facility permits from the Department of Environmental Protection. That took 2 1/2 to three years. They inspect your facility and you build based on the regulation, implementing it into your process and facilities.”



Cody Gray, driver/operator, works with a hose at the shop.

“IF YOU DON’T HAVE THESE TRUCKS OUT EVERY SINGLE DAY, YOU WON’T BE ABLE TO PAY FOR THEM.”

Jim Guerin

employees (including both Guerins) and 12 trucks.

“We’re busy, and then all of a sudden somebody has this need, so we end up subbing it out, or we sub out the scheduled work because it’s an easier job and we pull our truck off and we juggle another thing,” Guerin says. “That’s what drives the need to get another truck, so once that happens more and more often, that’s when you say, ‘We need another truck.’”

They recently added a brand-new 2019 GapVax to their existing fleet of two GapVax wet-dry units with Hotsy Cleaning Systems, a PresVac wet-vac unit, Galbreath roll-off truck, three Acro Trailer tank tractor-trailers, an

ITI Trailers & Truck Bodies pump truck, as well as an additional PresVac pump truck and four support vehicles.

With the new unit, their plan is to begin keeping growth to a more controlled rate.

“We’ve been averaging two to three trucks added for the past four or five years. So we’re just trying to manage the growth now,” Guerin says. “As any business owner knows, it’s the net that matters, not the gross sales. So as soon as the net starts not keeping up with the gross, that’s when we’ll home it in a little bit. And we don’t expect to continue 30 to 40 percent again for another six or seven years.”

A STRONG LEGACY

Looking back on the long road that got him to this point, Guerin’s only regret is that he didn’t start his company sooner.

“I was in the industry for over 11 years with one company,” he says. “After eight or nine years, we started not agreeing. I was frustrated for two years. So it was very risky and not a good time personally to start a business, but the work was out there, becoming more available to people seeking work. Everybody was thinking that they could save money by reevaluating contracts and seeking bids from new contractors.”

By taking a series of calculated risks, Guerin was one of the few who made the recession work for him, carving out a sizable cleaning kingdom that he can now pass on to his son. ▼

Next came Hurricane Sandy in 2012, providing JG Environmental with six months’ steady work during the early recovery efforts. For at least four months, a large contractor in New Jersey essentially sublet one of JG Environmental’s trucks.

“They needed our help, so we ended up sending one truck out there full time,” Guerin says. “At the time, we only owned three trucks, so sending one every day that we could bill for four months was a big shot in the arm.

“If you don’t have these trucks out every single day, you won’t be able to pay for them. Starting off, somebody would say, ‘Can you ...’ and I’d say yes, then I’d figure out how to do it. I mean honestly, that’s true,” Guerin says. “You do what you can to keep the truck moving, keep the truck running.”

The growth mentality is reflected in the evolution of the facilities. Today, the company is planning to expand the processing facility and will build new office and garage headquarters on an adjacent lot this spring.

“Business really took off when we purchased and moved onto the new property. Combining administration and operations really helped us with synergy and helped us get focused,” Guerin says.

At one time, they were renting a small office where Guerin worked back to back with an administrative assistant — Joyce Hanner, now the company’s vice president of finance and administration — 3 miles away from the shop. Operators would fax information back and forth.

“Now that we’re all under one roof, it’s much more efficient, and we continue to grow,” Guerin says.

TAKING RISKS

It might seem like luck has pushed the company on its rapid growth trajectory, but careful consideration and foresight are the real reasons for its success.

There have been plenty of challenges, like dealing with last-minute job requests, but these jobs have provided opportunity.

“If there’s a sinkhole or somebody lost power, we’re small enough to tweak our schedule and jump at the opportunity,” Guerin says. “There are a lot of companies out there that they called first that can’t do it so quickly, so taking the chance and ordering the trucks before you actually need them, that’s important — seeing that you’re going to need it in six months — because these trucks take six to eight months from once you order them until you receive them.”

That strategy has worked out well for JG Environmental, which has maintained steady growth of between 30 and 40 percent per year over the past seven years. Since the company bought its first truck in 2010, it has grown to 17

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A Brighter Future

LED TECHNOLOGY REDUCES POWER CONSUMPTION WHILE INCREASING THE BRIGHTNESS OF HAZARD AND WARNING LIGHTS

BY DEL WILLIAMS

To ensure the visibility and safety of everyone on the road, the Society of Automotive Engineers mandates that vehicles such as construction and utility trucks are equipped with hazard and warning lights. Whether roof-mounted beacons or directional surface mounted to the vehicle's body or grille, these flashing strobe lights capture the attention of motorists and pedestrians and warn of a potentially hazardous activity or situation.

Available in several colors — amber, white and blue — and a variety of pulsating strobe effects, these lights come in several SAE classes and mounting styles depending on how quickly the vehicle will be moving.

Now, however, as the lighting world continues to transition to LEDs, these hazard and warning lights are now available in low electrical consumption, long life models that far exceed traditional halogen or gas-discharge options.

Making this move even more attractive for fleet managers are the plummeting prices of LED technology, which have decreased to the point that many vehicles that require Class 2 lights are instead being outfitted with brighter, Class 1 options given the minimal price differential.

"Today, the entire hazard and warning light industry is undergoing a significant sea change — namely, the industry's shift to LED technology," says Chris Cammack of Grote Industries, a U.S.-based manufacturer of vehicle lighting and safety systems.

"The reason for this migration comes down to three factors: energy efficiency, longer service life and brightness," Cammack says. "LEDs consume less power than any other lighting technology on the market and are powered by low voltage, allowing for minimal draw of electrical current from the vehicle's battery."

BETTER QUALITY AND LONGER-LASTING

By contrast, halogen lights draw an excessive amount of current, which can eventually lead to draining the vehicle's battery. In addition, they are known for poor energy efficiency, with halogen lights losing as much as 95 percent of their energy to heat.

"LEDS CONSUME LESS POWER THAN ANY OTHER LIGHTING TECHNOLOGY ON THE MARKET AND ARE POWERED BY LOW VOLTAGE."

Chris Cammack

Gas-discharge strobe lights are equally inefficient. However, unlike halogen lights, it is not due to excessive current draw, but instead the intense and concentrated heat generated by the strobe, which can significantly shorten the service life of the flash tube.

LEDs, on the other hand, consume only 25 to 35 percent of the power of gas-discharge strobe and halogen lights. As a result, LED strobe lights have a service life that is 10 times longer, often lasting 70,000 hours or more.

With most of the world transitioning to LEDs, the quality has continued to improve as well. In the early days of LEDs, they were not bright enough to meet SAE requirements for luminous intensity of hazard and warning lights, measured in candelas. However, technology has advanced and LEDs are now as bright — if not brighter — than the average strobe or halogen light.

A sampling of LED lights forms includes (1) an amber strobe, (2) thick hazard lights and (3) thin warning lights.



"LEDs today are much brighter," Cammack says. "Today, they are more than bright enough to meet the SAE standard for candela over 100 feet."

