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**PROFILE:**

**BROTHERS LAUNCH  
OPERATION BASED ON  
FATHER'S BUSINESS**  
**20**

**DOWN & DIRTY:**

**MIX OF HDD AND  
UNDERWATER EXCAVATION  
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Underground Systems employees Michael Hood (left) and Vicente Garcia pull 4-inch conduit pipe from the reel to a back reamer where they will attach it for pullback operations. The company based in Buford, Georgia, and owned by Dana Hood, installs fiber optic lines and waterlines throughout metropolitan Atlanta with its 18 employees. (Photography by Kaylinn Gilstrap)

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FOCUS: Excavation, Trenching, Education and Safety

- Profile: M.L. Chartier (Fair Haven, Michigan)
- Machine Shop: Backhoes and loaders



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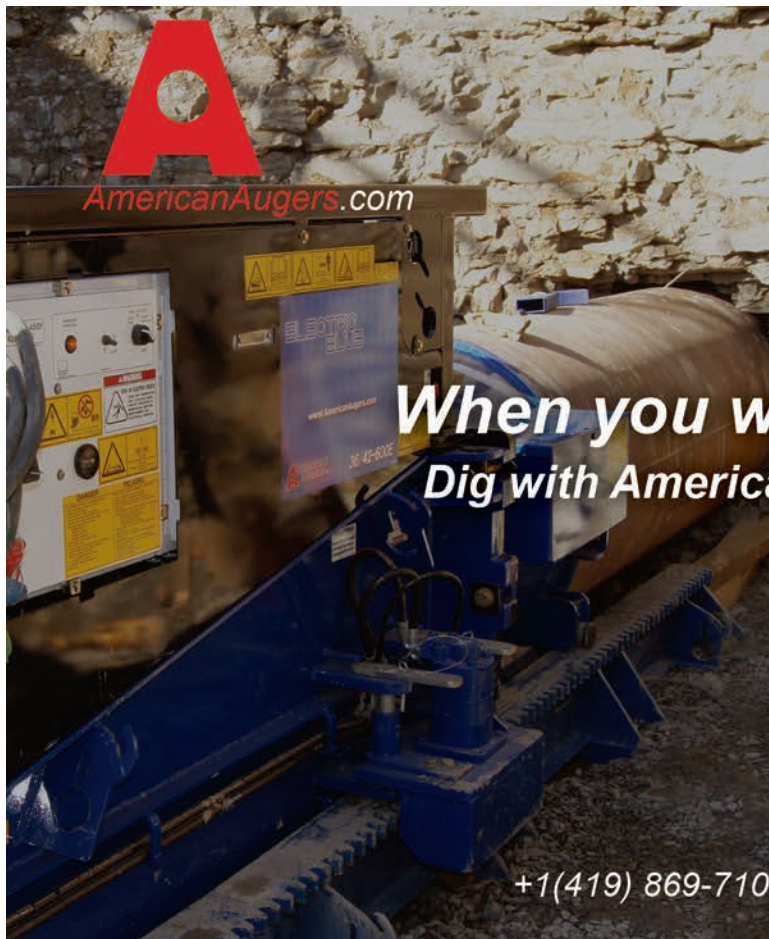
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## Making the Change

**SOMETIMES SHAKING THINGS UP WITH THE COMPANY OR YOURSELF CAN BENEFIT YOU AND YOUR BUSINESS, BUT IT CAN BE A TOUGH MOVE TO MAKE**

BY CORY DELLENBACH

**C**hange can be scary for anyone, but both contractors featured in this issue overcame those fears in order to grow their companies.

Dana Hood, owner of Georgia-based Underground Systems, found herself making a service offering change to her company after the market in the Atlanta area changed. The company's primary service was burying road-to-house service lines for cable television companies, using vibratory plows and doing open-cut.

After 2005, the market changed with widespread consolidation in the state's cable television industry, and only two competitors were left, creating tough competition for her company.

She knew she had to make changes — and fast. In 2012, Hood and the company's president of field operations saw a work crew doing horizontal directional drilling. That was the turning point. Later that year, they bought their first directional drill. Hood has purchased a new directional drill every year since then and sales have doubled every year, turning the company into a multi-million-dollar-a-year venture.

The other contractors featured in this issue, John and Christopher "Chris" J. Angelo, owners of J. Angelo Industries in New York, went through a completely different change. John was working in the trucking industry and Chris was contemplating an architectural career.

"My brother was driving trucks and one day we looked at each other and said, 'Let's do what we know,'" Chris says. Their father had operated a pipe inspection and cleaning company in New York, and the two had been around the industry since they were kids.

Their change from working different jobs to owning their own company happened in 2015. Now they have two cousins working for them and offer hydroexcavation, pipe cleaning, CCTV mainline inspection, and many other services in a 75-mile radius of Wappingers Falls.

### TIME FOR YOU TO CHANGE?

These two contractors knew it was time for a change and it was good for each of them, but how do you know when it's time for a change for you or your company?

First of all, revisit your business plan. If you don't have one, write one for your business as it currently exists — even a one-page, brief summary will work. Compare how your business plan will be the same or different with the change.

Then consider if this change will build on what you already have in place. This refers not only to your resources, but also to your own skills and those of your staff. Hood knew her crew already had the ability to install cable lines, so all they had to do was learn a different method of doing so.

You need to figure out if the change is going to be cost-effective. John and Chris were leaving solid jobs when they decided to start up J. Angelo Industries. It's not an easy decision to make, so you have to take a long look at all the options in front of you.

Finally, talk to other business owners. That is where the best advice will come from. They'll be able to tell you what they went through when things changed at their companies and offer tips on how to deal with those changes.

### HEARING FROM YOU

Speaking of changes, I'm always open to hearing from readers and learning what you like and don't like about *Dig Different*. Are there more features you would like to see in these pages or something you would like to see less of?

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## **SAFETY**

### **How to Respond to a Trench Collapse**

The top priority is to avoid trench collapses all together by stringently practicing the proper safety measures. But in the unfortunate event you do find yourself part of a trench collapse on the job site, safety expert David Dow provides a checklist of what to do next. [digdifferent.com/featured](http://digdifferent.com/featured)

## **DIRECTIONAL DRILLING**

### **Use of HDD Eases Environmental Group's Concerns**

A sewer line replacement project underway in a New Jersey town has caused concern for an environmental group due to its location on the edge of a wildlife preserve. In this online exclusive, learn more about how the decision to use the horizontal directional drilling method on the project has eased some of that concern. [digdifferent.com/featured](http://digdifferent.com/featured)



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## **SNAPSHOTS**

### **Contractors Out on the Job Site**

Far more photos are taken of the companies we profile each month in *Dig Different* than are able to fit on the pages of the magazine. The website is the perfect avenue for displaying a gallery of some of those "bonus" photos we didn't have room for in print. In this online exclusive, check out more working shots of the contractors who have been featured in the magazine in 2018 thus far. [digdifferent.com/featured](http://digdifferent.com/featured)



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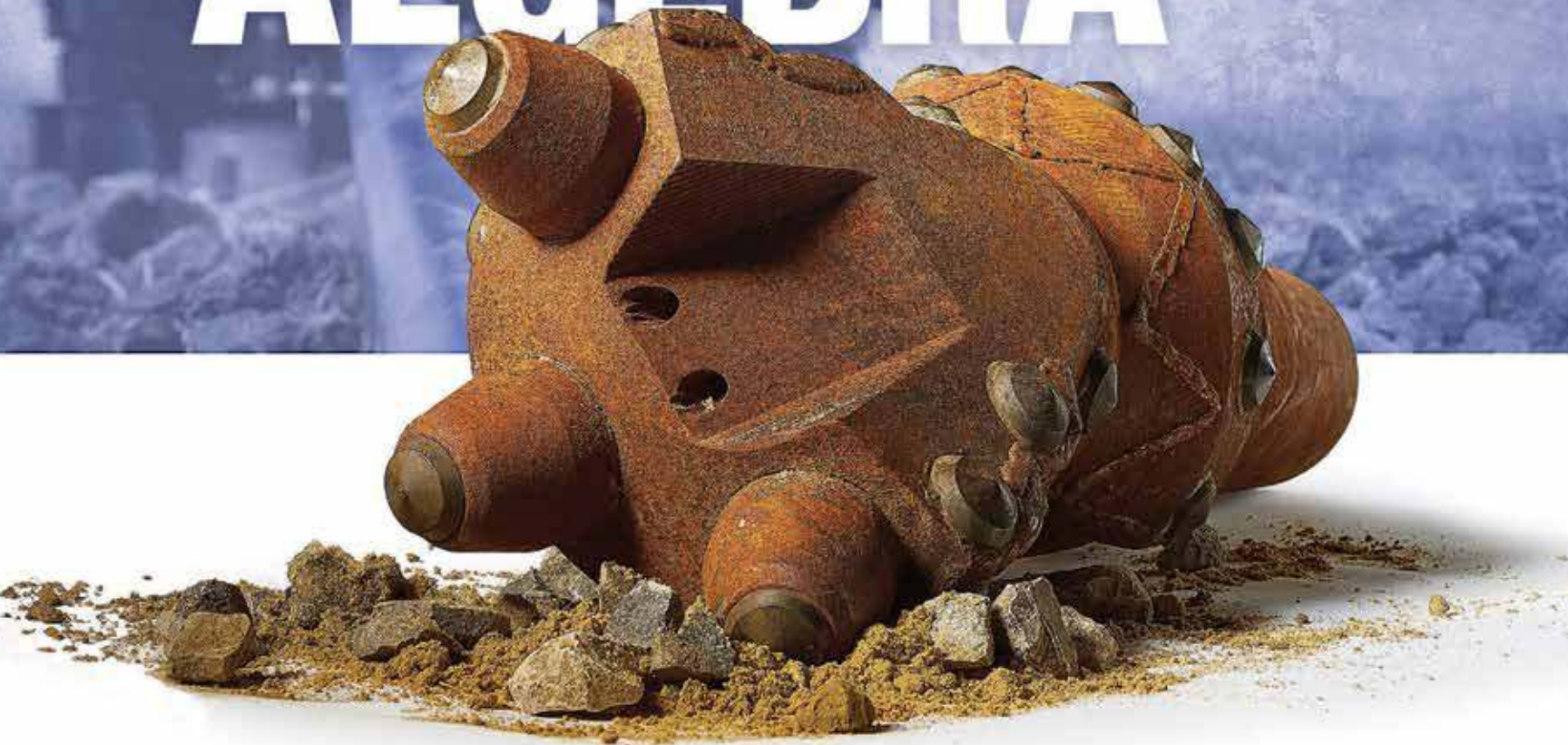
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# CHANGING WITH THE TIMES

## A MOVE INTO DIRECTIONAL DRILLING AND AN INVESTMENT IN EQUIPMENT LEADS TO RAPID GROWTH FOR GEORGIA-BASED CONTRACTOR

STORY: KEN WYSOCKY PHOTOS: KAYLINN GILSTRAP

**F**or a clear-cut illustration of how investments in new technology can kick-start established companies and help them break into a different — and more lucrative — market, consider Underground Systems, a company that primarily does horizontal directional drilling for telecommunications companies throughout metropolitan Atlanta.

But it wasn't always that way. The story begins in 1991, when Dana and Tony Hood established a company called A-1 Installations, based in Buford, about 40 miles northeast of Atlanta. Its primary service was burying road-to-house service lines for cable television companies, using Case Maxi-Sneaker vibratory plows. At the time, every county in the state had its own cable-television provider, and the company eventually served as the prime contractor for various cable companies.

In 2005, however, Tony died unexpectedly. Moreover, after years of widespread consolidation in the state's cable-television industry, there were just two competitors left. The result: fierce competition for lay-

ing cable lines, which led to diminished profit margins, Dana, age 53, explains. The business was changing, and Dana knew she had to make changes, too.

"I had two young kids at home and needed to continue the business to survive financially," she says. "I knew I had to do something different."

That's where the new technology stepped into the picture and radically transformed the company. The tipping point occurred after Dana started dating Paul Heine, who now is the company's president of field operations.

In a fortuitous twist of fate, Heine one day happened to see a work crew doing HDD. Curious, he stopped to ask them what they were doing and how much they got paid for doing it. The answer he got provided a crystal-clear picture of where the company should head next: installing water and power lines using trenchless technology.

"We bought our first directional drill in 2012 and eventually walked away from doing cable drops with

vibratory plows,” Dana says. “That was a turning point — when things really took off.

“The industry paid better because it wasn’t beaten down, like in the cable industry,” she continues. “And only a few other companies were doing it (trenchless installations) at the time. Plus, demand for replacing water and power lines was just starting to grow. We hit it at just the right time.”

Today, just six years after investing in HDD machines, the company — which Dana renamed Underground Systems — is a multimillion-dollar-a-year company in terms of revenue. It employs 18 people and owns HDD and other related equipment worth more than \$1 million.

“We’ve purchased a new (directional) drill every year since then and doubled our sales every year,” Dana says. “We even bought a new building at the end of 2015 in Suwanee, right down the road. I was nervous that it was too big for what we needed, but we’re already outgrowing it.”

#### SUCCESS FACTORS

While the company’s focus on investing in productivity-enhancing equipment contributed strongly to its rapid growth, other factors came into play, too. Take establishing good credit, for starters. Dana says the company bought its first HDD machine on credit but dutifully paid it off in one year instead of four. That helped it establish a sound credit record that made it easier to purchase additional machines on credit. “You can’t do it without good credit,” she notes. “I always made sure we had good credit.”

Heine and Dana also constantly assessed new business opportunities and took calculated risks when buying new equipment that would be needed to handle additional custom-



“THIS ISN’T THE KIND OF COMPANY WHERE **ONE GUY DIGS A HOLE AND FIVE GUYS WATCH HIM.** WE HAVE PROFESSIONAL PEOPLE WHO ARE EXPERIENCED AND KNOW WHAT THEY’RE DOING.”

Dana Hood

## Underground Systems Buford, Georgia

**FOUNDED:** 1991

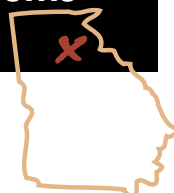
**OWNER:** Dana Hood

**EMPLOYEES:** 18

**SPECIALTIES:** Horizontal directional drilling, installing fiber optic lines and waterlines

**SERVICE AREA:** Metropolitan Atlanta

**WEBSITE:** [www.undergroundsys.net](http://www.undergroundsys.net)



Underground Systems crew members Michael Hood (left) and Scottie Skipper discuss possible obstacles as they prepare for a directional drilling job with the company’s D23x30 S3 Vermeer horizontal directional drill. The company based in Buford, Georgia, and owned by Dana Hood, installs fiber optic lines and waterlines throughout metropolitan Atlanta with its 18 employees.



