

# PROBING TIMES

Information for the ENVIRONMENTAL, GEOTECHNICAL, GEOTHERMAL, EXPLORATION, and WATER WELL Industries

★★★  
**NEW**  
★★★

## 3145GT

### Advancing the Geotech Industry

- trim time between applications with centerline head side shift
- reduce strain of rotary work with hands-free rotation and feed
- readily traverse rugged terrain in comfortable cabin on crawler carrier

#### ENHANCEMENTS

- crawler carrier rapidly roams off-road
- storage simplifies keeping track of tools on long treks
- taller standard winch pulls 20-foot tool string with spoon above breakout

**Geoprobe**

Centerline head side shift on 3145GT aligns all head functions and winches over the borehole without moving mast or machine for efficient performance on wind farm projects. (see page 2).

[www.geoprobe.com](http://www.geoprobe.com)





3145GT travels at a top speed of 6 mph in tough terrain on long treks required on power line jobs.

## NEW 31 Series Carrier Option: Engineered to Punch Out Power and Pipe Line Projects

All the 31 series drill rigs – whether track, truck, or crawler carrier – come equipped with:

- **Power and versatility to effectively compete in multiple revenue streams – HSA, SPT, CPT, DPT, rock coring, mud rotary, air rotary, and drive and wash.**
- **Centerline head side shift to align all head functions and winches over the borehole without moving the drillmast for efficient drilling.**
- **Simple controls with hands-free rotation, head feed, and auto drop hammer to make work nearly effortless and create a gentle learning curve for the seasoned driller as well as the new hire.**

Features unique to the NEW 3145GT are:

- **Enhanced off-road capability to easily run on rugged terrain at a top speed of 6 mph with crawler chassis providing heated and cooled operator cabin.**
- **Increased tool storage to simplify housekeeping, especially on long treks.**
- **Taller standard winch to effectively pull 20-foot tool string with attached split spoon above the breakout.**



## Features Convince Customer NEW 3145GT Drill Rig is Engineered for Geotechnical Work

In business since 1988, **MCCRAY DRILLING** in Tennessee, spent most of the '90s and early 2000s focused on environmental work. However, in the past five years their schedule has increasingly been filled with geotechnical jobs. When David McCray, owner, saw the NEW 3145GT geotechnical rig on crawler carrier at the 2021 National Groundwater Association show he immediately recognized the benefits it could provide his company.

**“It would be killing two birds with one rig. We’d still have the direct push capabilities as well as the ability to drill to greater depths,” McCray said. “The carrier looked very beefy. It would be ideal on any off-road job where low ground penetration is needed, whether environmental or geotechnical.”**

For McCray, positioning of the pumps and the longer boom to handle deeper mud rotary exemplify how engineering the NEW 3145GT focused on geotechnical work.

“Every driller is always asking ‘do they make one that will go a little deeper’,” McCray said. “No matter how deep you go, somebody is always asking you to go deeper.”

While the carrier was attractive, what caught his eye was a longer boom to trip more rods along with rod rack to carry 10-foot tooling. And with four Geoprobe® rigs already in his fleet, he understands the value-added benefits of the NEW 3145GT.

“Geoprobe® rigs are reliable and they always stand behind their product,” McCray said. “That goes with any of their rigs.”

## Demonstrations Display Faster, Easier, Safer Field Work

Drillers attending tools-in-the-ground demonstrations across the nation are witnessing how the newest Geoprobe® geotechnical rig and tooling offerings are providing faster, easier, safer field work leading to increased production and profits. Attributes standing out for those attending recent demonstrations were:

### VERSATILITY

*“The level of sophistication and ability to do more was good to see in person. It’s not just a direct push machine anymore, it’s much more powerful,” – Brian Mott, environmental specialist, DLZ*

### POWER

*“Previously Geoprobe® just pushed soil samples, but now it can go and economically and effectively core concrete and rock. This rig is better suited for the mindset of today’s field crews,” – Dave Harness, project manager, Alt & Witzig Engineering*

### ATTENTION TO DETAIL

*“Lot of thought was put into it – every piece of real estate is utilized well. From little cubbies near the control panel, tables for cutting liners, hooks and hangers for tools. The CPT box integrated into the rig so you can put your module in there, shut and lock the door, and know it’s protected is a nice touch,” – Todd Ives, operator, Amdrill Inc.*



**CALL TO SCHEDULE A DEMO: 785-825-1842**

## WATCH A WALK AROUND OF NEW 3145GT GEOTECH RIG



[▶ geoprobe.com/3145GT](https://geoprobe.com/3145GT)



# Comfort and Ease Combine with Versatility to Expand Footprint

Comfortable ride of 3100GT – which doesn't require a Class A/B CDL – doesn't require sacrificing performance on typical geotechnical jobs or varying geographies.

Drillers operating conventional drill rig like the benefits of the spring assisted swivel lift cap, making their work easier and safer.



## Spring Assisted Swivel Lift Caps Improve Crew Safety

Predominantly performing geotechnical drilling projects, crews at 60-year-old BRAUN INTERTEC CORPORATION were accustomed to using slip rings. Hoist plugs were available, but weren't commonly used, so they stocked the cheapest options.

As Braun Intertec began strengthening safety protocols and preparing to switch from slip rings to hoist plugs, they desired a better product. With 1,000 employees and 38 drill rigs from assorted manufacturers – spread along the Mississippi River corridor from North Dakota to Texas – they sought to provide their crews with a simple, easy transition. The solution – Geoprobe® spring assisted swivel lift caps.

**"We've had good response from the drill crews," Greg Scallon, operations manager, said. "They appreciate the ease of putting them on and taking them off, and the little more play the spring assisted swivel lift cap provides regarding tension kept on the winch line."**

Features of the spring assisted swivel lift caps which have made the transition easier for their crews include:

- Abrasive tape around the body of the lift cap making them easier to grip.
- Spring assistance increasing range of acceptable winch cable tension.
- Minimized effort and maximized speed to make and break joints.
- Better quality bearings for smoother operation.

**"The tooling is a well engineered and well thought out product that they're always working on to improve," Scallon said. "Geoprobe® isn't satisfied with the status quo."**



## WATCH EASE OF SPRING ASSISTED SWIVEL LIFT CAP



[▶ geoprobe.com/SWIVEL](https://geoprobe.com/SWIVEL)

Focused primarily on drilling for their own geotechnical investigations, KENNEY GEOTECHNICAL SERVICES has 10 employees and a couple of drill rigs running throughout upstate New York. The 17-year-old company began drilling services 10 years ago. Recently, they sought ways to more efficiently cover more territory to satisfy client needs.

"With our offices in Syracuse, it's four hours to the northeast corner of New York and four hours to the southwest corner, so we have a big area to cover. Our 7822DT is versatile, but requires a trailer to haul to sites," Chris Kenney, P.E., said. "With the 3100GT it's a comfortable drive and then just pop up the mast and drill."

The simplified mobility of the 3100GT makes it cost effective to expand their footprint and compete with drillers who might be closer geographically to a site. Because it doesn't require a Class A/B CDL to drive, it also expands their employee base capable of mobilizing to sites.

**"Our geologists don't need a CDL to drive the rig to the site," Kenney said. "It's difficult these days to get drillers, so anything we can do to make the job a little easier is better for everyone."**

The 3100GT provides the performance required for their standard scope of work and range of geological formations.

**"Our work is typically to 30 feet, sometimes to 100 feet. The 3100GT is all we need and we can get around more quickly and economically than a bigger truck-mounted rig," Kenney said. "The 3100GT does everything we need. We have highly variable soil conditions – a site can have glacial till full of boulders at one end and at the other end it's 300 feet of soft clay to rock. The 3100GT can core rock just as easily as it takes Shelby tube samples or does mud rotary."**

Being easy to drive and a comfortable ride is top-of-mind when reflecting on rig features.

**"The guys love driving the 3100GT and are always saying it rides like a Cadillac," Kenney said. "As a boss, I don't get complaints about having to drive the truck. Drilling is not an easy job. Anything we can do to make it easier is a plus."**

Easy also applies to learning how to run the rig.

"The 3100GT is so easy to learn. Our engineers and geologists can operate the 3100GT themselves when needed," Kenney said.

Versatility to perform various applications keeps the 3100GT out on a variety of jobs.

"We do primarily geotechnical drilling, but if we encounter a need to set environmental wells, it's easy to switch over," Kenney said. "It does everything – SPT, CPT, rock coring, setting piezometers and instrumentation, etc. The 3100GT definitely fits our needs."

All these attributes combine to keep the rig busy.

"We're doing twice as much work," Kenney said. "Being a small business, when you get new equipment you've got to keep it busy and tend to worry whether it will be sitting idle. The 3100GT has certainly been busy the entire time."

The industry-leading Geoprobe® customer service also contributes to keeping the rig busy.

"We really like the way Geoprobe® did things and customer service they provide. Anytime we need tooling or replacement parts, support can get us what we need quickly so we don't lose any drilling time," Kenney said. "We really appreciate everyone at Geoprobe®. From the service guys, to Vic Rotonda [regional sales representative], they're always a pleasure to work with and extremely helpful."



# Technology for the Times

Working throughout Texas and Louisiana, **MATHERS ENVIRONMENTAL DRILLING** has been completing environmental, and some geotechnical, drilling since 1992. Through the years they've consistently provided services installing monitoring wells, collecting soil samples, and doing rotary and air work in all types of locations — off barges, in landfills, at refineries, and on commercial sites. What has changed is how they perform the work.

"We've changed from truck-mounted drill rigs to now most are with a track to maneuver in small areas. They have a smaller footprint, which means we can do more work with them," said Shawn Mathers, operations manager and driller. "We like to keep up with technology and like Geoprobe® rigs to do direct push and augers in our lithologies."

Seeking a drill rig to complete direct push, but with a larger rotary head and multiple winches, Mathers determined the 3126GT could tackle any of their projects but was still sized to slip into most sites.

**"The 3126GT can do any drill job and still do direct push. It can go off road and into tight areas," Mathers said. "The added weight means we can go a little deeper with direct push than with our 7822DT. The 3126GT can get into tighter areas than a big drill truck, but get to 100 feet easily with augers in Houston. Instead of just a direct push rig, it's like a conventional drill rig."**

The versatility of the 3126GT, power of the rotary head, and ease of the centerline head side shift means it can go out on jobs all the time.

"The centerline head side shift can line up over the hole without moving the mast but has better pulling power," Mathers said. "It's convenient to use the centerline head side shift to move the head out of the way and run the winch line."

Other 3126GT advantages he identified include:

- **WINCHES**, which make pulling hollow stem auger tooling a little easier.
- **OUTRIGGERS**, which make balancing when doing direct push on an angle easier and make lifting foot up to break rods or set up over mud pans simpler.
- **WIDER TRACKS**, which make traveling over different site conditions easier.
- **STREAMLINED DESIGN** — like the side rack, which makes toting tooling for direct push work convenient.
- **SEPARATE HYDRAULIC CIRCUIT FOR MUD PUMP**, which permits washing out heaving sands without losing power.

**"The 3126GT just keeps rolling, doing mud pump and rotation at the same time. It doesn't slow down at all," Mathers said. "It's a compact drill rig with really good direct push capabilities."**

The versatility and size, in combination with the rig features, means they're able to work in tight areas in a warehouse or in the woods.

"We use it almost everyday. We work all over the state and it handles whatever we need to do," Mathers said. "It's more convenient. It's helper friendly. It has all the power you need and you don't have to manhandle things as much. It can handle auger and rotary work here in Houston, but also works in other parts of the state if we need to auger and then switch to air. It's easy to set up and run and the size makes it convenient for environmental even though it's a geotechnical rig."

Fuel efficiency also contributes to them believing the 3126GT is well worth the purchase.

3126GT gets into tighter areas than a big drill truck while easily augering to depth on tough sites.



**"We used to take a big truck to try and push a few samples, now we don't even think of that — especially with the cost of diesel," Mathers said. "It's really good in fuel consumption. You can work hard for a full day and just burn one tank pretty much."**

They also appreciate the innovation combined with peace of mind that comes from purchasing rigs from Geoprobe®.

**"A lot of engineering has gone into everything. Geoprobe® really keeps up with technology, and that's where we want to be. The more technology the less labor you need and can do a project a little faster," Mathers said. "Technology is way up there, but if we have a problem, we can talk to someone to solve it. You can call up and troubleshoot and get parts easily. I like not worrying about whether I'll be on my own to solve problems after I get equipment."**

Centerline head side shift on 3126GT lines up over the hole without moving mast but has better pulling power than 7822DT.



**WATCH ADVANTAGES OF GEOTECH BY GEOPROBE®**



[geoprobe.com/GEOTECH](https://www.geoprobe.com/GEOTECH)



# Geotechnical Rig Checks the Boxes



Top: Wider tracks on 3126GT make trekking over varying soil conditions easier. Middle: Separate hydraulic circuit for mud pump on 3126GT creates consistent power for both pump and rotation. Bottom Left: 3126GT sneaks into small spaces with power to conduct geotechnical sampling. Bottom Right: Small footprint with ample power makes 3126GT suited for barge project over water.

Founded in 1985, TRI STATE DRILLING LLC initially offered geotechnical engineering and construction materials testing services to their clients, including drilling services.

“In 2007 we sold the geotechnical engineering and construction materials testing piece of the business, which was a good move because it allowed us to focus on drilling,” Rob Bittel, president, said. “This also gave us opportunities to drill more for local firms who viewed us as competitors when we offered engineering and testing.”

Now they have 10 rigs operating on a daily basis providing environmental, geotechnical, and mineral exploration drilling services for engineering firms across the southeast from their offices in Chattanooga and Nashville, Tennessee. Three of their rigs are Geoprobe® – two 7822DTs and one 3126GT.

“We wanted to replace one of our oldest rigs and had been pleased with Geoprobe® products. Even though 3126GT was newer to market, we wanted to look at it,” Bittel said.

While talking with Lee Shaw, sales representative, he described the 7822DT as a direct push rig that can also do geotechnical drilling while the 3126GT is a geotech rig that can also do direct push. Bittel also witnessed a demonstration of the 3126GT at their shop during one of Shaw’s road trips. The performance and availability of the 3126GT convinced them to place their order shortly following the demonstration.

“Our operator is very pleased with the rig thus far, and he has already put it on some interesting projects, including a barge project over water, 200-foot rock coring at a quarry site, air rotary, and hollow stem auger from 2.25 to 6.25 inches,” Bittel said. “The rig has not backed down from anything we’ve asked it to do. I think it’s safe to say we will buy another one in the future.”

The rotation speed and overall coring capabilities surprised their driller who cores with it almost daily. They also appreciate how well the carrier tracks and the user-friendly setup of the rig.