PRICING HAS CHANGED

Another barrier to early adoption was the initial price point, another aspect that has dramatically changed in the past decade.

"The cost to upgrade to LED strobe lights was prohibitive, at least initially," Cammack says. "Fortunately, the prices have come down significantly in the past 10 years, and now they are about the same."

In fact, Cammack believes LED models will soon become less expensive as fewer manufacturers make models with outdated technology. Companies like Grote Industries have phased out other technologies in favor of LED only.

"Fewer companies are manufacturing gas-discharged strobe warning lights, so the price of those units is actually going up," Cammack says. "In a couple of years, it will actually cost more for a gas-discharge or halogen strobe."

For manufacturers such as Grote Industries, the options are virtually unlimited. The company offers class 1-3 permanent, vacuum and magnetically mounted beacon lights in both regular and high profiles and a myriad of strobe patterns. Most of the company's LED offerings only draw 0.4-0.35 amps at 12 volts DC.

The company also offers LED directional surface-mount strobes in 3, 6 and 12 diode options that feature 12 different selectable flash patterns in either of two phases, including "steady-on." These too, require only about 0.1 amps per diode.

Cammack adds that it is important when upgrading to LED strobe lights to be cautious when purchasing inexpensive, imported products. Although they may be cheaper initially, some overseas suppliers use lower-quality LED components. Moreover, it can become an issue of warranty claims arise.

ABOUT THE AUTHOR

Del Williams is a technical writer based in Torrance, California. He writes about health, business, technology and educational issues, and he has an M.A. in English from California State University Dominguez Hills. ▼



As horizontal directional drilling expands and more crews are needed, training becomes complicated. Manufacturers are trying to do their part in easing that pain with the help of simulators. Vermeer has a full-sized simulator where contractors can get the feel of a directional drill and how it behaves.

Training the Next Generation

WHILE STILL IN ITS INFANCY, SIMULATED TRAINING CAN HELP SOLVE OPERATOR SHORTAGE AND HELP KEEP CURRENT OPERATORS CERTIFIED

BY JARED RANEY

Ask any contractor and they'll likely tell you that finding and training qualified employees is one of the biggest challenges facing any trade industry today.

Part of the problem is that technological advancements equal more training and higher thresholds for entry, but in the case of horizontal directional drilling, technology may also be part of the solution.

As HDD expands and more crews are needed, training becomes complicated. Manufacturers are trying to do their part in easing that pain with the help of simulators.

"The beauty of the simulator is it's the same platform as our real equipment," says Dan Vroom, customer training lead for Vermeer. "So if we can train somebody well on the simulator, they can really run any of our products. It's the same process, same features, same control layout."

There was a time when manufacturers could bring each of their customers in for training on the actual rigs, at the factory itself. But as the customer base expands, that is not always feasible. Not to mention, with increasing underground utility saturation, simply finding a safe place for practice boring is a challenge.

"It's always best to get on-rig experience, so we don't actually use a simulator for the training we do at the factory, but we do promote its use at the dealership level," Vroom says. "It just expedites the process."

Ditch Witch is another manufacturer using simulated training. Unlike Vermeer, they opted not to pursue the larger, model-chair simulators, which

tend to be heavy and expensive. Instead, they use a simple setup with video game joysticks and a monitor. It doesn't have the same crossover value as the larger simulators, but benefits from mobility.

At its current level, simulator technology is a supplement to other traditional training methods, not a replacement. Simulators, while valuable, are just one piece of the puzzle.

"THE BEAUTY OF THE SIMULATOR IS IT'S THE SAME PLATFORM AS OUR REAL EQUIPMENT. SO IF WE CAN TRAIN SOMEBODY WELL ON THE SIMULATOR, THEY CAN REALLY RUN ANY OF OUR PRODUCTS."

Dan Vroom

PUTTING THE PIECES TOGETHER

Ditch Witch incorporates its simulators into a five-step training method, which also includes online and classroom training. The company still offers on-rig free-boring in their training, but having the simulator gives customers a leg up before getting to that stage, simplifying the process.

"The simulators are good. I think the market is still trying to figure out what is the best intended use," Vroom says. "Because a simulator on its own is OK, and then a classroom training on its own is OK, but how do you partner those up together to get the biggest bang for you buck?"



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At its current level, simulator technology is a supplement to other traditional training methods, not a replacement. Ditch Witch's simulator is a simple setup with joysticks and a monitor, making it more mobile.

Potential for simulated training is ever-evolving, as evidenced by Ditch Witch's recent foray into a virtual reality simulator.

"It gives the simulation depth, where the operator can look a full 360 degrees around him and the machine," says Greg Wolfe, director of product support and training for Ditch Witch. "What it did for us is not only were we able to engage the novice operator, but now we're able to engage even that operator who's got three or four or five years of experience, in helping him hone his skill."

ADDING MORE PIECES

Hardware and implementation aren't the only factors that continue to advance — software additions seek to provide more versatility and further uses for the technology.

"The operations of the simulator allow you to be able to see not only what you're doing when you're boring, but gives you both a topographical and a side view of the bore site, and we have several different boring conditions to choose from," Wolfe says. "It's a pretty dynamic tool."

As the internal structure of these simulations progress, specialization will become more feasible in the form of advanced situational training for experienced operators.

Most manufacturers and regions offer certifications for HDD operators, something that is becoming expected more and more by employers as well. Vermeer recertifies operators every three years, and simulators could play a role in simplifying that process.

"When we're talking about training, it's all about consistency. So when you have a simulator, in the fundamentals of it, it is all going to be the same," Vroom says. "No matter who gets in the seat, they're going to hear the same message and see the same response, so to me that's where the benefit really lays, is consistency."

THE FINAL PIECE

This technology could go beyond training new or existing operators, even into classrooms, as a way to pique students' interest in the trades as a career path. "I think it would be cool if you incorporated a lot of this at the community college level or the high school, to get more traction to the industry, to promote the industry," Vroom says.

Some in the industry are already pushing that idea forward, such as CM Labs, which hosted a seminar and demo at Del Mar College, where students had the opportunity to try an analogous simulation.

Over the past several years, the industry has made great strides in simulated training, but there is still room to grow. "The simulator has to be at the right entry point to be useful and beneficial," Vroom says. "Right now, we're almost there, but there could be some tweaks to make it even better." ▼



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Cooperation Prevents Catastrophe

UTILITIES, MUNICIPALITIES AND CONTRACTORS NEED TO WORK TOGETHER TO AVOID CROSS-BORE DISASTERS

BY SHEILA JOY

Directional drilling is a fast and efficient way to install underground pipe and conduit, but when a gas line is bored through a sewer lateral, disaster can ensue.

Cross bores — when a line bores through a sewer line — have been the cause of catastrophic events in the past. As a result, utilities, municipalities, contractors and the trenchless industry are joining forces to ensure proper pre- and post-inspections are conducted and disaster is avoided.

