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**digDIFFERENT** Think outside the bucket

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Contractor shifts from laying water and sewer lines to becoming a large HDD operation and sees business boom. By Ken Wysocky

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REM Directional technicians Solomon Rivera (left) and Jose Guerrero, bring down a new length of pipe for the Herrenknecht HK250C directional drilling rig. The company is drilling a pilot hole on a 1,500-foot pipe job through rock in Tennessee. (Photography by Meggan and Jeff Haller)

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*digdifferent* 

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### RISK-TAKING DOESN'T OCCUR IN A VACUUM.

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# Risks and Their Rewards

### CONTRACTORS NEED TO KNOW WHEN THE TIME IS RIGHT TO TAKE ON RISK AND WHAT THE OUTCOMES MIGHT BE FOR THE COMPANY

### BY CORY DELLENBACH

s contractors, you know risk is part of the game. You take on risk when you start a new job, open your own business or take on that large customer with a tough job.

Without risk there is no reward, right?

Both contractors featured in this issue, Midwest Mole and REM Directional, have taken risks to help grow from small operations to companies that now serve much of the U.S.

Midwest Mole, based in Indiana, offers directional drilling and other pipe rehab and installation services. It has grown from a handful of employees to over 90 now. REM Directional, based in Alabama, started by laying water and sewer pipe with just two employees in 1998, but now has over 60 employees and does directional drilling throughout the country.

Both contractors had tips on how to be successful, but almost every tip centered around taking risk. Here are some reasons why risk-taking can be essential.

- **Risk often brings opportunity.** We tend to view risk-taking negatively as dangerous and unwise. While some risks certainly don't pay off, it's important to remember that some do. REM Directional took the risk of changing its services from pipe laying to directional drilling and it led the company to big growth in the last 20 years.
- Taking risks shows confidence and helps you stand out. Taking a risk is a great way to present a company as a leader, not a follower content with the status quo. Since expanding services to become a one-stop shop for customers, Midwest Mole has gained prestige, and is regularly contacted by engineers seeking input on upcoming projects.
- We learn from risk. Crews at REM Directional learned by taking on the big, tough jobs. In the long run that helped them improve, becoming familiar with the work and performing even better on the next job.
- Success won't fall in your lap you have to pursue it. Taking risks may be a necessary step in pursuing success, and it can help overcome fear of

failure. In the Down & Dirty feature, Action Hydrovac took on the tough job of vacuuming out soil from the courtyard of a hospital. They had to do it without water and limited access. They succeeded, and as a result have earned other work.

• **Taking risk requires preparation.** Risk-taking doesn't occur in a vacuum. Smart contractors prepare and educate themselves on the possible fallout. All contractors profiled on these pages over the last three years have said they weighed the benefits and risks of every opportunity presented to them. Sometimes, the reward isn't worth the risk.

### FOCUS ON DIRECTIONAL DRILLING

There is a heavy focus on directional drilling in this issue, and not just in the profiles. Product Focus is filled with HDD and boring tools and equipment. There's also our annual HDD & Boring directory — a great place to see what manufacturers are out there and what they have to offer.

### **ARE YOU A RISK-TAKER?**

What kind of risks has your company taken on over the years? I'd like to hear about the unique jobs you have done and how you took on risks to grow. Email me at editor@digdifferent.com or call 800/257-7222. I look forward to hearing from you.

Enjoy this issue!

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### DO YOU HAVE THE SKILLS? Lacking Leadership Stalls Business Growth

There's a specific starting point if you're looking to grow your alternative excavation business. Skip it and any growth efforts will be minimized, or even end in failure. That one starting point is having leadership, and if you have it, it will allow your company to grow as big as you want it. **digdifferent.com/featured** 

### THINKING SAFETY Creating a Culture of Workplace Safety

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# VENTURING IN A NEW DIRECTION

# CONTRACTOR SHIFTS FROM LAYING WATER AND SEWER LINES TO BECOMING A LARGE HDD OPERATION AND SEES BUSINESS BOOM

STORY: KEN WYSOCKY PHOTOS: MEGGAN AND JEFF HALLER

If not for a homeowner's resistance to having a driveway dug up, Joel Colgrove Jr. might still be laying water and sewer lines instead of owning one of the country's largest horizontal directional drilling companies, REM Directional.

But while the business world is full of chance encounters that send companies in totally unexpected directions, REM Directional's rapid growth into a contractor known nationwide for tackling the riskiest, most difficult projects was anything but a fluke. Instead, the company based in Boligee, Alabama — relied on a game plan centered on investing in cutting-edge technology that increased productivity and profitability.

In addition, it developed a diverse base of services that produced independent revenue streams and made the company more attractive to customers, and ran a relentless grass-roots marketing campaign that generated job leads and built brand recognition.

"We just beat doors down and called on everybody we could think of," says Colgrove, 43, referring to him and his father, Joel Colgrove Sr. "We just kept staying after it, and word-of-mouth referrals just sort of spread from there.

"All we did was get out there and work hard, and keep after our goals and do the best job we could for customers," he continues. "That's what really paid off for us. People got to know us as a company that would show up on a job on time and get a job done."

The results speak for themselves. Since REM Directional was formed in 2004 as a spin-off business from REM Services, employment has increased from two to 60,

"ALL WE DID WAS GET OUT THERE AND WORK HARD, AND KEEP AFTER OUR GOALS AND DO THE BEST JOB WE COULD FOR CUSTOMERS. THAT'S WHAT REALLY PAID OFF FOR US." Joel Colgrove Jr.

revenue jumped 100-fold, and the company's roster of equipment grew from one Vermeer 50,000-pound drilling rig to a large fleet of equipment that represents an investment of more than \$30 million. Moreover, the company's service area expanded from a few-hundred-milewide radius around Boligee (located in west-central Alabama, southwest of Tuscaloosa) to the U.S. Midwest, South, southeastern and southwestern regions.

Not bad for a father-and-son team that in 1998 knew about as much about horizontal directional drilling (HDD) as they did about quantum physics. "We really didn't have a clue," Colgrove recalls of the abrupt U-turn the company took into the pipeline-boring market. "We just liked the work and were tired of laying water and sewer lines, which wasn't very profitable at the time. We just started drilling cold-turkey by hustling up work, and by the grace of God, it all worked out."

Colgrove concedes it was a bold move. "But that's how we operate," he notes. "When you make business decisions, sometimes you have to take chances."

#### **STARTED OUT SMALL**

In 1992, Joel Colgrove Sr. founded a company called REM Services, installing water and sewer lines in central Alabama. Joel Colgrove Jr. started working for his dad after he graduated from college in 1996. But the company's radical business shift occurred in July 1998 when a homeowner balked at having his driveway dug up for a waterline REM was installing for a small town in Alabama.

"He didn't want us to opencut his driveway," Colgrove recalls. "So we asked someone at Vermeer Corp. if they had a machine that could bore under a driveway. They did, and we used it to go under the guy's driveway. Then we had to do two more similar bores. REM Directional technician Solomon Rivera attaches a new length of pipe for the Herrenknecht HK250C HDD rig. The company is drilling a pilot hole on a 1,500-foot pipe job through rock in Tennessee. REM Directional, a directional drilling company, got its start in 1992 by Joel Colgrove Sr. as REM Service.





ABOVE: REM Directional President Joel Colgrove Jr. believes in the value of building great relationships with his employees, and if necessary, working alongside them in the field. LEFT: Solomon Rivera brings down a new length of pipe for the HDD rig.



"We liked doing it so much that we decided once that project was over, we would buy a drilling machine ... stop laying water and sewer lines and do strictly HDD," he adds. "It was the best move we ever made."

At first, REM installed fiber-optic lines for communication companies. From there, the business slowly moved into oil, water and gas lines. Why? There were, and still are, many competitors doing fiber-optics work, which dilutes profit margins. "So we started looking at other uses of horizontal directional drilling technology and saw that the larger-diameter pipes and longer installations was a market that seemed to have more profit potential," Colgrove says. "If someone has a pipeline that needs to go under a road or a river, we put it in for them."





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©2016 Vactor Manufacturing. Performance data is based upon published data from a variety of manufactures of competitive products between 1/2016 - 8/2016 Now, drilling bores for oil and gas pipelines generates 90 percent of the company's business. Colgrove says they learned the old-fashioned way, through trial and error. "We gained experience from every job," he says.

In early 2000, the Colgroves established a new company entity, REM Directional, to better represent the company's main business focus. In 2007, the company completed a pivotal job that cemented its reputation and opened doors to bigger projects: More than 100,000 feet of horizontal directional drilling to install a 42-inch-diameter steel pipe for a natural gas pipeline that stretched from Sabine Pass, Texas, to Eunice, Louisiana.