**“Stepping up to the 3126GT was a good decision for us. The 7822DT had limitations on depths, auger size, and other factors we had to consider before mobilization,” Bittel said. “You can tell Geoprobe® invests a lot of resources on R&D and relies on feedback from rig owners to assist them in making the best product they can.”**

They have been pleased with overall performance of the 3126GT. They drilled a 250-foot core hole at a quarry site in East Tennessee where productivity and recovery were good. More recently they did some air rotary drilling with it.

**“We are all in unprecedented times where companies are having to push the limits, if you will, due to workload, increase in cost of doing business, and labor shortage. Our operator of the 3126GT has met most if not all of our production goals since we bought the machine and he seems to enjoy coming to work more,” Bittel said.**

Their service department is also happy with the support Geoprobe® provides.

“I can’t tell you how many times I’ve walked through the shop when our mechanics are working on a rig and Face Timing with a Geoprobe® technician troubleshooting a problem,” Bittel said. “That means a lot to us.”

For Bittel, the advantages of Geoprobe® rigs, including the 3126GT, are numerous – from being operator and maintenance friendly to their dependability and maneuverability.

**“We are a better company with the 3126GT than we were before we bought the machine,” Bittel said. “Geoprobe® was listening to their customers when they designed that rig. The 3126GT checked all the boxes for Tri-State Drilling.”**



Interlocking split spoons eliminate bulging when sampling heaving sands under conventional rigs. Available in 2-inch and 3-inch sizes.

## Interlocking Split Spoon Makes Job Easier for Driller

Geotechnical engineering office AMERICAN ENGINEERING TESTING INC tests anything built on grade – buildings, roads, etc. Driller Matt Hanson, who grew up in a drilling family – his father has been drilling since 1972, has been drilling for 22 years working for the South Dakota American Engineering Testing Inc office since 2000.

While on a job site a few years ago, a Geoprobe® sales representative demonstrated the patented 2-inch interlocking split spoon. Hanson immediately recognized the benefits in their geologies.

“In South Dakota we have lots of water bearing sand. Around the aquifer north of town, conventional style spoons would usually expand out,” Hanson said.

The friction created by the coarse sand wouldn’t allow it to flow through a conventional sampler and instead bulge or balloon out. The Geoprobe® 2-inch interlocking split spoon held its rigidity.

**“When you go through hollow stem augers and the spoon bulges, it makes it tough to retrieve as it acts like a wedge,” Hanson said. “The interlocking split spoon comes out much smoother.”**

The threads of the 2-inch interlocking split spoon also add operational advantages.

“Threads allow the shoe and top part to be on either end. The stout thread lasts longer,” Hanson said. “They’re also not a fine thread so they don’t require as much turning to assemble.”

He acknowledges assembling the 2-inch interlocking split spoon takes a little learning, but once he got the system down it locks in pretty easily. Other small nuances of the interlocking split spoon also prove beneficial.

**“The side blow out valves point down rather than to the side so when water gives way you have a fighting chance to stay dry,” Hanson said.**

He credits Geoprobe® “phenomenal” tooling for making jobs easier for the driller.

**“Geoprobe® steps the bar up for everyone else to make it easier for us hands-on guys and gals,” Hanson said. “The interlocking split spoon thread is fantastic – it doesn’t take a lot to put on a shoe. In sand they don’t pull apart in the center. They’re pretty tough – we went through rocks before and just had to file the shoe some. Clearly we love it; we keep getting it.”**

## WATCH INTERLOCKING SPLIT SPOON SIMPLICITY



[geoprobe.com/SPOON](https://www.geoprobe.com/SPOON)



## Geoprobe® Seismic CPT Saves Time, Provides Confidence

Initially focused on testing oil pipeline welds, the original owners of TWIN PORTS TESTING opened their doors in 1972 as a non-destructive testing company. Throughout the years the company expanded into geotechnical engineering and construction material testing to eventually encompass five business units, including industrial hygiene (lead and asbestos testing) and chemistry (biomass fuel testing). During 2017 several employees joined together to purchase the business and shifted the focus to geotechnical engineering – their area of expertise.

"We've remained diversified so not all eggs are in one basket should one business unit slow down, others can pick up," said Jim Johnson, engineer and one of the owners.

Since 2011 when they purchased a 6625CPT, their geotechnical unit has included cone penetration testing (CPT) for its ability to quickly collect high-quality data that is repeatable and continuous.

"It provides a niche for us with the other nearest CPT company in the Twin Cities. We can minimize mobilization costs," Johnson said.

With the tailing basins of iron mines near them requiring annual geotechnical testing on their dams, they invested in seismic CPT during 2015. Their initial system worked, but Johnson seemed to always struggle with the data processing and presentation.

"The original seismic CPT system was finicky, requiring manual manipulation, and I would often second guess myself," Johnson said.

During the 2021 Direct Image® workshop before the Open House he saw the Geoprobe® seismic CPT module in action in the field.

"I was impressed by how much easier it was to use and simplicity of data processing compared to our original system," Johnson said.

At the same time their original system began requiring repairs more often than desired, so they pulled the trigger on the Geoprobe® seismic CPT module. Johnson found the solution to his data processing woes when they recently used the new system for two weeks on an iron mine tailing basin in northern Minnesota.

**"The Geoprobe® seismic CPT module saved time and I was more confident in data I was providing clients," Johnson said.**

Not only was their field work faster, not having to string a different cable to switch between a regular CPT sounding and a seismic CPT sounding, but the post processing of the data was also faster.

**"The client likes to see data at the end of every day. The Geoprobe® seismic CPT module saved hours per day in data processing," Johnson said. "What used to take three hours in the hotel room each night only took 15-20 minutes."**

The improved data processing and presentation imperative to Johnson when a buying a new system was realized using the Geoprobe® seismic CPT module's simple software system to:

- Pick arrival times by selecting the intersection of waves, eliminating guesswork
- Click a few buttons to get a report the clients desired

Other advantages of the Geoprobe® seismic CPT module include:

- **SIMPLE INTERFACE** – easily enter project information, offset, and frequency of measurements
- **STACKABLE WAVES** – clean up noisy data stacking waves so shear wave becomes amplified for improved visibility in post processing
- **STANDARD CABLE** – eliminate restringing rods using same cable as regular cone

**"We have an 120-foot tool string with cable on rack. With the old seismic system we'd have to unstring the cable and restring with a thicker cable to use it. This would eat up a half-hour to an hour each time while in the field," Johnson said.**

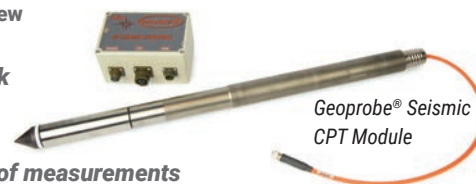
**"The Geoprobe® seismic CPT module uses one cable. Just disconnect the cable adapter, replace with seismic, and away you go. Saves one to two hours per day if on a project where you are switching back and forth."**

Johnson appreciates Geoprobe® hearing feedback from those in the field and making adjustments to provide a better product.

**"I like that Geoprobe® is always innovating while others are still building the same machine. They find new ways to make my job easier," Johnson said. "Every time I search through the Source Book I find a new tool that I think, 'I can find an application for that!'"**

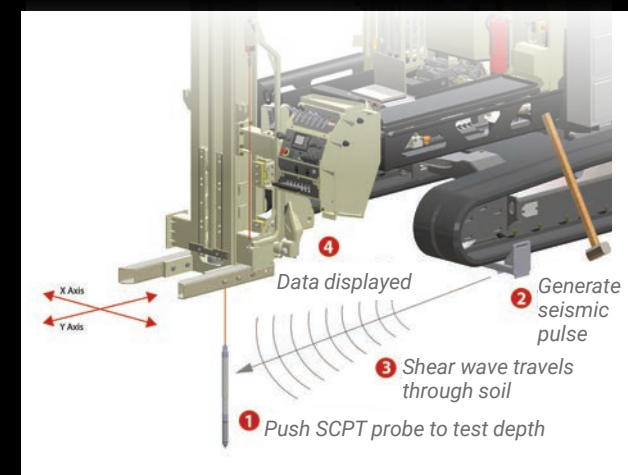
He also finds his conversations with Troy Schmidt, Geoprobe® CPT expert, enlightening.

"I learn something new about CPT every time I talk with Troy, which is fantastic since I consider it my area of expertise," Johnson said.



Ease of picking arrival times and producing reports along with using a standard cable with the Geoprobe® seismic CPT module expedites conducting annual geotechnical testing on dams of iron mine tailing basins.

### WATCH GEOPROBE® SEISMIC CPT MODULE IN ACTION



[geoprobe.com/SEISMIC](http://geoprobe.com/SEISMIC)

## 20CPT Skid Steer and CPT System Economically Add Numerous Business Advantages

Seeking to expand drilling services to all eight of their offices, GEOTECHNICS SOIL & MATERIAL TESTING in Missouri saw an opportunity to capitalize on new technology by investing in the Geoprobe® 20CPT Skid Steer and CPT system.

"We sought a way to expand capabilities and get jobs that require CPT in addition to geotechnical borings. We see it as a useful addition to the geotechnical methods we currently use," Matthew Sick, operator, said. "The 20CPT Skid Steer was an economical way to fulfill our needs."

He appreciates the ease and simplicity of using the 20CPT Skid Steer and CPT system.

**"If you go do a geotechnical boring it requires a lot of tooling, time, work, and sweat. With CPT it's so much simpler," Sick said. "After the first time we pushed the cone everyone was like, 'that's it?'"**

They're still learning its usefulness and ability to push in their different geologies. However, they're already recognizing that in certain situations they have an advantage being a one-man show pushing CPT.

"You can take out a conventional rig and the 20CPT Skid Steer with three people instead of four, which reduces costs, increases profit, and makes you more competitive," Sick said.

They tested out their new 20CPT Skid Steer and CPT system on a job requiring hundreds of borings.

**"We completed half of the borings with CPT, which cut time and increased profit substantially," Sick said. "This also provided consistent comparable data so we could get used to interpreting the readings."**

By adding the 20CPT Skid Steer and CPT system they anticipate their business will now:

- Be considered for contracts specifying CPT capabilities, even if not method chosen for the job.
- Better understand client's needs using continuous data all the way down boring versus snapshots at particular intervals provided by standard geotechnical methods.
- Speed up geotechnical investigation process and save money on certain jobs and depths.

"If we're doing a Mississippi River boring, especially in winter, CPT will enable us to do the job since we won't have to deal with water freezing while conducting rotary drilling," Sick said. "For 130-foot borings there's no comparison to how much less time and effort CPT requires compared to standard boring methods."

The 20CPT Skid Steer and CPT system is another tool in their tool box which not only increases their drilling capabilities but also enhances the driller's experience on the job. For Sick, the worst thing about auger drilling is being in the mud all the time – you can't get away from it.

**"CPT is much more pleasant, which is important if you're out there day-in and day-out for years. Drilling can be a tough job, which contributes to labor shortage," Sick said. "Anything we can do to make better work conditions can help retain employees and help them have better attitudes."**

The 20CPT Skid Steer and CPT system also keeps them current. "It's a technology-based method which is the direction the world is moving," Sick said. "If you don't jump on the bandwagon, you'll be left behind."



Adding 20CPT Skid Steer provides economical way to get into CPT market.



# Three Rigs In One

Having put 8-9,000 hours on their conventional geotechnical rig, **TERRACON** in Raleigh, North Carolina, determined it was more feasible to purchase a new rig rather than refurbish. In their new rig they sought the ability to expand into environmental (versus farming it out as they had the past 10 years) as well as into CPT (versus relying on the Charleston, South Carolina, or Greensboro, North Carolina, office). However, they needed something with more capability than a 7822DT since they see plenty of 150-foot holes. When considering the increased torque and ability to pull 20 feet of rod, a new 3230DT with a second hydraulic circuit for the mud pump best fit their needs.

“The second hydraulic circuit makes mud rotary much easier than the older 3230DT. We’re able to get more power out of the rig,” Willie Duggins, driller, said. “The new hydraulic pump improved production. Tier 4 power is integrated very well.”

They chose to add a rotation guard, which with other rig features combines to make a very safe and easy rig to operate.

“It’s the most convenient rotation guard I’ve dealt with,” Duggins said. “The hydraulic hammer slides in, which is a lot easier versus manual. The telescoping mast makes a world of difference in tight situations in wooded areas.”

Compared to 2017 3230DT they used prior to their 2022 model being completed, Duggins finds coring and mud rotary 100 times easier with the two hydraulic circuits. In general, he finds the 2022 3230DT doesn’t require fine tuning to do some tasks like the 2017 3230DT. He recently completed mud rotary to 150-feet collecting SPT samples and undisturbed samples in a historic Charleston greenway as part of a tunnel construction project.

“Working on the greenway, the 3230DT being more compact made it better suited to the job than a conventional rig,” Duggins said. “The 7822DT was a little small, but the 3230DT is more compact than our bigger ATV conventional rig.”

The budget planned two days per hole. However, the 2022 3230DT took 1.5 days per hole versus the two days the 2017 model would have taken.

**“We definitely increased production on these holes,” Duggins said. “When drilling deep holes with the old 3230DT, we’d sit and wait while water ran to clear cuttings. With the new 3230DT, we don’t have to sit and wait as long for hole to flush out because we’re not losing flow as we’re advancing the hole.”**

Saving time allows them to bid jobs more competitively, getting the 3230DT more in line with a dedicated geotechnical rig.

Using the 3230DT to conduct geotechnical sampling for a new transmission line in North Carolina.



“On the projected 20-day job, saving a half-day per hole should shave five days off of original scope of work,” Duggins said.

What they also gain with the 3230DT is three-rigs-in-one.

**“We have all engineering-type rigs in one – environmental, geotechnical, and CPT – in a fairly compact package,” Duggins said. “The 3230DT is big by Geoprobe® standards, but still a small footprint to most in geotechnical industry.”**

They also gained industry-leading Geoprobe® customer service.

“Customer service is my biggest thing and why there are very few drill rig companies I care for. Doug [sales manager] answered his phone on a Saturday when we had a breakdown and I was very impressed by that,” Duggins said. “He got me the answer I needed and minimized the time we were down on site.”

NEW

## NEW 3230DT Dual Hydraulic Circuit: Consistent Hydraulic Pressure

Separate mud pump circuit eliminates the battle between drilling functions and fluid circulation for hydraulic flow and pressure, creating stable mud flow. Tier 4 engine provides more than 15 percent greater horsepower when compared to the previous version. Auto throttle and load-sense hydraulics save dollars and increase fuel efficiency. New control panel display offers operators new features.

3230DT TIER 4 FINAL V2





Wider tracks on compact 7822DT v3 combined with carrying tool rack on front blade facilitates hauling tooling into tight job sites.



## 7822DT v3 Enhancements Make Everyone Happy

With three offices — one each in New York, Pennsylvania, and North Carolina — **PARRATT WOLF** has a fleet of 30 rigs, seven of which are Geoprobe®. The 53-year-old company got its start doing primarily geotechnical work before expanding into environmental in the 1980s. Now their more than 50 employees complete 90 percent environmental.

