

PROBING TIMES

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



Geoprobe® 3100GT expands driller talent pool by eliminating class A/B CDL requirement while exceeding production expectations, providing:

- plenty of power for geotechnical projects
- easy operation for new or seasoned drillers
- centerline head side shift for all head functions and winches over borehole without moving mast or machine (see pages 3-4).

www.geoprobe.com



fieldwork simplified



3145GT Geotech Rig

“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. It would be ideal on any off-road job where low ground penetration is needed, whether environmental or geotechnical.

— David McCray, Owner, McCray Drilling, Tennessee



PROFICIENCY: compete in multiple revenue streams – HSA, SPT, CPT, DPT, rock coring, mud rotary, air rotary, and drive and wash using simple controls with hands-free rotation, head feed, and auto drop hammer.

PERFORMANCE: align all head functions and winches over the bore hole utilizing centerline head side shift without moving the drill mast for efficient drilling.

PRODUCTIVITY: quickly traverse long stretches of tough terrain encountered on pipe line, power line, or wind farm projects from comfort of crawler carrier at top speed of 6 mph.

Demonstrations Display Fieldwork Simplified

Drillers attending tools-in-the-ground demonstrations across the nation are witnessing how Geoprobe® geotechnical rig and tooling offerings are providing fieldwork simplified for production and profits.

“Geoprobe® listens to clients and has their ears open. They come up with innovative ideas by listening to people using the machines, coming up with solutions, and putting them into place,” Rick Mielcarek, TTL Associates operations manager, said. “It’s cool to see Geoprobe® isn’t just an environmental type of machine anymore and is specializing in producing machines to handle geotechnical types of applications.”

Attributes standing out for those attending recent demonstrations were:

POWER...“Our drilling supervisor was impressed by the amount of power the 3126GT had. He anticipated something less powerful for the package size.” — Brian Mott, environmental specialist, DLZ

ATTENTION TO DETAIL...“The rig has a lot of push/pull capacity but also a lot of control. The ability to tune controls on the 3126GT control panel is way, way ahead of other drilling rigs. How they’ve worked out the operating system impressed me more than anything. They took care of all the little details to make things easier in the field.” — Dave Harness, project manager, Alt & Witzig Engineering

VERSATILITY...“The 3126GT comes with the ability to do CPT and other things besides direct push, including augers and mud rotary. This will mean we will see a faster return on our significant investment in the machine because we are not buying a single-use tool such as a standalone CPT or DP machine.” — Brian Mott, environmental specialist, DLZ

CALL TO SCHEDULE A DEMO:
785-825-1842



SCAN TO WATCH
3145GT Features



3100GT simplifies initiating drilling services thanks to easy operation and provides flexibility to shift scheduling and accomplish more jobs.



Simplicity Streamlines Adding Drilling Services

Since launching **G2 CONSULTING GROUP** in 1994, the Michigan company has outsourced drilling for its geotechnical and environmental consulting and materials testing services. However during the past few years, drillers they'd been using began discontinuing services, creating scheduling difficulties.

"We decided to add our own drilling capabilities," Christopher Nicol, project manager, said. "We looked at used rigs, but it came down to the 3100GT not requiring a CDL. It's hard enough to find a driller, let alone one with a CDL."

The common theme when asked about his favorite features — "simplicity."

"It's simple to operate. We appreciate we only have to deal with one engine, which simplifies things," Nicol said. "The maintenance needed is straight forward, and we've been able to do it ourselves with some help."

For a first foray into drilling, they're pleased with their ability to accomplish their goals.

"We've used the 3100GT for 100 percent geotechnical drilling, which is really why we needed the additional capacity," Nicol said. "We've been able to access some off-road jobs because it's relatively light compared to a conventional rig."

Adding their own drilling services also amplifies their ability to accomplish more jobs.

"We can get more done in a timely manner. We have gotten some jobs because we have the ability to jump on it in a couple of days versus scheduling with another driller a month out," Nicol said. "The 3100GT allows us to get jobs drilled quicker because we have our own rig. We also have more flexibility to shift the schedule if an emergency job comes in. We can definitely get more jobs done because we added the 3100GT."

And for the few, small issues they've experienced, he finds the customer service "great."

"Everyone has been helpful and expeditious in handling those items," Nicol said. "The customer service is very good, very helpful."

3100GT ON F600 PROVIDES FREEDOM PLUS PERFORMANCE

"You don't need a CDL to drive the rig to the site. 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 is all we need, and we can get around more quickly and economically than a bigger truck-mounted rig. The guys love driving the 3100GT and are always saying it rides like a Cadillac. As a boss, I don't get complaints about having to drive the truck.