“There are always more connections than what surface observation suggests,” says Jason Walborn, business development manager for Professional Pipe Services, or Pro Pipe, headquartered in Mission Viejo, California. “I have seen typical streets that have, for example, eight homes, eight clean-outs and eight green corresponding lateral marks from an 811 call. The reality, however, is that subsurface there are more like 10 sewer laterals. We are doing everything we can to coach facility owners on how to spatially map their subsurface infrastructure during routine maintenance to improve accuracy for 811 locate requests.”

FINDING CONFLICTS

Camera systems using lateral launch technology have made an incredible impact on finding those missing conditions. “We use state-of-the-art lateral launch cameras to locate potential cross bores in the laterals prior to the commencement of drilling,” Walborn says. “Cameras are launched from the main up each lateral to identify and record potential conflicts. The data, including GPS position and time stamp, are captured, recorded and provided to the utility or system owner to address and/or proceed with the drilling. Equally important, however, is the process of post-drill inspection to confirm laterals have not been breached during the installation of the utility.”

While gas or communication lines are typically the utilities most of us think of when we hear the term cross bore, directional drilling of other utilities can negatively impact the integrity of laterals as well. Jerry Weimer of Jerry Weimer Consulting, formerly the wastewater collection supervisor for the city of Cincinnati, wrote the Cross Bore Prevention Detection Program for Cincinnati. He shared how waterlines, installed using directional drilling, compromised laterals during his employment for the city.

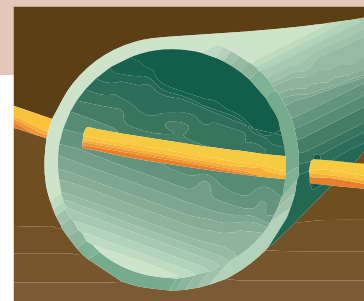
“Those waterlines hit just about every lateral,” Weimer says. “The city started getting calls. One house would back up, then the next, and so on — it was like a game of dominoes. Since the compromised pipes were waterlines, they were not part of the Cross Bore Prevention Program, as no real prevention, detection or standards were in place for installing this type of utility.”

PREVENTION

The partnership between utility owners and municipalities is critical if cross-bore events are to be identified and addressed appropriately to keep com-

“THE WORST THING THAT CAN HAPPEN IS AN OPERATOR RUNS ACROSS A CROSS BORE AND **DOESN'T DO ANYTHING.**”

Jerry Weimer



munities safe. Weimer also shared how the city of Cincinnati and Duke Energy came together to develop a comprehensive and mutually beneficial cross-bore program. “It is rather uncommon for a city and utility to work so closely together on cross-bore prevention,” Weimer says. “In this case, both Duke Energy and the city recognized the importance of a comprehensive prevention program, so they shared the costs to get cross-bore inspection work done economically and responsibly. Since the city is under consent decree to televise a certain number of feet of pipe, it gets the assessment data needed while sharing the cost with Duke Energy. It’s a win-win for the city, the utility and the customers.”

SETTING STANDARDS

NASSCO, whose mission is to set standards for the assessment, maintenance and rehabilitation of underground infrastructure, identified the need to set standards for proper cross-bore prevention and detection. As a result, NASSCO recently introduced a cross-bore work group to address this topic. Specifically, the work group is developing protocol targeted to operators when cross bores are found during routine sewer inspection and cleaning.

“The worst thing that can happen is an operator runs across a cross bore and doesn’t do anything,” says Weimer, who also serves on NASSCO’s cross-bore work group along with Walborn.

“Our job is to get standard processes in place to support operators in identifying cross bores and provide the proper protocol to report them quickly to protect the public, the operator, the plumbers and the public,” Walborn says. “Awareness is the No. 1 objective of our work group.”

The standard assessment and cleaning of mainlines and lateral lines could also potentially uncover cross bores masked by roots. If a cross bore is hiding behind roots that have infiltrated the pipe and the roots are then cut, disaster could ensue.

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“A significant benefit of a regular chemical root control maintenance program is the ability to kill the roots without cutting or damaging the pipe,” says Mike Hogan, president of Duke’s Root Control. “Our product, for example, which has a thick, shaving-cream consistency, is released from a manhole into the main, killing roots in the entire system. The foam compresses pipe surfaces, penetrates cracks, joints and the connecting sewers. Killing roots in laterals using chemical root control assists in identifying and revealing laterals compromised by cross bores without mistakenly cutting the roots away and breaking through a gas or other utility line.”

PARTNERSHIP

In addition to municipalities and utilities working closely together, the relationship between utilities and contractors is extremely important for the implementation of a successful cross-bore program.

Harley Peterson, a project manager with the SoCalGas Sewer Lateral Inspection Program, shares the importance of his relationship with contractors. “We work with a few contractors on our cross-bore program,” he says. “Pro Pipe is the largest contractor and does the majority of the work. We started working with them back in 2011, and the reason our relationship has been so successful is because of our mutual partnership and Pro Pipe’s willingness to adapt to our needs. Pro Pipe has their own fleet of camera trucks and crews, so we never need to wait to get out into the field. They also work with us to identify challenges and develop unique solutions. The result has been better quality data and a higher level of confidence that we are keeping homes and business protected.”

The most common question pertaining to cross-bore inspection and remediation is always who is responsible. The answer: When it comes to keeping our communities safe, we all are.

ABOUT THE AUTHOR

Sheila Joy is president of New Phase Marketing. ▼

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BY SUE BINGHAM

It's a great irony that the discipline policy preferred by most companies is called "progressive." The word progressive means "making favorable progress or change;" nothing is further from the truth with this type of policy.

A progressive discipline policy is about punishment — not improvement. This senseless and dehumanizing process was created to protect companies from adverse legal rulings, and mostly at the advice of legal counsel. The irony is that a claim or charge can be adjudicated in favor of the employee — not because of what the terminated employee has or hasn't done — but because the company failed to follow the myriad details outlined in its own policies.

Most managers denounce their company's progressive discipline policy as lengthy, overengineered and ineffective. For the bad apple who shouldn't have been hired in the first place, this process takes far too long. And the small minority of abusers use the policy like a playbook and keep ahead of the game by changing the performance issue that is violated. They also know the time required for the last warning to be removed so they can do it again. Here's how it works:

PLEASE SIGN HERE

Typically, progressive discipline policies are comprised of steps, with each step involving an employee and his/her manager and eventually witnesses. In each step, the communication is routinely one-way and parent-child, ending with the threat: "Failure to improve will result in further disciplinary action up to and including termination."

- Step 1 is a verbal warning. The word "warning" is correct because the discussion ends with a threat. The angry employee then leaves (often after being asked to sign the written verbal warning).
- Step 2 is just like the first step but is now called a written warning. Again it ends with a threat (in a more serious tone) and the angry, dispirited or apathetic employee leaves after being asked to sign the warning.
- Step 3 varies among companies. It may be a second written warning or an unpaid suspension from work. The employee is sent home (which

seems much like sending a child to his or her room), and the employee and his or her family are being punished because the company is withholding pay.