Jeremy McGee (left) and Everett Skeen install conduits for a major telecommunications company to upgrade their fiber optic backbone in an area that is currently being served by old copper cables.

ers. “We’d say, ‘If we can get a bigger machine, we can get X amount of work from this company and so forth,’” Dana says. “Paul does a lot of research, then we run the numbers and figure it out.”

Providing top-notch customer service also played a role. In essence, Heine says customer service centers on a single simple principle: Just do what you say you’re going to do when you say you’re going to do it. But it also means doing everything legally, with permits and locates — something that fly-by-night outfits don’t always do — and thoroughly cleaning job sites when projects are complete.

Furthermore, the company doesn’t do without double-checking line locates via potholing. “It seems like 90 percent of locates aren’t correct, so we do potholing to make sure they’re marked correctly,” Dana explains. “And if they’re not, you call someone. We’re not out there constantly cutting utilities. You do that and the Georgia Public Service Commission will fine you. We

know that not everything is marked or marked correctly. We don’t want to get fined or hit anything, so we double-check everything.”

#### **GREAT EMPLOYEES ARE KEY**

It also helps that the company has been successful in hiring qualified employees, then retaining them long enough for them to gain valuable experience — develop that sort of a sixth sense of where underground lines might lurk or take an unexpected bend or turn.

**“WE KNOW THAT NOT EVERYTHING IS MARKED OR MARKED CORRECTLY. WE DON’T WANT TO GET FINED OR HIT ANYTHING, SO WE DOUBLE-CHECK EVERYTHING.”**

Dana Hood

“This isn’t the kind of company where one guy digs a hole and five guys watch him,” Dana notes. “We have professional people who are experienced and know what they’re doing. A good group of guys out there who get the job done and do it well. If they run into problems, they can fix them and still get the job done. Our employees are what sets us apart from fly-by-night operations.”

Heine also credits assistance from an industry veteran, Larry Rodgers, the owner of HDD Inc. in Tallahassee, Alabama. The two met at a local Ditch Witch distributor in Atlanta around 2011, and now the two companies partner up on various projects. “He has larger drills than we do, so he can do larger-diameter pipes,” he explains.

“It’s always great to be able to bounce ideas off someone with more experience,” Heine adds. “Larry is always very bashful about his expertise — says he’s here to help. But he’s great at providing tips for how to approach certain shots and things to look for.”

For example, Heine says he once asked Rodgers how he’d handle a challenging job that required drilling a 600-foot-long bore about 15 feet below a wetlands area on the northern outskirts of Atlanta. The bore was needed for an 8-inch-diameter HDPE forced sewer line. “We were concerned we’d lose the hole because of the wet soil,” Heine notes. But a talk with Rodgers confirmed his hunch that drilling out with a 4-inch-diameter head, then jumping right up to a 16-inch head (and bypassing an intermediate-sized, 8-inch head, in order to save time) would be the best approach.

“It took us a day and a half, but it worked,” Heine reports. “The biggest challenge was making sure the hole wouldn’t collapse while pulling the pipe through the bore. There was no way to get out there and test how deep the swampy soil was. It’s a bit of a guessing game. You need a little luck along with experience. You have to watch the mud coming out and hope you see red Georgia clay, not the dark, mucky stuff.”

#### **GOOD EQUIPMENT DRIVES GROWTH**

Consistently reinvesting in equipment that enables employees to work more efficiently and boosts profit margins has been integral to the company’s success.

The firm currently owns five directional drills: three built by Vermeer (24x40, 23x30 and 20x22 models) and two manufactured by Ditch Witch (models JT922 and JT520).

The company also owns a trailer-mounted VX500 vacuum excavator made by McLaughlin (a company owned by Vermeer); three mini-excavators made by Yanmar America, Kubota, and IHI Construction Machinery (owned by

*(continued)*

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## From potholing to cleaning drainlines, versatile machine gets the jobs done

It didn't take Paul Heine long to recognize how valuable a VX500 vacuum excavator could be to Underground Systems.

"We rented one for a job about two years ago," says Heine, the president of field operations. "We used it once, and a week later, we went out and bought one."

"There are times on larger jobs when we rent a large vacuum truck (with hydroexcavating capability) for potholing, but for most jobs, this one does the trick," he continues. "It's a really neat piece of equipment. I call it my \$40,000 vacuum cleaner."

The VX500 is made by McLaughlin (owned by Vermeer). It features a 500-gallon spoil tank, a 400-gallon water tank, a hydraulically driven rear-hatch door for gravity-fed waste removal, and a rotary blower (575 cfm) built by Roots blower from Howden, including a reverse-flow option. "We wanted a 400-gallon water tank to reduce refill trips," he notes.

Crews often use the machine for potholing to expose utility lines before commencing with directional drilling. But they also use it to vacuum up mud that collects in drilling pits during back-reaming and to clean drainlines in hard-to-access places, such as parking decks.

"We even use it to suck string while proofing the ducts (conduits for fiber optic lines) to check for proper alignment and to find any obstructions," he adds. Employees also use the VX500 to clean mud and other debris from ducts that have been sitting empty for a while, pending installation of fiber optic lines, Heine says.



The VX500 vacuum excavator from McLaughlin (owned by Vermeer) is one of Underground Systems' go-to equipment items used on most job sites.

"Everybody wants this machine on their job," he says, noting the unit's popularity among employees. "It's well-engineered, reliable and very easy to maintain — basically just change the oil and keep the filters clean. It's a very handy machine."



Dana Hood, Underground Systems owner and CEO, and Paul Heine, president of field operations

KATO Works); three locators made by Radiodetection and two made by Digital Control and Underground Magnetics; an RD1100 ground-penetrating radar unit built by Radiodetection; and Hytera two-way radios.

The high-performance two-way radios come in handy when Underground Systems crews are stretched out on a road for miles while pulling fiber optic cables into conduit. The company used to utilize cheaper technology but found their range was inadequate.

"The ability for everyone to communicate and hear what's going on instantaneously was a big game-changer," Heine says. "For example, when it's time to quit for the day, everyone's on the same page. It's much faster than making a lot of phone calls back and forth to crew leaders."

### MAINTAINING PROFIT MARGINS

What's the key to boosting profit margins? Closely tracking expenses and making sure employees are productive, Dana says. The latter underscores the importance of continually investing in reliable, more efficient machinery — not to mention hiring good employees, too.

"It's always a matter of volume," she points out. "So when you have good weather, you've got to get out there and put pipe in the ground because soon enough, you'll have two days of bad weather where you can't work or the locates are wrong or a piece of equipment tears up. Nonproductive days are going to happen, so when the weather is good, you have to be sure you've got a good crew out there and get some footage in."

"Good employees are the biggest big part of it," she adds. "When you have employees that care, they see that something needs maintenance and they do it. That helps maintain good profit margins more than anything." How does the company foster such a culture? By not micromanaging employees and providing them with good equipment and tools, which helps build mutual respect.

"It's hard to find people like that," she admits. "But we've been pretty lucky. The majority of our employees are referrals from existing employees; and some of them have been with us for more than 10 years now." *(continued)*





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Last but not least, being on the forefront of technology helped Underground Systems establish a solid reputation, which in turn made it harder for competitors to enter the market. “Now there are about 10 more companies (that do directional drilling) that have come along in the last five years,” she says. “But we’re still No. 1 because we provide good service and our name has been out there for so long.”

### MORE GROWTH EXPECTED

For the foreseeable future, Dana expects continued growth for the company, as well as some diversification. “That way all our eggs aren’t in one basket,” she notes. Moreover, she expects that eventually, the fiber optic cable boom will end, forcing the company to consider other local markets. “I’m not a big fan of having employees go out of town to work, so I’d like to expand into other services where we can stay local and still be a profitable company,” she explains.

In the long term, Dana expects her son and daughter-in-law, Michael and Gelsey Hood, to take the reins when she and Heine retire. Michael currently works for the company as a crew foreman and Gelsey is Dana’s assistant, handling duties such as payroll and invoicing. Paul’s son, Jacob, also work for the company, handling welding and other duties out in the field, and Gelsey’s brother, Andrew Minnick, performs small waterline bores, she says.

Dana also is working on developing a better benefits program for employees, including a retirement savings program to complement health and life insurance plans already in place. “This company has grown into something bigger than we ever expected, so we want it to benefit everyone because we’re a team,” she says. “We can all be successful only by working together. We can’t do it without them, and they can’t do it without us.”

**“THIS COMPANY HAS GROWN INTO SOMETHING BIGGER THAN WE EVER EXPECTED, SO WE WANT IT TO BENEFIT EVERYONE BECAUSE WE’RE A TEAM. WE CAN ALL BE SUCCESSFUL ONLY BY WORKING TOGETHER.”** Dana Hood



The team at Underground Systems stands in front of a Vermeer D24x40 drill being pulled by a Ford 750 with a mixing tank. From left, James Gomez, Paul Heine, Jacob Heine, CEO Dana Hood, Everett Skeen, Jeremy McGee, Jose Valtierra, Andrew Minnick, Jose Garcia, Sean Gwin, Gelsey Hood, Nick Young, Michael Hood, Scottie Skipper, Vicente Garcia, Adam LeClair, and Adrian Vargas. Not pictured: Larry Wilcox.

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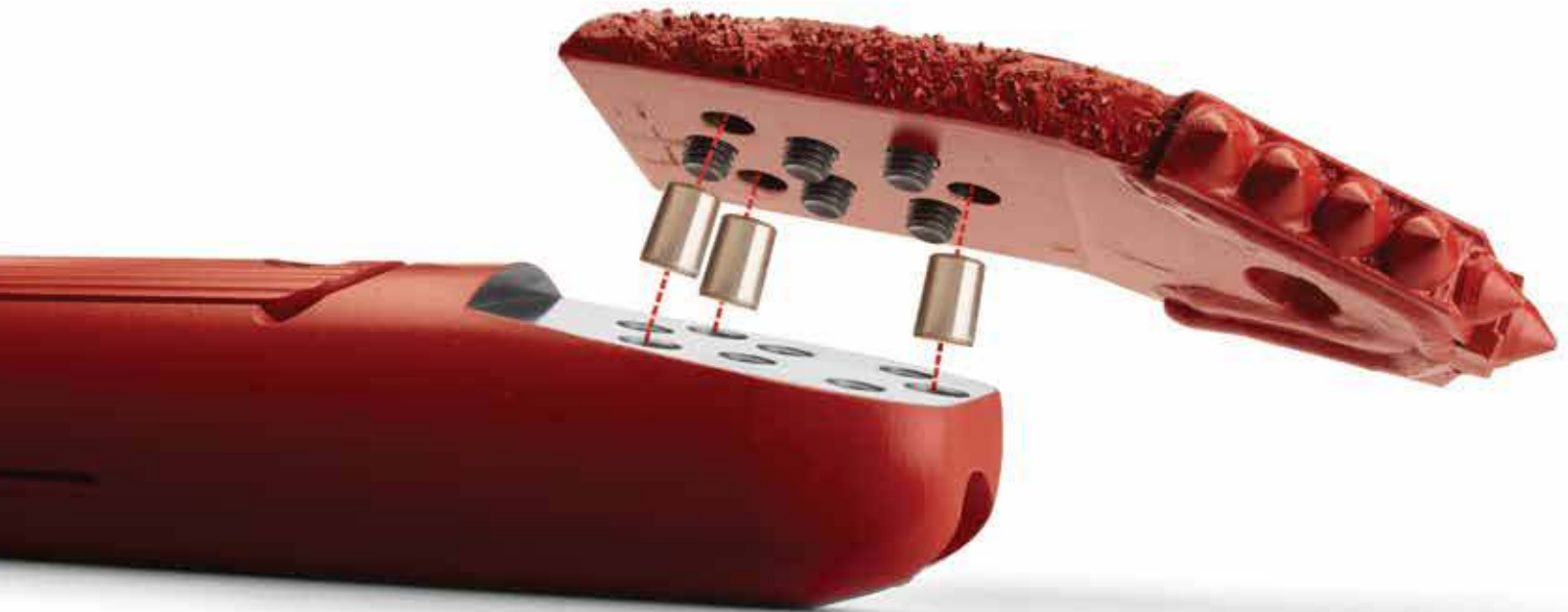
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The acronym for Underground Systems is “us,” as in management and employees. In fact, the shirts that are part of employees’ uniforms says, “You’ll have no problems when you deal with US.”

As Dana looks back, she still marvels at how much the company has grown — and at the potential that lies ahead as a new generation prepares to take a leadership role. “When Tony and I started out, all we were hoping for was to make enough money to have a nice house and raise our kids and go on nice vacations,” she says. “We wanted to avoid struggling and living paycheck to paycheck. And now it’s turned out to be more than I ever dreamed possible.” ▼

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*Profile*



# BUILDING ON HERITAGE



## AFTER YEARS IN DIFFERENT INDUSTRIES, BROTHERS RETURN TO LAUNCH HYDROEXCAVATION COMPANY BASED ON FATHER'S BUSINESS

STORY: GILES LAMBERTSON PHOTOS: CHRISTOPHER CAPOZZIELLO

To call J. Angelo Industries a blue-collar success story is almost literally true. The New York state hydroexcavation company was founded on the belief that long, hard days with rolled-up work-shirt sleeves are the keys to building a business.

"I haven't worn a regular shirt without my name on it for three years now," says Christopher "Chris" J. Angelo, co-owner of the company bearing his name. "I walk and talk and breathe the business."

Three years ago is when Chris and his brother John Angelo decided to formally enter an industry they had grown up around and knew well. It was part of their heritage, and the brothers decided to build on it.

Their father and an uncle, Joseph and Albert Angelo, operated a pipe inspection and cleaning company for nearly 20 years in the Poughkeepsie area of New York. In 1986, Chris had rode a thousand miles to Madison, Wisconsin, with his father to pick up and drive home a two-year-old Vac-tor 810 hydrovac unit. That long-distance rumbling ride behind the truck's nose reel was the family's introduction to hydrovac equipment.

"I grew up around it," Chris recalls of his father's sewer pipe-cleaning work. "I was able to be on jobs with my dad, getting my hands dirty, operating a truck when I was 12 or 13 and then in high school."

When his father sold the business in 2004 after receiving an engineering offer, his sons went in different directions. John got into trucking; Chris contemplated an architectural career, but then a drunken driver involved him in an accident in which Chris suffered a spinal cord injury. "It has taken awhile to get back," he says from the perspective of 12 years' painful recovery. "But I go to work every day."