“We have highly-trained crews who do more specialty work than geotechnical,” Todd Muench, operations manager, said.

Having had great success with their other 7822DT rigs and experiencing business growth, they didn’t consider options other than a 7822DT v3 when replacing an outdated truck rig without an SPT hammer.

**“It’s more compact than the older truck rig yet does 85 percent of what a full-size rig would do,” Muench said. “We were seeking efficiency and power in the probe hammer.”**

Choosing the versatile 7822DT v3 to do direct push, auger, air rotary, and mud rotary, Muench immediately identified enhancements on the v3 compared to their older models. These include wider tracks going from 60-inches to 70-inches.

“This is an advantage since we use it like an ATV not just a track machine,” Muench said.

He also appreciates the fuel savings realized from the auto throttle and Tier 4 engine.

**“V1 functions would stall when at idle, now we can tower up at idle rather than half throttle,” Muench said. “Tier 4 engine operates functions at idle for additional fuel savings.”**

The reorganization of where machine options are located is another benefit.

“By stacking the extruder and moyno pump on one side of the machine, we chose a rod rack for opposite side and then use front rack for augers,” Muench said.

All these enhancements have added up to satisfaction in their purchase.

“Everyone’s been happy,” Muench said. “More than just being new and shiny, it’s just more user-friendly.”

### 7822DT v3 Advantages Compared to Legacy Models

Parrat Wolf Operations Manager Todd Muench identified several enhancements on the 7822DT v3 proving beneficial compared to their legacy 7822DT.

- **WIDE TRACKS** — going from 60 inches on v1 to 70 inches on v3
- **STABILITY** — drill mounted more forward on carrier increases stability
- **AUTO THROTTLE** — returns to idle for fuel savings
- **REMOTE CONTROL** — more user-friendly
- **OPTION MOUNTINGS** — extruder and moyno on same side leaves other side for other options
- **FUEL FILTER** — full-size, spin is easier to access than inline on previous version



## NEW Display Module: Operation Options

NEW MD4 display modules on drill rigs provide larger, brighter screens and open up potential for future enhancements and capabilities while providing the same information — just in a different place or in a different format.

Watch the video to learn more about the operation options now incorporated into the NEW MD4 modules. For example, the display can be used as a virtual switch should one of the toggle switches go out. This permits running the rig from the touch-screen display until able to receive and install a replacement switch.

### WATCH BENEFITS OF NEW MD4 DISPLAY MODULES



[▶ geoprobe.com/MD4DISPLAY](https://www.geoprobe.com/MD4DISPLAY)



# Versatility Proves to be a Perfect Fit

Serving a wide swath of the Midwest, **SCS ENVIRONMENTAL CONTRACTING** in Indiana, provides turnkey services for their clients with a variety of specialized equipment to set them apart from competitors. When they sold their last 6620DT, purchasing a 7822DT v3 to compliment their existing four 7822DTs just made sense.

“The 7822DT rigs just fit our organization perfectly. This unit is so versatile,” Curt Luebbert, operations manager, said. “The 7822DT can switch between different drilling methods with ease. The versatility of the 7822DT makes it our workhorse. It’s just so universal.”

Confident in the 7822DTs ability to serve as their workhorse, Luebbert was surprised by the Tier 4 power of the 7822DT v3 – especially the load/fuel sensing system.

**“When you need the power of the unit, it is there, but when idling or not under a load, the system pressure is lowered, thus saving wear and tear on the machine and improving fuel efficiency,” Luebbert said.**

On a recent limited-access project, they unexpectedly encountered bedrock.

“Instead of having to mobilize a separate rig to complete the job, with the flip of a switch we completed DT22 sampling and bedrock drilling that same day,” Luebbert said.

That wasn’t the only time the 7822DT proved its ability to perform multiple applications.

**“The client needed to complete geotechnical soil borings and install monitoring wells in a remote wooded area,” Luebbert said. “We were able to complete the project with just the 7822DT.”**



Completing jobs has now become the norm for SCS.

“With the 54LT and 6620DT, we would have to call numerous projects off due to refusal. Now with our fleet of 7822DT units, those projects are far and few in between,” Luebbert said. “For the most part, projects are completed in a timely manner and under budget.”

According to Luebbert, the 7822DT has earned a reputation for getting the job done among their numerous repeat clients.

“There seems to be high confidence when you show up with the 7822DT that the project will be completed efficiently and correctly,” Luebbert said.

Luebbert also places confidence in his ability to get support from the team at Geoprobe®.

**“Most of the time it’s a one-call-and-done scenario for parts and service. Hard to beat that in today’s world,” Luebbert said. “Simply put, Geoprobe® is the best.”**

*Left: 7822DT possesses power to auger through concrete. Top: 7822DT provides versatility to go from direct push installation of monitoring wells to geotechnical soil borings.*



7822DT is perfect size and power to hunt for treasure on television show.

## 7822DT Hunts for TV Treasure

Started in 2013, **RODDY QUALLS ENVIRONMENTAL DRILLING** is licensed in five states to complete direct push and auger projects from limited due diligence to large scale groundwater monitoring projects, including remediation and injection. During the past year they experienced an unusual surge in direct push work compared to their auger work.

“Not sure if it’s a trend toward a more limited approach to investigations providing more data for less money, but we were close to double our direct push projects with Geoprobe® rigs compared to auger,” Eric Hutton, vice president, said.

What is more unusual is appearing on television. Someone who had used their drilling services in the past reached out to the History Channel regarding an archeological investigation, and it ballooned into an episode of the *Beyond Oak Island Project* hunting for buried treasure.

**“We chose the 7822DT because it was versatile enough and small enough to manage the rough terrain to access the site on top of a hill but strong enough to get to depths in an easy and time-effective manner,” Hutton said. “They also wanted to do air drilling and we weren’t comfortable with the safety of putting the weight of a big rig on the side of a hill.”**

The maneuverability of the 7822DT provided options for where to place the equipment. The track-mounted 7822DT also came in handy at the conclusion of filming.

“At the end of the project it rained quite a bit in a short time and became very muddy,” Hutton said. “The 7822DT helped pull out a lot of people’s vehicles who otherwise would have been stuck on top of a hill with a long walk back down.”

While they didn’t find treasure, Hutton said the drill crew had fun and the company has had an influx of calls from out-of-state consultants. Perhaps the biggest boost was seeing an environmental drilling company on television.

“You never see anyone out of our industry on TV shows. We’re kind of the unsung heroes in a lot of things and the last thought on a lot of projects,” Hutton said. “I just think it was neat for someone out of this industry to be seen on TV.”

The 7822DT was perfect for their television debut project.

**“Based on the obstacles for the project, the 7822DT met all our needs. Not only did it complete the project, but it reduced the safety issues for our crew and the camera crew,” Hutton said. “It was small enough for them to get shots and not have to move further around the rig. It was the right tool for the job.”**

## Post Your Used Rig on Geoprobe® Website: [geoprobe.com/used](https://geoprobe.com/used)

Ready to clear out some older equipment?

Let Geoprobe® help by listing your equipment on the Used Drill Rigs page of our website.

Hundreds of pairs of eyes daily – from all over the world – look for used machines and other drilling-related equipment on our website.

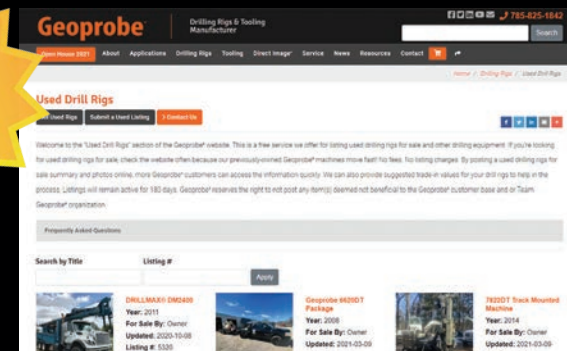
Check out the site to see all brands and types of equipment listed.

**ADD YOUR LISTING:**  
for FREE as a service to our customers

1. **BROWSE USED MACHINE PAGE**
2. **CLICK: “Add a New Listing”**
3. **COMPLETE: required information**



## SELL USED RIGS ON GEOPROBE® WEBSITE



[geoprobe.com/USED](https://geoprobe.com/USED)



# Production Flies with DT325 Driven Casing SPT (OTE)

A full-service environmental and remediation company, GEOPRO INC, in New Jersey, conducts their own drilling. However, they also support a slate of clients through their probing, soil investigation, and monitoring well services. The past few years they've experienced growth in geotechnical work which they attribute to a surge in construction and to having team members willing to travel and do the tougher geotechnical jobs. Accustomed to running second-hand rigs, they rented a 7822DT for a job and were impressed by the multi-functional drill's ability to conduct geotechnical work.

"The power for the size is great," Art Remedios, project manager, said. "We do a lot of light commercial and residential work and it fits on any of those sites. It fits the niche we fill."

So when they decided to add a new rig to their fleet they gravitated to the 7822DT because of its versatility and footprint.

"We don't need to mobilize more equipment. With the 7822DT you can quickly turn around and do something else required on a job site once you have tooling," Remedios said. "We do a lot of preliminary investigations where there's a backhoe creating a trail for us. The 7822DT's size makes it a great off-road rig to run and do SPT in the woods."

Driller Ryan Zajac describes the 7822DT as a probe modified to conduct geotech.

"For guys used to probing, it's easier to teach them," he said.

So when they landed a job conducting SPT sampling inside a beverage bottling facility, they leaned on their probing roots to meet the job requirements, investing in the 3.25 out-the-end (OTE) system. Remedios had seen the system on the Geoprobe® website and during a demonstration day in Millstone, New Jersey, the previous fall.

"We needed to minimize dust and cuttings generated within the facility, so spinning augers was not an option. So once we had the project, I pulled the trigger on the 3.25 system," Remedios said. "We conducted 10-15 geotech borings with almost no mess. The client was thrilled."

A three-week job in Delaware required sampling a field designated for a 1.3 million square foot warehouse. Again they deployed the 3.25 OTE system.

**"Using the 3.25 OTE system was lighter to carry, productive, and easy to work with," Zajac said. "The 3.25 rods are lighter to pick up than augers, so it's easier on the guys doing long days of geotechnical sampling."**

They completed 45, 40- to 50-foot borings with everything fitting within the rod rack. The clients were pleased with the continuous sampling along with the SPT. They also appreciated less mess on the site with the elimination of backfill or piles of dirt.



7822DT provides ability to track through tight trails with power to conduct DT325 Driven Casing SPT (OTE).

**"Production is 30 to 40 percent faster than doing augers," Remedios said. "Under the right soil conditions, you can fly with the 3.25 system."**

Remedios appreciates the support Geoprobe® provides — both for his rig but also for tooling techniques.

"Last winter when we were looking at getting a rig, we bought the 7822DT because I knew I was able to call the guys in service and get back up and running if I ran into an issue. Others aren't offering that level of service," Remedios said. "If I have a tooling question, I can call Vic or one of the guys in the office to work through it."

He also praises the tooling durability, attributing Geoprobe® quality control measures.

**"The actual probe rods over the years are more durable. The threads wear more slowly and are so much nicer. They are quick to thread, hold tight, and hold up," Remedios said. "I think the edge Geoprobe® has on other manufacturers is they actually test the equipment and tooling versus just doing it because everyone else is."**

## DT325 Driven Casing SPT (OTE) Efficiently Expands Market

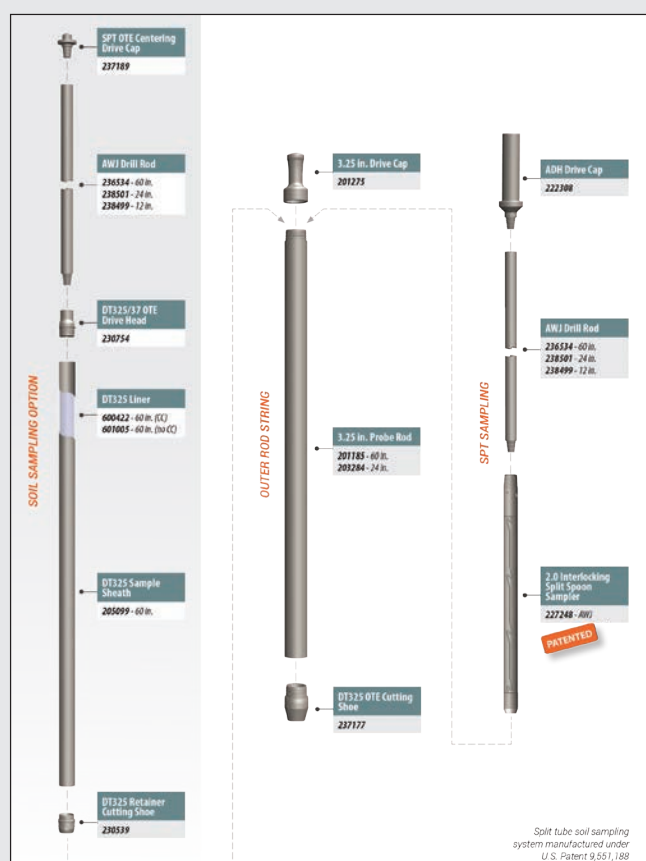
Customers already using 3.25 tooling can expand their market and increase their efficiency doing out-the-end (OTE) SPT. The sampling system designed to work as one with the 3.25 rods includes the Geoprobe® manufactured AWJ drill rods.

**ADVANTAGES OF DT325 OTE DRIVEN CASING SPT:**  
fast • lightweight • continuous sample • no drilling fluid

**PARTS REQUIRED TO USE YOUR DT325 TO DO SPT:**

- SPT OTE Centering Drive Cap
- 3.25-inch OTE Cutting Shoe
- DT325 Drive Head SPT Only
- DT37 Retainer Cutting Shoe OTE
- ADH Drive Cap Pin Down
- AWJ Drill Rod
- 2.0 Interlocking Split Spoon Sampler

It is best practice to consult applicable ASTM standards when performing geotechnical investigations.



## WATCH EFFICIENCY OF DT325 DRIVEN SPT (OTE)



[geoprobe.com/DT325OTE](http://geoprobe.com/DT325OTE)



Direct push power and limited augering ability of new 6712DT means taking it out on tougher jobs previously reserved for the 7822DT.



## Growing with Geoprobe®

Providing traditional environmental probing and sampling services, Rob Mores, owner/operator, characterizes ENVIRO DYNAMICS in Indiana as a small company. Their four field employees use their three drill rigs — two 6712DTs and one 7822DT — to provide consistent services for the past 25 years while their capabilities to do bigger projects and wells have grown as Geoprobe® has grown.

"In the 1990s we were using 5400s just doing direct push, 1-inch wells. As we got into the larger GH60 hammers and augers, we now have more capabilities within our service range," Mores said. "We developed as Geoprobe® developed bigger, more powerful machines."