— Chris Kenney, P.E., Kenney Geotechnical Services, New York

3100GT TAKES THE SWEAT OUT OF SCHEDULING JOBS

- **Fuel-sipping chassis under class A/B CDL expands options for available operators**
- **Creature comforts like air conditioning keep crew satisfied while quickly mobilizing site to site**
- **Bluetooth enables completing safe cell phone calls while driving**
- **Simple set up and operation quickly advances helpers to productive drillers**
- **Centerline head side shift minimizes tool handling to maximize crew safety**



SCAN TO WATCH
3100GT F600 Features



Geotechnical Drilling Gains Ground with Right Rigs

Established in 2004 as a strictly environmental services company, **DIRECT PUSH SERVICES** has expanded from a couple of rigs and two employees to six rigs and 15 employees. During the past five years, the Utah company has realized this expansion through the addition of geotechnical drilling services.

“We had clients specifically wanting geotechnical services,” Sean Bromley, owner, said. “We had used some other rigs that turned out to be maintenance nightmares, and when we saw the simplicity of the 3100GT when it was introduced, we decided to switch to the brand we knew and trusted – Geoprobe®.”

They have now added both a 3100GT truck mounted and 3126GT track mounted rig to their fleet and are impressed by their performance.

“Utah has some crazy drilling conditions – gravel, bedrock, caliche, shallow groundwater, deep groundwater – and they perform in all of it,” Bromley said. “We’ve used them for mud rotary, augering, rock coring, and our overburden drilling EXcentric (ODEX) system.”

With similar features between the two rigs, he is quick to rattle off a few favorites:

- **SIDE SHIFT HEAD** – “makes everything easy versus lifting and moving the foot and recentering over the hole when we switch between drilling method and drop hammer.”
- **SEPARATE HYDRAULIC CIRCUIT FOR MUD PUMP, LARGER MOYNO PUMPS** – “enable using tool rack to carry water tank when accessing a remote or muddy site, providing sufficient water to complete confirmation rock coring.”
- **DISPLAY SCREEN** – “provides ability to diagnose and see how system is performing at your fingertips.”



Eliminating CDL restrictions and ease of operation makes 3100GT invaluable for growing geotechnical services.

They opted for the 4-speed rotary head on the 3126GT and chose the 6-speed head and three winches for the 3100GT.

“There’s a noticeable difference in lower gears on the 6-speed head that’s pretty incredible. We love the 6-speed head,” Bromley said. “While using the 3126GT 4-speed we got some augers stuck in the hole. With the 3100GT 6-speed head we reverse spun them and broke them free immediately.”

The 3100GT truck-mounted rig means anyone can get down the road under CDL.



3126GT tracks to locations despite weather conditions while efficiently achieving geotechnical footages to keep clients happy.

“If you have good site access, the 3100GT is the preferred option because you can quickly get to and from each location,” Bromley said. “CDL requirements are getting harder and it’s harder to find guys who can qualify, but the 3100GT is straightforward and easy to get any driller in it to get a job done. It’s almost invaluable to not have that CDL restriction.”

However, the 3126GT track-mounted rig has proved valuable through the wet months.

“We’ve had crazy moisture levels, so the tracks allow us to get into locations and use it through rain, snow, and mud,” Bromley said.

Each with their advantages, both 31 series rigs offer geotechnical efficiency. On a recent project at the base of the Kennecott Mine they completed 20-30 holes from 30-100 feet.

“We had specified two weeks. We finished in a little over a week. The efficiency of the rig allowed us to get it done quicker,” Bromley said. “We’ve done geotechnical jobs with our 7822DT, but now for any big jobs we use the 31 series rigs. They are meant for footages.”

The performance of the 31 series rigs keeps clients happy, and according to Bromley, operators love running them.

“They have been a game changer. We keep them both busy everyday,” Bromley said. “These rigs allow us to get into and excel in the geotechnical market.”

He’s certainly glad they made the switch to the 31 series rigs.

“Especially after using other conventional rigs first, it’s easy to say we needed to go with Geoprobe® who we know is reliable. I’ve been using Geoprobe® since 1997 and have always been super impressed with my dealings with everyone. If we had a specific need – like our ODEX system – the Geoprobe® team found a way to make it work,” Bromley said. “Thanks to Geoprobe® for staying on top of the market and making this stuff available.”

GEOPROBE® TOOLING ADVANCES GEOTECHNICAL SAMPLING

“We notice that there is a lot of engineering that has gone on behind the tooling that we are using and attention to detail in the manufacturing of the tooling. The tooling is designed for the user rather than following the same design as what’s been around for 50 or more years but still meeting the ASTM or AASHTO standards.