Since 2015, "work" has been owning and operating J. Angelo Industries. "My brother was driving trucks and one day we looked at each other and said, 'Let's do what we know.' Growing up the way we did, working for our dad, we knew what we were doing when we started the company, and here we are."

So Chris, now 37, and his younger brother have a 3-year-old company with roots that go back more than 30 years. "We don't feel like we are 3 years old," Chris says of the enterprise. "When you have been around the industry as long as

### J. Angelo Industries Wappingers Falls, New York

**FOUNDED:** 2015

**OWNERS:** Christopher "Chris" and John Angelo

**EMPLOYEES:** 4 (including Chris and John)

**SERVICES OFFERED:** Hydroexcavation, pipe cleaning, CCTV mainline pipe inspection, sewer/storm rehab/repair/jetting; wet well/pump station maintenance and repair, utility location, confined-space entry, site restoration and rehabilitation

**SERVICE AREA:** 75-mile radius of Wappingers Falls

**WEBSITE:** [www.jangeloindustries.com](http://www.jangeloindustries.com)

Chris Angelo, co-owner of J. Angelo Industries, hydroexcavates an area around a pump station at Silo Ridge Country Club. Angelo, along with co-owner John Angelo (left) and Raymond Beesmer, used their 1994 Ford Vac-Con L8000 diesel truck, outfitted with a hydroexcavation package that flows 12 gpm at 2,000 psi, removing dirt around a wet well, digging 6 feet down to a sewer main.



From left, Chris Angelo and John Angelo, J. Angelo Industries co-owners, with their cousin, Raymond Beesmer.

**"I HAVEN'T WORN A REGULAR SHIRT WITHOUT MY NAME ON IT FOR THREE YEARS NOW. I WALK AND TALK AND BREATHE THE BUSINESS."**

Christopher "Chris" J. Angelo

## Historic digs

Digging in Colonial American soils can be more interesting than utility digging in some places farther west in the country. Sometimes the excavations are archaeologically interesting.

J. Angelo Industries hydroexcavates in and around the Hudson River Valley city of Poughkeepsie, New York. It is an area and town steeped in Native American culture. The city is old by American standards, with one house dating to 1728 and numerous 19th-century structures.

Consequently, waterlines and sewer lines running from historic buildings pass through strata of earth containing artifacts from earlier eras. So far, J. Angelo Industries hydrovac operators have not turned up any significant finds.

"We did a dig down on Water Street in Poughkeepsie near the river in the historic part of town,"

recalls Christopher "Chris" J. Angelo, co-owner. "A client had an old lead pipe waterline still in service for a house with an elderly lady tenant. We worked with the city hand in hand on that one."

During the excavation, Angelo uncovered and retrieved glass bottles from the 1920s and '30s — interesting but not genuine treasure. However, the work was done almost in the shadow of the Poughkeepsie-Highland Railroad Bridge that dates from 1889. In 2009, the closed bridge was repurposed into a walkway for people to cross the Hudson more than 200 feet above the water. Running for more than a mile, it is the longest elevated pedestrian bridge in the world.

Vintage house on one side of the working hydrovac; historic bridge on the other. Just another day of digging in Poughkeepsie.

It has saved the day for us more than a couple of times."

At the start, they opted to use a power-washer pressurized unit to break soil apart. That proved inadequate. "After a few jobs, we could see we had to step up our game," Chris says. They bought a second truck, a 1994 Vac-Con V312T tandem axle unit. Working with Vac-Con, they outfitted it with a boiler and hydroexcavation tools. The old truck does not have a hydrostatic transmission, which Chris considers something of an advantage because the unit's powertrain is totally dedicated to digging.

"We knew hot water was the only way to go, especially up here in the winter," Chris says of the addition of

we have, it is sort of an extension of what we were doing with our dad. We learned a lot from him — what to do and, even more so, what not to do."

### FINDING A WAY TO DIG

The brothers bought a 1990 Vac-Con V390T with a big Ford diesel engine, a 9-yard debris body and a three-stage compressor capable of producing 7,400 cfm of vacuum. "It was very affordable, and we were able to bring the machine up to spec," Chris says. "We use it almost every day, at least three times a week.

the boiler. "Plus, we have clay we have to cut through. That hot water gets the job done. It's also a big advantage in cleaning out pump stations. It cuts the grease off the walls real fast."

### FINDING THE WORK

J. Angelo Industries is headquartered in Wappingers Falls, a village south of Poughkeepsie. The company's customers mostly are municipal authorities in and around the city. Older hydrovac companies already had locked up indus-

trial clients. “The other companies absorbed much of the industry so at first it was like picking up crumbs.”

In the beginning, the brothers traveled as far as the Bronx in New York City to find jobs, but now mostly work within a 75-mile radius of Wappingers Falls. The early crumbs have turned into a three-layer cake with frosting. “We are just taking care of good clients,” Chris says. “A lot of people were left without hydroexcavation services until we helped them.” Referrals are keeping them busy.

A typical hydroexcavation call for the company is to locate a gas line or a waterline, a relatively small utility potholing job. But not all jobs are small. The biggest digging project the brothers have undertaken was repair of a broken sewer-stormwater combination line in Poughkeepsie. It was a delicate excavation because a waterline in poor condition was situated atop the bigger one. The brothers dug a trench 10 feet deep and 300 feet long to uncover the fault, replaced the 22-inch sewer main and 6-inch water main, and restored services to homes in three days.

J. Angelo Industries clients are mostly located in Dutchess and Westchester counties and the Hudson River Valley. Dutchess is home to lots of rocks of different kinds — molten, pressure-squeezed and sedimentary. This geological characteristic of the terrain does not always make for happy hydrovacing. “Some

days we get nothing but rock, big rocks,” Chris says. “That makes it rough.”

His usual procedure when encountering a miniboulder is to use the hydro-excavator to suck soil from around its edges till it is well-exposed, then run a strap around it, and lift it from the hole with the boom. For larger rocks, he turns to the company’s Kubota mini-excavator. Closer to the river, the digging challenge is clay, the long-ago deposits from glacial runoff. In the 19th century, the clay was the principal building block for brick-making plants south of Poughkeepsie. Today, it is just a gummy challenge for Chris.

#### A ONE-STOP SHOP

The company provides a variety of other services, including pipe-cleaning and inspection, pump station maintenance, jetting, and CCTV inspections. On company shelves are four cameras — two of them Aries Industries, including a crawler for pipes up to 24 inches in diameter, and an EnviroSight pole camera for manhole inspections.

*(continued)*



J. Angelo Industries takes pride in handling every facet of an underground problem.

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Chris's motto is to, "Stay small and keep it all," and do it all. He feels expansion is not always worth it.

**To learn more** about J. Angelo Industries, take a look at a video profile of the company at [digdifferent.com](http://digdifferent.com)

## "OUR GROWTH TO THIS POINT HAS BEEN FOR OUR CLIENTS, AND I THINK **WHAT WE HAVE GOING ON WITH OUR CLIENTS IS SPECIAL.**"

Christopher "Chris" J. Angelo

Chris hangs his hat on the fact that company clients know J. Angelo Industries will take care of every facet of an underground problem. That is, a failed pipeline will be located, exposed, camera-inspected, repaired and the hole closed again. "We are a one-stop shop. Customers know they don't have to hire another contractor to come in behind us and finish up. Clients can lean on us because we know what we're doing."

The brothers are comfortable with the old but more than ready to try the new. The brothers pamper their old hydrovac trucks, loading them onto a low-boy trailer and carting them to more distant job sites. In terms of new things, Chris says he's looking into cured-in-place pipe repair. "I love what that offers. I've been in situations where I would have loved to have had it. We definitely will include it in the services we offer going forward."

Hydrovac work is the core of J. Angelo Industries' business, obviously. "I try to use the hydro trucks as much as possible," Chris says, noting that it is a versatile and safe means of excavating. "Breaking a waterline or a gas line? I've never done that with a hydrovac. So whether it is finding a small valve or emptying a catch basin 15 feet underground, the hydrovac is a tool in my bag I use at least three or four times every week."

### STAYING SMALL

Does his business model envision expansion and growth of the company? Chris isn't gung-ho about it. Though J. Angelo Industries has doubled in size in terms of equipment and clients, Chris believes expansion is hard and not always worth it.

"Sometimes it comes down to making more money just to have more problems," Chris says. "Our equipment is paid for. We don't have tons of overhead weighing us down. In this industry, it's hard to find people who know what they're doing. Our growth to this point has been for our clients, and I think what we have going on with our clients is special."

Chris coined an expression that conveys his business philosophy: *Stay small and keep it all*. "To do that, you have to do it all. My brother and I do, every day." Wearing all the hats worn by small-business owners — operator, mechanic, secretary, marketing person — means many days lack enough hours to accomplish everything. "When you own your own business, every day is a workday. To have a successful business, you have to sacrifice for the brand."

Despite his robust work ethic, Chris doesn't come across as a workaholic in danger of burning out. He and his brother believe that J. Angelo Industries after three years is operating at a sustainable pace. "We are going to be here for a while," he says. "My son Carmine is 7 years old, and he is proud of the name on the trucks. He will be around us as he grows up, and maybe one day he'll take over the company and make it his own." ▼

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# Making a Splash

## CONTRACTOR USES A MIX OF HORIZONTAL DIRECTIONAL DRILLING AND UNDERWATER EXCAVATION TO INSTALL WATER DISTRIBUTION PIPE ACROSS ALABAMA LAKE

BY JARED RANEY

**Y**ou start on one side of an obstacle and shoot underneath to the other side: That's how horizontal directional drilling typically works. However, when the bore needs to end in the middle of a lake, things get tricky.

Garney Construction, a national contractor headquartered in Kansas City, Missouri, was brought in to connect the Decatur, Alabama, water system to the Limestone County Water & Sewer Authority in Athens, Alabama. However, to get from one side to the other, there was a 1.5-mile-wide reservoir in between. The reservoir consisted of the Tennessee River and a portion of Wheeler Lake and located just a few thousands feet upstream of the busiest port along the river.

In order to connect the two, Garney Construction would need to cross 8,800 feet of water. It was too much for a single HDD shot, so the company combined 3,000 linear feet of drilling with 5,800 feet of subaqueous excavation for the 36-inch transmission line. The two ends would be tied together after the HDD portion broke through the bottom of Wheeler Lake.

**“DRILLING OUT INTO THE BOTTOM OF THE LAKE, THAT’S HIGHLY UNUSUAL AND ACTUALLY I DON’T KNOW THAT IT’S EVER BEEN DONE BEFORE.”**  
Jeff Seal



The receiving site of the directional drill bore included two barges that had to fit a mud recycling system, long-reach excavators and a crane. The receiving pit was in the middle of Wheeler Lake in Alabama.

“Drilling out into the bottom of the lake, that’s highly unusual and actually I don’t know that it’s ever been done before,” says Jeff Seal, Garney Construction’s regional operations manager and lead on this project. “This is the only job I’ve ever seen where we have drilled out with a horizontal directional drill underneath the river, into the bottom of the lake, and then tied onto it underwater. That is very unusual.”

The project, which was started in April 2016, was bid out for 570 days, but Garney Construction was able to complete it 41 days ahead of schedule, overcoming several challenges along the way.

### ACCOMMODATING PROJECTED GROWTH

This project was part of a 2007 hydraulic model assessment and long-term strategic plan by the Limestone County Water & Sewer Authority. Limestone

**PROJECT:** Limestone County Water Transmission Line  
**CUSTOMER:** Limestone County Water & Sewer Authority  
**CONTRACTOR:** Garney Construction (Kansas City, Missouri)  
**EQUIPMENT:** 1.1 million pound directional drill  
 American Augers, 800-324-4930,  
[www.americanaugers.com](http://www.americanaugers.com)

CAT 349 long-reach excavator  
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**RESULTS:** 8,800 linear feet of water main installed across Tennessee River and Wheeler Lake using directional drilling and conventional excavation, increasing water capacity for Limestone County by approximately 11 mgd

**DOWN & DIRTY**

County had a projected growth rate of about 1,000 new customers and 300,000 gpd each year, plus the possibility of a new industrial megasite that would require infrastructure expansions.

Water demand before the project was 4 mgd — today, it’s closer to 6 mgd

— with projections exceeding 10 mgd inside of 20 years. The county has two main water sources: a treatment facility and purchased water from the neighboring city of Decatur.

Enhancing the connection with Decatur allowed for a capacity increase of approximately 11 mgd and was more cost-effective than the other proposed options, such as forging new connections with other towns or constructing a new facility to draw from the Tennessee River.

Along with the new transmission line, the Limestone County Water & Sewer Authority negotiated a 30-year purchase agreement with Decatur.

### PLANNING THE PROJECT

Getting the project to the starting point was the first challenge officials met. The permitting process included nearly a dozen agencies and required nearly three years to acquire.

Once the route was finalized, decisions regarding pipeline materials had to be made. For the HDD portion of the project, a



Crews weld together pipe segments in preparation of the underwater work after the HDD portion is completed. The pipes are then pulled into the lake and sunk where they are then attached to the segment that was installed using HDD.

36-inch butt-welded steel pipe with a wall thickness of 0.75 inches and minimum yield strength of 42,000 psi was determined to be the best.

The project area within Wheeler Lake, where 5,800 linear feet of pipe would be connected to the HDD portion and laid across the lakebed, also had design factors to consider. Due to the fragile ecosystem, the permitting agencies determined that during installation the excavated materials must be side cast and then spread over the top of the pipe once the pipe was installed. No backfill material was to be brought in, and no excess material was to be removed.

To condense the overall project duration and meet the timeline, the conventional opencut pipe installation and the HDD portion were done in conjunction. That also minimized the installation time for the subaqueous pipe once the pullback for the directional drill was completed.

### SETTING UP FOR THE DRILL

The drilling and pullback for the HDD was sub-contracted to TransAmerican Underground, and one of the first challenges they met was where to place the drill and the equipment for the pullbacks. One side of the drill was in the middle of a lake, while the primary drill rig was set up on the landside with a footprint of 125 feet by 125 feet.

Space was limited as it was in the parking lot of a midrise building — a retirement home — in a con-

gested area of Decatur. Crews could only work from 7 a.m. to 5 p.m. “We actually had a lot of curious people. A lot of them would come out and sit there and basically watch us all day,” Seal says.

Within the area was the 1.1 million pound directional drill (American Augers) with a power unit, the driller’s operator cab, drill pipe trailer, track-hoe with pipe tong, two mud systems, a mud storage area and the entry pit.

On the receiving end of the drill, in the lake, a 50-foot-wide-by-80-foot-deep platform was built using modular barges. The floating work area accommodated an excavator with hydraulic pipe tong, mud recycling system, and drill pipe.