"THESE DAYS, SOME PEOPLE MAY THINK IT'S ODD TO SEE THE OWNERS OF A COMPANY WORKING OUT THERE IN THE FIELD, GETTING THEIR HANDS DIRTY WITH THEIR GUYS. BUT **IF OUR GUYS NEED HELP WE GET OUT THERE AND DO IT** TO GET THE JOB DONE." Joel Colgrove Jr.

#### **POINTS OF DIFFERENTIATION**

Colgrove says several factors propelled the company's growth. One was a strong work ethic. Another was the Colgroves' personal touch. "We were resilient, we stayed after it," he recalls. "And we went out and did the work ourselves (Colgrove, his father and his brother, Kurt). It helped a lot for us to be there to stay on the jobs and meet face to face with customers. They appreciated that kind of direct contact with the owners of the company because it was easier to make decisions right there on the spot."



### Herrenknecht drill rigs bring the muscle

The workhorses of REM Directional's fleet of horizontal directional drilling (HDD) machines are two Herrenknecht rigs, one that's trailer mounted and produces 1.2 million pounds of pullback force, and a track-mounted rig that generates 500,000 pounds of pullback force, says Joel Colgrove Jr., owner of the Alabama-based company.

"We appreciate Herrenknecht's innovations," Colgrove says. "The computers on these machines are really up to date and the machines are very easy to operate. Everything is touch-screen and uses Windows-based software."

Better yet, if something goes wrong, a Herrenknecht technician in Germany can log in to the machine's diagnostics software and help REM employees troubleshoot the problem. "Either they can fix it remotely or tell us how to fix it," Colgrove says. "It's a neat feature on their machines."

While sophisticated diagnostics and operating software are great, the units also bring another valuable asset to the job site: brute force. REM specializes in riskier jobs that require longer and bigger-diameter bores, which requires rigs with the power offered by the two Herrenknecht units, he says.

"We do the kind of jobs that your average HDD

company cannot or doesn't want to pull," Colgrove explains. "Every rig we own has its purpose, and we use these two Herrenknecht machines for longer bores through rock or under big obstacles like the Mississippi River. They basically give us entry into a market we otherwise couldn't serve."

Colgrove points out that REM employees strive to prepare a borehole properly, so pulling pipe doesn't require the machines' maximum force. "But if we do need it, it's great to know we have the power to do it," he says.

The Herrenknecht machines also add value through their reliability, a critical attribute in an industry where machine downtime can be very costly. "You break down, you lose a lot of money," he notes. "It's just that simple." Moreover, machine breakdowns make it difficult to generate repeat business from customers, as well as word-of-mouth referrals.

"One thing we can say is we've never left a drill uncompleted," Colgrove says, noting the value of well-engineered, well-built and reliable equipment. "We have our problems at times, just like everyone one else. But we always get the job done, no matter what it takes."

Another significant factor: The company's gradual move into a niche market for the most challenging bores. "We not only like to do the longer, more difficult jobs, they're also more profitable," Colgrove notes. A difficult job might require an 8,000-foot bore with a 42-inch-diameter pipe, for example, or a 6,000-foot "shot" with large-diameter pipe through rocky soil.

"Where the drilling is, what it's going under, the environmental regulations in the area — all those things dictate how difficult a bore will be," he explains. "We even have used an 'intersect' drilling method for very long drills, which means we actually drill from both the entry and exit sides and meet somewhere in between. Using this method, we've completed drills more than 17,000 feet long."

Offering more services than a typical drilling company also benefited REM. "We're not your normal HDD contractor," Colgrove says, noting that the company also performs road bores, digs footings and drives sheet piling. "We do a variety of things so that when the HDD market is down, we can do something else," he says. "Or sometimes a customer wants one contractor to do as many boring-related jobs as possible. We're a one-stop shop, but our bread-and-butter still is HDD."









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Fausto Leyva, a mud operator, cleans sodium bentonite clay from a mud-cleaning machine (Tulsa Rig Iron).

### "WE DO A VARIETY OF THINGS SO THAT WHEN THE HDD MARKET IS DOWN, WE CAN DO SOMETHING ELSE. ... WE'RE A ONE-STOP SHOP, BUT OUR BREAD-AND-BUTTER STILL IS HDD."

Joel Colgrove Jr.



Superintendent Kevin Jones (right) talks safety with truck driver Robert Boully.

#### **EMPHASIS ON NEW TECHNOLOGY**

Investing in new and more reliable technology also greatly impacted the business. "We're always trying to figure out ways to do things faster and better," Colgrove explains. "That's what drives our profit model. So good, reliable equipment is important. When you're broke down, you're not making money."

A good example is the HRE 750 drill rig the company purchased in 2003 from Horizontal Rig and Equipment (now owned by Vermeer Manufacturing Corp.). "It was the smartest thing we ever did," Colgrove says. "We'd been doing a lot of drilling with smaller rigs and it was pretty stressful. It's a lot more comfortable working on jobs when you know you have the power to get things done."

The company now owns three HRE 750s, which can generate pullback force of 750,000 pounds. In addition, REM owns eight more drilling rigs, made by American Augers, Herrenknecht AG, Roberts, Ditch Witch and Vermeer. The company also owns eight MCS 1000 mudcleaning/recycling systems made by Tulsa Rig Iron, pneumatic hammers made by HammerHead Trenchless Equipment, 26 Peterbilt tractor cabs, and roughly 15 low-boy flatbed trailers made by Liddell Trailers and Fontaine Commercial Trailer (a Marmon Highway Technologies/Berkshire Hathaway company).

Furthermore, the company also owns an array of support equipment that includes trackhoes, bulldozers and side booms manufactured by John Deere; tanker trailers made by Dragon Products Ltd.; Godwin Pumps, a Xylem brand pumps; and CAT and Ingersoll Rand generators.

In addition, REM burnished its drilling credentials when it became the first company in the U.S. to buy a Direct Pipe pipe thrusting system from Herrenknecht. The company now owns multiple Direct Pipe systems including two Herrenknecht pipe thrusters with 500 tons of push force. The units offer a productivity advantage because they can bore a tunnel (up to 60 inches in diameter) and install pipe at the same time, as opposed to drilling a pilot hole, then reaming one, two or even more larger holes (depending on the pipe diameter) before actually pulling the pipe through the bore, he says.

"Furthermore, the Direct Pipe system doesn't require as much drilling mud for boring and minimizes frac-out risk. Moreover, while a typical HDD rig needs a shaft dug at each end of the bore, the pipe thrusters require only one access point, and its footprint is substantially smaller and nowhere near as deep as typical HDD. On some jobs where there isn't much room on one end of the bore, that comes in handy," Colgrove notes. The Pipe Thruster can also be used independently as pipe-assist tool for challenging HDD crossings.

### **ALL HANDS ON DECK**

But while investing in new technology is critical, the human touch matters, too. When asked to name his most valuable trait as a businessman, Colgrove says it's his work ethic — a value instilled by his father that also pays dividends in terms of building great relationships with employees.

"Our dad taught us that hard work pays off," Colgrove notes. "You've got to be resilient and relentless out there when you're going after work and doing work. We're not scared to go out there and get our hands dirty with our employees. These days, some people may think it's odd to see the owners of a company working out there in the field, getting their hands dirty with their guys. But if our guys need help we get out there and do it to get the job done."

Looking ahead, Colgrove is optimistic about REM's growth prospects. He says that in one month last spring, he bid more work than he did in the last five years. He attributes that to pent-up demand created by the prolonged economic downturn. "Pipeline work is picking up," he says. "I haven't seen this many bids in a long time."

But despite the opportunities presented by an improving economy, Colgrove sees measured, not exponential, growth in the years ahead. He envisions buying one more large drilling rig, then applying the brakes. "We're comfortable where we're at," he says. "We've been bigger than what we are now, and it creates a lot of challenges. Plus, it's so hard to find good employees and also hard to manage all of them when you get bigger. We want to keep working hard, but we want to enjoy life, too."

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Directional Drilling Drofile

David Howell



Midwest Mole foreman Jeff Hayden uses a McElroy TracStar T500 fusion machine on a project requiring over 1,000 feet of pipe. Based in Greenfield, Indiana, the company operates throughout the Midwest and in and around the Washington, D.C., area, specializing in auger boring, tunneling, directional drilling and pipe rehab work.

# BRING ON THE CHALLENGE

### INDIANA'S MIDWEST MOLE THRIVES ON THE TOUGH JOBS, WHILE KEEPING AN EYE ON GROWTH OPPORTUNITIES

STORY: CORY DELLENBACH PHOTOS: MARC LEBRYK



That mindset was put in place when the company was founded 35 years ago and still holds true. With jobs ranging from basic utility locating to auger bores near a hospital with varying ground conditions, there is no shortage of tough jobs.

"We're always up for a challenge; we're always interested in looking at things," says David Howell, senior project manager. "We want to be known as a quality contractor that people call when they do have a tough job and it needs to be done right."