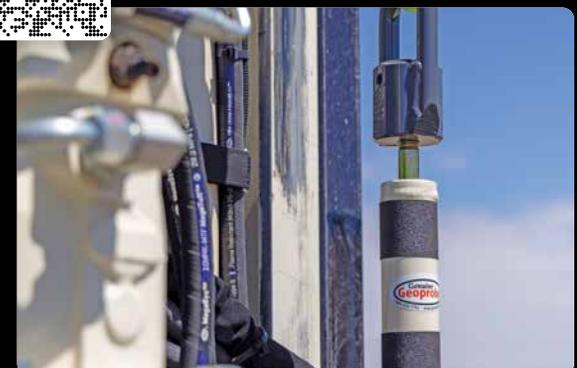
— Duane Reichel, Owner,
Soils & Engineering Services Inc, Wisconsin

COMPLETE LINE OF GEOTECHNICAL TOOLING, INCLUDING:

- Patented Interlocking Split Spoon*
- Spring Assisted Swivel Lift Cap
- AWJ rods



SCAN TO WATCH
Geotech by Geoprobe®



Geoprobe® a One-stop CPT Shop

Engineers who had gained valuable geotechnical experience working for the US Army Corps of Engineers Vicksburg District and the Waterways Experiment Station in Vicksburg, Mississippi, launched **BURNS COOLEY DENNIS** in 1985. Now with a staff of more than 60, the full-service Mississippi firm serves the entire state — top to bottom and east to west — while also venturing into the surrounding states as needed. The bulk of their work involves conducting geotechnical investigations with drill rig borings and lab testing in-house and providing materials engineering and testing for construction projects. They're also known for offering a few specialized services: practical numerical modeling, geo-structure design (e.g. anchored walls, soil anchor stabilization systems, soil nail walls), pile driver analyzer and other deep foundation testing, expansive clay analysis and forensic studies, and asphalt pavement physical and emulsion lab testing design and research.

"We have occasionally needed to add CPT to some of the geotechnical investigation projects, but have always had to subcontract that service in the past. Part of our long-term plan has been to add CPT capabilities, and we saw the benefit of adding a drilling rig like the 3126GT that could accomplish both traditional geotech and CPT," Christian Jackson, engineer, said. "The 3126GT has the added benefit of allowing better access into difficult and restricted access locations."

Doug Koehler, sales manager, spent three sweltering summer days setting the team up for success with training on what to do — and what not to do — with their new rig and cordless cone penetration testing (CPT) tooling system. The informative training left the team confident without a lot of lingering questions.

"Geoprobe® has made it really simple to have a drill rig, CPT rig, and in-the-field training from one company. Geoprobe® offers really good support. If we have a question about the rig or running CPT or getting supplies, we can call one place to get answers," Jackson said.



3126GT satisfies company needs for pushing CPT on levee or rotary drilling while making jobs less physically demanding.

Cordless CPT saves time, and they find setting up and running CPT easy thanks to a simple layout and features.

"Installing the anchor and adding additional pieces to increase depth of embedment is easy. Nothing is too difficult when running the CPT. There are tools to help efficiently remove rods from the ground," Jackson said. "As the amount of energy required to push the cone varies between soil layers, the energy output by the rig can easily be adjusted. It's as simple as pushing a button to adjust the speed and maintain the 2 cm/sec ASTM standard."

They recently performed a job pushing the cone 130-135 feet to measure strength gain for a levee being constructed in stages over weak clays in south Louisiana.

"That is the deepest CPT we have done with the rig, and it went great honestly," Jackson said. "We've collected samples in 100 feet of sands and gravels and installed instrumentation, such as vibrating wire piezometers, in roughly 100 feet of clay. In both instances the 3126GT drilled a good hole."

To them, the 3126GT is easy and efficient to operate while meeting not just their needs for CPT but other types of drilling as well.

"I talked with the driller and he says it does everything we need — hollow stem auger, dry augering, rotary drilling, direct push — extremely well. The driller has no complaints, and the engineers are very pleased with production rates," Jackson said. "The way it's set up, the screen tells you everything you need to know about the status of your rig like when maintenance may be needed or making adjustments to power."

The 3126GT also provides added benefits such as:

- conveniently leveling a pad on a steep slope or uneven terrain with the blade
- easily maneuvering through rough terrain in woods or washouts and down ditches with the tracks
- hauling water tank, augers, and other equipment on tool rack

"This is convenient when accessibility is difficult and you can't get another truck with drill supplies to the location," Jackson said. "It's extremely efficient for most of the work we do. It's easy to get into tight spots, difficult locations."

Conversations in the field convey how attention to detail on the 3126GT makes jobs easier for the entire crew.

"The helper and driller described how the breakout clamp having places for equipment and tools like the sampler, pipe wrench, additional bits, and extensions makes the job less physically demanding and helps them be more efficient," Jackson said. "The way things are laid out are really beneficial to the guy having to take everything on and off, which is easier than some of our other rigs."

Adding the 3126GT and CPT has not only made their jobs easier, it has increased their company's service capacity.

"It expands our arsenal of all we can do as a company. We started looking for and gaining more CPT work since adding the 3126GT. It's the rig of choice for most of our projects now," Jackson said. "Bringing CPT in-house helps with scheduling and flexibility on the job to add additional CPT or add an additional boring if data looks off."

Single Source for CPT: Rigs, Tools, Training plus In-house Service, Support

With more than 25 years of experience, Geoprobe® has the technical team and equipment to support your CPT endeavors.