- Some companies even have a Step 4 — a third and final written warning. This is usually a tense and negative interaction between the manager and employee. It exists to create a paper trail that will hold up in an unemployment claim or court of law once the employee is terminated (at this stage, the decision has already been made to fire the employee).

Punishment is not instructive. It cannot teach a new behavior or solve a problem. The improvement or desired behavior will never be permanently learned unless an employee and his or her supervisor work together to solve the problem.

ASSUME THAT THE VAST MAJORITY OF EMPLOYEES ARE GOOD PEOPLE WHO WANT THE COMPANY TO SUCCEED. THEY ARE ADULTS WHO OWN HOMES, RAISE CHILDREN AND SERVE IN THEIR COMMUNITIES. IF A PROBLEM DEVELOPS AND IS BROUGHT TO THEIR ATTENTION, THEIR DESIRE IS TO SOLVE IT.

In most traditional companies, equipment is treated better than employees. Using a progressive disciplinary approach is like banging on a machine to make it run better.

HERE'S A BETTER WAY

Assume that the vast majority of employees are good people who want the company to succeed. They are adults who own homes, raise children and serve in their communities. If a problem develops and is brought to their attention, their desire is to solve it.

A performance coaching approach is based on this assumption. If a prob-



Sue Bingham

lem arises, those involved will want to solve it. This coaching meeting has an agenda the manager partially prepares in advance to be clear and concise about the problem. When prepared, the manager can state the issue, usually in under 15 seconds, and then ask, "What's going on?" This turns the problem-solving conversation immediately over to the employee to discover the cause of the performance issue.

This is not a "step" process. This is an adult conversation, and the ending depends on the employee's response. For example:

- **Cooperative:** If the employee is cooperative (most are), he or she accepts responsibility and offers an action or commitment to address the cause — problem solved! The action or solution is not provided by the manager. The manager helps follow through on the employee's plan.
- **Uncooperative:** The employee may be uncooperative, meaning he or she isn't forthcoming regarding the cause, blames others or simply avoids responding as an adult to the manager's questions. When this happens, the manager reflects what he or she is seeing and hearing. Most people become cooperative at this point. If not, the manager will ask the employee to go home for the rest of the day. Unlike a suspension, this time off is paid because the employee's job that day is to decide about his or her employment. Is this a job he or she wants? Can he or she meet expectations? If so, the employee is expected to return with a sincere commitment statement or plan of action. If the employee determines the job is not for him or her, the company processes his or her resignation. (A surprising number of people make the decision to change.)
- **Disrespectful:** Occasionally an employee can go beyond uncooperative and become downright disrespectful. There is no room for disrespectful behavior in this process. The manager reflects what he or she is seeing or hearing, and if the employee continues to be disrespectful, the manager ends the meeting. The employee is sent home and informed that the manager will call in the morning to let the employee know if he or she still has a job.

In all three instances, the problem is solved — usually with less than two conversations.

This process does have documentation. When a manager lacks confidence that the improvement will be made, a letter is sent to the employee that documents both sides of the conversation including the employee's plan of action. It is kept in a company file. When the employee's response results in resignation or termination, a report detailing the conversations is submitted.

AVOID LEGAL ISSUES

With this approach, the legal process is now focused on the employee's response and subsequent actions versus whether the detailed progressive discipline steps were followed by the company.

As competition for good people becomes more intense, companies that treat their employees with respect, and as adults, gain the advantage. Managers are then free to use the leadership, judgment and communication skills for which they're paid.

ABOUT THE AUTHOR

Sue Bingham is founder of HPWP Group, a coach, speaker, and author of *Creating the High Performance Work Place: It's Not Complicated to Develop a Culture of Commitment*. Reach her at www.hpwpgroup.com. ▼



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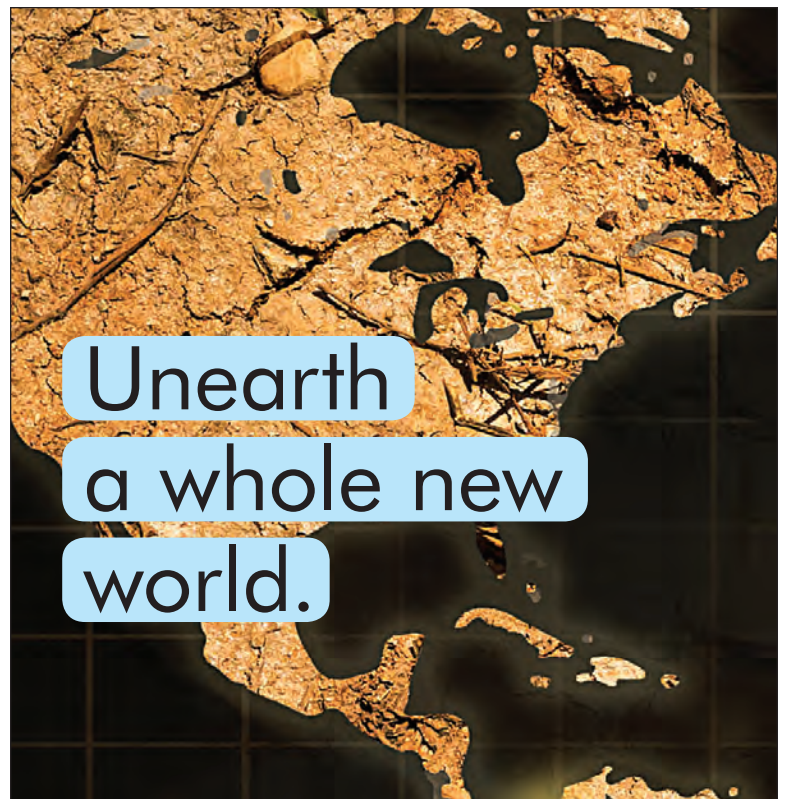
Model X1

Features Include:

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- Water ring tips boring inward to cut the soil & outward to get tube down
- Bumpers on bottom to protect tips & lines

Patent #6,484,422B1

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BY CRAIG MANDLI

Air Excavation

Ramvac by Sewer Equipment AX-4000

The AX-4000 air excavator from Ramvac by Sewer Equipment offers a simple, single-engine design with 12-volt electrical controls and manual hand valves for ease of use while also providing operators the ability to excavate with both air and water effectively using only one truck. This series offers payload capacities from 5,000 to 12,000 pounds while the hydraulic rear door allows operators to dump spoils quickly and easily. It allows you to customize your blower to achieve the results you need in any applications, with capacities of 18 or 27 inches Hg, 1,400 or 3,000 cfm and hose diameter of 4 or 6 inches. All water systems are contained within a single heated enclosure for cold weather applications while also offering a large amount of standard tool storage.