Midwest Mole, based in Greenfield, Indiana, has grown to over 90 employees. It operates throughout the Midwest, and in and around Washington, D.C., performing services that include directional drilling, tunneling, hydroexcavation, sliplining and auger boring.

"As new technologies have come about, we've always been the ones to evaluate and see how we might be able to offer those services as well," Howell says. "As the trenchless industry has grown, so have we."

### **BUILDING A FOUNDATION**

Len Liotti was working in the tunneling industry for Affholder Inc. when the company decided to get out of the auger boring business in Indianapolis.

Liotti saw a void in the market and knew he could fill it with the experience he had. In 1982, he started Midwest Mole as an auger boring and conventional tunneling company. Now his son, Dan, and an employee who worked his way up the ladder, Jason Miller, own the company.

The company saw big growth between 2000 and 2008. The recession then took hold and a small retraction occurred, but the owners weren't going to let that stop them. "We looked at new areas we could work in and that's how we got into the Washington, D.C., area," says Howell. "That's been a good



move for us. We keep one to two crews busy year-round there and we're looking to continue to grow that market."

While expanding its coverage area, the company also added new services to compliment the auger boring and tunneling side. "As the projects came

lem-solving to our clients."

The company handled one of those tough jobs earlier this year at Walter Reed National Military Medical Center in Bethesda, Maryland, where crews were auger boring for new pipes. "We had some very tough ground conditions

### **Midwest Mole Inc.** Greenfield, Indiana

**OWNERS:** Dan Liotti and Jason Miller EMPLOYEES: 90

**SERVICES:** Auger boring, directional drilling, soft-ground tunneling, rock tunneling, sliplining

SERVICE AREA: 8-hour radius around Indianapolis, 2-hour radius of Washington, D.C., but willing to travel for work

WEBSITE: www.midwestmole.com

around and the needs grew in the area, we added services," Howell says.

Directional drilling has been one of the biggest areas of growth. It accounts for 15 to 20 percent of the company's revenue. Crews operate five Vermeer directional drills, from a 7x11 up to a 100x120.

Hydroexcavation was added to the mix 10 years ago as a way to keep crews safe while auger boring and directional drilling. For that work, the company uses two Tornado Global Hydrovacs units.

"We'll use the hydrovacs extensively on directional drilling job sites and at times on tunnels to carry the material away," Howell says. "Most of the time, though, we're using them to pothole for utilities so we make sure where the utilities are prior to crossing them."

In fact, Midwest Mole's policy is that crews will not cross a utility without seeing it with their own eyes. "We want to make sure we are doing everything as safely as possible," Howell says.

### **DRAWN TO CHALLENGES**

Even though Midwest Mole has expanded its menu of services, the company still does what it was founded on with several auger boring and tunneling jobs a year. That is where some of the toughest work comes from.

"There's definitely some tough jobs that we've done out there," Howell says. "The challenging jobs are definitely frustrating, but they have some good opportunity for us to show our capabilities and expertise at prob-

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on that project," Howell says. "Some of the auger bores were mixed-faced conditions where you have soft ground and rock combined. Having to bore through that can be extremely difficult."

Crews went into the project being told that the rock strength in the area was in the neighborhood of 12,000 to 15,000 psi. However, when they encountered the rock, some of it was close to 25,000 psi, or higher. "We had to rework some of our tooling, and it took additional amount of time to get through," Howell says. "We ended up doing a lot of modification to our equipment for those jobs."

Crews drilled pilot holes with rock equipment and followed those with the larger auger boring machines to stay on target and maintain line and grade.

The company's auger boring equipment ranges from homemade gear to boring machines from Barbco and American Augers. Midwest Mole also has boring machines built in the 1960s and 1970s that are still in operation. "An auger boring rig is a pretty resilient piece of equipment," Howell says.

Midwest Mole often has to think of creative ways of attacking the challenging jobs. The company recently wrapped up a joint-venture project where crews had to cross the Des



Midwest Mole has grown along with the trenchless industry and currently staffs 90-plus employees.

"THERE'S DEFINITELY SOME TOUGH JOBS THAT WE'VE DONE OUT THERE. THE **CHALLENGING JOBS ARE DEFINITELY FRUSTRATING,** BUT THEY HAVE SOME GOOD OPPORTUNITY FOR US TO SHOW OUR CAPABILITIES AND EXPERTISE AT PROBLEM-SOLVING TO OUR CLIENTS." David Howell

# Putting together complimentary services

When performing trenchless installations, a company can add supplementals without adding a lot of expense.

Midwest Mole has done that ever since the company was founded. Beyond its main services of auger boring, directional drilling and tunneling, the company does rehabilitation work.

"They're very complementary," says senior project manager David Howell. "Most of our auger bores and tunnels we're already usually threading a carrier pipe of some sort inside of those. So for us, the rehabilitation services are just basically the same thing, but we didn't put in the original tunnel lining."

The company offers sliplining and spiral-wound lining services. "We've done spiral-wound PVC linings before, and we've done spray-on cement linings or geopolymers," Howell says. "We use all different types of products for the sliplining, depending on if it's a sanitary sewer or a storm sewer, and depending on the shape of the structure we are rehabbing."

Midwest Mole has worked on fiberglass and PVC pipes as well as HDPE and steel.

Plaines River in Joliet, Illinois. A 112-inch rock machine had to be used to bore under the river, which is built up like a canal with the river sitting higher than the surrounding area.

"The concern with that project was that we could hit a fissure and the water from the river would flood our pit areas," Howell says.

To address that concern, crews conducted a preliminary pilot hole using a directional drill with a rock hammer attached. The pilot hole went across the crown to make sure there were no fissures. Workers built a valve system attached to the wall of the shaft, so if they hit water during pilot drilling, they could stop the water and grout the cavity shut.

"We never found water, so that was good," Howell says. "We do enjoy the tough jobs and at the same time, those are typically the projects where the more risk you take, the better the growth opportunities are for your revenue. But also, the more risk you take, the more money you could lose if it doesn't work out."

### **SELECTING THE RIGHT METHOD**

Midwest Mole doesn't limit itself to the tough jobs. Team members also look at designs and talk with engineers anywhere to come up with the right approach to certain jobs, even if not in the company's territory.

"We offer that to all engineers, just to give us a call and tell us what kind of job they have going and what they're trying to do," Howell says. "Then we can look at that from a constructability standpoint and let them know what different options are out there and what may be the best option.

"If someone uses an incorrect methodology and the job goes bad, then it gives a bad name to that methodology when in all actuality, it just may not have been the right one for that project. Those are the types of things we're trying to change out there."

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### "AS NEW TECHNOLOGIES HAVE COME ABOUT, WE'VE ALWAYS BEEN THE ONES TO EVALUATE AND SEE HOW WE MIGHT BE ABLE TO OFFER THOSE SERVICES AS WELL." David Howell



Midwest Mole believes their employees are key to their success, and feels cross-training is critical in handling workflow that comes in waves.

to take care of the people who really make up Midwest Mole and make it successful."

Workers in the field aren't dedicated to just one skill set.

"All of our crews, with the exception of our HDD guys, are cross-trained to a degree to do anything from a tunneling job to an auger bore to a slipline," Howell says. "They can do all those different operations."

It's important for the company to have cross-trained employees because work comes in waves. At one time there could be multiple auger boring jobs, and other times no boring but plenty of tunneling jobs. Directional drilling, though, is a constant. Crews work in that area about 90 percent of the time because there is so much of it.

"We'll bring new employees on as laborers and try to get them out on various jobs so they get the hands-on experience learning from the guys who have been doing it," Howell says. "We try and get them exposed to as many different methodologies as we can to try and grow them and train them to eventually take on more responsibilities."

### FOCUS ON THE FUTURE

Focusing on the company's core services will remain a priority, but Midwest Mole management keeps an eye

out for new markets.

"We're going to see where the market needs additional contractors and where those opportunities might lie for us," Howell says. "We're always looking for smart growth opportunities in markets that are maybe underserved."

The company doesn't want to grow to just make revenue; the goal is to be profitable. "There's no reason to do double the amount of work for the same profit," Howells says. "You want to do more work for more profit, not the same profit. We have to make sure we get jobs that are right for the company, that we're going to be successful at."



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Foreman Jeremy Scales operates a Vermeer D100x120 Series II directional drill. Directional drilling accounts for up to 20 percent of Midwest Mole's revenue.

### **HOMEGROWN EMPLOYEES**

A big reason the company can make those recommendations and take on the challenging jobs is that its employees have the experience to handle many situations. Midwest Mole's two superintendents and all the foremen started as general laborers.

"Some people have a desire to grow into more of the office or that type of role," Howell says. "Most of the guys do stay in the field and they want to grow within the field, like going from being a laborer to a foreman on a project, all the way up to a superintendent."

Company co-owner Jason Miller is one of those who started as a laborer.