“It’s definitely unusual,” Seal says. “This isn’t the first time that we’ve done underwater excavation, and it certainly won’t be the last, but it is not something you see very often. It’s very specialized, and there’s only a handful of companies and people that do that kind of work.”

*(continued)*



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## LIMESTONE COUNTY INDEED

Crews found out quickly how the county earned its name as they ran into hard limestone measuring between 5,000 to 12,000 psi.

“We had a hard time getting the drill to bite into the rock to start drilling into the rock because it just wanted to skip forward across the top,” Seal says. “In that area of the country, the rock and dirt interface is black and white. It goes from dirt to rock, and the rock, they say it’s like a tabletop.”

In order to get past that barrier, crews put a 16-inch casing down to the rock face as a track for the 12-inch pilot drill head. With that in place, the pilot bore was able to continue swiftly, but the heavily stratified geology made blow-outs a concern.

“We were going through a lot of different layers because we had to go so deep to get underneath the river,” Seal says. “It was also very hard limestone; they don’t call it Limestone County for nothing. It’s probably some of the hardest limestone in the Southeast.”



A 1.1-million-pound American Augers directional drill sits at the entry pit of the 3,000-foot-long HDD project involving digging under Wheeler Lake in Alabama. The entry pit was in the parking lot of a retirement home.

**“THIS ISN’T THE FIRST TIME THAT WE’VE DONE UNDERWATER EXCAVATION, AND IT CERTAINLY WON’T BE THE LAST, BUT IT IS NOT SOMETHING YOU SEE VERY OFTEN. IT’S VERY SPECIALIZED, AND THERE’S ONLY A HANDFUL OF COMPANIES AND PEOPLE THAT DO THAT KIND OF WORK.”**

Jeff Seal

A gyro steering tool guidance system was used to maintain line and grade during the drilling of the pilot hole because of it going under a waterway. The gyro gave the operator real-time location of the drilling head and allowed the operator to keep the drill on the proposed path.

For the 37.5-inch O.D. pipe, a 54-inch hole was drilled. To accomplish this, a total of four passes were done: an initial 12-inch pilot hole followed by three reaming passes of 30, 42 and 54 inches. It was one of the longer runs for that size Garney Construction has ever done.

Due to the abrasion of the rock, it took two reaming heads per each size to complete the 3,000-foot drill.

## A UNIQUE PULLBACK

The pullback of the 3,000 feet of pipe was completed in a single, continuous 11-hour pullback. It was the one time an exception was given on the time restrictions for working. Crews planned in advance and gave the retirement community warning before the 11-hour session. “It was probably like an 18- or 20-hour day, because there’s stuff you’ve got to do before you actually start pulling and then stuff you have to do once it is pulled in,” Seal says. “That takes time.”

In order to counteract the buoyancy of the pipe during the pullback, potable water was pumped into the pipe once the pulling head reached the bottom

of the drill hole. To pump water to the pull head, a 4-inch HDPE pipe was run from a fire hydrant on land back to the section of pipe floating in the water, which was capped with a blind flange.

Another 4-inch HDPE pipe was also installed inside of the steel casing through the flange to the front of the segment of pipe near the pulling head. The water needed to be pumped to the pulling head to add weight to the belly of the pipe to prevent it from floating to the top of the hole and creating friction.

The maximum force the directional drill used during the pullback was 325,000 pounds.

## WORKING IN WATER

Garney Construction used the modular barges that were used for HDD for the subaqueous installation.

“We had an excavator that has a super-long boom and a super-long stick on it so that it could reach down into the water deep,” Seal says. “When we pulled up the material, it could reach out and put it to the side, far enough away where it doesn’t come back in your hole.”

The CAT 349 long-reach excavator had a Topcon GPS grade control system installed on it, allowing crews to put in the exact shape, grade, and elevation of the ditch, taking the guesswork out of the equation.

“When you’re digging underwater, you can’t see what you’re digging, but the GPS system on the excavator will show you exactly where your bucket is, where the bottom of the ground is, and where you need to dig,” Seal says. “So that’s how we dug the ditch.”

## CONNECTING THE TWO PIPES

With a little ingenuity on Garney Construction’s part, the challenge of connecting the two ends had a surprisingly simple solution. On the end of the pipe that was directional drilled, crews installed a ball-and-socket joint with a 50-foot pipe attached.

“The ball joint solved a lot of those challenges with lining up the pipe segments,” Seal says. “That was a solution that we came up with. We did consult with the engineer, who designed the job, from a constructability standpoint, and as they were designing this, we had given them our suggestions on how it was possible to build this.”

The ball joint enabled crews to line up with the trench and Wheeler Lake pipe segment. The EBAA Iron Sales FLEX-900 ball joint allowed for 15 degrees of deflection. There was a 6-degree vertical deflection at the connection point.

After that, it was just getting the subaqueous pipe laid.

The last challenge was getting the pipe into place at the bottom of Wheeler Lake. With this being a potable waterline, they wanted to limit contamination; so sinking the pipe with lake water was off the table.

Instead, crews welded together 1,000- to 1,500-foot lengths of pipe on land, put flanges on the ends and bolted on flat plates with 4-inch waterline tie-ins. They floated the long sections into place and pumped in potable water. After the pipes had been sunk and attached to the system, precast concrete weights were put on top to keep it from floating up once the system water was flushed. The weights were set every 50 feet along the pipeline, spaced in between the welded joints.

## AN EARLY FINISH

The line was successfully pressure tested to 150 psi and then backfilled with the native excavated material, consisting of mostly sand and small pea gravel.

The job was finished 41 days ahead of schedule.

“Drilling out into the bottom of the lake, instead of drilling from land to land, trying to put all the equipment that’s normally set up to be on land out on a barge floating in the middle of a lake, was just unique,” Seal says. “That was the first time that we’d ever done it, and I don’t know that it’s ever been done otherwise.” ▼

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# Protect Pedestrians Through Planning

## DEVELOPING A JOB SITE PLAN BRINGS ADDED SAFETY AND PROTECTION FOR PEDESTRIANS AND CONTRACTORS

BY JARED RANEY

**T**here are a hundred little things on a construction site that can potentially endanger the public; that's why having a foolproof plan for every single job, big or small, is more than good practice.

"It doesn't matter how much money we make, or how big the project is. If somebody gets hurt, that job is a complete failure," says Richard Crow, regional manager with Murphy Pipelines Contractors in Florida.

Possibly the most vulnerable members of the public around job sites are pedestrians.

### THE BASICS

Dealing with safety means dealing with hoses and cables, walking routes, and potholes, among other challenges and obstacles. It is the contractor's job to find solutions to those challenges.

"If an access pit is left overnight, the site has to be secured with construction fencing and a temporary cover," Crow says.

There are many options for temporarily covering pits to reduce risk and liability. Contractors should consider a specialized device — a piece of plywood doesn't do the trick — such as raised plastic pothole covers available on the market.

When working with hose or cable, sometimes access is an issue, and often contractors must cross lanes of pedestrian traffic. "We use ramps for our lines, made for pedestrian and traffic bearing," Crow says.

Other jobs may require more elaborate solutions. When Ecotech Hydro Excavation in Quarryville, Pennsylvania, was excavating debris from a hospital basement, the company's GapVax unit was parked across the street with the boom stretched over the road. Scaffolding carried the hose over a sidewalk to protect pedestrians walking beneath.

Depending on the service, having the appropriate number of people on site is also important. Using spotters to ensure bystanders aren't getting too close is always a smart decision.

"A lot of times you'll get the wanderers that come up and they just want to know what you guys are doing," says Anthony Chavez, safety compliance officer for Minnesota's Davids Hydro Vac. "If you don't have that extra guy, they may go into an area that you've already excavated or they may not pay attention to the caution tape or the cones that you have set up."



PHOTO COURTESY OF ECOTECH HYDRO EXCAVATION

Pennsylvania-based Ecotech Hydro Excavation set up scaffolding to hold a hydroexcavator hose over the sidewalk to allow pedestrians to walk under for their safety on a job site at a hospital.

**"GENERALLY WHEN THE JOB STARTS, THINGS CHANGE. IT'S JUST CONSTRUCTION; IT'S THE NATURE OF THE BEAST."**

Richard Crow

The last essential any company should have is insurance. If the worst would happen and someone is injured, it's important to be covered. "We have coverage in case something happens — lightning does strike," Crow says.

### MAKING THE PLAN

Companies that are generally working in areas where there could be pedestrian traffic are advised to develop a plan for the job site before work begins.

*(Continued on page 32)*

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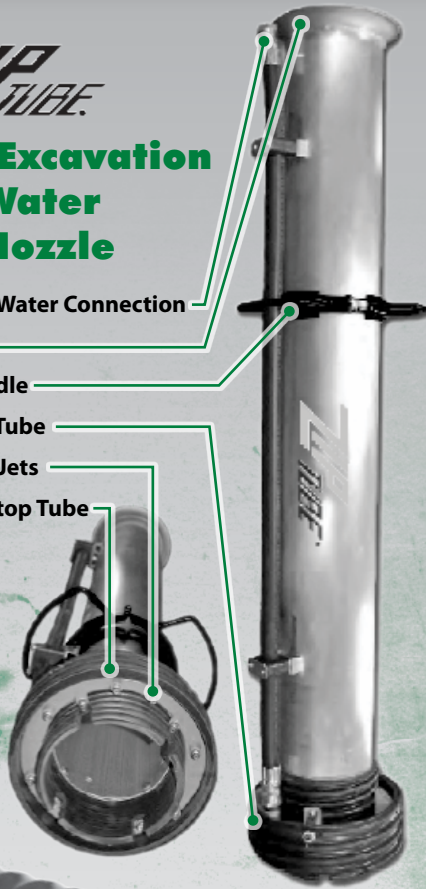
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(Continued from page 30)

"We are out here providing a service, and generally there are some specs or guidelines in providing pedestrian safety or vehicle safety," Crow says. "I think it's crucial for all parties to have a review process when you're submitting something for pedestrian or community safety."

For Crow and his team, the first step when approaching a job plan is to survey the site. Murphy Pipelines Contractors supervisors start with a drive-through, followed by an aerial survey via Google Earth. They then use that aerial map to analyze routes and traffic, then sketch out necessities for that particular job.

"You need to understand what the construction crews are going to do during the day: what access they need, to and from the site," Crow says. "A lot of times people are worried about the site itself, but you have dump trucks and other large deliveries coming through the site every day. And how are they going to off-load. How are they going to pick up?"

After agreeing on a plan, it is formalized and industry-standard traffic and pedestrian control is applied. "It could be not just vehicle traffic, it could be sidewalk traffic," Crow says. "How are you going to detour people around sidewalks? How are they going to access it?"

The plan is also submitted to necessary authorities — municipality, county, or state Department of Transportation — and reviewed by the client. After those approvals, the plan is distributed to site superintendents and foremen to be implemented.

#### GETTING THE WORD OUT

While signage is needed at job sites to warn of dangers and traffic changes, contractors should also communicate with the general public prior to work starting. "Messaging is really important," Crow says. "It's easy to put up a few cones and some detours around, but if you don't notify the public in advance, it just causes confusion."

Crow suggests notifying them in advance of any obstructions or detours or obstacles that they might come upon. He knows firsthand the danger of this topic. Before working at Murphy Pipelines Contractors, he was the client on a job where the contractor picked up some signage before the site was clear. As a result, a woman rear-ended a dump truck and was killed in the accident.

"That contractor made an error by picking up his traffic control plan too early," Crow says.

#### REVIEWING THE PLAN

Often, in construction, all you can do is roll with the punches. But having a solid safety plan and understanding of the site before work begins allows contractors to make those on-the-fly changes with confidence.

"Generally when the job starts, things change. It's just construction; it's the nature of the beast," Crow says. "We consider the safety plan a working document, so we continually review throughout the progress meetings.

"This gets lost amongst a lot of contractors, engineers, and even clients: No job is too small, or too big. It should be the same thorough process. I think once a party assumes that a job is too small, that's when issues are going to come up," he says. "You just don't want to miss anything when it comes to safety." ▼

**"I THINK IT'S CRUCIAL FOR ALL PARTIES TO HAVE A REVIEW PROCESS WHEN YOU'RE SUBMITTING SOMETHING FOR PEDESTRIAN OR COMMUNITY SAFETY."**

Richard Crow



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# Maintaining Support Machines Makes Horizontal Directional Drilling Operations Successful

## MAXIMIZE DRILLING EFFICIENCY WITH FLUID SYSTEM MAINTENANCE FROM YOUR MIXERS TO THE RECLAIMERS

BY JARED RANEY

In directional drilling, most of the focus is put on the drill, but if you want to eliminate downtime on drilling sites, fluid handling systems cannot be ignored.

The two main pieces of equipment in this category are fluid mixers and reclaimers. Each has its own tips and tricks, which we have highlighted here.

1

### DON'T FORGET THE BASICS

As with most heavy equipment, one of the major components of fluid handling systems is a gas or diesel engine, so regular engine maintenance is important. Operators should check engine oil and oil filter daily, along with any manufacturer-specified maintenance intervals.

In addition, another common component is the pump. All this machinery incorporates pumps — on the mixers, usually a centrifugal pump, which comes with its own specific challenges.

“The centrifugal pumps have impellers that move the fluid, and as those impellers wear, you could lose head pressure at your hydrocyclones, and when you lose head pressure, the hydrocyclones lose their cleaning capacity,” says David Gift, Vermeer engineering manager. “Monitoring that head pressure and performing the maintenance as needed on those centrifugal pumps is key.”

Most of the systems are trailer-mounted or self-contained, roadworthy units. “It is a roadworthy item, so making sure your Department of Transportation requirements are met, with lighting and signage — air brakes, air suspension systems, etc.,” Gift says.

Learn your area’s DOT requirements, and follow manufacturer recommendations for trailer units.

2

### CLEANER IS BETTER

Drilling is a messy business, but cleaning up after each job isn’t just good for your mental state, it’s important for your equipment.

Mixers and reclaimers have tanks and hoppers with a variety of material cycling through them. Keeping them clean between jobs prevents cross-contamination in your fluid, and perhaps more importantly, prevents rust and other effects that can limit the life of your equipment.

“After each job, there could be a tendency of solids settling out in the tanks,” Gift says. “It’s critical that those solids get removed from those tanks.”

There’s also a possibility of algae growing in the tanks if water is left to stagnate. For the mixers specifically, moisture buildup in the dry hopper can



PHOTOS COURTESY OF DITCH WITCH

Maintenance on mud recyclers, like this Ditch Witch MR90, is essential to keeping horizontal directional drilling operations going. Contractors should go through everything from the engine to the mixer before and after each job.

cause serious clogging, resulting in downtime on the job.