Wanting to stay smaller and work within the environmental niche, they focus on the most commonly required work.

"Our goal was to focus on services that the equipment we have can do on an everyday basis. We didn't want to buy equipment we'd use once or twice a month," Mores said. "We didn't want to grow to have a lot of people who have to specialize."

They bought their first 6712DT in 2014 and added a second in 2017. Then after attending the 2021 Geoprobe® Open House and witnessing the improvements on the 6712DT Stage V — including the machine horsepower, he eventually sold his 2014 6712DT and bought the new 6712DT.

**"There's a noticeable power difference in driving rods. The new 6712DT doesn't work as hard to do the same amount of work," Mores said. "The bigger engine requires less strain than the smaller engine."**

Within a week of getting the new 6712DT, they installed three 2-inch prepack monitoring wells with 3.75-inch probe rods to 25 feet.

"We had the 7822DT on standby, but the 6712DT performed well," Mores said. "We could definitely notice a difference in the hammering capabilities between the newer and older 6712DT."

They have now completed a half-dozen jobs installing prepack wells with 2-inch casing 20 to 30 feet.

"For us, 60 to 70 percent of our work is direct push and the 6712DT has proven to get done what we need to get done," Mores said.

"The 6712DT gets depths we need and drives rods."

Other advantages include the option of a wireless remote, the electronic versus mechanical throttle eliminating freezing up during temperatures below 25, and the addition of the display for onboard diagnostics and performance readings. He also appreciates the compact size amplifying job site access and simplifying transportation.

"We do a lot of work in Chicago and suburbs where space is at a premium," Mores said. "It's lighter so it's easier to trailer and we can stay under CDL requirements."

With the new 6712DT they can schedule jobs in tougher probing conditions where they would have otherwise sent the 7822DT.

**"We're willing to try tougher jobs out with the new 6712DT, which means we're able to get to jobs faster," Mores said. "We now send the 7822DT primarily to do augering and if we need a second rig we use the new 6712DT with more engine horsepower, more hydraulic power, and a more powerful rotary motor."**

They've still retained their 6712DT with low-clearance cylinder, which he describes as being "invaluable".

"Lots of jobs have a 9- to 11-foot overhead clearance. The 6712DT LC has allowed us to do a lot of projects that may have been done with hand equipment, but the LC could definitely get in there," Mores said.

Overall, they're glad they made the investment in upgrading to the newer version 6712DT.

"For an operator or company looking for a smaller direct push platform because they predominantly do direct push and limited hollow stem augers, then you don't need the extra weight and size of a 7822DT," Mores said. "The new 6712DT provides relatively similar direct push results in an economical package."

Adding to the value of the 6712DT are the Geoprobe® reliability, dependability, and customer service.

"Nobody can compete with the service and reliability. Typically I've been able to resolve mechanical problems in the field by calling service. Most times, the guys have the ability to walk people who aren't even technically strong through problems," Mores said. "I'll never buy anything from anyone else."

The dependability extends to Geoprobe® tooling as well.

"I have a good network of guys who run companies like mine, and I talk to people who buy tooling from other manufacturers and their tooling doesn't last as long," Mores said.

He attributes Geoprobe® for growing the overall technology of the environmental industry when it comes to subsurface investigation.

**"I can't expound enough how much Geoprobe® has driven the environmental industry to grow and be successful. They've pushed companies to be better. It's amazing what they've developed in a little more than 30 years," Mores said. "It's a complimentary relationship. They've always been there and had the tools and equipment I need to be successful."**

## Needing New Equipment?

Some of you may remember reading a Spring 2021 *Probing Times* article about challenges we expected to face in 2021. Well, it is 2022 and the challenges continue.

Fortunately Geoprobe® thrives on helping you overcome challenges. Whether it's engineering new rigs or strengthening industry-leading sampling tools, we're constantly striving to find ways to make your jobs faster, easier, and safer.

**In order to best help you overcome your 2023 equipment challenges, I encourage you... don't wait to get your order in!**

We continue to experience struggles obtaining raw materials and components in a timely manner as supply chains are severely stressed. Add to this, nearly all of our machines scheduled for production in 2022 are already sold.

You can understand why I recommend you don't wait to begin discussions about your 2023 equipment needs. The more information we have the better Team Geoprobe® can work to meet your needs.



Doug Koehler,  
Sales Manager

## Trade Old Rigs for New Rigs

Trading in your old Geoprobe® — and even non-Geoprobe® — machines toward the purchase of new equipment can have many advantages.

- Reduce amount to be financed.
- Most states only require sales tax be paid on the difference between price of trade-in and new piece of equipment.
- Possible savings in capital gains tax.
- Continue to use your trade-in until the new unit arrives.

To determine a trade-in value, send 4-6 current photos (mast up), current hours, and serial number to: [koehlerd@geoprobe.com](mailto:koehlerd@geoprobe.com).



**CALL FOR RIG, TOOLING, TRAINING, OR TRADE-IN QUESTIONS: 785-825-1842**

## WATCH NUMEROUS BENEFITS OF 6712DT



[▶ geoprobe.com/6712DT](https://www.geoprobe.com/6712DT)



# Sonic Rig and Tooling Stand Up to Alaska Geology

Geoprobe® 8150LS sonic drill rig and tooling exceeds performance expectations in ice-rich permafrost or glacial till of Alaska.



As sonic drilling demand in Alaska increased, **DISCOVERY DRILLING** determined they could no longer discount sonic drilling technology as some passing fad.

“We began to do our own research, reaching out to others in our industry with experience in the realm of sonic drilling — specifically in similar geology to what we have here in Alaska,” DJ Wardwell, drilling manager, said.

Past performance of Geoprobe® machines, tooling, and exceptional service led them to choosing a Geoprobe® sonic drill rig; seeing the 8150LS in action at the 2021 Geoprobe® Open House sealed the deal.

“Hearing feedback from other industry professionals and knowing the amount of research and development that goes into Geoprobe® machines made it an easy decision to pick the 8150LS for the first sonic drill to be added to our fleet,” Wardwell said. “It is such an amazing, powerful platform, with everything we need in a single package — including the capability for wireline rock coring and ability to collect SPT samples.”

Wardwell praises the easy operation created by the combination of rod handling system, dual breakout clamps, and indexing rack.

“I was absolutely shocked the first time I saw this machine run large diameter 10-inch tooling. No pipe wrenches needed or having to twist anything by hand substantially reduces operator fatigue,” Wardwell said. “The machine does all the work.”

While Wardwell often is office-bound and considers himself a little rusty operating drills these days, the control panel design made returning to the reigns natural.

**“I have to say at first glance it is the most intimidating set of controls I have ever seen on a drill rig, but after our training it became clear it was designed as a user-intuitive control panel with operator ease of use in mind,” Wardwell said. “I jumped on the controls and everything just felt right and simple. The design of the control panel is ideal for the operator, and with a little learned muscle memory, I found myself not even having to look at the control panel anymore when operating.”**

Joel Christy, machine engineer, provided the training in Anchorage, and together with Jed Davis, tooling engineer, recommended a tooling package to meet the requirements of the Alaskan geographies.

**“After purchasing our 8150LS, the Geoprobe® team spent many hours on the phone with us coming up with a large sonic tooling order that would meet all our needs, despite how unconventional they sometimes are,” Wardwell said. “The tooling is robust, works as intended, and designed to take whatever punishment we can throw at it. Geoprobe® also fields so many tooling options, it makes it easy for us to maintain an appropriate amount of down hole tools for the wildly varied applications we are tasked with here in Alaska.”**

Having a dedicated, experienced team of sonic experts for training and support provides Wardwell additional peace of mind.

**“Whenever you are talking to an engineer at Geoprobe® regarding sonic technology, that engineer is also a well-versed sonic driller,” Wardwell said. “It really bridges the gap between what works on paper and what actually works in the real world.”**

Their 8150LS has certainly been working for them, exceeding their expectations in just about every aspect imaginable.

“Ease of use; ability to run large diameter 10-inch tools — hands-free; tooling options for about whatever geology we could encounter here in Alaska; ultimately the overall power of the machine are just a few things that come to mind,” Wardwell said. “We were convinced that it may struggle with some of the typical challenges we face in the subsurface here — like ice-rich permafrost or glacial till — but nothing seems to be able to stop this machine.”

Including the 8150LS in their fleet has added impressive capability and an additional option for clients to choose when selecting the correct tool for their job. The sonic drill rig has also led to some friendly rivalry between Discovery's drillers.

“Whenever they find out the 8150LS is going to the field, they all want to be the one to operate it,” Wardwell said.



Weighing cost versus longevity, Geoprobe® sonic tooling provides best value plus product knowledge and support.

# Sonic System Includes Service and Tooling Support

With a primary focus on environmental drilling, **M&W DRILLING** in Tennessee adapts to market fluctuations by supplementing with other service lines. Through the years, the 15-year-old company has completed work in oil/gas, geothermal, coal mine blasthole, mine vent holes, and municipal water wells. For the past four to five years, geotechnical drilling has accompanied their environmental work as they complete direct push, auger coring, air rotary, and sonic drilling.

When they began in 2005, they would subcontract sonic work. As large projects came up for bid at facilities like Oakridge National Laboratory and Paducah Gaseous Diffusion Plant, they decided to invest in sonic drilling technology.

"Lots of times these scopes specified sonic, which prompted us to purchase," Joe Mathis, maintenance, said.

Their experience with Geoprobe® led them to choose Geoprobe® sonic rigs and tooling.

"We have a long-standing rapport with Geoprobe®. They have been extremely good on support – both for service and product," Mathis said. "They've always been a good company to deal with, so we decided to go with Geoprobe®."

They keep one 8150LS, two 8140LS, and one 8040DT busy.

"For casing advancement, you can't beat the 8150LS," Mathis said. "In unconsolidated soils that won't stay open, it's the quickest way to do it. The sonic wave energy liquifies the soil and lets you get through it."

Mathis appreciates the remote diagnostic system for troubleshooting issues.

**"The 8150LS has integrated ability for engineers to log in and watch it run from Kansas," Mathis said. "There's so much integration into the computers, if you do have an issue, they can access and change parameters to correct the situation until it can be serviced."**

He values a simple phone call can solve problems.

"They're good to work with on the phone," Mathis said. "They're very adept at helping out on the phone and not having to take the rig to them or for them to come here."

For Mathis, the 8150LS combined with the Geoprobe® tooling can't be beat if the ground formation requires sonic.


**"For the cost versus how it holds up, it is very good tooling. We looked into other tooling, but the cost was twice as much," Mathis said. "Weighing everything, we went with Geoprobe® tooling because of cost and product knowledge. They make a good product all the way around."**

To him, engineering behind Geoprobe® sonic products makes it worth the investment.

**"Geoprobe® puts a lot of effort into designing tooling," Mathis said. "The bits are better because they listen to drillers and make modifications that actually help."**

## Seven Solid Reasons to Choose Geoprobe® Sonic

- 1. SYSTEM** – When buying Geoprobe® sonic you invest in a "system." Machine...tooling....training....service...all in one place. Doesn't matter what you need, one phone call gets you legendary Geoprobe® support.
- 2. SAFETY** – Proximity switches on rod handler and control panel presence bar eliminate inadvertent movement of the rig. Swing arm control panel gets operator as close or far from the rod string as they need. Hands-free auto drop hammer keeps drillers out of harms way.
- 3. EFFICIENCY** – Rod handler and indexing racks eliminate need to muscle large rods into place, reducing crew fatigue and increasing production.
- 4. PEACE OF MIND** – Two-year unlimited warranty on GV5 Sonic Head and standard Geoprobe® one-year unlimited hour warranty on machine chassis.
- 5. EASE** – Centerline head side shift gives easy access to ID of rod string when building a well. Quickly shift from sonic to auto drop hammer or high-speed coring head without moving drill mast.
- 6. OPTIONS** – Geoprobe® offers many options to set up the machine to best fit geography and operator's needs.
- 7. TRAINING** – Purchase of Geoprobe® sonic includes factory training on operation and maintenance of the machine.

 **CALL FOR SONIC RIG, TOOLING, & TRAINING NEEDS: 785-825-1842**

## WATCH ADVANTAGES OF 4.5-INCH HD SONIC RODS



 [geoprobe.com/SONICHDR](https://www.geoprobe.com/SONICHDR)





# 6011DT Solves Direct Push Predicaments

Small size track rig with GH63 percussion hammer, 6011DT provides advantage for interior boring locations

**S**ucceeding in an industry that ebbs and flows – often at the whim of environmental regulations – requires versatile equipment to efficiently complete environmental sampling. So when the NEW 6011DT debuted during the 2021 Geoprobe® Open House, companies jumped to add the benefits of the small footprint and powerful GH63 percussion hammer to their fleet.

“We needed to buy small rigs with shorter piston to drill under 8-foot ceilings with 7822DT power to drill in tough city geology,” said John Schretzmayer, president of **ASSOCIATED ENVIRONMENTAL SERVICES LTD** in New York City.

Primarily working in the five boroughs where restricted access rigs make life easier due to the footprint of the property, the 20-year-old environmental and geotechnical drilling company was using their 7822DT with 2-foot rods so they didn’t hit the ceiling, even digging floors out to get the foot down to get more clearance. Schretzmayer believes the NEW 6011DT will allow them to get deeper soil samples with the power of the 7822DT where their 420M and 54LT just didn’t have the power to get through the challenging geologies.

“This will be much faster and easier. Most of the work we will do with this rig is for initial real estate transactions so you don’t need augering,” Schretzmayer said. “When clients see the full-size rig in a small area under 8-foot ceilings it will open up more opportunities. I’m glad they made this machine. It’s the main reason I flew out to Open House and was so impressed I bought two.”

Seeking a more reliable option than their aging 6610, Dusty Schroeder, president of **MIDWESTERN DRILLING** in Minnesota, was also immediately drawn to the NEW 6011DT.

“I fell in love with it as soon as I saw it,” Schroeder said. “We want to continue to be the best and have the best field equipment. Our clients’ reputation is always on the line and we aim for perfection while in the field.”

The 11-year-old environmental drilling company primarily completes soil and groundwater sampling and monitoring well installations. The option for a low-clearance cylinder and the 4-foot footprint will allow them to get into smaller areas.

**“The 6011DT provides an advantage for interior boring locations – car dealerships, dry cleaning, quick lubes. It allows us to get in between hoists and see what’s down there,”** Schroeder said. **“It’s always good to upgrade equipment. It improves our ability to get jobs when we have newer, up-to-date equipment.”**

For Casey Crosby, owner of **STRONGARM ENVIRONMENTAL** in California, he didn’t need to see the NEW 6011DT in person to recognize how the rig would feed their business.