"He started in the field and then came into the office and has worked his way up to the president now," Howell says. "He definitely has a good understanding and feel for what the crews deal with. We try to do the best we can





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# 10 Tips to Stop Wasting Time at Work

WAIT

### IF YOU'RE SHOCKED THAT 2017 IS HALF OVER, MAYBE IT'S TIME TO ASK WHERE THE TIME GOES AND BECOME A BETTER TIME MANAGER

**BY JUDY KNEISZEL** 

hen you greet a child by asking what he or she did in school that day, often the response is, "nothing." You know they must have done something, but haven't you felt like that yourself at the end of a workday? You can be busy all day, but feel like you accomplished "nothing." Those nothing days add up and months pass.

Time is a work tool, just like a vacuum truck, personal computer or smartphone. Like those material items, time can be used wisely to help run a business profitably, or carelessly to the detriment of the business. I'm not suggesting that you are wasting entire workdays playing Candy Crush on your phone or driving to the beach. If you're doing either of those

things, the solution is self-evident. I'm talking about the hours you waste without even realizing it, and how to more effectively manage that time.

### **BEYOND THE LIST**

Productive people are often list-makers. A sense of satisfaction comes from crossing things off a to-do list. But to accomplish more, don't just make a list; prioritize tasks and schedule them. It's tempting to do simple tasks first to get a lot of items crossed off the list quickly, but you'll get more done in the long run by tackling the big jobs first. If payroll is your biggest headache, do it first thing in the morning. If you're sleepy after lunch, maybe schedule tasks that take you away from your desk, like inspecting your restroom inventory or calling on potential special events customers personally.

### **ONE THING AT A TIME**

Speaking of that big job — it will get done quicker and better if you not only schedule time for it, but also try to focus on it exclusively during the time allotted. While this isn't always possible, it's a worthwhile goal. Studies have

shown most people actually waste time by multitasking, even though it's self-aggrandizing to say you're always doing six things at once. Maybe you'd be able to prepare a more accurate, thorough bid for the government contract you're going after if you had uninterrupted time to work on putting it together. Or maybe a personnel issue with one of your drivers deserves your undivided attention.

### **KEEPING TRACK**

If you honestly don't know where your time goes, spend a couple of days diligently tracking what you do all day. Informally jot it down in a notebook or, if you think this is a permanent solution to your efficiency woes, there are many productivity apps and job-tracking software programs available for your PC or smartphone. It may amaze you how much time you spend returning emails, answering phone calls or simply chatting with employees. It may also surprise you to find out that you are consistently more productive at certain times of the day. Going forward, you can then try to schedule your most difficult tasks at those times. Also consider the schedules of those you do business with. The sales associates at your paper and chemical suppliers might not be available before 8 a.m., but the owner of a construction company might have more time for you in the early morning.

### SCHEDULE COMMUNICATIONS TIME

Give yourself a set amount of time to answer emails or return calls every day. Don't feel like you must answer the phone just because it rings or answer every email immediately. Also block off some time every day as designated "no communications" time. That means you don't answer the phone, you don't even have your email program open and no one is allowed to bother you in person except in a true emergency. You may be surprised by how much you can get done during this period.

### **ORGANIZE YOUR SPACE**

If you honestly track your time for a few days, you'll realize how much time you waste looking for things in your office. Clean up and organize, and then keep it that way to become more efficient.

### LEARN TO DELEGATE

Maybe you feel as though you get nothing done because you are trying to do it all. Don't think of delegating as a failure on your part. Rather, think of it as a way to give an eager employee an opportunity to grow. Don't fall into the trap of thinking it will take too much time to train someone to

### MEETINGS CAN ALSO BE GIANT TIME-SUCKERS. ... THOUGHTFULLY CREATING AN AGENDA CAN ACTUALLY HELP DETERMINE IF ISSUES COULD BE SETTLED MORE QUICKLY WITHOUT A MEETING BY SIMPLY PHONING, EMAILING OR HAVING A QUICK CHAT WITH THE INVOLVED PARTY.

do a few of your tasks. It will be time well spent in the long run. It's OK to admit that one of your young, tech-savvy employees could be a quick study with the routing software and actually do a better job than you do after a few short lessons.

have to be nose to the grindstone eight to 10 hours a day without a break. It means you use time wisely enough that you actually earn a refreshing break occasionally, and still feel a sense of accomplishment at the end of the day.

### **MAKE MEETINGS MORE PRODUCTIVE**

Meetings can be efficient ways to communicate, because you can say something once and everyone in attendance gets the message. But meetings can also be giant time-suckers. If you are wasting a lot of time in meetings, try creating and distributing an agenda in advance and sticking to it. This can help keep attendees from going off topic. Thoughtfully creating an agenda can actually help determine if issues could be settled more quickly without a meeting by simply phoning, emailing or having a quick chat with the involved party.

### TAKE DRASTIC MEASURES

Here are a few simple but drastic measures you can take if you still find yourself wasting too much time during the workday:

1. Remove the guest chair from your office or cubicle. Or stand up anytime anyone comes in to talk to you. Having guests sit encourages chatting. If one or both people are standing, however, it's actually kind of awkward and visitors will leave immediately upon having their questions answered.

2. Cut yourself off from social media. If you are constantly scrolling through Facebook and justify it because you have a business page and want to be able to respond immediately to comments or complaints, maybe you need to schedule time to do this once or twice a day rather than staying logged on and being tempted to watch cute puppy videos. Maybe someone else in the office can take over social media marketing while you wean yourself off of the puppy videos.

3. Get some blinds. If you have an office with a glass door or windows that people walk past, you may not realize you are wasting significant time acknowledging people as they pass, whether it's a nod, wave, verbal greeting or full-blown conversation. You don't have to become a hermit, but by adding blinds or curtains you can close them when you're in intense getthings-done mode. This can be helpful for you as well as employees who would be more efficient if they spent less time shooting the breeze with you.

#### **SEEK A BALANCE**

If you are frequently left asking yourself where the time went at the end of the day, it may be time to think about time. Using time efficiently doesn't mean you



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# Courtyard Cleanup

### HYDROEXCAVATION CONTRACTOR GOES WITHOUT WATER TO HELP DURING LARGE REMODELING PROJECT

### **BY CORY DELLENBACH**

hat do you do when a customer has a tight budget and a location where water can't be used? You complete the job using dry vacuum. That's what Action Hydrovac did in late 2016 when the company accepted a job at St. Michael's Hospital in downtown Toronto, Ontario.

The hospital was undergoing a multimillion-dollar renovation that included a new patient care tower on the site of a center courtyard. The project, dubbed St. Michael's 3.0, also included a renovated emergency department and significant upgrades to the existing hospital space.

### **GETTING TO THE COURTYARD**

The courtyard was surrounded on all sides by the hospital, making it impossible to get a truck into the dig site. Mitch Fairbarn and Aaron Van Tol, owners of Torontobased Action Hydrovac, decided the only way to do the work was to run the hydroexcavator hose from the truck on the street through the hallways of the hospital and into the courtyard.

"It was about 225 feet we had to go," says Fairbarn. "And we couldn't use water just in case we had a break or anything like that because it would make a mess of the hospital."

### "IT WASN'T VERY FUN WITHOUT THE USE OF WATER, BUT IT WAS ONE OF THE WAYS WE SAVED ON THE HOSPITAL'S BUDGET." Mitch Fairbarn

Before the job, crews held a tailgate meeting to discuss the project and get an idea how long they could be

at the job. They also had to figure out how to handle pedestrian traffic in and out of the hospital. At the hospital entrance, workers lifted the hydroexcavator's boom over the walkway and directed pedestrian traffic under it. The hose was then fed from the entrance through the hall to the courtyard.

"We had to go this route because the only other way they could get a piece of equipment in there was by dropping it in with a crane, and that would be too costly," Fairbarn says.

### SHOVELING AND VACUUMING

After getting the hose to the courtyard, three Action Hydrovac crew members started digging with shovels and using the vacuum hose to suck up the



<b>*</b>		
	PROJECT:	Excavate the courtyard at a hospital for an expansion
	CUSTOMER:	St. Michael's Hospital, Toronto, Ontario
	CONTRACTOR:	Action Hydrovac
	EQUIPMENT:	Vactor HXX Hydroexcavator Vactor Manufacturing, Elgin, Illinois 800/627-3171 / www.vactor.com
	RESULTS:	After 20 hours, crews hauled away 65 cubic yards of soil using dry vacuum, allowing the general contractor to proceed with the expansion. Action Hydrovac stayed within the hospital's tight budget.



dirt. "It wasn't very fun without the use of water, but it was one of the ways we saved on the hospital's budget," Fairbarn says.

Action Hydrovac was the second hydroexcavation company to come to the job site. The first was unable to complete the task. "Our trucks were bigger than the other company's trucks," says Fairbarn.