Dozer

John Deere 950K SmartGrade dozer

The 950K SmartGrade dozer from John Deere incorporates an EPA Final Tier 4/EU Stage IV 9.0-liter engine with 280 hp. The efficiently designed hydrostatic powertrain gets approximately 15 percent more power to the ground versus a conventional torque-converter powertrain. Featuring SmartGrade technology, the 950K PAT improves the quality of work and job site accuracy through the complete integration of the Topcon 3D-MC2 Grade-Control System. The system is fully incorporated into the machine cabin, structures and software, delivering precise grading performance while eliminating vulnerable external masts and cables. This eliminates external cables to the masts, reducing breakage; and the removal of the masts from the blades helps decrease vulnerability to theft and damage. SmartGrade technology removes the need to install blade-mounted sensors and components daily, reducing setup time, and allows operators to get more work done.



800-503-3373; www.johndeere.com

Dust Control

Imperial Industries 4,000-gallon steel tank

Dust control is needed in countless industries, yet it's often overlooked. Manage unwanted airborne particles with this 4,000-gallon steel tank from Imperial Industries featuring rear and side sprayers with air control and a Berkeley pump, all on a 2019 Freightliner with an L9 350 hp Cummins engine.



800-558-2945; www.imperialind.com

Excavators/Excavating Equipment

Bobcat R-Series E85

R-Series E85 excavators from Bobcat offer a design geared toward increasing operator productivity and comfort, as well as machine uptime protection. Operators will benefit from the performance of the nondiesel particulate fil-

ter, turbocharged engine with increased horsepower, and an optimized integrated rear counterweight design that enhances the machine's stability. An optional automatic heating and air conditioning system provides complete control over the cab climate. Strengthened hinges and latches and more ridged, aligned excavator panels reduce vibration in the cab, making for a more enjoyable workday. Along with having the largest cab openings in the industry, there is increased floor space and additional glass surface area, which includes an improved top window and narrower side pillars for increased visibility.



800-743-4340; www.bobcat.com

Hydroexcavation Equipment

Cusco Sewer Jetter

The Sewer Jetter from Cusco can help perform major cleanups by excavating debris with a 26-foot boom reach and a 600-foot 3,000 psi jetting system. Outfitted with quality components and reverse engineered for optimal weight and payload with a superior operator control system, the unit is designed for simple regular maintenance and features durable and uncomplicated systems to reduce repairs and downtime. It can be paired with a Cusco SJX hydroexcavator to provide municipalities and contractors a powerful option for handling sewer and waterline maintenance and digging new lines with one piece of equipment. Options include various tank and chassis sizes and can be modified based on customer specifications.



800-490-3541; www.wastequip-cusco.com

DBO Solutions ME 4000

The ME 4000 from DBO Solutions is a fully mobile waste recovery system designed for street and hydrovac waste processing. Ideal for multiday projects or as a portable facility-based unit, it quickly and efficiently processes hydrovac, storm and street waste slurries, recovering clear filtrate water and stackable solids. It can easily handle multiple truckloads of different material per day, making it ideal for heavy civil construction projects. Designed for ease of transportation, setup and operation, it has self-loading options, minimal short- and long-term maintenance requirements, severe-duty construction, and is ISO 9001 compliant and Department of Transportation approved. Advanced automation controls are standard, and remote operation interface options are also available.



844-432-6349; www.dbodecant.com

Ditch Witch HX30

The Ditch Witch HX30 vacuum excavation trailer offers a 24.8 hp Kubota diesel engine designed for performance and productivity on mid-sized potholing, soft-excavation or cleanup tasks. The low-profile machine reduces unit height without compromising ground clearance. It is available with a 500- or 800-gallon debris tank and in a light or heavy version. Also available are advanced optional boom designs to improve ease of use. With advanced sound-reducing technology, it creates minimal disturbance in noise-sensitive areas. An optional reverse-flow feature allows quick and easy spoil off-loading for improved productivity.



800-654-6481; www.ditchwitch.com

Dynablast Pratissoli Pumps KT28ASPF

The Pratissoli Pumps KT28ASPF high-pressure water pump, distributed by Dynablast, is ideal for hydroexcavating. It offers 18.4 gpm, 2,900 psi, 1,450 rpm and a 35 hp power end. It is available with a T13 female spline shaft and SAE two-/four-bolt flange for direct mounting to the hydraulic motor. Reducing the pump speed to lower water flow for hydrovac use can result in increased pump life and reduced water bypass. It has a self-lubricating design, with no oiler kit or weekly oiling required. The manifold is made from nickel-coated spherical cast iron for protection from cavitation. Its symmetrical aluminum crankcase makes it easy to reverse shaft the pump, and internal fins provide cooling to lower oil temperature. It has tapered roller bearing for improved lateral loading. Two bore ceramic plungers provide thicker ceramic on the water end to prevent from thermal shock.

905-867-4642; www.dynablast.ca



Enz USA Rotodrill

The Rotodrill nozzle from Enz USA has a rotating front jet for improved cutting performance. It's effective at clearing blocked or frozen pipes and moving heavy debris. It has ideal propulsion but can also be used in hydroexcavation by plugging off the thrust jets. This versatile nozzle is available in 1/2-, 3/4- and 1-inch systems.

877-362-8721; www.enzusainc.com



GapVax HV33

Designed to safely transport water and debris in urban areas, the GapVax HV33 is shorter, smaller and more compact than its predecessor. It is 30 feet long overall on a medium-duty chassis and includes a 600-gallon water tank, 6-cubic-yard debris body, 14- to 17-foot 6-inch boom in 8 or 6 inches, 4,000 cfm power and an inverted, full-opening tailgate.

888-442-7829; www.gapvax.com



Hydra-Flex Ripsaw

The Ripsaw rotating turbo nozzle from Hydra-Flex blasts a 0-degree water stream at up to 3,200 psi while rotating at a high speed to provide an 18-degree cone of coverage. Its cone-shaped flow pattern is ideal for potholing applications. The heavy-duty, high-impact nozzles are constructed with stainless steel housings and tungsten carbide wear surfaces to withstand harsh environments and provide long life. Repair kits are available for extended life and lower operating costs. Select from traditional coating (blue) or upgrade to the heavy-duty coating (green), a formulation designed for use in extreme environments. Greater impingement allows users to complete jobs faster or use a smaller nozzle size while getting the same impact as nozzles with higher flow rates.

952-808-3640; www.hydrflexinc.com



Kaiser Premier CV Series

The CV Series hydrovac from Kaiser Premier has all critical components centralized and housed in an insulated, heated aluminum van body. The RB-DV series of rotary three-lobe positive displacement blowers can operate at high vacuum levels thanks to a device that injects atmospheric air. RB-DV series blowers can reach vacuum levels of up to 93 percent on a deadhead and 27 inches Hg without the need to inject water or use an upstream heat exchanger. Its hydraulically assisted off-load method



eliminates overhead conflict concerns when off-loading by avoiding the need to raise the tank. Rather than using gravity alone, it applies its mechanical advantage to quickly off-load compacted tank debris. To release hot high-pressure water, the vehicle can be equipped with a 700,000 Btu boiler. The transfer case is specifically designed for vacuum excavation trucks requiring a highly configurable and easily serviceable gearbox.