"Cory and Troy have made efforts to be at our disposal to ask questions and their response time is exceptional," said Derek Wolfe, engineer with Applied Geotechnical Engineering Consultants in Utah. "Having that kind of customer service is invaluable."



Troy Schmidt,
CPT Specialist

CPT READY RIGS...Geoprobe® CPT-ready rigs incorporate:

- 15 tons of downforce, sufficient to execute the work
- automatic head feed rate control to provide a consistent 2 cm/sec CPT push rate, meeting ASTM standards

"As the amount of energy required to push the cone varies between soil layers, the energy output by the rig can easily be adjusted. It's as simple as pushing a button to adjust the speed and maintain the 2 cm/sec ASTM standard," said Christian Jackson, engineer with Burns Cooley Dennis in Mississippi.



Cory Harvey,
CPT Specialist

CONES, RODS, ANCHORS...Geoprobe® offers 10 cm² and 15 cm² NOVA cone options, cabled or cordless options, and a seismic module. You'll have access to all the accessories required to easily run your CPT system with your Geoprobe® rig — anchors, rods, and polyfilters.

"Installing the anchor and adding additional pieces to increase depth of embedment is easy. Nothing is too difficult when running the CPT. There are tools to help efficiently remove rods from the ground," Jackson said.

EXPERT TRAINING...Geoprobe® CPT experts spend classroom and field time — in Kansas or your location — setting you up to succeed with your CPT equipment. Complete training with confidence to tackle your first job.

"It was a fantastic learning experience. If you're wanting to learn CPT, I would 100% recommend going to Salina. It was an invaluable experience," said Thomas Kasang, operations manager with GSG Consultants Inc in Illinois.

IN-HOUSE SERVICE AND SUPPORT...Geoprobe® service and support extends beyond the rig to the cone system. Cone calibrations and repairs are handled in-house by CPT experts who quickly answer the phone when trouble arises in the field.

"I can contact Troy Schmidt and he'll walk me through troubleshooting while I'm in the field. Geoprobe® has put in a lot of time and effort to try and solve problems and accommodate our needs," said Kevin Whitla, Olsson project manager.



SCAN TO WATCH
Simple CPT Controls



Efficient Seismic CPT Includes Live Views of Data

Passionate about delivering exceptional geotechnical, environmental, and instrumentation exploration services, the **TERRACON CONSULTANTS INC** office in Savannah, Georgia, went from being without in-house drilling resources in 2021 to running three Geoprobe® rigs, operating full time. The rigs are a 7720DT, a 6622CPT, and a new 7822DT.

"We now support Terracon drilling offices across Georgia and into Florida and South Carolina," Logan Richard, drilling manager, said. "The diversity of our fleet allows us to accomplish a variety of drilling objectives – from environmental Macro Core® soil sampling, well installation, cone penetration testing (CPT), dilatometer (DMT), and Standard Penetration Testing (SPT) with our 7822DT and 7720DT, to dedicated and highly efficient CPT operations with our 6622CPT."

Depending upon the job specifications, any of the three rigs can be found running the Geoprobe® seismic cone penetration testing (sCPT) module.

"Its modular nature makes setup from rig-to-rig quick enough to perform sCPT whenever it is deemed necessary," Richard said.

Many people don't realize the Southeast is a seismically active area.

"In 1886 Charleston experienced a massive earthquake estimated to be a magnitude of 6.9-7.3," John Mnieckowski, geologist, said. "Because of this historic event, we now know that Savannah is within a seismic zone as dictated by the International Building Code. Naturally, seismic analysis is a crucial element of our geotechnical drilling."

Conducting liquefaction analysis increases the importance of obtaining quality data with an efficient system.

"Our rigs are oftentimes miles deep into undeveloped forests, which means having a reliable system is highly important," Richard said. "We rarely go to a jobsite just to perform an sCPT, meaning we need cross-compatibility between CPT and sCPT."

Both Mnieckowski and Richard feel they found the solution when they added the Geoprobe® sCPT module to their resources a little more than a year ago.

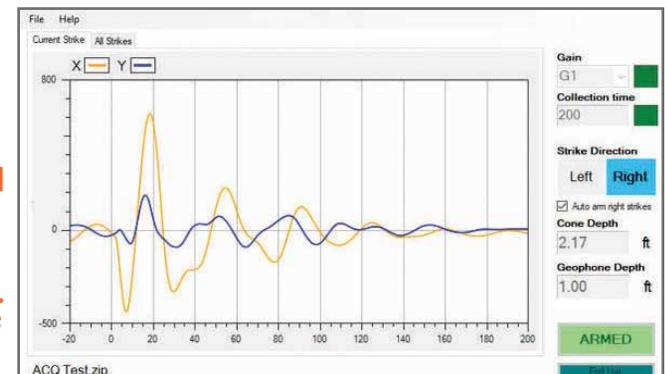
"Several parts offered by Geoprobe® have made cross-compatibility possible for us – notably the blade mounted rod and tooling rack, which allows us to have a set of wired rods for sCPT and a set of non-wired rods for wireless CPT both ready to use at a moment's notice," Richard said. "Compared to our previous system, it is much more advanced."