“This size rig is our bread and butter – installing temporary monitoring wells, taking soil vapor samples,” Crosby said. “Its size is really good for inside work where the 7822DT is too big and unnecessary for us. The 6011DT is powerful; being Geoprobe® it’ll be reliable; and the price point is reasonable.”

He anticipates the 6011DT providing their 25-year-old environmental field services company more capacity.

**“I foresee it giving us a better choice for inside work, getting into tight spaces where we currently use the 540M – which is great but slow,”** Crosby said. **“It’s a little bigger footprint, so we can get better coverage inside and work faster at dry cleaner, industrial, and manufacturing facilities. It’ll also be safer and more stable to be able to get in and out easier.”**

The rig’s similarity to other Geoprobe® rigs they’re running gives him confidence to proceed with purchase sight unseen.

“We’re excited to get that thing!” he said. “Once again Geoprobe® is offering something people wanted.”

All three company leaders echoed their appreciation for dependable, quality Geoprobe® products and customer service.

**“The advantages of using Geoprobe® rigs are threefold. Service – if we have issues the service guys are awesome and can walk the guys through whatever issues they are having and get the rig back up and going. There has never been a time they couldn’t. Parts – if I call today, I can get them tomorrow. Reliability – our first Geoprobe® rig we bought 20 years ago started right up after 10 years without use like it was running yesterday,”** Schretzmayer said.



## NEW 2022 Source Book: Ultimate Reference

The eighth edition of the Geoprobe® Source Book, released June 2022, demonstrates our tireless commitment to bringing state-of-the-art products and solutions to drilling and science professionals. From industry first to industry standard, you’ll find methods, ideas, and products to make your geotechnical, environmental, exploration, construction, geothermal, or water well drilling faster, easier, and safer.

We hope the 2022 Source Book finds a home on your desk or dashboard or in your glove box or toolbox. Know that when you buy from Geoprobe®, you make an investment in the future of the drilling industry.

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### WATCH BIG POWER OF SMALL 6011DT RIG



**geoprobe.com/6011DT**



## PFAS Screenpoint Sampling Project Proves Profitable

In 1992 – three years after starting their business – TECHNICAL DRILLING SERVICES became one of the first engineering companies in New England to purchase a Geoprobe®.

“We made a huge leap of faith to buy the Geoprobe® – not yet proven in the glacial till of New England. Contemporaries were laughing at me,” Mark Zork, president, said. “Thirty years later if you don’t have a Geoprobe® in your arsenal you’ll be missing out.”

Now with seven Geoprobe® rigs ranging from 420M to 7822DT with coring capabilities, they use smaller rigs for niche stuff inside buildings and larger rigs on big direct push projects. For two years they used a 7822DT and a 6712DT exclusively on a PFAS investigation at the former Fort Devens Army Base in Massachusetts, which is now used as a commercial/industrial center.

“The site has a highly permeable soil with a deep water table. Past use of the property contaminated hundreds of acres with PFAS. They filled lagoons with diesel fuel, lighting them to practice putting out jet fuel fires with retardants containing PFAS,” Zork said. “The highly permeable soil conditions caused the contamination impact. There’s concern whether the two or three municipal well supplies adjacent to this facility have been impacted.”

Using the two rigs for two years, they conducted groundwater profiles with water sampling every 10 feet, initially using SP16 and eventually switching to SP22.

“We kept finding PFAS so they kept adding change orders to expand the area sampled until we had peppered the base with groundwater profiling,” Zork said.

During the project they conducted numerous holes to more than 100 feet, including a 181-foot vertical profile using SP22.

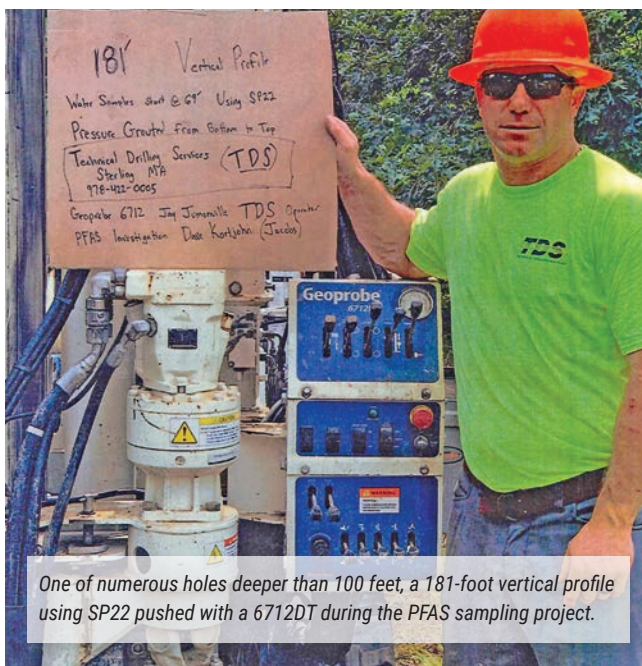
“We had similar production rates between the 7822DT and 6712DT,” Zork said.

According to Zork, the Environmental Protection Agency, local Massachusetts Department of Environmental Protection, along with the Army Corps of Engineers collaborated on the scope of work. After the agencies had tried sonic – which achieved depths quickly but struggled sampling to the point they didn’t trust the results – they revised the work plan to direct push using SP16. However, Zork experienced challenges with the 1.5-inch rods in the soft soil.

“We would bend a string of rods 100-foot long, looking like a corkscrew when we pulled them out. The rods would be straight for 50 feet and then bend without an indication in hammer production we’d hit an obstacle,” Zork said. “Because of the soil between 70-150 feet, we wouldn’t know what direction they were going. It got to where I would call Geoprobe® because we’d lost 150 feet of rod and began keeping 300 feet of rod in stock at all times.”

After six months of SP16, the agencies switched the scope of work to SP22 using a heavier rod, which eliminated the rod bending. SP16 and SP22 were specified because of their ability to isolate the sample in a closed system.

**“We could go through 100 feet of water with confidence of the discrete nature of the sample, important because the detectable carcinogenic rate is so low you have to be certain there’s no cross contamination,” Zork said. “SP22 handled filtering out fine sediments better than SP16.”**



One of numerous holes deeper than 100 feet, a 181-foot vertical profile using SP22 pushed with a 6712DT during the PFAS sampling project.

They were required to complete a sampling protocol without injecting another water source into the sample.

“Normally we would wash out heaving sands to keep them from coming up in the drill rod, but we had to have a means of taking samples without introducing water into the sample,” Zork said. “There was zero tolerance for introducing water into the casing.”

That zero tolerance applied to rain water as well. “If there was heavy rainfall with droplets running off our heads or equipment, they would shut down the site. Not because of the rain but because something we had on or with us would have a chance of cross contamination by dripping into the samples,” Zork said. “We had to document that the sampling equipment didn’t contain PFAS. Because detection levels are so much lower, they had to eliminate any chance we were introducing something that wasn’t in the ground.”

The direct push method and use of SP16 and SP22 were the only way to complete the project in Zork’s mind.

**“The job couldn’t have been done with a conventional machine or other method of drilling. SP16 and SP22 are proven sampling methods,” Zork said. “In most situations the EPA and Army Corps are already educated to how useful these tools are. Geoprobe® has done the right demonstrations for the right people.”**

The 7822DT and 6712DT also proved to be the right tools, minimizing downtime on the two-year project to just 10 days – only two due to breakdowns.

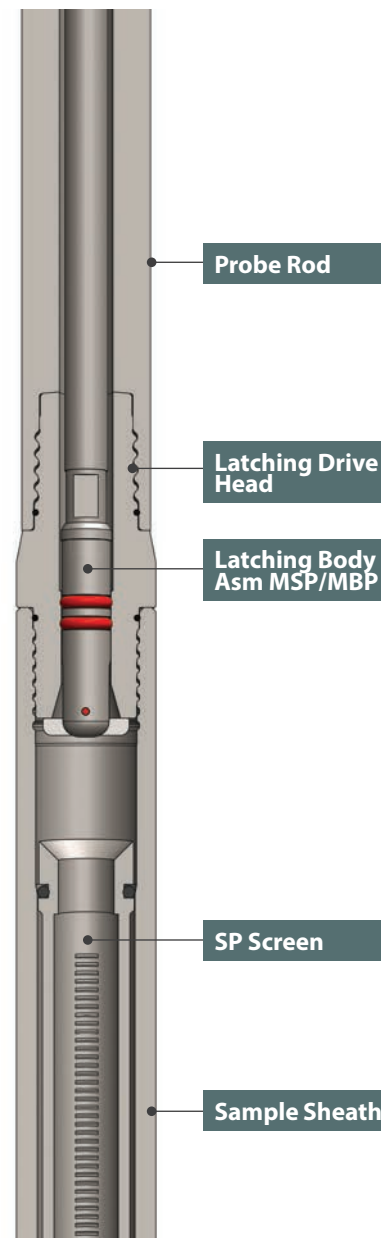
**“I finally told the client the rigs had been running virtually non-stop for four months and we needed to do regular maintenance on hydraulics and engine oil,” Zork said. “Downtime is the biggest killer in the industry. Geoprobe® has done their homework and the tech support is so far superior. Geoprobe® products may not be cheapest, but being able to depend on them to run is more important.”**

Upon completion, Phase I of this PFAS sampling project had ballooned into a \$1 million direct push job. The agencies recently contacted Zork to conduct another round of groundwater sampling – 15 profiles to bedrock estimated at 150 to 200 feet, all direct push. The proposed second contract is \$200,000.

“We’ve been in business 33 years,” Zork said. “Thirty-three years ago I didn’t even realize if I’d still be in business or if I’d be dead or sipping pina colodas on a beach somewhere.”

## Groundwater Screenpoint Latching Samplers Assure Integrity

The latching sampler system allows the operator to deploy a screen point (SP) sampler in the formation and then insert a sampler and tubing down the rods and connect or “latch” to the SP drive head. The latching sampler system uses o-ring seals to isolate the sample zone (the SP screen) from water in the drive rods above the SP drive head. Mechanical Syringe Pumps (MSP), Mechanical Bladder Pumps (MBP), and conventional peristaltic pumps can be used as screen point latching samplers.



### Latching SP16

The latching sampler allows the user to connect a pump, or other sample line, directly to the top of the downhole SP sampler. This isolates the SP sampler from water in the rod string above the sampler, thereby assuring sample integrity.

### Latching SP19

Designed for 1.75 rods for additional durability along with O-ring seal at the rod joints compared to 1.5 inch rods, SP19 has a modified drive head with 59% more area included in the sheath head making it stronger and more durable. Utilizing the latching sampler, connect a pump or other sample line directly to the top of the SP19, isolating the SP19 from water in the rod string above to assure sample integrity.

### Isolated SP22

Saving time when doing a lot of testing, the isolated SP22 securely holds the mechanical syringe pump or mechanical bladder pump, sealing the outer string.

## Geoprobe® Groundwater Sampling Tools and Liners Tested Nondetect for PFAS Compounds

Geoprobe® tested groundwater sampling tools and systems, including the Hydraulic Profiling Tool (HPT) system, the 175GWP groundwater profiling system, the Screenpoint16 (SP16) and Screenpoint22 (SP22) groundwater samplers, and the prepacked screens used in many direct push installed monitoring wells. All of the systems tested were found to be nondetect for each of the 36 PFAS compounds on the Wisconsin PFAS analyte list. PFAS Technical Bulletins providing a detailed review of the equipment tested, procedures used, and lab report can be downloaded from our website.

Geoprobe® also submitted samples of our clear PVC soil liners to the research team at Oregon State University. The team analyzed the Geoprobe® soil liners for 52 PFAS compounds, including PFOS and PFOA. The PVC liners tested nondetect for all 52 compounds. The research concluded that field sampling materials are an unlikely source of contamination for Perfluoroalkyl and Polyfluoroalkyl substances in field samples.

 **READ ABOUT PFAS TESTING RESULTS: [geoprobe.com/PFAS](https://www.geoprobe.com/PFAS)**

## SEE ADVANTAGE OF USING SP LATCHING DRIVE HEAD



 **[geoprobe.com/SPLATCHING](https://www.geoprobe.com/SPLATCHING)**



# Diving Into OIHPT

Starting out in 2000 as a company of three, **WATER & ENVIRONMENTAL TECHNOLOGIES (WET)** has grown to nearly 100 scientists and engineers and operates its subsidiary – Enviro Probe Services – to address its own project needs, as well as an independent contractor to assist outside consultants with site characterization services. Using their fleet of three drill rigs they've built the business installing wells and conducting site investigations with some injection work here and there. Seeing market opportunity and an internal need to complete their own work, they decided to venture into high resolution site characterization.

"We do expert witness work on a variety of sites, so it's ideal when you can go with your own tools and equipment, working on your own schedule," Pat Thomson, senior hydrogeologist, said. "The state of Montana had made a deliberate move toward using this technology to delineate sites rather than spend a lot of money on soil borings and laboratory analysis. So we investigated the Geoprobe® tooling and ended up diving in with both feet."

Based off the sites on their docket where they needed to characterize impacted soils, they invested in the Optical Image Hydraulic Profiler Tool (OIHPT). Their largest project to date was in an oil field exploring a pipe line running from the pumpjack to the oil gas separator building.

"We did 56 holes to an average depth of 30 feet for a total footage of 1,680 feet. We were able to create a 3-dimensional model pretty quickly and easily and then estimate volumes of soil contamination based on the fluorescence level," Mike Shirley, hydrogeologist, said. "The client was actually pretty impressed with what we were able to get at such a low cost."

In addition to oil field work, they've discussed high resolution site characterization options with regulatory agencies.

"There's been some familiarity with the technology at the regulatory level from my understanding, but as a technology it isn't top of mind necessarily," Loran Brooks, engineer, said. "We're just trying to bring this tactic to the forefront."

Response from Montana Department of Environmental Quality observers was positive.

"They were very impressed with how easy it was to see and understand what was going on," Thomson said. "You can watch the measurements right on the computer screen while you're advancing the tooling, and they were impressed with that as well."

OIHPT gives WET and Enviro Probe a powerful tool to provide clients cost-effective site characterization.

"You get a comprehensive study without a bunch of wells or tearing a site up," Tyler DeBoo, engineer, said. "You can get a fair amount of OIP borings without a huge footprint."

By choosing OIHPT, they aren't limited to just investigating contaminated petroleum areas. With one boring, they can provide clients significant value for the deliverable.

Pushing OIHPT probe using the 3100GT geotechnical drill rig in a bulk fuel petroleum impacted site investigating the migration of the plume.



**"Having that combo tool of OIP and HPT, we can find leaching pathways, not just for contaminated petroleum areas, but also for metals or something like that," Brooks said. "We can hammer complex sites where there might be a lot of historical uses that led to a variety of contamination, and we can address it in one mobilization, reducing costs for the client up front, but also delivering this really comprehensive product at the back end."**

WET believes bringing OIHPT to their clients sets them apart in the northern Rockies area.