970-542-1975; www.kaiserpremier.com

Presvac Systems Hydrovac

The Presvac Systems Hydrovac is designed for versatility and cold-weather operation with optional full compliance with DOT specifications for collection or transportation of hazardous materials. The high-vacuum blower allows extraction of all types of soils, gravel, rock, clay, water and silt material, with knockout features in the debris tank minimizing carryover. Modular filtration configured to blower size provides blower protection and minimal maintenance, according to the maker. It comes with a heavy-duty, 8-inch boom that extends up to 25 feet, with six-way hydraulic power and wireless controls for all boom functions, soft-start water pump, vacuum breaker and truck engine speed.

800-387-7763; www.presvac.com



Rival Hydrovac T10

The T10 from Rival Hydrovac is a larger version of the initial Rival T7 unit, which has become a suitable choice for many urban contractors who are aware of the trending weight restrictions and realize the need to bring these trucks into compliance when driving on roads to disposal sites. It operates in the same manner as the T7, as it is fully hydraulic, eliminating the need for a transfer case; and aside from engaging one PTO, the entire truck is operated from the remote and rear panel. This unit features the same "pressure off" feature as the smaller units and has essentially the same controls.

403-550-7997; www.rivalhydrovac.com



ScreenCo Systems Handle-Tech Hose Handles

Handle-Tech Hose Handles, distributed by ScreenCo Systems, enable technicians to safely clamp onto hose or pipe and easily grip, torque and release it single-handedly through a natural movement. Through mud, cold, rain or sleet, the handles' design allows workers to safely and efficiently manipulate hoses and pipes in any climate. They are ideal for drilling, mud suction hose, tanker hose, pneumatic truck hose, aircraft refueling hose, frac pipe, drill pipe, welding poly pipe and other rigid pipes. Sizes range from 1 1/2 to 6 inches, with an 8-inch version coming soon. Handles are manufactured with long-glass nylon that enhances the thermal insulation properties. They are strong, nonconductive and wear-resistant in temperatures from 40 degrees below zero to 150 degrees F to withstand steam blasting with de-icing equipment.

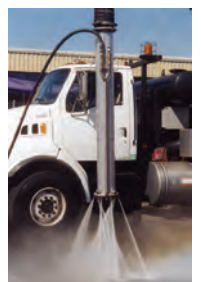
208-790-8770; www.screencosystems.com



Soil Surgeon hydroexcavating tool

The Soil Surgeon hydroexcavating tool fits any sewer combination truck equipped with a telescoping 6- or 8-inch boom. The tool has a 1-inch water connection. The operator controls water pressure and power through truck controls. It has a 6-foot Tuff Tube with handles to guide the unit down for potholing or side to side for trenching. Six jets boring inward cut the soil, while six boring outward bring the tube down.

949-363-1401; www.soilsurgeoninc.com



(continued)

Super Products Mud Dog 1200

The Mud Dog 1200 12-yard-debris-capacity hydroexcavator from Super Products has a rear-mounted boom capable of a 19- to 27-foot reach, 335-degree rotation, 45-degree upward and 25-degree downward pivot. This range of boom motion allows crews to achieve greater work area access and deeper digging without halting production to reposition the trunk. Easy-to-use ejector plate unloading technology provides fast, thorough and safe debris removal, according to the maker. A tilt-unloading feature ensures liquids in the debris tank are cleared efficiently, even when unloading in an up-slope/nose-down position. Options include the Acculevel load-sensor system for precise debris tank level measurement.

800-837-9711; www.superproductslc.com



Supervac Hercules XL

At 37 feet long, the Hercules XL from Supervac is suitable for applications where weight is not as much of a concern. It can carry 18 cubic yards of debris, and it has available a payload capacity of 25,000 pounds. The 3,600-gallon debris tank is mounted as close as possible to the truck's cab. Its 3,800 cfm, 27-inches Hg blower is more compact than its predecessors and mounted directly over the truck's second axle. In addition, more equipment, including its 30-ton hydraulic dump hoist and 400,000 Btu boiler are compactly situated near the cab to allow for more even weight distribution. The unit's 185 cfm air excavation compressor, Webasto diesel fuel heater, 3,000 psi high-pressure water pump, controls, aluminum toolboxes and six 250-gallon (1,500-gallon total capacity) plastic water tanks are evenly distributed along the sides of the unit, adding to the even weight distribution.

866-839-5702; www.supervac.co



Tornado Global Hydrovacs F4 ECOLITE

The F4 ECOLITE from Tornado Global Hydrovacs has a 12-cubic-yard mud tank and holds 1,550 gallons of freshwater. The unit is more than 7,000 pounds lighter than the company's older models and offers more than double the payload. The boom has a 342-degree rotation and a 26-foot reach. The smaller F3 ECOLITE is a 10-cubic-yard, 1,250-gallon tandem-axle unit that also more than doubles older payload capacities. It features an 8-inch boom and a 3,800 cfm blower.

715-441-7157; www.tornadotrucks.com



Transway Systems Terra-Vex HV38

The Transway Systems Terra-Vex HV38 has a 12-yard debris tank with onboard scales, which allows a driver to load the tank worry-free. It includes a large debris tank for those light loads, saving time and money, complete with a 26-foot-by-8-inch telescopic boom. It has a simple one-touch-operated hydraulic half-door with a 3,800 cfm at 27 inches Hg hydraulically driven blower. Water pressure is achieved with a hydraulically driven triplex pump, delivering 10 gpm at 3,600 psi from a 1,000-gallon HDPE baffled water tank. The water is heated with a 420,000 Btu diesel-fired burner for cold weather operation.

800-263-4508; www.transwaysystems.com



Vac-Con X-Cavator

The X-Cavator from Vac-Con is designed to be powerful, durable and easy to operate. It features a hydrostatic drive using the chassis engine for vacuum, creating a more efficient system that eliminates the need for PTO, clutch and gearbox operation. It is available with water systems up to 4,000 psi and a mobile, wireless remote-control system controlling chassis engine revolutions per minute, boom, automatic vacuum breaker, dump controls and hydraulic door locks from up to a half-mile away. The boom rotates 270 degrees.

904-284-4200; www.vac-con.com



Vacall AllExcavate

Vacall AllExcavate hydroexcavators include AllSmartFlow smart controls that help to conserve water during high-performance jet/vac digging around utilities and waterlines or cleaning frac tanks and vessels. Single-engine efficiency helps conserve fuel and reduce emissions. It has a high-pressure water system with rheostat control to vary water volume and capacity output. A heated compartment protects the water system components against freezing. Its water tanks are made of high-quality aluminum for extra strength. Large, galvanized steel debris tanks are also available. A single control is used to open, close and lock the tailgate. It has double-cyclone filtration with a simplified design to reduce maintenance, extend performance and increase working life. Its rear-mounted boom front-loads debris. It is available with a cold-weather package.