Three factors influence their preference for Geoprobe® sCPT module, including:

- **VIEWING DATA IN FIELD** – "You can see the shear wave velocity in a zoomed, real-time view in the field. Velocity waveforms appear on the screen as the program processes them during data collection operations. Previously it was difficult to tell if you'd collected poor quality data. Now you can readily make adjustments in the field by simply clearing the strike and trying again after adjustments."
- **STACKING WAVES** – "You can easily stack the waveforms to determine more accurate average velocity at different depths."
- **EFFECTIVE COMMUNICATION** – "With the real-time view Geoprobe® software offers, drillers are able to efficiently communicate their findings with engineers via text or phone call."

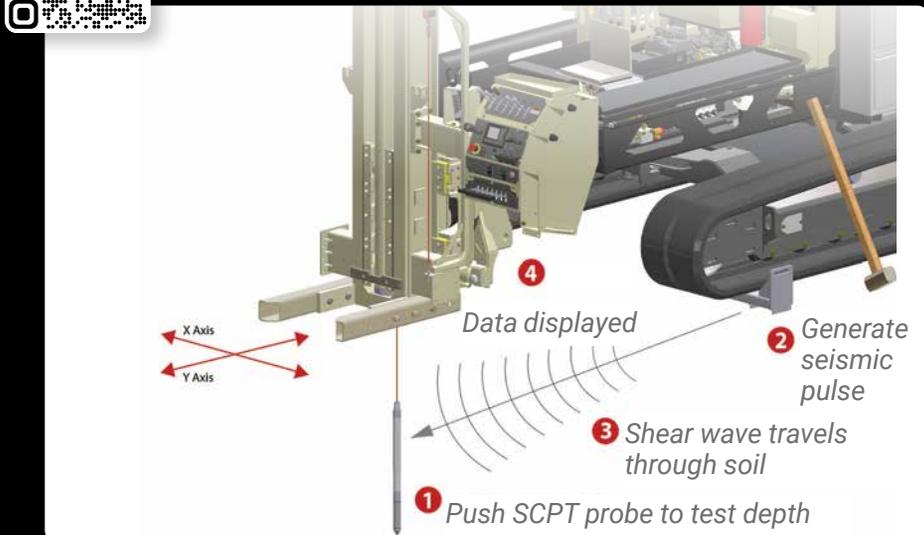
Ensuring quality data from the field contributes to overall team efficiency.

"It takes effort to prep and mobilize to a site, and then to be blind to what data you're collecting is frustrating and inefficient. We now can see quality of the data in higher detail in the field and if there are problems, allow our operators to make adjustments in the field versus learning days later the data was insufficient or lacking is a tremendous advantage," Mnieckowski said. "Additionally, setup of the new system is quick and modular. Plug in four wires, snap magnetic strike boxes to each side of your rig, and you're ready to go."



The FREE software has signal stacking capability for use in high ambient noise locations.

SCAN TO WATCH
Geoprobe® Seismic CPT



NEW

NEW Cone Size Now Available for CPT: NOVA15

We're now your source for 10cm² or 15cm² cones (probes) for your cone penetration testing (CPT) projects. Pushing a larger diameter cone can provide advantages, depending on the soils you are pushing in.

- **Increased diameter to 44 mm (1.73 inch) improves overall strength and durability**
- **Reduced rod friction has been reported to yield greater depths in fine-grain soils and clay material**

"One customer reports side-by-side comparison where they pushed a 10cm² NOVA to 85 feet, then offset to push NOVA15 to 105 feet through restricting clay soils that generated too much rod friction for the smaller 10cm² NOVA cone," Troy Schmidt, CPT specialist, said.

SCAN TO WATCH
NEW NOVA15



Compact Power Diversifies Capabilities



Features on 3230DT make it suited for barge project requiring range of tools from Membrane Interface Probe to 6.5-inch rods.

Landings a barge project, **ODYSSEY ENVIRONMENTAL SERVICES** Owner and Project Manager Jason Miller knew he needed to run tooling beyond the capabilities of his fleet of three 7822DTs. The predominantly environmental and geotechnical drilling company in Pennsylvania took the opportunity to expand their fleet and services, adding a 3230DT.

“The 3230DT gives you a variety of drilling options and the ability to switch gears quickly. All the controls and drilling area are operator and helper friendly,” Miller said. **“Not only can we run direct push off it, we can also run air rotary, rock core, and mud rotary.”**

For the six months prior to the start of the barge project they utilized the 3230DT on various projects testing its capabilities and efficiencies.