“We use a hopper design where you introduce the material into the water, and that’s where the mixing process begins. The main thing with that is keeping it clean and dry,” says Cory Maker, Ditch Witch product manager. “Essentially what causes downtime, if you get moisture buildup in there or the product gets wet as you’re putting it in there or if you try to feed it too fast, it’ll wind up clogging itself, and you’re sitting there for a couple hours trying to get it cleaned to where you can get it functional.”

3

### COLD WEATHER KILLS

According to Ditch Witch, cold weather isn’t just a concern in the northern U.S., but it can even cause problems down south. “Cold weather, I mean we still have that problem from Canada all the way down to Texas, because it gets cold enough in the wintertime to freeze up,” Maker says.

The easiest way to prevent freezing is just to keep your tanks empty whenever possible. When it’s not possible, circulate the pumps as much as necessary.

“When guys are driving up to job sites, once they already have that tank full and everything, it’s essentially keeping that pump circulating. That way it doesn’t have an opportunity to freeze up,” Maker says.

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Fluid mixing systems should also be checked for wear and tear, from the hoses to the tank itself, to ensure there are no breakdowns.

After that, it comes down to cold weather storage, where the tanks should be drained, and all valves — fluid system valves and drain valve on the pump — should be left open.

4

### DO IT FOR THE DRILLS

Fluid handling systems increase drilling efficiency, but if you're not careful, they have the potential to cause problems with the drills themselves. Mixing systems allow for the perfect concoction of drilling fluid — but the variability of the machine also requires diligence.

"There are a lot of options out there. A lot of it's ground-dependent, what you use," Maker says. "From our standpoint, we always approach it the same way, we still do the same viscosity, density, pH and sand content testing. We

do a lot of that testing for performance, as well as longevity of the system as far as the drill rig goes."

In today's high-tech environment, the possibilities for different fluid additives and products are endless. Making sure you have the right mix is important not just for the efficiency of a specific job, but making sure your drill lasts as long as it can.

Ditch Witch has a free Fluid Formulator tool on their website ([apps2.ditchwitch.com/fluidformulator](http://apps2.ditchwitch.com/fluidformulator)) that will tell you the exact fluid specifications for your job based on the parameters.

For the reclaiming end of the drilling process, not keeping a close eye can also have detrimental effects on the drilling system. Possibly the most important part of a reclaimer is the shaker deck, where a number of screens ensure that spoils aren't reintroduced into the drill.

"On reclaimers, it's really about screen maintenance: Keeping your screens washed, observing the condition of the screens, and if there's holes in them, then those screens need to be replaced because your contaminants are going right back into your tanks," Gift says.

Screens should be checked continually. It depends on the material you're going through, but it's not uncommon to go through multiple screens in a single job.

"Because they are under vibration and because there are abrasive materials like sand moving across them, they do wear out. So that's probably the single biggest wear item," says Adam Bates, Vermeer product manager.

### THE BIG PICTURE

Directional drilling is a high-stakes, high-stress environment, and anything that can be done to ensure the job goes smoothly is effort well-spent. That's why fluid handling systems, and making sure those systems are operating at peak efficiency, is an important consideration for any contractor. ▼



One of the biggest advances for tires in recent months is the use of tire management software and tire pressure monitoring systems. Technology is more often keeping track and managing tires for the operators.

# Top Tech Trends for Construction Tires

## NEW TECHNOLOGY BRINGS ONE OF THE GREATEST OPPORTUNITIES TO REDUCE COST FOR CONTRACTORS

BY ASSOCIATION OF EQUIPMENT MANUFACTURERS

As construction equipment has grown in the last couple of decades, in terms of size, power, weight, and speed, so too has the need for off-the-road, or OTR, tires that can keep up with the increased demand.

“Tire manufacturers have developed more enhanced compounds and design characteristics to adapt to a job site’s specific environment,” says Johni Francis, global OTR product manager at Titan International. “If necessary, tire manufacturers will work with contractors to develop custom tread compounds.”

This is in line with predictions coming from many of the market reports today. For instance, Research and Markets suggests the OTR tire market is projected to grow in construction. One big trend cited is that due to the advancements in construction and mining equipment, such as automation and electrification, fleet operators use the equipment in multiple shifts. This has led to decreased tire replacement duration, leading to increased demand for after-market tires.

At the same time, the transition to bigger and faster equipment has also led to advances in tires, both in the tires themselves, as well as the technology associated with the tires.

### ADVANCES IN TIRES FOR CONSTRUCTION EQUIPMENT

Throughout the years, various tread designs and solutions for tires were born out of the need to address flat tires, traction, productivity, driver comfort, longevity, and cost of ownership. Often, the goal is to increase productivity and decrease maintenance costs.

“Tires are being relied on as a more critical part of the equipment,” explains Justin Brock, B2B construction segment manager at Michelin North America. “Equipment is advancing at a rapid pace. Tires must also advance with the equipment. It is the connection the machine has to the ground.”

As such, the tires for the construction equipment are advancing in several fundamental ways in recent months to help meet the needs of the industry.

- **Solid Tires:** Many construction companies are looking for a solution that prevents flat tires and the downtime associated with changing out a flat tire, especially in remote locations, according to Brock. Enter solid tires, which became a solution for some in these circumstances, but many times with a trade-off of decreased operator comfort and traction and an increase in equipment stress when compared to a pneumatic tire, Brock says.
- **Radial vs. Bias:** The production of bigger and faster equipment has led construction to shift to predominately using radial tires, Francis explains. However, he says, while radial technology outperforms bias in many instances, bias tires — when used in proper application — can provide significant cost savings and performance benefits.
- **Tread Siping:** Another growing trend is tread siping, which is a feature that helps with head dissipation and even wear across the tread base. Francis explains that when siping first became popular, most sipes were deep and large designs, but today they have evolved into smaller, narrow strips, which based on tread design may take the form of a zigzag or straight-line pattern.
- **Airless:** Airless technology will continue to play an important part of the evolution of tires, according to Brock. One example is the MICHELIN X TWEEL airless radial for skid-steers, which has the ability to offer the benefits that a solid tire provides in flat protection, but also provides great traction, operator comfort, and longevity due to its airless radial design.
- **Multipurpose Tires:** Today, machines are being used in multiple applications every day. One of the reasons for this is the growth of the rental segment in which the equipment is rented to different customers to be

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used in various applications, according to Brock. “The end users in the construction segment face an array of different environments. Many times the equipment is used on hard surface one moment and off road the next moment,” he says. “These application changes mixed with the various environmental conditions are driving customers to seek a more versatile/multipurpose tire solution.”

- **Low Sidewall Technology:** This is a concept inspired by the automotive market, with larger rim diameter and shorter sidewall, which allows for less sidewall flex, ultimately easing stability concerns and improving breakout force. Francis says this has proven successful in agriculture and mining and is currently being tested in smaller construction equipment applications.
- **Accelerate Change Technology:** This wheel technology eliminates the need for the outside wheel to be removed when changing the inner tire. All the bolts stay on, and there’s no need to torque the wheel. This reduces downtime associated with tire changes and rotations by up to 50 percent, according to Francis.

These are just a few of the ways that construction tires have changed in the past few months and will continue to change in the future.

**TIRE MONITORING TECHNOLOGY**

One of the biggest advances for tires in recent months is the use of tire management software and tire pressure monitoring systems. Technology is more often keeping track and managing tires for the operators.

“As the top wear-part expense on the fleet, tires offer one of the greatest opportunities to reduce costs, but only if properly managed,” Francis says.

There are a few key ways that technology and connectivity are aiding in the management of construction tires.

- **Tire Management Software:** One way fleet managers can reduce tire costs is by using tire management software. Most fleets already have

access to technology that can improve their tire management practices. Telematics and fleet management software are two staples in aggregate and mining operations, according to Francis.

- **Tire Pressure Monitoring System:** This system monitors real-time inflation pressures and internal operating temperatures and is installed internally on the tires and set to integrate with the machine’s telematics system. The benefits include: longer lasting tires, less variances in tread wear, increased stability, and the ability to retread a tire if necessary. According to Market Research Future, this is expected to grow 7 percent through 2023.

**AT THE SAME TIME, THE TRANSITION TO BIGGER AND FASTER EQUIPMENT HAS ALSO LED TO ADVANCES IN TIRES, BOTH IN THE TIRES THEMSELVES, AS WELL AS THE TECHNOLOGY ASSOCIATED WITH THE TIRES.**

- **Intelligent Tires:** In general, tires are becoming more intelligent, as they become connected. Goodyear recently unveiled an intelligent tire prototype, which will connect fleet operators to the tire. This will allow for continuous connectivity and real-time data sharing. The end result is safer and more cost-efficient mobility and maximized uptime.

Equipment used in the construction industry is constantly evolving — with new technological and innovative advancements for the job site.

“As the demand of these machines increases, so do the requirements of the tires,” Brock says. ▼




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<b>McLaughlin Group</b> 2006 Perimeter Rd., Greenville, SC 29690 800-435-9340 864-277-5870 Fax: 864-235-9661 www.mclaughlinunderground.com mmole@mightymole.com	✓	✓					
<b>Melfred Borzall, Inc.</b> 2712 Airpark Dr., Santa Maria, CA 93455 800-558-7500 805-739-0118 Fax: 805-739-0698 www.melfredborzall.com sales@melfredborzall.com <i>See ad page 19</i>			✓	✓	✓		
<b>Pow-R Mole Trenchless Solutions</b> 1400 Commerce Pkwy., Lancaster, NY 14086 800-344-6653 716-683-2486 www.powrmole.com	✓	✓	✓	✓	✓	✓	
 <b>radius</b> TOOLS FOR HDD PROFESSIONALS 2525 Ranger Hwy., Weatherford, TX 76088 800-892-9114 855-471-2771 Fax: 817-599-3024 www.radiushdd.com info@radiushdd.com <i>See ad page 11</i>	✓	✓	✓	✓	✓	✓	

	HDD Software/ Guidance	Locators	Mud Recyclers	Piercing Tools	Pipe Bursters	Reamers	Rock Drills/ Saws/ Cutters	Rod Pushers	Shoring / Safety Equipment	Vacuum Excavators	Other
						✓					Trenchers
	✓	✓	✓			✓	✓	✓		✓	
											Trailers
										✓	
										✓	
						✓	✓				
										✓	
		✓		✓						✓	
		✓				✓	✓				
	✓	✓		✓	✓	✓		✓			Thrust Boring Equipment
						✓	✓				

(continued)

# 2018 Horizontal Directional Drilling & Boring DIRECTORY

MANUFACTURER	Boring Machines/ Systems	Directional Drills	Drill Bits	Drill Pipe	Drilling Fluids/ Lubricants	Fluid Mixers/ Systems
 <b>RIVAL HYDROVAC</b> See ad page 47 <b>Rival Hydrovac Inc.</b> Box 5, Major, SK S0L 2H0 Canada 844-467-4825 403-550-7997 www.rivalhydrovac.com tdell@rivalhydrovac.com						
See ad page 33 <b>RODDIE, Inc.</b> 109 Canyon View, Columbia Falls, MT 59912 888-406-382 408-224-7777 www.rodzieunderground.com rod@rodzieunderground.com		✓				
See ad page 15 <b>Sonetics</b> 17340 SW Durham Rd., Portland, OR 97224 800-833-4558 503-684-7080 Fax: 503-620-2943 www.soneticscorp.com sales@soneticscorp.com						
 <b>SPARTAN</b> SINCE 1940 <b>Spartan Tool</b> 1506 W. Division St., Mendota, IL 61342 800-435-3866 www.spartantool.com sales@spartantool.com						
See ad page 7 <b>Transway Systems Inc.</b> 314 Lake Ave. N, Hamilton ON L8E 3A2 800-263-4508 905-578-1000 Fax: 905-561-9176 sales@transwaysystems.com www.transwaysystems.com						
 <b>ultraSHORE PRODUCTS</b> See ad page 55 <b>Ultra Shore</b> 4745 Bakers Ferry Rd. SW, Atlanta, GA 30336 800-746-7464 404-505-0510 Fax: 404-505-0506 info@shoring.com www.shoring.com						
See ad page 25 <b>Underground Magnetics Inc.</b> 5555 Northwest Beaver Dr., Johnston IA 50131 515-505-0960 mike.young@undergroundmagnetics.com www.umaghdd.com						
 <b>VAC-CON</b> See ad page 3 <b>Vac-Con</b> 969 Hall Park Rd., Green Cove Springs, FL 32043 904-284-4200 vns@vac-con.com www.vac-con.com						
See ad page 37 <b>Vac-Tron Equipment LLC</b> 27137 South Hwy 33, Okahumpka, FL 34762 1-888-VAC-TRON 352-728-2222 cori@vactron.com www.vactron.com						
 <b>Subsidiary of Federal Signal Corporation</b> <b>VACTOR</b> See ad page 31 <b>Vactor Manufacturing</b> 1621 S. Illinois St., Streator, IL 61364 800-627-3171 815-672-3171 Fax: 815-672-2779 sales@vactor.com www.vactor.com						
See ad page 5 <b>Vermeer Corporation</b> 1210 Vermeer Rd. E., Pella, IA 50219 800-VERMEER salesinfo@vermeer.com www.vermeer.com	✓	✓	✓	✓		✓



	HDD Software/ Guidance	Locators	Mud Recyclers	Piercing Tools	Pipe Bursters	Reamers	Rock Drills/ Saws/ Cutters	Rod Pushers	Shoring / Safety Equipment	Vacuum Excavators	Other
										✓	
					✓						
									✓		Wireless Headsets
					✓						Pipe Relining
										✓	
									✓		
		✓								✓	
										✓	
										✓	
										✓	
	✓		✓			✓	✓				

BY CRAIG MANDLI

## Air Excavation Equipment

### VACMASTERS SYSTEM 6000

The VACMASTERS SYSTEM 6000 is the first air-vacuum excavation system with the power to trench, as well as pothole. It is designed from the ground up to lower costs, reduce injuries and eliminate damage claims. The system uses supersonic air to penetrate, expand and explode the soil from within while keeping it dry for easy vacuuming and quick backfilling. In turn, this will also increase revenues and profitability by doing more work in less time.



800-466-7825; [www.vacmasters.com](http://www.vacmasters.com)

## Auger Machine

### McLaughlin McL-60 Workhorse

The McL-60 Workhorse auger boring system from McLaughlin is designed for demanding diameter power, communications, water/sewer and pipeline casing installations. Powered by a 218 hp Volvo turbocharged engine, it can install steel casing up to 60 inches in diameter and perform bores up to 700 feet in length. A low-profile engine design allows the unit to easily glide beneath standard trench box spreader bars, and an Eskridge gearbox generates torque up to 126,000 ft-lbs. A remote-control feature lets the operator control the machine from outside the excavation pit, and the onboard Rabbit Travel feature eliminates the need to use the cylinders of the machine to install the product pipe or to pull augers, creating faster performance.