"What we can do on the reporting side and give such a much more detailed and nuanced product to our clients with some expediency is where we really see this tool benefitting us and being something we can capitalize on in our region," Brooks said.

So far client response has supported their theory.

"A lot of people have stated how pleased they are that this tooling is now local rather than having to contract farther out of our area. Now it's all here in state," Shirley said.

The WET team appreciates how easy the OIHPT system is to use.

**"I like how easy Geoprobe® made it for the operator to use, everything from the tool all the way down to the software. It's a well-designed and well-supported system," Shirley said. "It's very easy to use and even if the tool hiccups or if anything happens, the software is able to recognize it and alert you. If it crashes, it's able to recover itself."**

And the few times they've run into an issue, they've been well supported for rapid fixes.

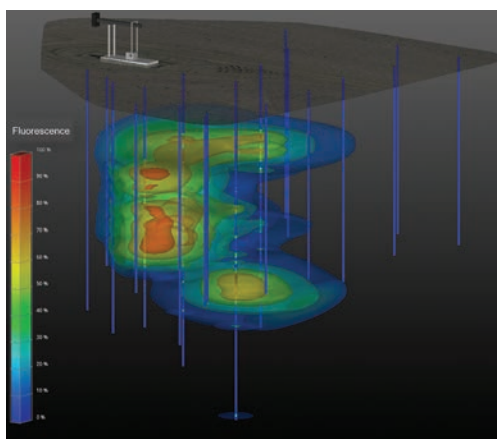
"I really like how accessible Dan Pipp is. I think I've only had to call him twice since we've had it, and every time he's immediately available and addresses the problem, and he tends to always get it fixed," Shirley said.

They credit training from Dan Pipp, Geoprobe® chemist, for setting them up for success.

"It's pretty daunting on day one when you have pallets of equipment show up at your doorstep and you don't really know what anything is. After two days of training you have a very good feel for how things work and what steps to take for troubleshooting," DeBoo said.

With the ability now to do everything from site investigation all the way through reporting to the remediation phase in an expedited fashion, the WET team doesn't foresee the road with this kind of technology ending with OIHPT.

"I could imagine us stepping further into this sphere by adding more tools to characterize sites in a variety of ways after these fulfilling experiences we've had so far with OIHPT," Brooks said. "We've been able to meet our expectations with it and not underperform on anything we've tried to do with it so far, so it's been a pretty rewarding experience for sure."

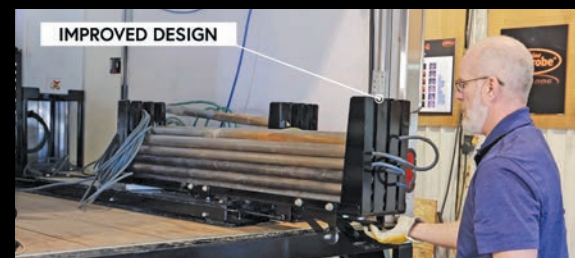


Each line represents an OIHPT boring with colored orbs representing anything with a fluorescence greater than zero. Software used calculates volume of impacted soil remaining on site.

## NEW Bearing Wheel: Easy Rolling Rod Rack

The roll out rod rack primarily used for Direct Image® tool strings was originally designed in 2002 to hold 18, 1.25-inch rods for a total of 500 pounds of rolling weight. Rods have since gotten larger, weighing more, with more rods carried on rack for total weight approaching 1,000 pounds, making maneuvering rack challenging. Watch how a new bearing wheel design greatly reduces the friction encountered, minimizing the force to initiate moving the rack from 80 pounds to 30 pounds. Replacing the old wheels with new bearings wheels is simple and easy and greatly reduces energy expended in setting up and closing down your job site.

### WATCH EASE OF ROLLING DIRECT IMAGE® ROD RACK



[geoprobe.com/ROLLINGRACK](http://geoprobe.com/ROLLINGRACK)







Working directly with Geoprobe® for service support reduced downtime by 50 percent.

## Canadian Customer Realizes Benefits of Geoprobe® Support

With a fleet primarily comprised of Geoprobe® rigs, ERNCO ENVIRONMENTAL DRILLING AND CORING INC. in Canada completes primarily environmental drilling. When they started eight years ago, they solely focused on Phase II. However, economics during the past three to four years led them to enter other phases.

“Starting in 2014 the economy took a significant downturn. We used this as an opportunity to focus on diversifying our services into the Phase I, Phase III, and Phase IV market to better support our consulting clients,” Josh Ernst, owner, said.

Initially they completed direct push and auger sampling with a 6620DT. Since then they have grown one to two drills per year. In their drilling fleet they currently operate one 540MT, one 6620DT, one 7730DT, two 7822DTs, five 8040DTs, two 8140LS sonics, and several other drills on sites from indoor, to heliport, to sonic, to deep air for 200- to 300-foot wells.

Ernco has appreciated the exceptional service and sales support provided working with Geoprobe®.

“They provide drawings, getting us parts we need quickly,” Jeremy Ernst, owner, said. “I can call Roman and get the parts shipped out that same day.”

Josh agrees, “Before we figured out 90 percent of the problems we had – whether mechanical, electrical or ordering parts – on our own. Now we call anyone from Geoprobe® and get the schematic of the electrical or hydraulic that we need.”

The support provided by Geoprobe® ranges from shipping tooling or ordering a new remote to ongoing repair support while out on a three-week, continuous job.

“They help with figuring out how to adjust hydraulics to correct pressure,” Jeremy said. “There’s also a lot of potential to go wrong with electronics and they help track it down while in the field. They’re really good about walking a driller in the field through troubleshooting.”

He especially appreciates the extensive support provided by Roman Burrows, international service technician, and Bryan Lorensen, service technician, when they had a 7822DT failure in the field.

“They walked us through getting it mobile to at least get back to the shop to repair,” Jeremy said. “They worked with me until we could get it rectified.”

Ernco has realized decreased downtime since utilizing Geoprobe® service and sales support.

“The speed and quality of service means we’re able to get rigs up and running in 50 percent of the time it took in the past,” Josh said. “The efficiency of the repair and getting back up and in the field is a big benefit.”

## LL MIHPT Optimizes Design of a Permeable Reactive Barrier

Contributed by Patrick O’Neill, M.A.Sc., P.Eng., Project Manager, Vertex Environmental Inc., Kitchener, Ontario, Canada

More than 300 years ago Alexander Pope said “a little knowledge is a dangerous thing”. In the case of many subsurface characterization programs being completed today, too little data is also a dangerous thing. It can result in wasted time, energy, and money. Traditional drilling and sampling programs provide basic, necessary data, but the approach can be very inefficient, often requiring multiple rounds of work and once done, the total amount of data obtained is quite small. Subtle subsurface changes can be missed when using this traditional approach alone. Limited site characterization data requires assumptions to be made to fill in data gaps, leaving room for error and, ultimately, an incomplete or even inaccurate understanding of subsurface conditions. Often the result is too little available knowledge, even after a lot of effort has been spent.

VERTEX ENVIRONMENTAL deployed Direct Image® (DI) technologies on-site to quickly and accurately fill in data gaps for a Permeable Reactive Barrier (PRB) design. The Low-Level Membrane Interface Probe and Hydraulic Profiling Tool (LL MIHpt), deployed using a Geoprobe® rig, was able to collect massive amounts of data on electrical conductivity (EC), soil permeability, and contaminant concentration and types using a single probe push. Thousands of data points are collected and displayed by depth in real time while standing on-site.



LL MIHPT instrumentation set up

The LL MIHpt survey was completed along a property boundary and several interior locations down to depths of 9.7 m (32 ft) where a groundwater plume of chlorinated solvent contaminated groundwater was flowing onto the client’s property from an off-site source. Prior to completing the LL MIHpt program the PRB design for the site was based on only three monitoring wells and analytical data from a limited number soil and groundwater samples. The PRB was to be 80 m (260 ft) in length along the property line and from 1 to 4 m (3 to 13 ft) in depth. The objective of the LL MIHpt survey was to identify more accurately the geologic, hydrogeologic, and contaminant characteristics along the property boundary to refine the PRB design in hopes of saving the client money.

Chlorinated solvent impacts were detected along most of the property boundary, however, the furthest points of the LL MIHpt program indicated the groundwater plume’s outer edges had been identified. Similarly, the LL MIHpt was able to delineate the depth of the contamination impacting the client’s property (Figure 1).

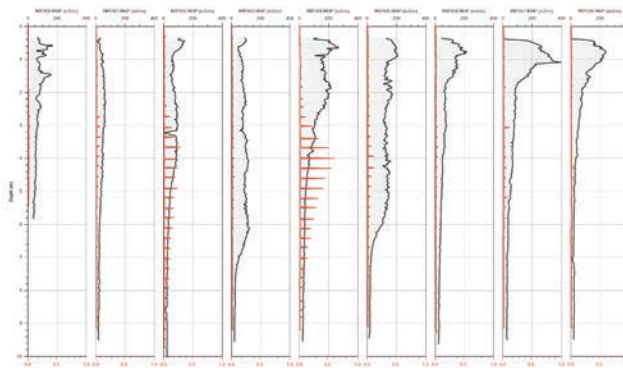


Figure 1: EC and XSD from LL MIHPT points along proposed PRB alignment

Based on the results of the LL MIHpt program, the total required length of the PRB was significantly shortened from the original 80 m down to 55 m along the property line. However, if the PRB had been installed based on the limited information originally available, there would have been a significant portion of the deeper chlorinated solvent plume missed since it was located well below the original design depth of 4 m (13 ft).

The HPT pressures recorded at the site generally indicated that the back pressure from the formation increased with depth, sometimes as high as 600 kPa (90 psi) (Figure 2).

Figure 2 (right): LL MIHPT log showing depth of impact, formation pressures, and estimated hydraulic conductivity

All of the data generated from the LL MIHpt program was then modeled in 2D and 3D to aid in interpreting subsurface conditions along the proposed PRB alignment. This included developing a model of the inferred hydraulic conductivities in the subsurface to identify transport and storage zones (Figure 3) as well as a model of the presence and relative concentration of chlorinated solvents in the subsurface on the client’s property (Figure 4).

The data acquired from the LL MIHpt survey allowed the following details to be identified in a short amount of time:

- Total required length of the PRB along the property line (shorter than expected)
- Critical contaminant depth intervals (deeper than expected)
- Variability in subsurface permeability (groundwater flow rates)
- Storage and transport zones along the PRB alignment (confining layers)

All of these factors were incorporated in developing the final, optimized PRB design for the site.

The data generated from the LL MIHpt survey provided much more certainty on the PRB needed to address the plume of contaminated groundwater migrating onto the client’s property. Had the original design been followed, money would have been wasted in extending the PRB to areas of the site where it wasn’t needed, and the deeper plume would have been completely missed. The refined PRB design resulted in a savings to the client of about 2.5 times the cost of the LL MIHpt survey, while at the same time avoiding failure by ensuring that the entire contaminant plume was captured by the PRB.

Returning to Pope’s proverb, this case study shows how a LL MIHpt survey can provide more than a little data (knowledge) to avoid the danger of potentially wasting time, effort, and costs from inadequate remedial designs. It can also help avoid potential failure of the design!

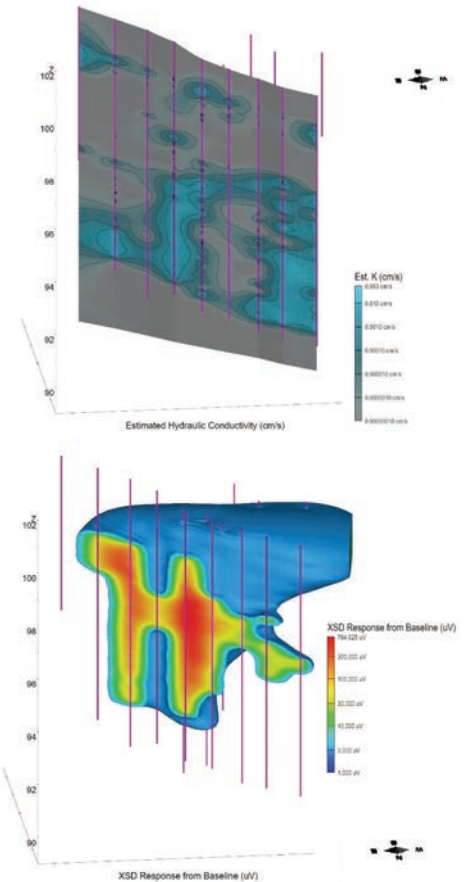
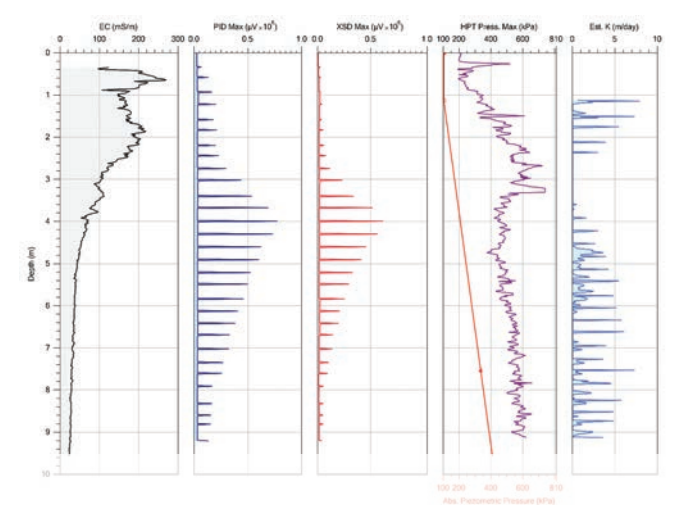


Figure 3 (top): 2D model of estimated hydraulic conductivity along the proposed PRB alignment  
Figure 4 (bottom): 3D model of inferred chlorinated solvent impacts extended onto the client’s site





## Happy Collision of Geoprobe® and DRILLMAX®

Initially generating a name for itself by redefining the way environmental sites are investigated, Geoprobe® continually advances the drilling industry worldwide by designing and manufacturing drilling rigs and tooling to make tough technical drilling jobs efficient and safe.

Adding the DRILLMAX® line of rotary drill rigs in 2017, Geoprobe® began bolstering the DRILLMAX® 40-year reputation in the water well and geothermal industry by enhancing manufacturing processes to ensure durability and easy maintenance. The Geoprobe®/DRILLMAX® manufacturing facility in Kansas leverages individual skills of shop technicians equipped with state-of-the-art manufacturing tools and processes to achieve low-volume, high-quality manufacturing.

DRILLMAX® joining Geoprobe® in 2017 also created the opportunity for Geoprobe® engineers to increase focused investments on water well and geothermal rigs and tooling innovations. Interestingly,

factory engineers have long been using Geoprobe® rigs (direct push, sonic, rotary) and tooling systems to test creative ways to install water wells and geothermal loops. In fact, you may be surprised to learn our main R&D building in Kansas utilizes geothermal HVAC with vertical loops installed many years ago using Geoprobe® equipment.