“It’s opened up more possibilities: diversifying our coring capabilities, increasing our ability to do geotechnical work, and completing additional groundwater investigations with larger diameter rods at deeper depths,” Miller said. “It allows us to do similar work scopes, but on a larger scale with bigger tooling. It’s more efficient on certain types of drilling. The rod clamp on the head pulls tooling more efficiently.”

Other features he attributes to the 3230DT’s efficiency include:

- **Sliding head, aligning everything over the hole when changing tools and pulling rods**
- **GH70 percussion hammer pounding power, penetrating bigger tools deeper in the ground**
- **Multiple heavy-duty winches, providing pulling power**
- **Adjustable control panel, creating comfortable view of tool string for operator, ample room around tooling for helper**

These features combine to increase efficiency for Odyssey Environmental Services Inc and their clients.

“It increased our efficiency by reducing field time. We are excited to improve our drilling time and implement equipment that works for us and our clients,” Miller said.

Their barge project on the Anacostia River in Washington D.C. for the Department of Environment began mid-October 2022 with an extensive collaboration of companies. When running Membrane Interface Probe (MIP) investigation, 3.75 rods were installed to case off river sediments while pushing MIP through the casing to depth.

“This required adjustments on rod length to run 3230DT versus 7822DT,” Miller said.

By Christmas, they switched to setting 2-inch temporary wells and sampling with DT45, collecting cores for analysis.

“We used 6.5-inch rods with 6-inch casing shoe to set a 6-inch outer casing to case off upper overburden contamination and river sediments; then sampled to depth before setting 2-inch temporary wells for the consultant to test groundwater over tide cycles,” Miller said.

This spring they’ve been completing geotechnical borings, setting 6-inch outer casing and running 3.75 rods with geotech shoes and split spoons.

“The 3230DT allows us to use various tool strings and switch between them easily. It also enables larger tooling capabilities,” Miller said. **“The 3230DT is the perfect rig for this application.”**

According to Miller, the 3230DT being perfect for the application includes:

- **80K pull back, necessary when driving into riverbed clay combined with buoyancy of the barge**
- **Convenience of hose pump kit in conjunction with injection head, conducive to grouting borehole while retracting rods**
- **Flexibility to run variety of tooling, required to accommodate varying subsurface conditions on a daily basis**
- **Capability to adjust rig using outriggers and oscillation, imperative on an often-uneven barge platform**

“The operator has versatility to adjust the drill mast to run tooling perpendicular to the surface,” Miller said.

He pairs Geoprobe® tooling with the 3230DT because of its superior quality.

“Geoprobe® tooling holds up. It’s superior to everything on the market. The quality control is there,” Miller said. **“The different size shoes and systems make everything easy to work. The thread design reduces stress on the joint so they’re easier to thread and unthread.”**

Miller credits rig capabilities and longevity of tooling to Geoprobe® listening to field crews and investing in engineering.

“Geoprobe® understands fieldwork, listens to the rig operators, and is constantly a step ahead of advancing technology,” Miller said. “There’s been a lot of innovation over the last 25 years.”

Responsiveness of international service for 3230DT clarifies extent of team backing driller success.



International Service Support Builds Customer Confidence

Initially seeing drilling as a route toward a career in consulting, Kyle Brown discovered he liked drilling more than engineering. So when the industry in Alberta, Canada, slowed down during 2015 he saw it as the perfect opportunity to launch his own business — **LANDMARK DRILLING SERVICES LTD** — completing geotechnical, environmental, rock coring, and interior drilling across Western Canada, including the Territories.

“We’ve built a strong reputation in commercial and industrial drilling,” Brown said. “I have always seen the value of direct push technology, and I am happy to have finally added the 3230DT to meet the industry’s growing demand.”

They experienced a few “hiccups” with the 3230DT when it initially arrived but have found Geoprobe® service to be a difference maker.

“Roman and team have been available to answer questions and give advice. He was very prompt in responding — diagnosing most issues over the phone. When challenges got more complicated, they didn’t hesitate to book a flight to deal with a warranty issue,” Brown said. “They go above and beyond. It’s clear Geoprobe® stands behind their product.”

While the Geoprobe® service technicians were in Canada for the warranty work, they provided Brown with a full-service training and a general controls overview. Now the rig performs as expected in the field.

“Being a smaller outfit, it was important to purchase a drill that had the team and support. I’m happy with my choice. Rather than employing my own service team, I have the support through Geoprobe®,” Brown said. **“They definitely make it easy to own a Geoprobe®, which builds confidence going forward. You know if there are issues, they’ll be there to help out.”**



EMAIL INTERNATIONAL SERVICE SUPPORT:
international@geoprobe.com



SCAN TO WATCH
3230DT in Action



Realizing Big Dreams Using Compact Rigs

Established in 2017 to provide drilling services to geotechnical engineers — focusing on mud rotary technology, **PG ENVIRONMENTAL SERVICES** struggled to break into the environmental market.

“Initially because of our name, consultants were concerned we were another competitor,” Carlos Quinonez, owner, said. “We let time tell our story, and now we work with many of the largest environmental consulting firms in New York and New Jersey.”