800-382-8302; www.vacall.com



Vector Technologies Mudslinger

The Mudslinger line of compact trailer-mounted hydroexcavation vacuums from Vac-Con, in cooperation with Vector Technologies, uses a 66.8 hp Kubota diesel engine with a 1,200 cfm at 16 inches Hg positive displacement blower and comes with a 535- or 845-gallon debris tank with 55-degree hydraulic dump hoist and a hydraulic door. The water system is 4 gpm at 4,000 psi with 50 inches of 3/8-inch hose and comes with a 225- or 325-gallon HDPE water tank. A 9-foot boom with 24 inches of hydraulic extension, hydraulic up/down and 270 degrees of manual rotation is also available. It is mounted on a heavy-duty welded tube steel trailer.

800-832-4010; www.vector-vacuums.com



Loader

Case Construction Equipment TV450

Case Construction Equipment's TV450 compact track loader provides a 10,610-pound vertical lift with a rated operating capacity of 4,500 pounds at 50 percent tipping load. It features 9,188 pounds of breakout force and optional high-flow and enhanced high-flow hydraulics for high-power attachments such as mulching heads, stump grinders and cold planers. It is available with either standard mechanical H pattern controls or optional electrohydraulic controls with H and ISO pattern interchangeability, as well as optional mechanical hand and foot controls. Case electrohydraulic controls provide adjustable speed and control sensitivity settings that can adjust to meet the needs of each application and attachment. Operators are able to switch between H and ISO patterns via a simple rocker switch.

866-542-2736; www.casece.com



Rental Equipment

Easy Kleen Pressure Systems EZO4035G-K-GP-12

The EZO4035G-K-GP-12 pressure washer from Easy Kleen Pressure Systems offers easy transport, high power and high heat, making for efficient, clean, sanitary work. It has a 14 hp Kohler engine, offering 3.5 gpm at 4,000 psi. It comes with a fully welded, powder-coated, 12-gauge bent steel roll cage cart with lifting bar, 3/4-inch threaded axles welded to the frame, and a 10-gallon poly fuel tank. A stationary skid frame is also available. These units include nozzles, downstream chemical injection system and 50 feet of high-pressure hose. Hose reels, rotary nozzles or drain cleaning jetter kits can be added.

800-315-5533; www.easykleen.com



NozzTeq Paikert/Intruder

The Paikert/Intruder from NozzTeq is a low-speed, high-torque cutter designed to clear tough, stubborn pipe blockages like hardened concrete, tuberculation and thick, woody roots. It operates in three distinct modes for different cutting needs, including Impact & Drill, the most effective mode for hard deposits like concrete and tuberculation. Material is pulverized by the cutting head and flushed away. Drill Only is a good choice for protruding laterals and other situations where clean, precise cuts are needed. Impact Only is ideal for pushing objects down pipe without damage, as when plugs or other equipment are stuck. It typically operates at 1,000 blows per minute and 200 rpm. Its completely water-driven Hydro-Torque motor cannot come to a standstill or seize during use. Numerous accessories and configurations are available to customize it for specific cutting needs.

866-620-5915; www.nozzteq.com ▼



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Dig Different welcomes news about a tough excavation, pipe bursting, trenching, boring or tunneling job you just completed for the Down & Dirty column.

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THE LATEST: Products



1. Cat Pumps hydroexcavating pumps

For over 50 years, Cat Pumps has been manufacturing long-lasting and low-maintenance triplex pumps. With dedication to zero-defect manufacturing, ease of service and availability from stock, Cat Pumps designs and builds high-pressure pumps and systems to the highest quality standards for the hydroexcavation industry. Popular models include: the Model 3560 with 25 gpm, 3,000 psi or 20 gpm, 4,000 psi; Model 3570 with 30 gpm, 3,000 psi; the Model 660 with 10 gpm, 3,000 psi; and the Model 56 with 5.5 gpm, 3,500 psi or 8 gpm, 2,500 psi. **763-780-5440; www.catpumps.com**

2. Felling Trailers IT-I Series trailers

Felling Trailers IT-I Series model line has a refined design that incorporates additional standard features, structural strength and ease of operator use. The new IT-I design will be seen on Felling Trailers' 2020 model year IT-I tilt trailers. Advanced standard specifications include a redesigned hitch area with a more user-friendly, integrated nose plate; additional structural integrity for cylinder crossmembers; dual stop, turn and taillights located on the rear of the fenders that have been incorporated into the standard design; D-rings that were once located on the topside rail behind the fender on the rear of the tilt deck that are now located on the side of the trailer bed; and an operator-friendly tilt-deck latch design. **800-245-2809; www.felling.com**

3. Midwestern Industries Electro-Lift separator screen changing system

The Electro-Lift separator screen changing system from Midwestern Industries is ergonomically designed and electrically powered. Engineered with a 120-volt, sealed gear-driven system, operation is as simple as plugging into an outlet and pressing a switch. The systems are adaptable

to fit a variety of different frame deck configurations. Electro-Lift is mounted independently to the frame so there is no need for it to be locked out when working under it with your hands. The sealed gear-driven system eliminates the need for greasing, making it environmentally friendly. **330-837-4203; www.midwesternmind.com**

4. John Deere upgraded compact wheel loader line

The redesigned 244L and 324L K-Series compact wheel loaders from John Deere are ideal for landscaping and snow removal and ag material handling and construction tasks. Tailor-made for tight spaces, the 244L and 324L use the Articulation Plus system to provide greater stability and yield more lifting power while turning tighter. Newly optimized linkage provides improved parallel lifting, with only 6 degrees of rollback. The 244L achieves an 8-foot, 3-inch full-lift dump height and a full-turn tip load of 8,157 pounds, while the 324L with high lift reaches a 10-foot-3-inch height, and standard lift is capable of a full-turn top load of 9,766 pounds. **800-503-3373; www.johndeere.com**

5. Reelcraft Industries' Series LG cord reels

Reelcraft Industries' lightweight and compact Series LG cord reels are constructed from a durable, impact-resistant composite material. Three new models have been added to the medium-duty line of cord reels with two new cord endings. The new power cord reel option features circuit breaker-protected, quad-grounded NEMA5-15 outlets with an LED power-on indicator light. The quad outlet reel is available with 65 feet of 12/3 cord or 75 feet of 14/3 cord. The new light cord reel option features a 1,300-lumen LED light with bright COB illumination, a grounded 12-amp outlet and an on/off switch on the handle. The LED reel model is supplied with 50 feet of 14/3 cord. All three new Series LG models are ETL listed. **800-444-3134; www.reelcraft.com** ▼

This Issue's Feature:

Additive adds life to boring bits

BY CRAIG MANDLI

If you are a contractor who employs a horizontal directional drill on the job site, you know the practice tends to be hard on machinery. In fact, boring bits are often one of the highest product-replacement expenses impacting job profitability. That's why heavy-duty options are ideal to keep you on the job and in the black. **Drill Defender boring bits** from **Kondex** are designed to give HDD contractors more control of this cost by improving the performance and life of their boring bits. The bits feature a Tungstrong laser additive that — unlike other wear-preventive options — secures the carbide inserts to the bit to prevent them from eroding away. This results in better steering, longer life, greater efficiency and higher job profitability.