800-435-9340; [www.mclaughlinunderground.com](http://www.mclaughlinunderground.com)

## Boring Machines/Accessories

### Akkerman 1525B/D

The 1525B/D hydraulically driven high-pressure pump from Akkerman is used for effective pilot tube and other pipe jacking operations particularly on larger diameter bores. The large 525-gallon tank offers in-tank agitation for continuous mixing, independent agitation, or agitate and pump to maintain optimal mud viscosity. It displaces a Marsh Funnel viscosity as high as 50 seconds with pump flow up to 10 gpm at 2,500 psi. It is powered by a 20.7 hp diesel engine with an 8-gallon fuel tank. Like its 325-gallon counterparts, it is simple, safe, and reliable. There are few moving parts, no belts and a shrouded agitator. The stepped platform makes it easy for operators to access and fill the tank.



800-533-0386; [www.akkerman.com](http://www.akkerman.com)

### BOR-IT Model 60 Destroyer

The BOR-IT Model 60 Destroyer has a 174 hp Deutz diesel engine with a five-speed transmission, offering a maximum torque output of 144,203 ft-lbs with a maximum thrust of 1.2 million pounds. It bores a diameter range of 24 through 60 inches, which meets most of the demand for large projects. It is designed to split three ways for easy removal from the pit. This allows for secure storage of the power pack



while not disrupting the bore setup. The machine has four hydraulic cylinders with a 60-inch stroke to allow for farther advancement before retracting. A hydraulic winch is included for fast retraction, along with a hydraulic activated push bar assembly. It is provided with either a 4- or 5-inch hex drive.

800-289-6639; [www.bor-it.com](http://www.bor-it.com)

### CUES PICS

The PICS 2- to 4-inch borehole inspection camera from CUES helps eliminate cross bores in directional drilling operations. The inspection capabilities provide a powerful way to inspect, assess, mitigate, record and manage a horizontal directional drilling operation. The system is compatible with the company's cross-bore inspection platform that includes GraniteNet Gas software, sewer main and lateral inspection, and robotic lateral launch for pre- and post-inspection of sanitary and storm laterals. It includes HDD borehole inspection, pre- and post-sewer lateral inspection, sonde and line locating, digital video and picture recording, and wireless integration with GraniteNet asset management software.



800-327-7791; [www.cuesinc.com](http://www.cuesinc.com)

### Pow-R Mole Sales PD-6

The PD-6 directional-thrust boring machine integrated with the P1-6RT rod turner from Pow-R Mole Sales is a trenchless dry bore pit launch boring system. It was designed to install water, sewer and gas pipes in situations with setback restrictions. This system can steer accurately on grade, making it ideal for the installation of gravity sewer pipes. It operates from a pit 6 feet long by 3 feet wide and has a thrust force of 84,822 pounds at 3,000 psi. The maximum push rate is 8 feet per minute, and it can install up to 8-inch pipe in most compressible soils. The rod turner creates 4,500 ft-lbs of torque, allowing the operator to steer the rod string up to 200 feet. The machine is a powerful and productive system, offering a reliable and economical solution for utility installations in the most difficult soil conditions.



800-344-6653; [www.powrmole.com](http://www.powrmole.com)

## Dewatering/Bypass Pump

### Gorman-Rupp ValuPrime

The ValuPrime priming-assisted centrifugal pump from Gorman-Rupp is a compact and powerful pump ideally suited for the dewatering needs of the construction, industrial, and agricultural markets. It is available in 4-by-4-inch and 6-by-6-inch model sizes, flows to 1,520 gpm, total dynamic head to 150 feet, and solids-handling capabilities up to 3 inches. It comes standard with a 34-gallon fuel tank, programmable control panel, and an Environmental Protection Agency-compliant Isuzu Final Tier 4 diesel engine. It is ideal for flood and stormwater standby, general job site dewatering, dust control, and water and street department applications.



419-755-1011; [www.grpumps.com](http://www.grpumps.com)

## Horizontal Directional Drilling

### Toro DD2226

The Toro DD2226 directional drill delivers 2,600 ft-lbs of rotational torque and 22,000 pounds of thrust and pullback for versatility, allowing the machine to pull back and turn larger reamers in tough ground conditions. Dual rear stabilizers provide additional stability in uneven terrain. For convenience, it is also equipped with TDOS-1 Operating System software, featuring the SmartTouch control mode that stream-



lines pipe handling by allowing the operator to advance through the pipe handling process with a touch of a rocker switch on the joystick. It's designed to be easier for both new and experienced operators to learn. In addition, using Smart-Touch allows operators to reduce the pipe loading cycle times, thereby increasing overall productivity. It includes an optimized joystick design with responsive thrust and torque control. It offers capacity for 400 feet of 10-foot pipe.

855-493-0088; [www.toro.com/en/underground](http://www.toro.com/en/underground).

### Vac-Tron Equipment CS 1270

The CS 1270 trailer vac from Vac-Tron Equipment comes standard with a 1,200-gallon debris tank and 580 or 1,000 cfm. It is also available with a hydraulic-operated opening and locking rear door, wet/dry filtration cyclone, 30 feet of 3-inch suction hose and tool, and a 27 or 37 hp Kohler gas engine. Options include a 24 hp Kohler diesel engine and reverse pressure. It is ideal for drill slurry cleanup, as well as other projects that call for slurry removal. With the optional reverse pressure, the user can collect the slurry, transport it, and off-load it into another container or simply open the rear door and dump the material quickly.

888-822-8766; [www.vactron.com](http://www.vactron.com)



### Vermeer D40x55DR S3 Navigator

The Vermeer D40x55DR S3 Navigator horizontal directional drill delivers productivity in broad-range ground conditions, from hard, medium, and soft rock to loamy/dirt and clay. It has Vermeer dual rod technology that uses an inner rod to provide torque to the drill bit, while the outer rod offers steering capability and rotation torque for reaming. The combination provides powerful downhole cutting action and the flexibility to select the appropriate tooling to best match the ground conditions. Powered by a 140 hp John Deere diesel engine, it serves up 40,000 pounds of thrust/pullback and 5,500 ft-lbs of rotational torque. It can carry 500 feet of drill rods on board. It offers a carriage speed of 115 feet per minute and low guaranteed sound power rating of 104 dBA.

641-628-3141; [www.vermeer.com](http://www.vermeer.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 270-degree boom rotation. Outfitted with quality components and reverse engineered for optimal weight and payload with a superior operator control system, the unit is focused on the need for simpler regular maintenance and durable and uncomplicated systems, resulting in fewer repairs and less downtime. It can be paired with a Cusco SJX hydroexcavator to provide growing 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](http://www.wastequip-cusco.com)



### Ditch Witch HX30

The Ditch Witch HX30 vacuum excavation trailer offers a 24.8 hp Kubota diesel engine for performance and productivity on any mid-sized potholing, soft-excavation or cleanup task. The low-profile machine reduces unit height without compromising ground clearance. It is available with a choice of a 500- or 800-gallon



debris tank and is available in a light or heavy version. Also available are advanced optional boom designs to enhance ease of use. It is designed for ideal airflow and increased efficiency. With advanced sound-reducing technology, it creates minimal disturbance in noise-sensitive areas. An optional reverse-flow feature allows quick and easy spoil off-loads for improved productivity.

800-654-6481; [www.ditchwitch.com](http://www.ditchwitch.com)

### Easy-Kleen Pressure Systems Wildcat Heaters

Wildcat Heaters high-pressure, oil-fired hot-water/steam heaters and hydraulic pump systems from Easy-Kleen Pressure Systems are reliable, efficient and install-ready for vacuum trucks and hydroexcavators. A full range of heater options are available, such as dry steam, redundancy packages, Schedule 80 and 160 stainless steel or A53 boiler pipe, fine-tuned temperature and flow control systems. All coils are manufactured in-house, with CRN boiler-approved coils now available. Heaters can be designed for mounting in a cabinet or supplied as a completed cabinet unit that is ready to install. They are CSA- and ETL-approved.

800-315-5533; [www.easykleen.com](http://www.easykleen.com)



### GapVax HV33

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

888-442-7829; [www.gapvax.com](http://www.gapvax.com)



### Hurco Technologies hydroexcavation vacuums

The 250- and 550-gallon hydroexcavation vacuums from Hurco Technologies use quality components to provide maximum performance in a compact trailer or skid. They are ideal for smaller jobs to avoid needing to pull large vacuum units from other projects and for accessing delicate terrains or tight areas, such as golf courses and parks. The fully opening hydraulically powered door allows for easy cleaning, and the fixed-angle tank eliminates numerous maintenance and wear issues that arise with hydraulic-lift tanks.

800-888-1436; [www.hurcotech.com](http://www.hurcotech.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](http://www.hydrflexinc.com)



(continued)

### Presvac Systems Hydrovac

The versatile Presvac Systems Hydrovac is designed for cold weather operation with optional full compliance with Department of Transportation 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. 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](http://www.presvac.com)



### Ramvac by Sewer Equipment HX-3

The HX-3 truck-mounted hydroexcavator from Ramvac by Sewer Equipment is the smallest model in the Ramvac by Sewer Equipment truck family but is equipped with large productivity features. This unit offers a 3-cubic-yard debris body, 0 to 10 gpm at 2,500 psi water system all in a temperature-controlled enclosure, a compact footprint, NEMA-rated electrical system, debris blowoff system, and a fully hydraulic powertrain for durability. For customers looking to dig with air, an optional 185 cfm at 150 psi air compressor is available.

888-477-7638; [www.ram-vac.com](http://www.ram-vac.com)



### Rival Hydrovac T7

The T7 from Rival Hydrovac is a road-legal, cost-effective unit engineered to work primarily in urban settings. It offers a 7-cubic-yard debris body, 800 gallons of freshwater storage, and hoist and "pressure off" off-loading capabilities, allowing it to pressure loads into other vessels, vehicles, or tanks in minutes. Its RAPTORLOCK dump door system allows the door to hold a seal under vacuum or pressure without the use of manual wing nuts. It includes a Robuschi USA ROBOX enclosed blower system with quiet operation and 2,650 cfm at full vacuum. It comes with a 12-volt boiler system, 14 gpm water system and full winterization features. Its 6-inch boom offers full rotation and is extendable to 20 feet. An Aarcomm Systems remote system controls the boom, water, and vacuum, and it displays real-time truck weight. A full safety package includes a safety railing atop the truck, engineered D-ring tie-offs, and boom cradle sensors to prevent driving with the boom deployed.

403-550-7997; [www.rivalhydrovac.com](http://www.rivalhydrovac.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](http://www.soilsurgeoninc.com)



### StoneAge HXR-300 Rotary Hydro-X

The HXR-300 Rotary Hydro-X nozzle from StoneAge uses an angled rotating jet pattern that's designed to decrease jet dwell time and reduce undercutting for effective work around utilities. Users can save labor hours and heavy-equipment costs, all while avoiding the risk of damage to buried utilities. It is fully rebuildable, allowing the operator to reduce cost of ownership by extending the life of the tool with minimal, low-cost maintenance. There are three jetting options available for a variety of applications: higher flow for harder surfaces, intermediate flow for general use, and lower flow for water savings. It handles pressures up to 5,000 psi and flow rates from 3.5 to 10 gpm.

866-795-1586; [www.stoneagetools.com](http://www.stoneagetools.com)



### 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. A tilt-unloading feature ensures liquids in the debris tank are cleared quickly and 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.superproductsllc.com](http://www.superproductsllc.com)



### Suttner America 1/2-inch Inline Hydro Excavation Spray Gun

The 1/2-inch Inline Hydro Excavation Spray Gun from Suttner America has a horizontal flow-through design and an impact-resistant trigger guard. It offers flow ratings up to 16 gpm and pressure ratings up to 3,200 psi.

800-831-0660; [www.suttner.com](http://www.suttner.com)



### Tornado Global Hydrovacs F4 ECOLITE

The F4 ECOLITE from Tornado Global Hydrovacs has a 12-cubic-yard mud tank and holds 1,400 gallons of freshwater. This unit is over 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 F3 ECOLITE is a 10-cubic-yard, 1,200-gallon water tandem-axle unit that also more than doubles older payload capacities. With an 8-inch boom and a 3,800 cfm blower, although smaller, it's still robust and powerful.

715-441-7157; [www.tornadotrucks.com](http://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](http://www.transwaysystems.com)



## Vac-Con X-Cavator

The X-Cavator from Vac-Con is powerful, durable and easy to operate. It comes fully loaded and features a hydrostatic drive that uses the chassis engine for the vacuum, creating a more efficient system that eliminates the need for power takeoff, clutch and gearbox operation. It is available with water systems up to 4,000 psi and a mobile, wireless remote-control system that enables the operator to work the chassis engine revolutions per minute, boom, automatic vacuum breaker, dump controls and hydraulic door locks from remote areas up to a 1/2 mile. The boom rotates up to 270 degrees.

904-284-4200; [www.vac-con.com](http://www.vac-con.com)



## Vacall - Gradall Industries AllExcavate cold weather package

Vacall - Gradall Industries offers a step-in compartment on its AllExcavate hydroexcavators to provide operators with warmth and protection from inclement weather. The standard heated compartment is roomy, with enough space for an operator to change out of wet and muddy boots and clothing. The compartment has floor drainage, racks to hang dry clothing and another rack to store the high-pressure handgun and extensions. Even larger compartments with extra room are available. Along with new LED lighting, the cold weather package includes extra insulation, heated cabinets for the hose reel and water pumps, and boilers that can heat water for more effective hydroexcavation in frozen ground.

330-339-2211; [www.vacall.com](http://www.vacall.com)



## Vector HXX QX

The Vector HXX QX vacuum excavator offers improvements in payload capacity, weight distribution, operation and performance. The truck maximizes legal payload for customers and improves operational efficiency. The placement of the debris body and water tank on the chassis ensures equal distribution of the payload on the axles, regardless of how much water is in the tanks. Each component is purposely placed to ensure the entire chassis gross vehicle weight rating is used. A PrecisionFlow water pump features a single-piston design. The truck comes with a QuietPak sound-damping system with a Robuschi USA positive displacement blower rated for 6,176 cfm and 28 inches Hg. The system delivers higher airflow and quieter operation, with a decibel rating of less than 90 dBA throughout the revolutions per minute range. It has a Park-N-Dig quick operation design, which reduces setup and tear-down time between jobs, and a 7-inch display with real-time operational and performance information feedback.