Today they’re drilling 70 percent geotechnical and 30 percent environmental.

“We’re still predominantly a geotechnical drilling company, but we also do environmental drilling, including soil probes, vapor implants, monitoring well installation, tank removals, and chemical injection work,” Quinonez said.

Tight urban corridors in New York make it difficult to find open areas for larger drilling rigs. As such their fleet consisted of two, 2013 model 7822DTs and one, 2020 model. When looking to expand their fleet during 2021, they considered a 3126GT with ability to do more depth, faster, but they determined the 7822DT was ideal for them and added two more.

“The 7822DT compact size and power provides our clients the same results as a conventional truck rig, but we have the added advantage due to its versatility,” Quinonez said. “If you hit an obstruction you can change gears — from mud to direct push to air — and use other tools to get past the obstruction. The 7822DT is our rig and why we have five of them and aim to have more.”

He applauds the enhanced mud rotary capabilities on newer models.

“I love the 3L6 pump on the newer models and the double winch is handy when working on over 100-foot borings,” Quinonez said. “The 3L6 pump for mud rotary technology is great for rock coring.”

While the 7822DT was originally engineered as a direct push rig for environmental drilling, Quinonez pushes the limits of the rigs with geotechnical drilling as well.

“We are always drilling 100-foot geotechnical borings and rock coring Monday through Saturday. It can do rock coring by using mud rotary and air rotary. We have installed 6-inch wells to 35 feet, pushing 8.5-inch hollow stem augers. I’ve done 175-foot geotechnical boring and installed a 4-inch well to 200 feet,” Quinonez said. “We’ve also grown our fleet by adding smaller Geoprobe® rigs. It’s been great to be able to grow and provide our clients any specific drilling service needed, regardless of the project accessibility.”



Mud rotary capabilities on newer 7822DT make installing 4-inch monitoring well within a Brooklyn building feasible.



7822DT succeeds pushing 6.25-inch casing to 30 feet.

So when one client needed a 200-foot, 4-inch monitoring well installed — inside a building in Brooklyn — Quinonez was spurred on by the doubts of others to prepare a plan, buy the tooling, and play the entire drilling job out in his head in order to make it a reality.

“This only works when you have operators in your company who also enjoy dreaming big,” Quinonez said. “My crew called me crazy at first, but like I always say, ‘you stay calm and follow me; I will lead you in this battle even if I’m scared.’”

His strategy involved using 6.5-inch ID hollow stem augers to clear the borehole down to 20 feet, then direct push 6.25-inch casing to 30 feet. From there he started drilling with 5.5-inch tricone bit doing mud rotary to 201 feet, hitting boulders at 40, 75, and 125 feet. The plan worked, but then the hard part started — installing the well.

The crew used Variflo® to keep the hole open and installed the PVC well with 100-foot screen and 102 feet of riser. They then packed sand and bentonite around the stick-up well.

“Setting the well was a challenge with strong groundwater pressure, but we thought outside the box and used the rig as muscle to help us get it done,” Quinonez said. “After installation we developed the well using the rig’s 3L6 pump, generating six drums of silt. In total, it was a 5-day project and a happy client from beginning to end.”

He admits it was a perfect scenario where everything played its part.

“These are the gambles that having a Geoprobe® behind you enables you to make. And sometimes you end up on the winning side,” Quinonez said. “I couldn’t tell my client ‘yes’ if I didn’t have trust in my rig — and a lot of praying as well. The rig is like the human body, you’re not sure how hard you can push it until you try.”

Quinonez believes there’s a niche for everyone, and he’s found his — using the 7822DT for direct push environmental drilling and mud rotary geotechnical drilling.

“It’s a versatile rig that can do angle drilling, chemical injections, and work with limited height. A wrench and some extra tools and I can work inside a warehouse,” Quinonez said. “I did a job with 12-foot clearance, installing 2-inch wells to 25 feet. I have the advantage of a powerful machine that can get into tight spaces and get what clients need done.”

He asserts the Geoprobe® technology gives him an edge to provide services at a more economical price than other firms, enabling him to achieve his dreams.

“When you dream big, you need a great rig to achieve great things. The 7822DT allows us to perform all sorts of environmental drilling for clients to investigate and create remediation plans as well as obtain geotechnical samples needed for clients to create a new foundation design. Without these rigs, it would be impossible for our environmental clients to help clean up the world and geotechnical engineers to help rebuild our world,” Quinonez said. “I’ve been dealing with Geoprobe® for nearly 18 years and love the equipment and products Geoprobe® provides.”

However, he ultimately credits those around him — and a strict maintenance schedule — for the company’s success.

“This is a team effort and without the support of my family, my crews, my clients, my friends, and the expertise of Geoprobe® people like Bryan Lorenson, I wouldn’t be able to keep things going,” Quinonez said.