The company used one of its two Vactor HXX units with a 15-cubic-yard

### **GETTING MORE WORK**

Action Hydrovac, founded in 2014, works within about a two-hour radius of Toronto and handles water and sewer restoration. Much of that work is water main replacements.

"A lot of infrastructure is older in Toronto, so it's just a big burst of water work taking place right now," says Fairbarn.

### "IT'S BEEN A GREAT PROJECT FOR US AND ONE THAT IS GETTING OUR NAME OUT THERE EVEN MORE. I'M PROUD OF HOW OUR CREWS WORKED." Mitch Fairbarn

debris body and a 600 hp Cummins engine. In two days, crews put in 20 hours to complete the job, hauling away 65 cubic yards of dirt.

"Along the way, we kept the hospital up to date on our game plan and explained what we were doing, how long it would take and what the cost would be," Fairbarn says. "We just barely made their budget."

The crews learned a great deal on the job, specifically what the trucks are capable of doing.

"We learned how far we could be from a job and how much we could vacuum being 200-some feet away," Fairbarn says. It took four hours to load up the debris tank. Each load weighed about 60,000 pounds. Crews then transferred the soil to dump trucks and hauled it away.

### **REMODELING PROJECT CONTINUES**

After completing the vacuuming work, the general contractor came in to lay the foundation of the new tower, using a crane to lower equipment.

The project is expected to continue through 2019. Currently, crews are working on the patient care tower, the Donnelly Wing renovations, the Cardinal Cart Wing, and Emergency Department renovations.

In 2018, crews will begin with the Bond Wing and Shuter Wing renovations.

Since the hospital job, the company has done other work on the remodeling project. That includes utility location, and cleaning out and digging the holes for pilings for the hospital addition.

"It's been a great project for us and one that is getting our name out there even more," Fairbarn says. "I'm proud of how our crews worked."  $\checkmark$ 



# **Avoiding Electrocution**

# BONDING MATS CAN BE USED TO HELP PREVENT ELECTRIC SHOCKS WHEN WORKING NEAR CHARGED UTILITY LINES

#### **BY SHERREE GEYER**

adger Daylighting crews know the dangers of working near utility lines firsthand, and thankfully they use bonding mats.

"We've had tires that were damaged because they took current and the employees were safe because they were on the mat," says Dave LaFleur, corporate HSE director for Badger Daylighting, a North American provider of hydroexcavation services. "When hooked up properly, the employees are safe from voltage."

Bonding, or grounding, mats provide an insulated electrical safety mat that, when laid on the ground, protects workers. The National Institute for

Occupational Safety and Health in Washington, D.C., also says the nonconductive safety mats prevent individuals from being a path for electrical current to the ground.

"Bonding mats create an equipotential or equal potential area to protect the operator in the event that water cuts through an energized power cable," says Dean Krossa, president of Kri-Tech Products Ltd., a manufacturer of bonding mats. "If the water stream cuts through energized cable, the wand would become energized." from service immediately."

The guide adds that bonding mats should undergo digital low-resistance ohmmeter testing every three months, or at prescribed intervals based on frequency of use. Those with measured resistance values outside acceptable ranges should be tagged out and removed from service.



"WE'VE HAD TIRES THAT WERE DAMAGED BECAUSE THEY TOOK CURRENT AND THE EMPLOYEES WERE SAFE BECAUSE THEY WERE ON THE MAT." Dave LaFleur

### HOW THE MATS WORK

Bonding mats helped prevent underground land strike injuries and deaths according to the results of a six-month review of hydroexcavation electrical occurrences by Kri-Tech Products. Incidents involving gas line or power pole digs without the use of bonding mats resulted in hospitalization or death, the 2012 review found.

Krossa calls bonding mats an effective way to reduce exposure to electrical burns and fatal electrocution. Workers who excavate near underground cables or waterlines do risk electrocution, he says.

Bonding mats come in standard configurations, usually 58 inches square. There are common mats at 120 inches and custom configurations are also available. "Mats are bonded to the lance and dig tubes, keeping the operator at equal potential and safe," says Wes Scott, director of consulting for the National Safety Council.

### **CARING FOR THE MATS**

Mats should be pressure-washed, dried and rolled for storage, states Kri-Tech's care and maintenance guide. It also states the ferrules and clamps should be wire-brushed before and after use "to keep connections clean and corrosion free."

Rolled-up mats may put stress on wire grid if folded repeatedly in the same pattern.

The mats, and all associated conductive material, should be visually inspected before each use for damage, adds the guide, which calls "normal signs of wear acceptable," but "punctured, severed or missing braid elements unacceptable." Those that don't pass muster should be "tagged out and removed

### **GOING BEYOND THE MATS**

To protect themselves, Scott suggests hydroexcavation workers check out NSC's best practices.

He says cables should be de-energized if possible, and breakers should be hot-line tagged so they trip faster at lower fault currents. Scott also says operators need to have a heightened operator awareness, skill, and training and knowledge of the limits on water pressure and temperature. Another suggestion from Scott is protective urethane covers on the water lance and dig tubes.

Personal protective equipment, such as omega-rated boots and footwear, can protect workers. "Footwear outsole can provide a secondary source of electrical hazard protection," Krossa says.

LaFleur advises workers "to follow company job procedures as they relate to grounding and bonding" to protect themselves from hydroelectrical shock or electrocution. He points out that "digging at appropriate water pressure eliminates damage to underground infrastructure."  $\checkmark$ 

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# Avoiding Breakdowns

### **REGULAR MAINTENANCE, CLEANING VITAL TO AUGER BORING MACHINE SUCCESS**

**BY MARYBETH MATZEK** 

hen an auger boring machine works correctly, it can make a contractor's horizontal boring through rock or soil easier and more efficient.

Auger boring machines, which are usually used to install pipe casing under railroads, highways, airport runways or any area where the ground cannot be cut open, work best and last longer with proper maintenance, according to Michael Albers, president of Bor-It Mfg. Co.

"Safety should be the No. 1 concern when completing a bore job, and a major component of that is using properly maintained equipment," he says. "In addition, a small investment in time and parts to properly maintain your equipment can save you big money in the event of a breakdown during a job."

Here are some top maintenance tips contractors need to remember to keep their auger boring machines going strong:



### DAILY MAINTENANCE

Before using an auger boring machine, Albers says all controls should be tested and all oil levels checked. The operator should also

visually inspect the machine and components before and after each use.

If a control is not working properly, it should be repaired or replaced before being used. Albers adds that each operator must verify the emergency stop control works properly before use.

### **CHECK ACCESSORIES**

All auger boring accessories, including augers and cutting heads, should be inspected after completing a bore. The accessories are part

of a unit with the machine, and any damaged accessories can cause the auger boring machine to not operate properly and may lead to damage.



### **KEEP IT CLEAN**

A clean machine simply works better, says David Hammond, president of American Augers. Wash down the auger boring machine

with water and mild soap after each use. This is also a great time to inspect for any damage. Do not forget to clean the push bar assembly and inspect all parts, and repair or replace them as needed.

### CHANGE THE OIL

Drain and refill the machine's engine crankcase after 25 hours of runtime. The new oil will help the machine run better. Albers says it is vital to wait for the engine to cool before checking or changing the engine crankcase oil. It is also recommended to drain and refill the transmission and final drive with an SAE 90W synthetic gear oil at this time, he says.

"Follow the engine manufacturer manual for operation and maintenance to maintain your engine warranty," Albers says.



### CHECK FLUIDS

Regularly analyzing fluids is an easy and economical way to help contractors prevent costly repairs, Albers says. Check fluid levels and replace as needed. For example, if the hydraulic oil appears which means there is water in the system — it should be replaced

milky — which means there is water in the system — it should be replaced.

### "A SMALL INVESTMENT IN TIME AND PARTS TO

PROPERLY MAINTAIN YOUR EQUIPMENT CAN SAVE YOU BIG MONEY IN THE EVENT OF A BREAKDOWN DURING A JOB." Michael Albers



Shoring equipment is set in place in preparation for an auger bore job. Crews should also schedule in downtime to go over maintenance on all machines to head off equipment breakdowns.



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### FOLLOW THE MAINTENANCE SCHEDULE

Read through the machine operator manuals and look at what should be done at 10, 50, 500 and 1,000 hours, Hammond says. Schedule downtime for the auger boring machines so there is

time to complete regular maintenance projects. "Doing that is preferable to unscheduled maintenance time that you need when something breaks down," Albers says.

While some contractors keep up with regular maintenance, Albers says his experience is that most wait. "My biggest thing with the maintenance is that I feel most contractors wait for a breakdown instead of doing routine

maintenance," he says. "A small investment in time and parts to properly maintain your equipment can save you big money in the event of a breakdown during a job." **V** 

For more on auger boring machine maintenance, go to digdifferent.com

### **HAVING MAINTENANCE ISSUES?**

Do you have a guestion about maintenance on a piece of equipment? Dig Different can track down the answer for you in our Machine Shop feature. Send your question to editor@digdifferent.com or call 800-257-7222.