800-627-3171; [www.vector.com](http://www.vector.com)



## Vector Technologies Mudslinger

The Mudslinger line of powerful, 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](http://www.vector-vacuums.com)



## Westech Vac Systems Wolf

The Wolf noncode hydrovac truck from Westech Vac Systems is ideal for oil and gas customers working in extreme conditions. The debris body is positioned on the optimal spot of the chassis to ensure the payload is proportionately distributed across all axles simultaneously, maximizing legal payload for customers and improving operational efficiency. The side-mounted water tanks reduce the weight by more than 40 percent, lowering the overall cost of the truck. The 1,500-gallon capacity ensures ample water storage capacity for large or remote jobs. A top-mounted, no-touch water fill system is easily accessible from the passenger side of the vehicle. The debris body is lifted using a telescoping, dual-acting hydraulic cylinder capable of 36,000 pounds of force. When fully extended, the debris body exceeds a 45-degree dump angle for fast and efficient off-loading. To help the off-loading process, a heavy-duty, hydraulically powered tank vibrator is mounted to the belly of the debris body.

780-955-3030; [www.westechvac.com](http://www.westechvac.com)



## Locators

### Radiodetection RD8100

The RD8100 cable locator from Radiodetection is engineered to deliver high precision for damage prevention when locating buried cables and pipes. This advanced range of underground utility locators offers optional integrated GPS and usage logging. Containing an arrangement of five custom-manufactured, precision ground antennas, it allows the user to choose the best method to locate specific pipes and cables. Integrated GPS and usage-logging options automatically generate data for customer reports or in-house quality and safety audits to promote the best working conditions.

877-247-3797; [www.radiodetection.com/en-us](http://www.radiodetection.com/en-us)



### RIDGID thermal imagers

RIDGID thermal imagers offer easy-to-use interfaces to predict problems before they happen and prevent costly downtime. Ideal for diagnosing HVAC failures, finding hidden moisture in walls, and locating pipe blockages, the product line includes four thermal imagers — RT-3, RT-5x, RT-7x and RT-9x — that range from providing 160 x 120- to 320 x 240-pixel thermal images. All models include SuperResolution that effectively doubles the resolution of the camera for saved images, allowing greater detail to detect anomalies. Select models also show a digital camera image alongside the thermal image and include e-Assist and the RIDGID Thermal app. With e-Assist, the imager can recognize a placed reference sticker, determine emissivity and reflected temperature, and set both automatically. The app allows users to view, edit and analyze captured images from the thermal imager directly on a mobile device.

800-769-7743; [www.ridgid.com](http://www.ridgid.com)



### Schonstedt Instrument Rex

The Rex pipe and cable locator from Schonstedt Instrument is a multifrequency locator for all underground utilities: water and sewer, electric, telecom, and gas. The design is less than 2 inches thick and weighs less than 4 pounds. The pistol-grip receiver extends for greater sensitivity and retracts for easier carrying and storage. Both the receiver and transmitter fit into a custom shoulder bag. A Multi-Purpose Combo Kit is also available, with a GA-92XTd magnetic locator and a multifrequency pipe and cable locator.

800-999-8280; [www.schonstedt.com](http://www.schonstedt.com)



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## Subsite Electronics 830R/T

Made to withstand the demands of rugged job sites, the Subsite Electronics 830R/T high-frequency electronic locating offers performance at a very high active frequency. It can trace poor conductors, such as ungrounded tracer wire, and locate short lengths of utility infrastructure better than low-frequency units. Automatic features such as gain control, auto depth, and visual and audio feedback make it easy for even novice operators to confidently identify and trace metallic pipe or cable and water and gas distribution lines. It offers a long battery life of 150 hours on the transmitter and 75 hours on the receiver. Adaptive filtering ensures it is highly responsive in all modes of operation, providing left-to-right guidance very quickly, regardless of mode or operator style.

800-846-2713; [www.subsite.com](http://www.subsite.com)



## Vivax-Metrotech vScan

The vScan utility avoidance tool from Vivax-Metrotech was designed to make buried utility detection a simple and cost-effective process. It offers seamless data logging and a compass line direction indicator standard. Options include GPS, Bluetooth and a buried metal cover mode. Its main features and operational controls are in line with industry standards, so minimal training is required.

800-446-3392; [www.vivax-metrotech.com](http://www.vivax-metrotech.com)



## Mud Recycler

### Mud Technology International MCT-750

The MCT-750 from Mud Technology International includes a foldable catwalk that gives operators an expanded work area while maintaining the original shipping profile. This catwalk provides access to two high G-force linear shakers and a round cone manifold.

Magnum centrifugals with mechanical seals minimize the routine maintenance, and an added winterizing package helps prepare for cold-weather operations. Instead of a traditional cone manifold, it uses independent valves with field-replaceable elbows for quick maintenance. It incorporates an overhead possum belly for complete draining to lower maintenance. This updated design has a higher output and generally has less downtime. Its dual tandem axles, pintle hitch and 10,000-pound leveling jacks make it a versatile addition to any drilling fleet.

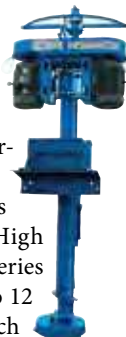
866-675-3240; [www.mud-tech.com](http://www.mud-tech.com)



## Mud/Slurry Pump

### ScreenCo Systems Patz Shaft Drive Pumps

Patz Shaft Drive Pumps, distributed by ScreenCo Systems, are vertical pit pumps that can be used in aboveground or underground storage tanks and include choices of single- or three-phase electric motors. They have high solids and grit capacities with large centrifugal pumps and hardened steel impellers. High capacities include the 3333 series up to 500 gpm, and the 4444 series up to 1,580 gpm. They can be deployed in depths from 3 feet to 12 feet 8 inches. The 6000 and 8000 series have a three-point hitch



with PTO drive and can offer up to 3,500 gpm at depths from 6 to 12 feet. They can be used with an agitator nozzle to mix and pump fast. The 616 vertical prop agitator is capable of mixing at 9,000 gpm, keeping grit and solids mixed at pit depths of 6 to 16 feet.

208-790-8770; [www.screencosystems.com](http://www.screencosystems.com)

## Pipe Bursting Equipment

### HammerHead Trenchless 26XPR

The 26XPR high-performance pneumatic hammer for pipe ramming and pipe bursting applications from HammerHead Trenchless has a newly designed high-flow valve system that produces a more powerful impact. XPR technology is a modification of the Air Reverse, or AR, valve system standard on all HammerHead Trenchless pneumatic hammers larger than 7 inches. Both systems allow for the reverse function to be controlled above ground, greatly simplifying tool removal from pushing collets and burst heads. The 26-inch hammer has replaced the 24-inch AR model. It can install casing 24 to 84 inches in diameter and is effective in pneumatic pipe bursting applications of pipes 15 to 36 inches in diameter.

800-331-6653; [www.hammerheadtrenchless.com](http://www.hammerheadtrenchless.com)



### RODDIE lateral pipe bursting machine

The lightweight lateral pipe bursting machine from RODDIE slides apart into two components of 50 and 60 pounds that can be lowered and reassembled by hand in the excavated pulling pit. In most cases, this machine is powered and operated by a mini-excavator or Bobcat tractor. It is capable of 30 to 50 tons of pulling force and can be used on 4-, 6- and 8-inch sewer laterals, but it can also replace 1- to 4-inch water services.

888-406-3821; [www.pipeburstingamerica.com](http://www.pipeburstingamerica.com)



## Pipe Fusion Equipment

### 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](http://www.nozzteq.com)



### Reed True Peel PE Prep Tool

The True Peel PE Prep Tool from Reed removes dirt and oxidation from the outside diameter of the pipe in preparation for electrofusion. Its spring-loaded blade does not skip and keeps consistent pressure on the pipe to yield a smooth, finished surface. The blade completely peels even out-of-round pipe with the help of the close-fitting mandrel, which rerounds oval pipe. The blade may be rotated to provide a second cutting edge, giving twice the blade life. An observation window





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allows the operator to view peel completion. These tools can be used on the ends of pipe or on tapping tee outlets. Each model is size-specific for both pipe size and wall thickness. Its low profile allows it to be used on tapping tee outlets with limited clearance.

800-666-3691; [www.reedmfgco.com](http://www.reedmfgco.com)

## Safety Equipment

### Sonetics Apex Gen 3.2

Apex Gen 3.2 wireless headsets from Sonetics include an increased Noise Reduction Rating of 24 dB that covers the entire product line, including the APX377 and APX379 Wireless Headsets with DECT7 wireless technology. Also included is a Headset to Multi-Base Station feature that enables a single headset to pair simultaneously with up to four SON150 Wireless Base Stations. Users can move between separate work teams and automatically pair to each connected base station. A Split Push-to-Talk feature lets users transmit over either an SCH305/310 ComHub-connected portable radio and/



or one direct-wired to an Apex 3-Series wireless headset. The package includes several durability enhancements that boost the headsets' overall ruggedness and flexibility.

800-833-4558; [www.soneticscorp.com](http://www.soneticscorp.com)

## Shoring

### Ultra Shore Trench Boxes

Lightweight Ultra Shore Trench Boxes are constructed from corrugated lightweight aluminum that is easy to transport, set up, and use, making them a time- and money-saving option for plumbers, municipalities, and utility contractors. All panels can be used horizontally or vertically and are stackable up to 12 feet in Class C soils. The boxes can easily be transformed into a three- or four-sided application with the use of quick-release end closure panels. Other accessories include our 2-foot leg kits and wheel kits to help take full advantage of OSHA regulations.

800-746-7464; [www.shoring.com](http://www.shoring.com)



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BY CRAIG MANDLI



## Carbide-tipped blade a fit for rocky California soil

### PROBLEM

Kerne America Construction, based in Kern County, California, had been working in rocky ground conditions for the several months. They have come across a mix of everything from shale to hardpan, and even gravel. The variance in ground condition didn't warrant spending the extra money on a rock bit, and they didn't know what they would run into 200 feet down the hole. They had been burning through their standard OEM blades every 200 to 300 feet.

### SOLUTION

**Melfred Borzall** had been field-testing its **Red Diamond Blade** for quite a while but saw this opportunity with Kerne America as a chance to test a lot of variables. The blade is made exactly for situations such as this with its 100 percent carbide coverage around all edges of the blade. The diamond-shaped carbide used had been successfully tested to withstand wear in hard ground conditions since there is no clearance between carbides.

### RESULT

The blade not only held up to the unforgiving and unpredictable California soil, but it ran longer than anyone expected in the ground conditions. Eric Hill from Kerne America claims to be running over 20,000 feet on the blade and in his words, "The darn thing still looks new!" The company's blade purchase volume decreased and production and speed increased. 805-739-0118; [www.melfredborzall.com](http://www.melfredborzall.com)



## Reamer and bits provide smoother operation, less wear on equipment

### PROBLEM

Rock Drill Solutions, based out of Bowling Green, Kentucky, needed tools to complete their rock bores more quickly and more reliably than tools with moving parts. "All rock is hard; some rock is just more difficult to drill than others," says Craig Shaw, owner.

### SOLUTION

**Infinity Tool** provided **HDD PDC Pilot bits** and a **PDC Reamer**. Benefits include no moving parts to be lost in the hole and smooth operation of the tool, so less fatigue on the rotary head and machine. PDC tools can be used with drilling mud, water or high-pressure air and water. They offer fast rates of penetration, so keeping the bore clean needs extra attention.

### RESULT

The pilot hole drilled with the 6 1/2-inch HDD PDC bit drilled smooth and two times faster in the limestone formation than the bit they used in the previous hole. Rock Drill Solutions then put on the 18-inch PDC pull reamer and reamed the pilot hole in one pass. Drilling two to three feet per minute, Shaw was impressed with the speed of drilling, how smooth both tools ran and how the tools came out looking nearly new. "These tools will help the company grow and, with how quickly they drill, save time and money," Shaw says. "This allows us to drill more footage in a week with the same amount of manpower and fuel costs." 888-838-6657; [www.infinitytoolmfg.com](http://www.infinitytoolmfg.com)





## Trenchless pipe replacement a solution for residential customer

### PROBLEM

A residential customer in Memphis, Tennessee, was experiencing slow drains. Upon investigating the situation, the plumbers found extensive root infiltration in the home's main sewer line. They also discovered that the house had an old clay pipe that was collapsing and needed total replacement. Due to the condition of the pipe, relining was not an option. There were also several large, mature trees in the front of the home, coupled with a large landscaped berm forming a natural water barrier. Traditional approaches to trenching and replacing the sewer pipe were not possible.

### SOLUTION

The **Spartan Tool UnderTaker trenchless pipe replacement tool** flawlessly pulled the new pipe through the old clay pipe — something that would have been nearly impossible without the proper equipment. In less than three hours, over 90 feet of failing clay sewer main was replaced with a new 4-inch HDPE pipe.

### RESULT

The tool helped the homeowner avoid thousands of dollars in landscaping repairs. Even more impressive, the home's occupants continued to use their sinks, showers, and bathroom as the plumbing techs performed repairs. **800-435-3866; www.spartantool.com ▼**

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1

### 1. MB Crusher's drum cutters line

MB Crusher offers a line of drum cutters with a direct-drive twin-motor system that allows for the differential power distribution to the two rotary cutting heads. The MB-R drum cutter line can handle job sites where standard excavation systems are underpowered and hammer systems are ineffective. They are compact, powerful tools that can be attached to a range of heavy machinery. The cutters are manufactured to increase stability and reduce stress on the machine arm. Power comes from the hydraulic system of the machine it is attached to. MB Crusher's drum cutters have a hydraulic control system that automatically manages calibration and hydraulic cooling during operations. There are several different models to choose from, depending on the machinery's operating weight. 855-622-7874; [www.mbamerica.com](http://www.mbamerica.com)



2

### 2. Cat Pumps Model 3560 water pump

The Cat Pumps Model 3560 is a high-pressure water pump with two performance ratings: 25 gpm at 3,000 psi and 20 gpm at 4,000 psi. The pump is ideal for equipment operating in high-duty cycle/remote applications, such as hydroexcavating and jetting. It can be direct-driven hydraulically or pulley-driven from motor or engine. Other features include V-packings and low-pressure seals completely lubricated and cooled, which greatly increase pump life. No external oilers are required. The discharge manifold is constructed from 316SS for high strength and long life in demanding applications. The manifold is easily serviced without entering the crankcase. It is available from stock for immediate shipment. 763-780-5440; [www.catpumps.com](http://www.catpumps.com)

## This Issue's Feature:

### An intuitive combo cleaner

BY CRAIG MANDLI

Technological advancements continue to help contractors do more with less. As the systems and services offered on combination machines become more automated, they allow operators to get more work done with less manpower. **Vactor** has embraced that idea with the **2100i combination sewer cleaner**, a unit offering advanced technology and simplicity for a highly connected operator experience that its makers are calling "game-changing."