“Our carbide ‘seat belting’ uses laser technology to safeguard carbide inserts, which commonly break free prematurely from competitive bits,” says Diane Riley, a marketing specialist for Kondex. “This seat belting holds the carbides in place longer to better maintain their integrity and prolong the bit's aggressiveness and useful life. By protecting the carbide, we protect — or defend — the bit.”

The process is simple. All the contractor has to do is contact Kondex and provide them with unused boring bits. After applying the laser additive, Kondex then ships the upgraded Drill Defender bits back. According to the company, most customers see usage extended by two to four times. While a traditional bit can lose its steering after just 500 to 1,000 feet, according to Riley, some contractors have seen as much as 10,000 feet on Kondex enhanced bits. The Drill Defender exchange program is currently limited to Trihawk-style bits.

Drill Defender boring bits from Kondex



“Kondex Drill Defender bits keep their steering longer, and in all our side-by-side tests, they’ve maintained their leading edge to continue drilling after these distances and more,” Riley says. “One of our customers called to tell us they had drilled straight through a rock at a Wisconsin site with our bits. While we don’t recommend this application, as they’re designed more for cobble, the contractor was very impressed with the performance of these bits!”

920-269-4100; www.kondex.com/drilldefender

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THE LATEST: News

BOSS Industries announces new vice president of business development and OEM sales

BOSS Industries announced the appointment of Jim Perschke as vice president of business development and OEM sales. His role will include identifying and capturing growth opportunities in all markets, and he will also assist with product enhancements, sales, service, training and marketing efforts as needed. Perschke's previous experience includes vice president of sales at Work Truck Solutions, vice president of global sales at VANAIR and general sales manager at Knapheide Mfg. Co.



Jim Perschke

"I am very excited to join the BOSS team and to get back to providing truck equipment solutions," Perschke says. "BOSS Industries' commitment to product improvement and its advanced electronic capabilities will provide unsurpassed value for our customers."

OX Equipment announces new partnership

OX Equipment, the exclusive North American distributor for German-manufactured MTS dry suction excavation equipment, has announced a formal strategic partnership arrangement with Wisconsin-based equipment supplier I-Quip. I-Quip, based in Seymour, Wisconsin, will aid OX Equipment in both the sales and technical support of all MTS Equipment within the states of Wisconsin, Illinois, Minnesota and the Upper Peninsula of Michigan.

Vac-Con announces new distribution agreement for HD video nozzle

Vac-Con announced that it has entered an agreement with Sewer Robotics to be the exclusive North American distributor of the C70 HD video cleaning nozzle. The nozzle is designed to jet pipelines ranging from 6 to 40 inches and is available through the Vac-Con dealer network.

Super Products to build new vacuum trucks facility

Alamo Group announced that it has plans to build a new \$15 million facility for its Super Products vacuum trucks operation. The facility will be located in the village of Mukwonago, Wisconsin, and will allow the company to consolidate and expand current production, which operates out of several facilities in the greater Milwaukee area. The plant is anticipated to commence operations in the first quarter of 2020.

The facility will allow Super Products to consolidate its manufacturing and customer support operations into a single, highly efficient location. It will also enable Super Products to bring in operations that are currently outsourced due to capacity limitations. The site also offers the potential to expand operations to meet future needs.

In 2018, Super Products opened two new rental locations in Savannah, Georgia, and Corpus Christi, Texas, and now operates eight rental locations in seven states. The additional capacity provided by the larger facility will allow Super Products to continue its growth in the coming years. ▼

Site Preparation and Remediation

Success Stories:



BY CRAIG MANDLI



Hydroexcavator provides safer trenching alternative for substation expansion

PROBLEM

We Energies, a Wisconsin power utility, needed to expand a Milwaukee substation, requiring trenching for new lines. Because of the potential hazard of excavating near existing underground power lines, We Energies required a safe alternative to using a backhoe to excavate the new trenches.

SOLUTION

Hawk Construction provided the hydroexcavation services needed. "Due to the risk associated when digging around the utilities today, most states or company policies now require you to hand dig or hydroexcavate so you visually locate the utility you are trying to find," says Ron Spoerl, president, Hawk Construction. "In addition to using the best hydroexcavation equipment, Hawk has incorporated safety protocols into all of our work processes to ensure our crews are safe and prepared for any job."

RESULT Using one of its **Vector HXX hydroexcavators**, Hawk Construction safely completed the substation trenching on time and on budget. "Hydroexcavation gives you a combination of safety and efficiency that's unbeatable," Spoerl says. Because of Hawk's quick trenching work, We Energies' other subcontractors were able to complete the installation of new underground lines without delay. "When a company can keep a crew and machine working instead of waiting, over a few days the potential savings is in the thousands," Spoerl says. **800-627-3171; www.vector.com** ▼

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How many pieces of excavation equipment do you have in service?

0 1-3 4-5 6-7 8-9 10+

What is your annual equipment budget?

0-50K 51K-75K 76K-150K 151K-250K 251K-350K
 350K+

What services do you perform on a regular basis?

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 Other _____

What is your company's primary service?

Excavation Contracting Utility Contracting Government/Municipal
 Industrial/Commercial Vacuum/Cleaning Services
 Dealer/Distributor/Manufacturer
 Other _____

D0419

Happenings

CALENDAR

April 6-7

National Heavy Equipment Show, International Centre, Mississauga, Ontario. Visit www.nhes.ca

May 3-9

4th ITA-AITES General Assembly and World Tunnel Congress (WTC), Mostra d'Oltremare, Naples, Italy. Visit www.wtc2019.com

May 21-23

National Utility Contractors Association (NUCA) Washington Summit, Holiday Inn Capitol, Washington, D.C. Visit www.nuca.com/summit

June 2-5

Electric Utility Fleet Managers Conference (EUFMC), Williamsburg Lodge and Conference Center, Williamsburg, Virginia. Visit www.eufmc.com

June 9-12

Professional Development Conference & Exposition, Ernest N. Morial Convention Center, New Orleans. Visit www.safety.assp.org

June 16-19

Rapid Excavation and Tunneling Conference (RETC), Chicago. Visit www.retc.org

Aug. 21-22

Water Finance Conference, Washington Court Hotel, Washington, D.C. Visit www.waterfinanceconference.com

Dig Different welcomes your contributions to our Happenings column. To recognize members of your team, please send notices of new hires, promotions, service milestones, certifications or achievements. We also invite your national, state or local associations and organizations to post notices, news items and learning opportunities. Send contributions to editor@digdifferent.com. ▼

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