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# **Discover Three Dimensions** of Underground Utilities

### **3-D GPR ARRAY MAKES IT EASIER FOR CONTRACTORS TO IDENTIFY** WHAT IS BURIED UNDERGROUND

### BY CORY DELLENBACH

DS GeoRadar has found a new way for contractors to map underground utilities and features. The company's Stream C will give those using it a clearer picture of what is underground, in a unique perspective.

The array of 34 antennas in two polarizations enables an accurate 3-D reconstruction of the underground utility network to be created in a single scan.

"It provides instantaneous images that are much easier to understand than a standard GPR," says Dan Broekhove, business development technician for IDS GeoRadar. "Anyone can understand looking at a 3-D image going up and down through it. It's a little harder looking at a side slice, which is what a typical GPR device does."

Unlike other GPR units that require the contractor to do X-Y grids to get a clear picture of what is underground, the Stream C surveys only need to be

"ANYONE CAN UNDERSTAND LOOKING AT A 3-D IMAGE GOING UP AND DOWN THROUGH IT. IT'S A LITTLE HARDER LOOKING AT A SIDE SLICE, WHICH IS WHAT A TYPICAL GPR **DEVICE DOES.**"

Dan Broekhove



The Stream C ground-penetrating radar unit was used inside a church to locate utilities buried beneath prior to a renovation project.

The Stream C ground-penetrating radar unit from IDS GeoRadar uses 34 antennas in two polarizations to provide an accurate 3-D reconstruction of the underground utility network in a single scan.

performed in one direction to ensure optimal detection for both longitude and transversal pipes.

"Everything is GPS coordinated as well, so if you find a pipe or target, it's accurate down to less than one inch on your X and Y coordinates, and the machine is accurate to about 1 to 2 inches as far as depth," Broekhove says. "It's way more accurate than a wand, which has an average room for error from 1 to 4 feet."

### **USER-FRIENDLY**

The Stream C, weighing just 165 pounds, can be folded up and transported via pickup truck or van. If there is no device to help with lifting, two workers can move it by hand. The unit is about the width of a residential sidewalk and can be folded up for transport.

The company says it's easy for a contractor to learn how to use the Stream C, saying it is easier than training someone on an entry-level GPR system. "With the entry-level GPR units, you're looking at a cross diagram showing waves and it can be scary," Broekhove says. "On these machines, on the display, you would have a top-down topographic view of what you're looking at in 3-D. It's a lot easier to determine if you have a pipe rather than looking at waves and trying to figure it out. The 3-D is a lot easier to interpret than the 2-D stuff."

The unit is designed for any contractor doing subsurface work — especially those working with gas or sewer lines. The Stream C also makes it easy for contractors to provide customers with a fallback option if marks on the road are washed away by rain.

"With the mapping feature, it saves your marks for later," Broekhove says. "It saves all of your targets so you can go back and georeference. You can locate the pipes again just by using that target you already had, and it'll be right there and you can trace it all the way back."

Contractors using the unit can also create a report on the spot.



"So if you just put in a new line for a customer, you can go map that project and give them a report in about 30 minutes," Broekhove says. "You can put it straight on a flash drive and give it to the customer right from the device, or connect it to a wireless printer in your truck."

### **PICKING UP STEAM**

Broekhove is excited to see where the company's unit will go. The unit hit the market in September 2016.

Italian customer Technics used the Stream C in January when the company was hired to undertake a GPR survey in the north and west buildings of Lincoln Cathedral in the U.K. to identify subsurface information on the scale and location of services and buried archaeological features on site.

"[THE MAPPING FEATURE] SAVES ALL OF YOUR TARGETS SO YOU CAN GO BACK AND GEOREFERENCE. YOU CAN **LOCATE THE PIPES AGAIN JUST BY USING THAT TARGET YOU ALREADY HAD,** AND IT'LL BE RIGHT THERE AND YOU CAN TRACE IT ALL THE WAY BACK." Dan Broekhove

Data was collected and is being used to assist in the development of a strategy to minimize any damage to buried archaeological evidence that may occur from the construction of planned refectory and visitor facilities, as well as map known and unknown buried services more precisely than existing documentation.

"It's exciting to see how contractors are going to be using this and we've kept it at a reasonable price compared to some other devices that can do similar things," Broekhove says. "It makes it safer for those doing the digging out there."  $\checkmark$ 



### 2017 Horizontal Directional Drills directory

				Fuel Tank Size	Model Weight	Entry Angle		
	MANUFACTURER	MODEL NAME	Engine Make & Model	Gross Engine hp	(gallons)	(lbs.)	(degrees)	
	Ditch Witch	JT5	Kubtoa® D1105	24.8	13	3,690*	10 to 16	
ditchwitch.com	Perry, OK 73077	JT9	Deutz® TD2.9	66	18	7,050*	10 to 14	
See ad	p: (405) 326-8280 www.ditchwitch.com	JT10	Deutz® TD2.9	66	18	7,100	10 to 14	
back cover	haley.brorsen@ditchwitch.com	JT20	Deutz® TD2.9L4	74	30	11,890*	10 to 14	
		JT25	Cummins® QSB4.5	130	48	20,760*	9 to 17 (w/tracks)	
		JT30	Cummins® QSB4.5	160	48	22,284*	10 to 16	
		JT30 All Terrain	Cummins® QSB4.5	160	42	22,983*	10 to 16	
		JT40	Cummins® QSB4.5	160 (Tier 4)	56	20,500 (operating mass)	20 to 29	
		JT60	Cummins® QSB6.7	200	55	31,250*	10 to 16	
		JT60 All Terrain	Cummins® QSB6.7	200	55	31,250*	10 to 16	
		JT100 MACH1	Deutz® TCD7.86L6	268	97	46,100*	10 to 15	
		JT100 All Terrain	Deutz® TCD7.86L6	268	97	49,250* *ALL with full rack of pipe on board	10 to 15	
	McLaughlin Group Inc. 2006 Perimeter Road Greenville, SC 29605 p: (864) 277-5870 tf: (800) 435-9340 www.mclaughlinunderground.com mmole@mightymole.com	McLaughlin McL-10H Pit Launch Drill	Kohler Gasoline Electric Start	12		1,100 for 5' 1,200 for 7'		
	<b>Pow-R Mole Sales LLC</b> 1400 Commerce Parkway Lancaster, NY 14086 tf: (800) 344-6653 www.powrmole.com brian@powrmole.com	PD-6	Honda GX630	20	6.5	750	pit launch	

### 2017 Boring Equipment directory

MANUFACTURER	MODEL NAME	Engine Make & Model	Gross Engine hp	Fuel Tank Size	Model Weight	
McLaughlin Group Inc. 2006 Perimeter Road Greenville, SC 29605 p: (864) 277-5870 tf: (800) 435-9340 www.mclaughlinunderground.com mmole@mightymole.com	McLaughlin 24B Case Auger Boring Machine	Deutz diesel air-cooled	31	5.2 gals.	2,900 lb carriage	
	McLaughlin McL-60 Workhorse Auger Boring System	Volvo TAD572VE turbocharged, water-cooled Tier 4 Final Diesel Engine	218		41,876 lb. total weight	

Pull Back (Ibs.)	Thrust (Ibs.)	Max. Spindle Torque (ft/lb)	Max. Spindle Speed (rpm)	Drill Pipe Diameter (inches)	Max. Drilling Depth (feet)	Min. Bore Diameter (inches)	Rod Carrying Capacity (feet)	Other
5,000	4,100	550	195	1.10		2.5	148	
9,000	9,000	1,100	186	1.60		3	330	
10,000	9,000	1,100	186	1.60		3	336	
20,000	17,000	2,200	210	2.06		4	400	
27,000	27,000	4,000	220	2.38		4.5	550	
30,000	24,800	4,000	225	2.38	Varies — based on	4.5	500	
30,000	24,800	4,000	225	2.23 (All Terrain Pipe)	project and locating	4.75	330	
40,000	40,000	5,500	225 or 280 (All Terrain)	2.81 (Power Pipe)	system used	4.5, 5.5 (All Terrain)	600	
60,000	60,000	9,000	240	3.06		5	420	
60,000	60,000	9,000	240	3.63 (All Terrain Pipe)		6.25	260	
100,000	70,000	12,000	210	3.62		6	360	
100,000	70,000	12,000	210	3.63 (All Terrain Pipe)		6.25	340	
	17,670 @ 2500 psi	1,030 @ 2,500 psi		Up to 10"				Available with both a 7' and 5' drill rack footprint. Remote throttle and emergency stop, as well as water controls are conveniently placed on the operator control station for added safety. Features hydraulic operator controls that are simple to use and reliable for thrust, pullback and vice operation.
79,000	84,000	4,500	2	2	15	1/2"-8"		Directional thrust boring system is a dry bore pit launch machine

Thrust	Max. Spindle Torque	Min. Bore Diameter	Other
115,000 lb. @ 3000 psi, hydraulic	8,512 ft./lb. peak in 1st gear	4" - 24"	Tubular steel cage design protects components from damage and the hydraulic dog plate cylinder is shielded from debris. Features Operator Presence Control - hydraulic clutch and Operator Control Station on the right side of the machine keeps operator out of danger.
1,272,000 lb.	126,000 ft./lb.	16"-60"	Standard features include - 5" HEX drive, wireless remote for out of pit operation, Rabbit Travel for increased productivity during product pipe installation and patented OPC clutch for safety disengagement.