We like when customers are creative and open to chat about new innovations. Our engineers enjoy evaluating customer needs; considering rig features, tools, or techniques to help them be successful; and then engineering cost-effective solutions to make difficult field work faster, easier, and safer.

We get excited when customers stretch the capabilities of their equipment to complete jobs.

Here are a few recent examples of customers successfully using DRILLMAX® equipment to get their job done. If you have specific drilling challenges you would like to discuss, please contact us.

View the complete line of drilling rigs at:

 [drillmaxrigs.com/DRILL-RIGS](http://drillmaxrigs.com/DRILL-RIGS)

# DRILLMAX®

 PRODUCTS SPECIFICALLY DESIGNED FOR WATER WELL AND GEOTHERMAL CONTRACTORS

## Efficiency Plus Simplicity Equal Performance

Lightweight DM250 outperforms bigger rigs, using less fuel and increasing maneuverability on tricky sites. Drillers praise the DM250 for:

- **No CDL required**
- **20-foot tooling**
- **Simple controls**
- **Optional rod carousel**



A second-generation water well drilling business began in 1985, **ROSENDALL WELL DRILLING** in Michigan realized increased demand for their residential drilling services as new construction took off. A small company with five employees, owner Jeff Rosendall was considering updating his aging rig when Donnie Wood, general manager, stopped by to introduce DRILLMAX®. Other drillers in the area had recently added DRILLMAX® rigs to their fleets, so Rosendall had ready access to reviews.

"I inquired with other local drillers who were happy with their DRILLMAX®," Rosendall said.

Rosendall was no stranger to Geoprobe®/DRILLMAX® equipment. When he decided several years ago to diversify his business to include environmental drilling, he launched this new service line by purchasing a used Geoprobe® 7822DT.

"After three years there was enough demand we bought a new Geoprobe® 7822DT," Rosendall said.

Now he too is among those happy with their DRILLMAX® purchase. He is impressed by the performance that comes from the smaller rig.

"It outperforms our older rig three times its weight," Rosendall said. "The faster rotation speed and faster head movement up and down increases efficiency. It's easy to operate — thanks to the layout of the control panel — and maneuver, so we do more work in less time."

Fuel usage also contributes to the rig's overall efficiency.

"The DM250 uses less fuel which is increasingly important as prices rise," he said.

He's also come to appreciate the efficiency and simplicity of the rod carousel. On his older rig, he would have to look up to watch where the head was on the mast in order to determine when to slide it over to pick up a rod out of the carousel.

"On the DM250, when head reaches positive stop at top, you know it's time to slide over to pick up the rod," Rosendall said. "It makes it easier to use and takes the guess work out of it for more efficient drilling."

Overall, the DM250's capabilities and ability to access sites have met Rosendall's needs.

"Almost every job we do I'm impressed with how well things go," he said. "It has outperformed the big rig I had with better performance and faster response."





Efficiency, safety, and ease of the 2021 DM450 facilitates completing jobs quickly and training drillers easily.



# On Vacation When Running New DRILLMAX® Rig

For more than 30 years, **CHRISTIAN & PUGH WELL DRILLING AND SERVICE** has provided water well construction and pump service around their Smithfield, Virginia, shop. Matt Cunningham took over the business in 2013 and has grown the company – both in number of employees and new equipment. Running older table-drive rigs, he purchased a 2008 DM450 to better equip his crew. Anticipating their workload would continue to grow, they looked to replace an older table-drive rig.

“With our current workload, our experience with the older model DM450, and the capabilities of the new DM450, it made sense with our line of work and geology,” Cunningham said.

The 2021 DM450’s efficiency compared to the 2008 model surprises him. Unlike their other rigs, they opted for the single rod loader on the 2021 DM450. He describes it as “a new luxury we love.”

“It has made our ‘day-to-day’ easier and life is better for us with the 2021 DM450,” Cunningham said. “We feel like we’re on vacation when running the new rig.”

Safety and ease of use also top the list of 2021 DM450 benefits.

“From the driller’s platform to controls, it’s safer all around,” he said. “Its ease of use is a world of difference, easier to teach to operate.”

With the 2021 DM450 they knock out the well and move on to the next one quickly and safely. He attributes the increased efficiency to the rotary speed and the 5.5X8 mud pump. They also use the smaller jib to set casing quickly.

“The speed of tripping in and out means we’re using it on deeper 600- to 650-foot wells,” Cunningham said.

Cunningham also praises the reliability, experiencing fewer problems, as another plus for the 2021 DM450’s productivity.

“It’s more efficient, so we’re able to do more wells and increase production,” Cunningham said.

Choosing the DM450 also sets them up to expand their service offerings.

“If we decide to take larger wells on, we’d have the ability to do it,” Cunningham said.

Overall, they couldn’t be happier with their DRILLMAX® experience.

“DRILLMAX® has been awesome. We pick up the phone to get parts for the 2008 DM450 and they’re readily available,” Cunningham said. “DRILLMAX® has been there for us, whether it’s parts or information over the phone – we can even talk to an engineer if we’re having trouble. We’ve entered into the DRILLMAX® world and been happy thus far.”



## DRILLMAX® Drill Pipe: Now Available in Multiple Sizes

Expanded offerings of DRILLMAX® drill pipe accommodate different applications performed by water well drillers across the country. Designed as part of the whole system – drill rig and tooling – there’s a primary rod for each specific DRILLMAX® water well rig. However, they’re engineered to be able to be used on any rig in the DRILLMAX® line.

Higher-grade material for the mid-body strengthens pipe for increased durability. Engineers also added a stress-relief groove where pin end meets body for additional durability. The radius spreads the load on the rod to increase fatigue life of pipe. Higher hardness tool joints also facilitate longer wear life.

- **Stronger: higher-grade material and engineered stress-relief radius enhance durability**
- **Increased Flow Capacity: 30% more on 2 3/8 MR**
- **Lightweight: compared to legacy steel drill pipe offerings**

Multiple sizes available in 20-foot length.

**Mayhew Regular – More than 15% Lighter. More than 15% Stronger. More than 30% More Flow Capacity.**

|                | Legacy MR  | DRILLMAX® 2 3/8 MR | DRILLMAX® 2 3/8 MJ | DRILLMAX® 2.0 IF | DRILLMAX® 2 3/8 IF | DRILLMAX® 3 1/2 IF | DRILLMAX® 2 7/8 IF |
|----------------|------------|--------------------|--------------------|------------------|--------------------|--------------------|--------------------|
| ToolJoint OD   | 3 inches   | 3 inches           | 3 inches           | 2.375 inches     | 3.5 inches         | 4.5 inches         | 4.5 inches         |
| ToolJoint ID   | 1.5 inches | 1.75 inches        | 1.5 inches         | 1 inch           | 1.75 inch          | 2.68 inches        | 2.125 inches       |
| Weight/20-feet | 178 lbs    | 142 lbs            | 176 lbs            | 128 lbs          | 198 lbs            | 319 lbs            | 319 lbs            |

## DRILLMAX® Pipe Saves Time

**CHRISTIAN & PUGH WELL DRILLING AND SERVICE** in Virginia constructs wells by running a smaller diameter screen through casing. Since using DRILLMAX® engineered and manufactured drill pipe on their 2021 DM450, production times have decreased.

**“The drill pipe helps us telescope the smaller screen much faster,” Matt Cunningham, owner, said. “It’s lighter, and the ID of the drill pipe is larger, and allows us to get more flow.”**

The significant difference in production rates prompted them to purchase a second set of pipe for their legacy model DM450.

Pulling drill pipe out of deep holes with the winches also becomes easier thanks to the lightweight pipe.

Prior to using the DRILLMAX® drill pipe, a company drilling 500-foot geothermal holes had to use the top head to pull the first three of the total 25 rods because the winch wasn’t strong enough. Now they can use the winch to pull the whole string, ultimately saving wear and tear on their rig.

“The same through hole but less weight means carrying more pipe on the machine without negative impacts to drilling process,” said Dillon Sickler, regional rig sales and service specialist.



## SOUTHEAST SERVICE CENTER

### Service Exceeds Expectations

For 23 years, GEO TECHNOLOGIES INC. in Florida, has been providing geotechnical consulting for roadways, bridges, infrastructure, and residential and large commercial projects as well as construction materials testing. Of their half-dozen rigs, two are Geoprobe® used for rapid test soil sampling compared to augering for soil identification.

"They increase our capacity 1.5-2 times over conventional drilling," Jonny Heath, owner, said. "We can complete 620 feet per day where conventional rigs would be 200 feet per day."

Having rebounded after some COVID-19 setbacks, they have a 52-person staff servicing all of Florida – from Miami to Tallahassee – from their Ocala office. While they'd gotten good life out of their 18-year-old 54DT, it was time to upgrade that model to make sure it was fit for the road.

"We can't mobilize to Miami and have it breakdown," Heath said. "We'd already received a quote and scheduled the Repair and Paint service with the Southeast Service Center and just crippled along until we just had to do it."

Following the Repair and Paint the rig looked brand new.

**"It was excellently redone. I was very proud to pick it up," Heath said. "It looked better than I even thought it would."**

It's also performing excellently, prompting Heath to consider sending in his 6620DT.

"We have one more to send but just can't cut it loose – we're too busy," Heath said.

He appreciates how easy the guys at the Southeast Service Center were to work with, valuing their ability to not only perform the Repair and Paint, but also their replacing hydraulic lines and hammers.

"They're just really good guys. If they have new Geoprobe® equipment at the shop, they call us to come take a look," Heath said.

The Southeast Service Center has also helped reduce his overhead expenses.

**"We used to stock service parts at our office because we didn't want to handicap our crews. Now we're able to schedule it in the Southeast Service Center for service," Heath said. "Geoprobe® has made catering to us field guys important."**



BEFORE



AFTER

Bottom: L to R – Robert Stewart, Southeast Service Center technician, with proud owner Jonny Heath following the Repair and Paint of their 54DT.

## FACTORY SERVICE CENTER

### Service Support Vital to Growing Drilling Business

Stranded in a muddy soybean field with rain pouring down, Jeff Anderson made a call for help to the Geoprobe® Factory Service Center. Adjacent to a Navy reserve base, spider jets streaked across the sky interrupting phone connection as service technicians worked with him for many hours to get their oldest 7822DT tracked back to the trailer.

**"They walked us through disabling the safety system so we could limp back to the trailer and shut off the fuel supply in order to turn off the rig," Anderson said. "I then drove it back to Kansas to have two new wire harnesses installed."**

For **SOIL ESSENTIALS**, owned by his wife's company Anderson Environmental, Geoprobe® service is "vital" to their growing environmental and geotechnical drilling business.

"The original two 7822DTs were old machines and issues happen. Geoprobe® service has been dynamite," Anderson said.

Since purchasing the originally Wisconsin-based Soil Essentials in 2017, geotechnical drilling with their two 7822DT has been their "bread-and-butter", accounting for approximately 75 percent of their drilling

"Our customer base has doubled. Our range has expanded some. We now service all of Wisconsin and Illinois into Eastern Iowa and now venturing into Indiana," Anderson said.

To keep up with demand they recently purchased a third 7822DT and have trained a couple of new drillers.

**"Our superintendent has 30 years of experience," Anderson said. "Our next guy has three years, but he can call Geoprobe® and they can walk him through what needs to be done."**

When purchasing their third Geoprobe® rig, service certainly played a part in the decision.

"It's part of the package," Anderson said. "We view Geoprobe® service as part of the package price."



Geoprobe® service considered vital part of keeping fleet performing geotechnical drilling.



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**Pick Up**  
**Tools in**  
**Florida**

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- **SP16 GROUNDWATER – SAMPLERS AND POINTS**
- **PROBE RODS & ACCESSORIES:** 1.5, 2.25, and 3.25
- **PREPACKS – EXPENDABLE POINTS AND PVC MATERIALS:** meets ASTM 6725-01
- **GEOTECHNICAL TOOLS – AWJ RODS AND PATENTED SPLIT SPOONS\*:** split spoons meet ASTM D1586

For more than 30 years, Geoprobe® has been innovating industry-leading tools for accurate, efficient sampling. Pick up your tooling from the Geoprobe® Southeast Service Center and know you're receiving well-tested, superior products with consistent quality designed for optimum performance.

\*Split tube soil sampling system manufactured under U.S. Patent 9,551,188

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# EAST COAST SERVICE CENTER

BEFORE



AFTER



## Refurbishment, Relationship Wise Business Investment

Going into their 50th year in business, **CUSHING & SONS** in New Hampshire does pretty much anything that puts a hole in the ground — water well, geothermal, cathodic protection, deep environmental, and construction. The fourth generation drillers — third under this company name — primarily run large conventional 1,050 CFM machines (at 80,000 lbs per drill rig) mounted on 3-axle Class 8 trucks, ranging in age from 2005 to 2018.

“We started with one rig just doing water wells. As the economy tightened we found other things to do,” Bart Cushing, owner, said. “We had to find something when the housing market collapsed. We found a market for jobs outside the norm. We’ve been able to talk through them and find a way to accomplish the unusual requests. We do 2-inch cores up to 26- to 30-inch diameter holes.”

When weighing whether to invest in a new drill rig or refurbish their aging REICHdrill 690WS, Cushing weighed costs and benefits of each ultimately determining investing in a rig refurbishment was wise.

“Our older rig doesn’t have 34 sensors. On new technology if a sensor goes out, it’s one to two days running diagnostics often for what is simply a bad sensor. The new technology saves labor but not money. Our older rig doesn’t have DEF and runs everyday. It burns 40 percent less fuel. It uses 21-21.5 gallons/hour versus 28-30 gallons/hour on the newer rigs. The new rigs are like having a second man leaning on a shovel,” Cushing said. “The refurbishment cost \$.5 million. A new rig costs \$1.2 million. If you have the receipts you can insure it for the value of the refurbishment.”

Having met Dillon Sickler, Geoprobe®/DRILLMAX® East Coast Service Center (ECSC) regional rig sales and service specialist, at a tradeshow and seeing their refurbishment

work, Cushing was impressed. He talked with owners who were having refurbishments done elsewhere who were experiencing delivery delays or struggling with rigs functioning in the field, postponing the rig being productive by months. On the other hand, all references for the ECSC checked out.

**“They were 10-days late on delivery due to working split shifts related to COVID-19, which was nothing compared to what others were experiencing at other shops — and they apologized. They did what they said they would do, and they stayed after delivery to ensure they could fix any leaks that developed after breaking in the rig,”** Cushing said. **“They know equipment and did reverse engineering on the machine to accommodate parts availability for me or any owner in the future. I was a little concerned when [Patriot Rigs and Services Inc.] got bought by Geoprobe®/DRILLMAX®, but other than the bills emailed instead of sent snail mail everything has been the same.”**

Cushing has put 2,100 hours on the rig since being refurbished. When at 1,100 hours the compressor leaked, he was impressed with the way the ECSC handled the repair.