As successor to the Vactor 2100 Plus, the 2100i increases simplicity with the IntuiTouch one-touch control system by bringing advanced, yet intuitively simple controls designed to maximize operator efficiency. New features inside the cab include a 7-inch screen with backlit tactile buttons and one-touch control for quick startup and engagement. It includes controls and a viewing screen for camera, lighting, recirculation and power takeoff/transfer case activation. One-touch engagement activates the PTO and transfer case, allowing operators to gain control of all operational systems. The operator can easily view the current operating mode, recirculation status, flows and pressures.

Outside the cab, operators will find a single control panel including a 7-inch dashboard screen with touch-screen and glove-friendly buttons featuring at-a-glance data for maximum efficiency. In addition, the new articulating controls adjust to the desired location for the operator's optimal placement. Touch buttons with backlit feedback enable the operator to know if a selected function is active, and the hose reel joystick significantly improves response time



2100i from Vactor

and pays in and out in the direction of the hose reel. The boom joystick has a telescoping feature built in, giving the operator full mobility with multiple direction boom movement for quicker setup. Operators have full control of the water system via a single Multi-Flow control dial, enabling them to precisely match the flow and pressure to the job requirements.

"When we launched the original Vactor 2100 Plus nearly a decade ago, we feel that we set the bar with technological innovation and customized design," says Brandon Shelton, product manager at Vactor. "Now we are revolutionizing the industry again with a state-of-the-art product that combines intuitive simplicity and operational ease with the most advanced technology available."

Furthermore, the RDB 1015 Rapid Deployment Boom telescopes 10 feet out and extends the debris hose down 15 feet, minimizing the need for additional tubes, speeding and easing operation in a wide range of dynamic applications.

"To say we are excited would be an understatement," Shelton says.

800-627-3171; [www.vactor.com](http://www.vactor.com)

# Happenings

## CALENDAR

**Aug. 28-29**

**Water Finance Conference**, Washington Court Hotel, Washington, D.C. Visit [www.waterfinanceconference.com](http://www.waterfinanceconference.com)

**Sept. 10-12**

**Breakthroughs in Tunneling Short Course**, Fritz Knoebel School of Hospitality Management, University of Denver, Denver. Visit [www.tunnelingshortcourse.com](http://www.tunnelingshortcourse.com)

**Sept. 29-Oct. 3**

**91st Water Environment Federation Technical Exhibition and Conference (WEFTEC)**, Ernest N. Morial Convention Center, New Orleans. Visit [www.weftec.org](http://www.weftec.org)

**Oct. 23-26**

**EquipmentSHIFT**, Renaissance Columbus Downtown Hotel, Columbus, Ohio. Visit [www.aemp.org/page/shift2018](http://www.aemp.org/page/shift2018)

**Nov. 1-2**

**WJTA - IMCA Conference & Expo**, Ernest N. Morial Convention Center, New Orleans. Visit [www.wjta.org](http://www.wjta.org)

**Nov. 7-8**

**Pipeline Leadership Conference**, Hyatt Place Houston/The Woodlands, Houston. Visit [www.plconference.com](http://www.plconference.com)

**Nov. 28-29**

**Risk Management in Underground Construction Course**, Hotel MdR Marina del Rey, Marina del Rey, California. Visit [www.undergroundriskmanagement.com](http://www.undergroundriskmanagement.com)

**Jan. 20-25, 2019**

**Underground Contractors Association of Illinois Annual Convention**, Casa de Campo, Dominican Republic. Visit [www.uca.org](http://www.uca.org)

**Jan. 29-31**

**Underground Construction Technology (UCT) International Conference & Exhibition**, Fort Worth Convention Center, Fort Worth, Texas. Visit [www.uctonline.com](http://www.uctonline.com)

**Feb. 20-23**

**Water & Wastewater Equipment, Treatment & Transport (WWETT) Show**, Indianapolis Convention Center, Indianapolis. Visit [www.wwettshow.com](http://www.wwettshow.com)

**March 17-21**

**North American Society for Trenchless Technology's No-Dig Show**, Donald E. Stephens Convention Center, Chicago. Visit [www.nodigshow.com](http://www.nodigshow.com)

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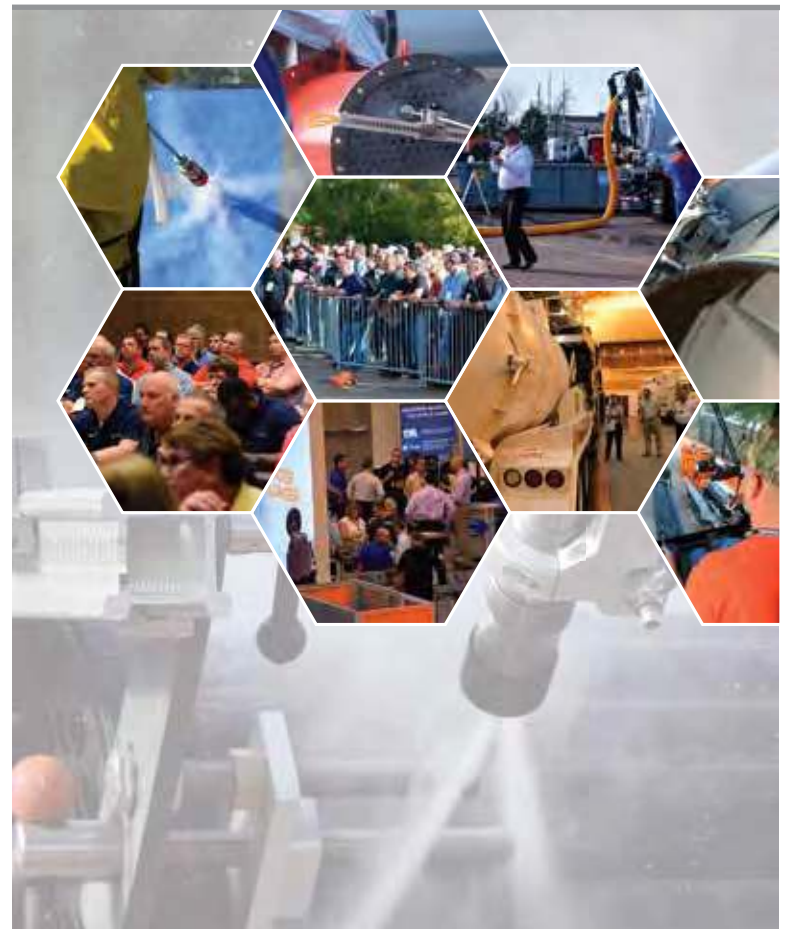
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# Annual Employee Reviews Aren't Enough Anymore

**WANT A MORE PRODUCTIVE AND SUCCESSFUL TEAM? GET GOING WITH MORE FREQUENT CONVERSATIONS ABOUT EACH EMPLOYEE'S PERFORMANCE AND PLANS FOR THE FUTURE WITH YOUR COMPANY.**

BY KATE ZABRISKIE

**N**ot so long ago, most people in the workplace received feedback once a year during a performance review. An employee didn't expect a development plan, a career track, or anyone to take an interest in his or her professional growth. That responsibility was often a solo activity. In fact, as recently as a couple of decades ago, there wasn't a great deal of help on the road to career success, and most people didn't complain. It simply was what it was.

But times change, and norms evolve. The practice of once-a-year feedback is fast becoming an anachronism and out of place in the modern business setting. The reason the average worker has evolved to expect a steady diet of attention and conversation is debatable and perhaps worth scholarly inquiry. In the meantime, however, a demand for dialogue exists and must be answered.

So, why should company owners and managers take action? What does it take to establish and maintain an ongoing give-and-take? How can you balance the constant conversation with their own workplace responsibilities?

For some, accepting the new reality means moving past the fact that they came along when life was hard. Sorry, it's time to get with the times, and get over it. Practices have evolved. First-class organizations have career paths, they invest in employee development, and managers engage in regular dialogue with their employees. Bottom line: If you want a top-notch worker, you better start acting like you know what to do with one.

## GET THE CONVERSATION STARTED

Once you've bought into the notion that routine conversation is a must, the next step is knowing how to guide interactions. First, take an interest. Very little builds engagement as well as a manager who seems to genuinely care for people, promotes their success, and has the ability to develop them. This is not an annual affair. Rather, you've got to have a range of formal and informal conversations throughout the year. To get started, ask questions, and pay attention to the answers.

- "What are you working on that's exciting to you?"
- "What aspects of your job do you enjoy the most?"
- "If you could eliminate parts of your work, what would you stop doing?"
- "If you could try something new with limited chance for failure, what risks would you take?"



- "Tell me a little about what first attracted you to this job. Has anything changed about how you feel about your work here?"
- "How do you feel about our interactions? Do I give your development the right amount of attention, and do you receive the right amount of feedback?"

There is no limit to the questions you could ask. The key is showing a sincere interest in the answers, withholding judgment about what you're told, and taking action when you can.

Secondly, be observant. As a manager, your job is to focus on the work that gets done and how it gets done. When you pay attention and are specific with your feedback, you show you've spent time to notice what's working and where opportunities exist. In other words, it's important to communicate to people that they matter to you.

## FINDING THE TIME

There is no clock fairy or magic solution to time management and fitting feedback and development conversations into a regular workload. It's an effort that requires discipline. To ensure planned dialogue happens, you need to put formal meetings on a calendar, schedule them at regular intervals, show up on time, and put the smartphone away.

**AS A MANAGER, YOUR JOB IS TO FOCUS ON THE WORK THAT GETS DONE AND HOW IT GETS DONE. WHEN YOU PAY ATTENTION AND ARE SPECIFIC WITH YOUR FEEDBACK, YOU SHOW YOU'VE SPENT TIME TO NOTICE WHAT'S WORKING AND WHERE OPPORTUNITIES EXIST.**

While increased levels of informal feedback and scheduled conversation can seem overwhelming at first, the more often a manager engages, the easier it is, the franker the discussions become, and the greater the understanding between the employee and the manager grows.

With whom should you be having conversations?

## ABOUT THE AUTHOR

Kate Zabriskie is president of Business Training Works, a Maryland-based talent development firm. Reach her at [www.businesstrainingworks.com](http://www.businesstrainingworks.com). ▼



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1999 International Guzzler vacuum excavator: Totally refurbished, purchased new for Big Dig Project. 27" blower, CAT engine, auto remote. Special noise-suppression equipment. Tri-axle. High-pressure wash-down system - 300-gallon water tank. \$59,500 OBO. Also available 1997 Ford Guzzler vacuum excavator - same features as 1999 International. No washdown system. \$59,500 OBO. Call 617-908-1629. (CBM)

2006 Kenworth PowerVac 5300 High Dump, Wet/Dry, C15 Cat engine. Truck hours 5,417; Mileage 90,972. Stainless 3,000 US gallon tank. 28" blower with 2,309 hours. \$265,000. Call Tim 810-217-5764 (P08)

2007 Sterling Vactor 2100PD tandem-axle combination cleaning truck. Ex-city owned, well maintained, and equipped with California Carb Compliant DPF System. See details of this unit and other cleaning and CCTV inspection units at [www.empireequip.com](http://www.empireequip.com). Contact Craig at 714-639-8352. (CBM)

1999 Volvo Camel 200: 1,500-gallon water tank, 16-cubic-yard debris tank. 80gpm @ 2,000psi. Ready to work. \$35,000. 920-655-7302; Green Bay, WI (CBM)

2006 Sterling Super Products Camel 200 dump body, Myers DP80 water pump, Roots 624 blower, extendable boom. Excellent condition, 41,500 miles. \$73,000. 559-284-0401 (C09)

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From left, Jim Berry (Dexter), John Kerr of Marsh & McLennan Agency, Marcus Hester of Optronics International, Patrick Jennissen of Felling Trailers, Ron Yarnell of PPG, Rick Coffey of The Carlstar Group, and Jerry Sampson of Kenda/Americana Tire & Wheel Corp.

**Felling Trailers named 2018 Green Manufacturing Award recipient**

Felling Trailers was presented with the 2018 Green Manufacturing Award at the National Association of Trailer Manufacturers Conference in Fort Worth, Texas. This award was established to recognize manufacturers that have made significant contributions toward improving their environmental impact within their manufacturing processes and facilities. Over the course of several years, Felling Trailers has made the reduction of their environmental footprint a prime focus in the operation of their company. The most recent initiative achieved was obtaining ISO 9001:2015 Certification for their quality management system.

**Nortrax retains 38 John Deere dealerships**

After the sale of seven stores in its Midwest region to Dubuque, Iowa-based McCoy Group, Nortrax announced it will focus on its existing 38 John Deere dealerships. Those dealerships are located in the states of Maine, New Hampshire, New York, and Vermont, with additional locations in Ontario, Newfoundland, and Quebec.

**John Deere celebrates 30 years of joint venture**

John Deere and Hitachi Construction Machinery celebrate more than three decades of a joint venture. Since the start of the operation as a joint venture in 1988, Deere-Hitachi has manufactured over 55,000 hydraulic excavators for the North, Central and South American markets.

**Manitou Group appoints new leadership roles**

Manitou Group announced three new members joined the North American leadership team with the appointment of Don Vollmar as vice president of engineering, Todd Miorin as senior director - program management, and Jeffrey Weido as senior director - product management and marketing.



From left, Todd Miorin, Jeffrey Weido and Don Vollmar

Vollmar most recently worked at CNH Industrial and has held positions at John Deere, Peterbilt and Kohler. Miorin brings more than 20 years' industry knowledge to his role and has extensive experience in developing and executing complex projects related to acquisition integration, strategic alliances, and product development processes. And Weido served as president and co-founder of i2A, partnering with companies such as Genie/Terex, JLG, and Generac. Prior to i2A, Weido served as the marketing director for Genie/Terex.

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**LaValley Industries adds new distributor**

LaValley Industries announced it has entered into an alliance with American Augers to distribute the TONGHAND exit side wrench and DECKHAND pipe handling system specifically configured for loading and unloading drill pipe in horizontal directional drilling applications.

“We’re excited to make DECKHAND and TONGHAND available to American Auger’s loyal customers,” says Jason LaValley, CEO and founder. “American Augers has a rich history of providing innovative solutions to its customers, and we believe

that our products combined with their global network is a win-win for our industry.”

**StoneAge welcomes new VP of finance and information technology**

StoneAge welcomed Peter Brooks as vice president of finance and information technology. He will be based out of the Durango, Colorado, home office and provide oversight of accounting, financial and information strategies. ▼



Peter Brooks

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