### THE LATEST: Products









### 1. Ditch Witch SK1550 mini skid-steer

The SK1550 mini skid-steer loader from Ditch Witch is powered by a 44 hp Tier 4 Yamaha turbocharged diesel engine and directs 34.5 hp to the attachment, allowing the machine to complete tasks typically suited for traditional loaders, including tree handling and sod transfer. It offers a 1,558-pound-rated operating capacity to lift heavier loads and is equipped with a 94-inch hinge-pin height, providing flexibility for loading and unloading material on a wide range of dump sites. The 4.7 mph ground drive speed, in forward and reverse, increases job cycle times. Optional dual-auxiliary connections can utilize attachments for better productivity for heavier loads, such as logs, trees and sod. **800/654-6481; www.ditchwitch.com** 

### 2. McLaughlin Vision underground utility locators

The Vision line of underground utility locators from McLaughlin offers dual-functionality semiautomatic and manual gain adjustment. The semiautomatic gain is for congested, urban job sites where signal distortion is common, and the manual gain for less-congested areas. With the push of a button, the locators use three antennas to measure depth readings and then average the measurements for a more accurate reading. A waterproof inductive clamp on the locator can lay or partially grip the utility and produce a reading; it doesn't require the clamp to be fully encircled around the utility. **800/435-9340; www.mclaughlinunderground.com** 

### This Issue's Feature:

### Portable solids control in simple package

### **BY JARED RANEY**

In an industry of ever-changing technology and constantly upgraded equipment, most excavation contractors can probably agree that simplicity is an increasingly valuable commodity.

Enter **Mud Technology's Raptor Series mud-mixing and cleaning systems.** The portable units have a smaller footprint for maneuverability where larger solids control equipment can't fit.

"The Raptor Series (990, 1200 and 1400) is Mud Technology International's base model lineup of smaller-sized solids control equipment solutions," says Beth Miller, vice president of Mud Technology. "Fully self-contained, closed-loop systems that mix, clean and separate liquids from solids, and recycle fluids."

The standard unit includes two 15 hp premium-efficiency electric centrifugal pumps — one pressure feeds the mud hopper and performs a "supercharge" function, the other pressure feeds five 5-inch hydrocyclones with 20-micron cut points.

"RST Series may have a smaller footprint than their MCT Series 'big brothers,' but they have larger appetites, rated from 240 to 320 gpm, with a maximum cleaning capacity of 400 gpm," Miller says.

It contains six interchangeable pretensioned screens for fine-tuning solids control and separation.

The shaker can be adjusted on the fly, up to 5 degrees or minus 3 degrees, due to special AWD (adjustable while drilling) shaker legs.

"Long before Mud Technology International RS Raptors were officially 'born,' our team had already embraced the challenge of developing a base model that was easy to use, economical and eco-friendly," Miller says. "Great equipment just without the 'bells and whistles.""



Raptor Series from Mud Technology

Mounted on tandem axles with electric brakes, pintle hitch and

four-point jacks, the RST Series has an onboard 30 kW diesel generator with safety shutdowns and IEC-rated main electrical box. It is built entirely of steel, with a two-section tank split equally for clean and dirty volume with tool-free clean-outs.

"We recognized the growing need for a line of smaller solids control equipment solutions/recyclers while keeping key features our customers have come to expect from the larger MCT Series," Miller says.

In the middle of the range is the RST 1200, which comes in at a footprint of approximately 17 by 8.5 by 10.5 feet, and weighs just 12,000 pounds.

"The RS Raptor Series speaks for itself," Miller says. "Just look closely at the build; we did not cut any corners on strength and integrity of our equipment, built with pride in the U.S."

### 3. Allied Equipment & Rentals Splash Guard

The Splash Guard from Allied Equipment & Rentals works as a safety screen for portable debris containment in air and water excavation applications. It collapses to approximately 8 inches in diameter, and blocks all types of debris, including dirt, stones and metal. The high-tensile, construction-grade material is rated at 211 psi, and up to 200 psi burst strength. Designed to be operated by one person, it has five steel step stakes, stands 5 feet high, and can be configured any way to allow for protection in even the tightest areas. Weighing about 16 pounds, it is weatherproof and UV resistant, and can be ground-set or free-standing with optional bases. **414/322-4973; www.alliedequipmentrental.com** 

### 4. Hi-Vac X-Vac X-13 hydroexcavator

The X-13 hydroexcavator from Hi-Vac Corp. has a 27-inch Hg highcapacity vacuum system, a 10 gpm at 2,500 psi triplex water pump, a toploading 360-degree boom, polygraphite, rust-free water tanks, a power transfer with OMSI heavy-duty transfer case design and a noise-deadening, heat-retaining enclosure that surrounds both the water system and the vacuum system. It can carry up to 23,000 pounds, and can transport and dump debris on site. **800/752-2400; www.hi-vac.com** 

### 5. Vactor air-only HXX Paradigm vacuum excavator

Vactor Manufacturing's air-only version of its HXX Paradigm vacuum excavator keeps the spoils material dry and available for backfill. The Paradigm's modular design tailors the excavator to be used without air, and with or without water. The air-only configuration is equipped with the choice of air compressor rated at 185 cfm at 150 psi or 300 cfm at 250 psi. **800/627-3171; www.vactor.com** ▼





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# Swagelining and pipe fusion team up to extend life of pipeline

### PROBLEM

Murphy Pipeline Contractors of Jacksonville, Florida, was contracted to replace a 24-inch ductile iron sewer force main using swagelining, a pipe lining method that results in a tight-fit HDPE compressive liner inside a host pipe. The 2,200-foot force main was situated along a busy highway with limited space and an abundance of underground utility lines.

### SOLUTION

ISCO provided a self-propelled **TracStar 900 machine** from **McElroy** with powerful hydraulic clamping for efficient fusion of the pipe ends. JEA's data logging requirement was met with usage of the McElroy DataLogger 6, which captured each step of the fusion process to ensure that joints were fused properly before installation. Once the amount of fused pipe equaled the pull distance, it was pulled through a reduction die. This temporarily reduced the size of the 24-inch DIPS HDPE pipe so that it could enter the existing ductile iron line. The flexibility of HDPE pipe allowed it to revert to its original size once the towing load was released.

**RESULT** Approximately 92 percent less excavation was required with the swagelining technology, which reduced public and environmental disruption. The cost to remove and replace new sidewalks and



driveways and the impact to the traveling public along with the Florida Department of Transportationroadway was also mitigated. Murphy's six-man crew was able to fuse and pull a 2,200-foot pipeline within a single pull in three days. The HDPE pipe increased the force main's flow rates and its corrosion- and leak-free qualities will result in a pipeline that will serve residents for up to 100 years. **918/836-8611; www.mcelroy.com** 

### Rock saw takes on toughest coral shelf conditions

### PROBLEM

A contractor in Naples, Florida, had a job that consisted of drilling through a sedimentary/coral shelf, into an ancient seabed, then back up through the shelf. The customer was about halfway through a 450-foot bore and had broken through the first part of the sedimentary/coral shelf and into the soft, unstructured sand. When trying to push out of the sand, the OEM bit would not grab the coral and break through to finish the bore.

### SOLUTION

The contractor called Galloway Group, which specializes in HDD drilling supplies and distributes **Melfred Borzall** tooling. "The customer tried for about two hours but all the bit would do is slide for-

ward under the shelf. It just wouldn't grab and punch into the coral," says Mike Barnett of Galloway Group. Barnett recommended the **Rock Saw** with conical cutters to grab the sedimentary shelf. "Normally we suggest the dome cutter for a smoother cut but in this circumstance, the conical cutters were the way to go when you break through into sand," he says.