“The ECSC covered the cost of the repair because it was during the warranty period — no arguments. They couldn’t have been more forthright in their dealings,” Cushing said. “I’ve also been buying rig parts from them because they’re not afraid to put parts on the shelf.”

He credits customer care and honesty provided by the ECSC as benefitting his business.

**“They were very thorough, replacing every component or compensating us for items we had recently replaced. We’ve built a great relationship and they’ve been very responsive,”** Cushing said. **“They’ve really helped our business. It’s not inexpensive, but it’s one of the best investments you can make.”**

### Sign Up for Customer Portal: Centerpoint Connected

- **find facts quickly and easily:**
  - machine records
  - service notes
  - tooling/service orders
- store your own machine service records
- be the first to know when new Centerpoint Connected features are released



 [geoprobe.com/CP](http://geoprobe.com/CP)

### Customer Affirms Centerpoint Connected

AMDRILL INC in Florida typically conducts subcontract environmental and geotechnical drilling for engineering firms. When Todd Ives, operator, initially heard about the Geoprobe® customer portal — Centerpoint Connected — he immediately thought it sounded like a useful tool.

**“It’s simple to sign up, much like logging in or creating an account anywhere else,”** Ives said. **“You can see all of the rigs, all the support questions asked over the years, see all the mechanical stuff completed, and see parts ordered.”**

Having purchased a Geoprobe® rig from a client, they used its history contained in Centerpoint Connected to assess its service needs.

“We tracked down what was done in the past, what issues it had, and what parts had been ordered for it,” Ives said.

Ives finds value in accessing all the information via the portal.

**“I primarily use it for viewing tracking information to find out when orders will arrive. This is especially helpful after hours or early in the morning before the Kansas offices open,”** Ives said. **“My mind was blown by all the information available. Someone spent a lot of time to put it together. It’s easy to access any information on what’s been done to machines, billing, and shipping details.”**



# Geoprobe® Part of the Team

Working for his father's company since age 10, Scott Nelson grew up in the drilling business.

"I worked on and off during school years and during summers before going full-time. I bought the company from him, and then eventually sold it," Nelson said. "I thought I'd retire, but when I returned to work, I decided I didn't like working for someone else."

Now president of **SRN TESTING SERVICES** in Illinois, the company is a full-service construction material testing, geotechnical and environmental engineering, and analytical laboratory. They have a 7822DT doing DT22 environmental sampling, MC5, and 3.75 direct push.

"I've run conventional rigs, but the 7822DT's compact size and efficiency can do about 90 percent of jobs," Nelson said. "It has the power, torque, and little footprint with more versatility than a conventional rig."

Seeking to pick up production in shallow holes versus rotary method, Nelson recently added the 3.75 OTE system with AWJ rods to his toolbox.

"It's a less invasive hole with less cuttings, so it's cleaner than conventional mud rotary," Nelson said.

Nelson appreciates Geoprobe® bringing manufacturing of AWJ rods in-house.

**"They took an old design and identified biggest problem," Nelson said. "They thought through the process and figured out how to do it better."**

Geoprobe® AWJ rods offer improved threads for faster, easier tool joints and in Nelson's eyes, overall cleaner machining. The Geoprobe® focus on producing the best drilling and probing equipment is just one advantage of Geoprobe® tooling according to Nelson.

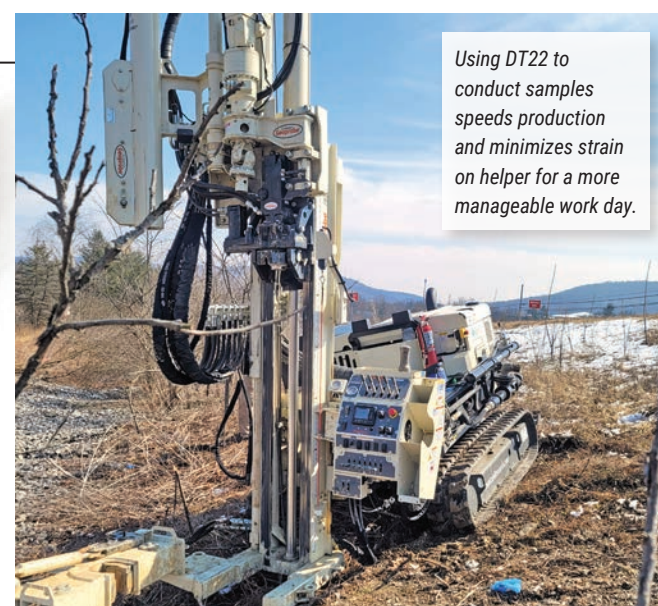
**"Knowledge. Help center. Prompt service. Good company values. Caring about customers. It's the whole package," Nelson said. "I get joy out of running and operating this equipment. I also get Geoprobe® support with the purchase – 110 percent. From service, tooling, support – Geoprobe® is part of my team. You don't get support from other companies like you do Geoprobe®."**



Geoprobe® manufactured AWJ rods offer improved threads for faster, easier tool joints and consistent quality.



Environmental sampling with 7822DT includes DT22, MC5, and 3.75 OTE system with the new Geoprobe® manufactured AWJ rods for cleaner machining.



Using DT22 to conduct samples speeds production and minimizes strain on helper for a more manageable work day.

## DT22 for Easier, Faster Jobs

From their office in Pennsylvania, environmental consulting company **MOUNTAIN RESEARCH INC** conducts geotechnical and environmental work along with asbestos removal. Securing a bid to complete 90-foot samples, they sought a way to complete the job quickly and easily.

"With the old system we would have to go every 5 feet and pull all the equipment," Nate Good, operator, said.

Upon the advice of Vic Rotonda, regional sales representative, they chose the Geoprobe® DT22 system for the 14, 80- to 90-foot holes.

**"We were able to do two holes per day. With the old system we might have been able to get one done," Good said. "DT22 speeds production to get borings and jobs done quicker. We got more done in a much more manageable day."**

The size of the rods contributes to an easier day.

**"DT22 is easier on the helper not having to pull all that tooling and using lighter rods," Good said. "It's less strenuous not having to keep pulling heavy rods out of the ground."**

The DT22 detent drive head also simplified the process.

**"The screw type drive heads were hard to clean up and we would have to use an Allen wrench versus just pushing the pin in," Good said.**

Choosing to use DT22 achieved their goal of efficiently completing the project.

"It's time efficient and we were able to meet the schedule," Good said. "The clients were happy to get the job done much more quickly."

DT22  
Standard  
Drive  
Head

DT22  
Detent  
Drive  
Head

## Customer Confirms Stronger DT22 Core Catcher Liners

Following significant testing, Geoprobe® tooling engineers sought customer feedback on improved Geoprobe® DT22 core catcher attachment liners. Response received confirmed their tests – the core catcher attachment liners were stronger than the previous product. More than twice as strong.

Rob Mores, owner/operator with **ENVIRO-DYNAMICS LLC** in Indiana, used the NEW DT22 liners on one site consisting of medium-dense, coarse sands and another site mostly comprised of clay. He and his crew found the Geoprobe® liners outperformed other liners they've used in the past in a couple of ways.

**"It was only 15 degrees out one of the days we used the Geoprobe® DT22 core catcher attachment liners and we didn't have any problems with them cracking or breaking when we were putting them on the drive head. We do experience that occasionally with other liners if you're not careful when putting them on the drive head," Mores shared.**

While Mores admits he rarely uses liners with core catchers attached, he concluded the NEW Geoprobe® DT22 core catcher attachment liners were an improvement.

**"When we used them in the past, I do remember that it seems like many of the catchers would break off and end up somewhere in the sample," Mores said. "The new ones were much better. It seemed like the core catchers stayed in place better on these liners than liners we used with catchers in the past."**

Geoprobe® DT22 core catcher attachment liners also offer the following benefits:

- Dual punch for use with detent drive head (228499) or set screw drive head (213916)
- Core catchers are attached without adhesives so no addition of volatile organic compounds
- Tested and determined non-detect for 52 PFAS compounds, including PFOS and PFOA
- High-quality, strong product available for same-day shipping when ordered before 3 pm CT



**NEW DT22  
Liners:  
Twice as  
Strong**

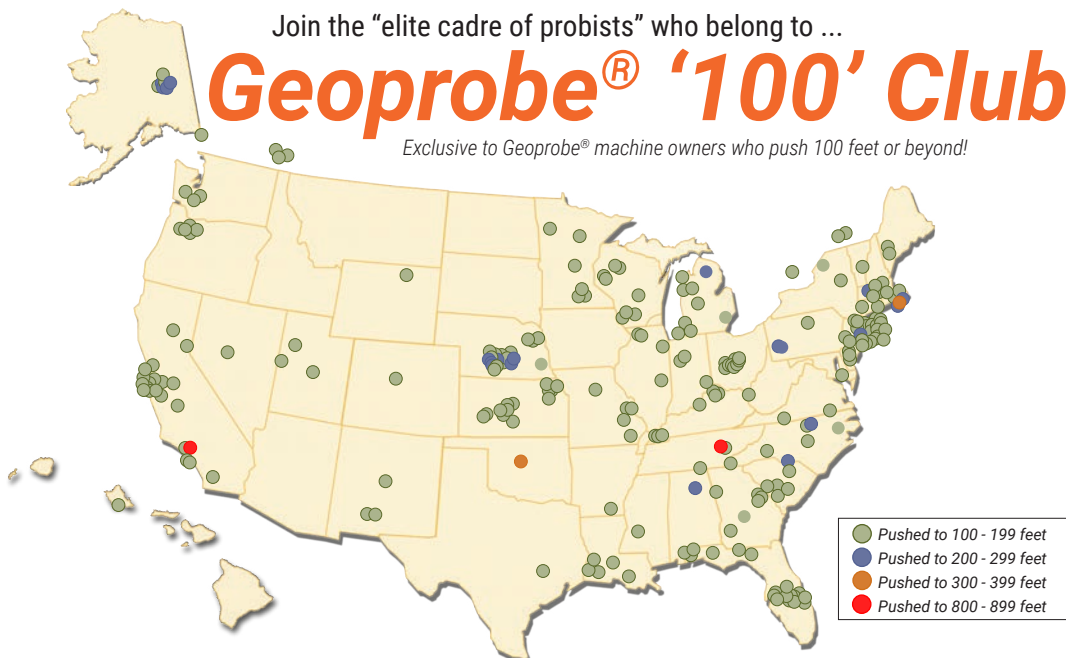
Extensive testing conducted by Geoprobe® tooling engineers to improve the strength of DT22 core catcher liners has resulted in NEW liners which are twice as strong and now available on the shelf. This includes MN 235304, 235305, and 235306.



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- Pushed to 800 - 899 feet



## 100 feet Cascade Remediation Services

**Field Team:** L-R Kurtus Beck, Aaron Zapf, Miles Sorbel  
**Field Site:** Dickinson, Texas  
**Depth/Date:** 100 feet / June 30, 2021  
**Field Data:** drilled down to 100 feet using solid stem augers



## 250 feet Catawba Valley Engineering and Testing

**Field Team:** L-R David LeGrand, Cody Dobbins, Matt Dobbins  
**Field Site:** Virginia  
**Depth/Date:** 250 feet / March 27, 2021  
**Field Data:** Continuous coring from 10 to 250 feet



## 108 feet

**HAD Inc.**  
**Field Team:** L-R Sam Hoffer & Erik "Oggie" Ogden  
**Field Site:** Landfill in Pennsylvania  
**Depth/Date:** 108 feet / Sept. 2, 2021  
**Field Data:** 4.25-inch hollow stem auger to 35 feet, 4-inch air hammer on 3.5-inch drill rods setting a monitoring well



## 245 feet

**Drillpro LLC dba Groundwater Protection**  
**Field Team:** L-R Joel Aponte, Billy Moss, Gama Rivera  
**Field Site:** Felda, Florida  
**Depth/Date:** 245 feet / June 10, 2021  
**Field Data:** 2-inch monitoring well to 245 feet, continuously sampled to depth, set 6-inch casing



## 250 feet

**Catawba Valley Engineering and Testing**  
**Field Team:** L-R Trey Scruggs, Trent Scruggs, Cody Dobbins  
**Field Site:** Virginia  
**Depth/Date:** 250 feet / March 30, 2021  
**Field Data:** Continuous coring from 10 to 250 feet



## 320 feet

**Drillpro LLC dba Groundwater Protection**  
**Field Team:** L-R Terry Winstead, Joel Aponte, Billy Moss  
**Field Site:** Lake Mary, Florida  
**Depth/Date:** 320 feet / Aug. 9 - Sept. 24, 2021  
**Field Data:** Six locations, all continuous soil and water sampled to 320 feet with a 2-inch monitoring well to 320 feet



## 115 feet

**Matrix Drilling**  
**Field Team:** L-R Brittany Jackson, Jack Thomas, Brad Running  
**Field Site:** St. Albans, Victoria, Australia  
**Depth/Date:** 115 feet (35 m)  
**Field Data:** 1-foot basaltic clay, 1-foot to 115-foot basalt, auger/rotary air hammer



## 155 feet

**PG Environmental Services Inc.**  
**Field Team:** L-R Edwin Otero and Orlando Santana  
**Field Site:** White Street, New York City, New York  
**Depth/Date:** 150 feet to rock and 155 feet with 5-foot rock core  
**Field Data:** Boulder at 123 feet, cored through boulder and continued to 150 feet, mostly silty sand

## Drillers Praise Geoprobe® for Innovative, Higher Quality Tooling

From industry first to industry standard, Geoprobe® tooling innovations continue to change environmental, geotechnical, water well, exploration, and geothermal drilling industries. Drillers recognize Geoprobe® as problem solvers, taking on tough challenges and providing industry solutions using customer feedback and information to develop the next generation of products. Companies across the globe acknowledge the simplicity and durability of Geoprobe® tooling and appreciate its ability to make drilling jobs faster, easier, and safer. They also have come to rely on the expertise of our tooling engineers and sales representatives to provide technical advice to optimize production efficiency.

### QUALITY CONTROL AND SUPPORT

"I think the edge Geoprobe® has on other manufacturers is they actually test the equipment and tooling versus just doing it because everyone else is. If I have a tooling question, I can call Vic or one of the guys in the office to work through it," — Art Remedios, project manager, Geopro Inc., New Jersey

### DURABILITY

"I have a good network of guys who run companies like mine, and I talk to people who buy tooling from other manufacturers and the tooling doesn't last as long," — Rob Mores, owner/operator, Enviro Dynamics, Indiana

### CUSTOMER-INSPIRED INNOVATION

"Geoprobe® puts a lot of effort into designing tooling. The bits are better because they listen to drillers and make modifications that actually help," — Joe Mathis, maintenance, M&W Drilling, Tennessee

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