**RESULT** After replacing the OEM with the Rock Saw, they drilled again to the coral shelf. The Rock Saw hit the shelf and immediately broke through the hard surface and drilled into the coral shelf. It continued to steer perfectly and the customer was able to complete the bore. 800/558-7500; www.melfredborzall.com ▼

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**BY CRAIG MANDLI** 

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### **Auger Machines**

### **McLaughlin Steerable Rock System**

The Steerable Rock System for auger boring from McLaughlin navigates solid rock and difficult fractured-rock conditions. Engineered to operate in rock up to 25,000 psi, it has an openfaced design that allows fractured rock to be pulled into the cutting head, where it is crushed or swallowed, creating a consistent path. The system of both disc



cutters and rock picks work to navigate varying rock conditions. It uses a fully rotational turntable, eliminating the need for a single main bearing that can seize up and freeze the head. 800/435-9340; www.mclaughlinunderground.com

### **Boring Machines**

### **Akkerman guided** auger boring

Guided auger boring is the method of accurately installing pipelines by using an Akkerman guided boring system (GBM) with an auger boring machine to maximize utility drive



lengths, ensure bore accuracy, expedite installations, reduce casing diameters, and avert the downtime associated with failed bores. This method has become one of the most common applications for the GBM 240A system.

800/533-0386; www.akkerman.com

### **Drill Bits**

**Product Focus:** Horizontal Directional Drilling and Boring

### StraightLine Professional Drilling **Solutions Armadrillco**

Armadrillco downhole tooling from StraightLine Professional Drilling Solutions has box-bybox high-flow/side-load transmitter housings, high-flow/ side-load drill heads and rock tool technologies to directly tar-



get hard condition pilot hole drilling. The aggressive Bull Bit features three carbide-penetrating teeth and 74 carbide-grinding buttons. Transmitter housings and drill heads incorporate a lid security system and urethane-sealed transmitter cavity that allow larger slots and protection of electronics. A bulletproof drill-head mounting system eliminates under- and over-torqueing of bits and cutting heads.

800/654-3484; www.straightlinehdd.com

### Horizontal Directional Drilling

### **Ditch Witch JT40**

The JT40 directional drill from Ditch Witch is available with the option of a fully enclosed cab with premium heat and air capabilities, or an open operator's station designed with integrated vandal covers. Both options have a premium ergonomic seat, extended legroom and place the operator at a 45-degree angle, which provides visibility of all critical vision points. The machine's raw power, provided by a 160 hp, Tier 4 Cummins diesel engine, gives operators 20 more horsepower in a smaller footprint over competitive 15-foot drill-pipe models in its class. The unit minimizes pipeentry distance, providing oper-



ators increased drill pipe support as it enters the ground. The optimized carriage speed gives contractors class-leading cycle times for faster utility installations. It holds up to 600 feet of drill pipe on board, allowing for longer bores and increased ROI.

800/654-6481; www.ditchwitch.com

### **Hunting Trenchless Division HX-1TRN**

The HX-1TRN quick connect from Hunting Trenchless Division requires just a single, 360-degree rotation to fully connect or disconnect transition subs, starter rods, pulling adapters, backreamers and other downhole tools for rigs in the 40,000-pound

class and below. Its Quad-Lead design provides a thread pattern with a lead every 90 degrees, so there are four places to start threading, as opposed to one place. It is designed to provide exponential time savings and a safer work environment.

337/367-9296; www.hunting-intl.com/trenchless

### Toro DD2024

The Toro DD2024 horizontal directional drill combines a compact design with 20,000 pounds of pullback force and 2,400 ft-lbs of rotary torque. Powered by a 74 hp Cummins B3.3 turbocharged diesel engine, it delivers performance in all operating conditions. Its quad rack-and-pinion carrier



design spreads the load evenly for smooth and stable movement. The onboard mud pump flows up to 30 gpm, and the floating carriage has two speeds, including a 120-feet-per-minute fast mode. It has a footprint of 52 inches wide, 207 inches long, and a height of 74 inches, with forward-mounted track drive motors with planetary gear reduction to provide traction in all types of ground conditions. The rear dual stabilizers can be independently adjusted to safely secure the unit during operation. For operator safety, it uses a remote exit side lockout and a Zap Alert system to notify the operator in the event of an electric line strike.

800/344-8676; www.toro.com

### Mud/Slurry Pumps

### Gorman-Rupp PAH10B60-6135H

The PAH10B60-6135H from Gorman-Rupp is a heavy-duty, priming-assisted pump ideal for mining, quarries, bypass pumping and other installations where high flow rates are a necessity. It offers flows to 6,100 gpm, has a TDH up to 375 feet and handles 2-inch solids. The 12- by 10-inch pump is driven by a 600 hp,

Tier 3 John Deere 6135H turbocharged, charge air-cooled, liquid-cooled diesel engine.

419/755-1011; www.grpumps.com



### Hydra-Tech Pumps S3CSL

The S3CSL submersible 3-inch hydraulic-driven sand slurry pump from Hydra-Tech Pumps includes a built-in agitator used for stirring up solids. It has hardened alloy wear parts and is designed to be used in applications where settled solids must be put into suspension and pumped away with the discharge water. Primary applications include de-silting ponds, lakes and streams; other uses include filling sand bags to prevent beach erosion, tank and digester cleaning, or pumping sediment from caissons. It requires hydraulic inputs of up to 10 gpm at 3,000 psi, and when combined with HT11 to HT20 open and sound-attenuated power units, is capable of output flows to 450 gpm.



570/645-3779; www.hydra-tech.com

### Pipe

### **Agru America AGRULINE**

The AGRULINE product group from Agru America offers a complete, high-quality product range of pipes, fittings, valves and customized components made from polyethylene for high-volume flow applications such as cooling water intakes for power plants, large sewage systems, seawater desalination or mining jobs. The large-diameter piping system is made from PE 100 or PE 100-RC



in dimensions up to 98.4 inches and 1,968 feet in length. Their long-term hydraulic properties, which save operational costs, are based on a high resistance to corrosion, wear and tear, and UV radiation.

800/373-2478; www.agruamerica.com

### Pipe Bursting Equipment

### Pow-r Mole Sales Model PD-33M

The Model PD-33M pipe bursting machine from Pow-r Mole Sales is designed to replace existing underground pipes 2 to 6 inches in diameter. Its nonslip cylinder-activated jaws prevent cable damage while providing 60,000 pounds of pulling force. It offers a cost-effective alternative to opencut excavation, which reduces customer disruption and increases company profits. The process replaces the existing pipe with a fused HDPE pipe, which eliminates all joints, and allows the operator to pull through bends such as 45-degree fittings. This system is modular, and can be easily disassembled and reassembled for



manhole and basement applications. With a compact design and very small footprint of only 20 by 20 inches, this unit can be used in tight locations. **800/344-6653; www.powrmole.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 can also replace 1- to 4-inch water services. 888/406-3821; www.pipeburstingamerica.com ▼

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### the latest: News

### Federal Signal to acquire Truck Bodies & Equipment International

Federal Signal announced it intends to acquire Truck Bodies & Equipment International for \$270 million, subject to post-closing adjustments. The transaction will allow the company to leverage its expertise in building chassis-based vehicles, expanding its exposure to industrial end markets.

### Hi-Vac hires new industrial sales manager

Hi-Vac hired Dennis Zorn as the new western terri-

tory sales manager.



Dennis Zorn

He brings over 30 years' experience, including many years with industrial vacuum systems, bulk material handling and process automation.

### Felling Trailers' employees earn CWI certifications

Ben Myhre, a welding trainer for Felling Trailers' Weld Training Center, and Kyle Wald, vice president of engineering for Felling, obtained their certified welding inspector certifications through the American Welding Society. The two will work together to create a set of Felling Trailers certified weld standards that will be implemented throughout the company.

### Dust Control Technology changes name to BossTek

Dust Control Technology has changed its name to BossTek to better reflect all of the company's product lines. Headquartered in Peoria, Illinois, the company maintains a domestic rental fleet of industrialstrength misting cannons of all sizes for dust and odor suppression. ▼



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# Happenings

### CALENDAR

Sept. 30-Oct. 4

**90th Technical Exhibition and Conference (WEFTEC),** McCormick Place North & South, Chicago. Visit www.weftec.org

### Oct. 3-5

International Construction & Utility Equipment Exposition (ICUEE), Kentucky Exposition Center, Louisville, Kentucky. Visit www.icuee.com

### Oct. 25-27

**WJTA-IMCA Conference & Expo**, Ernest N. Morial Convention Center, New Orleans. Visit www.wjta.org

### Oct. 28-29

Utility Contractors' Association of New England 63rd annual Banquet, Boston Marriot Newton Hotel, Boston. Visit www.ucane.com

### Nov. 28-29

**Risk Management in Underground Construction Conference,** Residence Inn Arlington Capital View, Washington, D.C. Visit www.undergroundriskmanagement.com

### Jan. 21-26, 2018

Underground Contractors Association of Illinois Annual Convention, Mauna Lani Bay Hotel & Bungalows, Kohala Coast of Hawaii. Visit www.uca.org

### Jan. 30-Feb. 1, 2018

Underground Construction Technology (UCT) International Conference & Exhibition, Ernest N. Morial Convention Center, New Orleans. Visit www.uctonline.com

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