Industry-standard Rigs Push Company Growth

Starting his drilling industry career as a consultant, David Drayback discovered he didn't love writing reports. So in 2011, he and his partner gathered funds from closed 401(k)s and an SBA loan to buy a piece of used equipment and launch **ENVIROTECH DRILLING SERVICES LLC**. During 2017 client calls for pressure washing and disposing of waste on decommissioning projects led to expanding into environmental services.

What began on a shoestring sprouted into two offices — in Houston with nine crews and in San Antonio with four crews. "Logistics play a large part in drilling, so having resources close is important versus mobilizing four hours or more for a job," Drayback, president, said.

Their work across Texas is a mix of direct push and hollow stem auger jobs. As their business has expanded, they've grown their fleet to put more rigs in the field. They've found the 7822DT in demand for their direct push jobs.

"The Geoprobe® 7822DT is the like the F150 — it's what people expect on an environmental job. If the machine doesn't do what a 7822DT can do, the client isn't happy," Drayback said. "It's the industry standard and does direct push projects pretty much anywhere. If you hit refusal with a 7822DT, clients are usually okay with it because it's the standard."

He also finds direct push perfect for their gulf coast lithology.

"The 7822DT is the right tool because of the lithology and depth of the water table. We can do pretty much everything we need to do," Drayback said. "We can set shallow wells, and if driller has knowledge, they can use air rotary in harder formations. It's versatile and light so we're able to do off-road work without getting into trouble."

Having purchased one 7822DT in 2017, they added three more last year. They appreciate the extruder option, eliminating customers waiting for barrels to be unclogged. They've also found the rigs capable of withstanding adverse conditions.

"We had them on a couple of long-term direct push projects through caliche formations in South Texas in 105-degree weather, wailing on hammers. They held up given the depths, heat, and hardness of the formation," Drayback said.

"Geoprobe® rigs are reliable. They're a well-engineered solution to collecting direct push samples."

Engineering explains the differences observed during his tenure in the drilling industry.

"You can definitely do jobs with today's machines you wouldn't have tried to do with them in 2006," Drayback said. "We're now doing 2-inch wells to 50 feet. It wasn't practical to even attempt that 15 years ago. They have definitely added to what the machines can do."

When they run into service questions, Drayback knows he can depend on Geoprobe®.

"Support is a different level," he said. "If there's a problem, the guys there are all over it."

He also appreciates Geoprobe® meeting delivery dates, enabling the company to capitalize on client demand for services.

"Geoprobe® didn't fall behind on the build schedule, so we were able to add capacity when we needed to and do more phase II, shallow well installations," Drayback said. "We've been able to grow the breadth of the company, and clients really appreciate we've been more available. These machines are in the field, staying billable."

Capabilities of newer 7822DTs expand practical field applications.

NEW Tooling Transit Option: Easy Transport Drop Rack

Toting tooling just became simpler with the NEW 'easy transport drop rack', providing gates on the ends to keep rods from sliding out and the ability to use the rig blade to pick it up from either side.

Other advantages of this NEW Geoprobe® tooling offering include:

- Ability to pick up with blade from either side
- End gates to secure rods
- Elimination of pins to keep table upright
- Tie downs available on all four sides
- Storage space for 1.25-1.75 AWJ center rods
- Larger table surface with area for sample liner cutting and area for prepping a secondary sample barrel (DT32 and DT45)
- Storage for pipe wrenches and other tooling on back of table during transport or while locating rack on job site with track machine
- Useable for all Geoprobe® track-mounted rigs with blade on back
- Additional parts available to customize rack



SCAN TO WATCH
Easy Transport Drop Rack



Preferred Rig for Air Rotary Work

For some air rotary drilling is a rarity, but for **EICHELBERGERS INC** in Pennsylvania it's a weekly occurrence using their 7822DTs. They've completed air rotary to 220 feet; they've drilled using 8-inch and 10-inch casing. On one project they set 10-inch casing to 60 feet and then air drilled 6-inch casing to 180 feet.

"We completed a gas pipeline project doing air rotary drilling for two years drilling 150- to 200-feet per day with 4-inch hammers," Chris Chronister, driller, said. "We just completed a job at a military base using air rotary with the 7822DT. We set 10-inch casing then drilled 6-inch casing down to 90 feet for a monitoring well on a PFAS study."

They find the versatility of the 7822DT to spin augers to bedrock then air rotary ideal for these projects. The ability to track through undisturbed areas, using the blade to move brush out of the way or transport air compressors to remote sites, contributes to choosing the 7822DT for air rotary jobs. They recently used it on a gas pad site coring rock using air.

"They wanted to see where the water was located so didn't want us to use water to remove the cuttings," Chronister said. "Using air, the core came out looking like it would if we were using mud."

They've deployed up to four 7822DTs on a job at a time and the clients have always been happy with the progress the 7822DT can accomplish each day.

"The 7822DT will do so many things. We have six conventional rigs, but our Geoprobe® 7822DTs can do everything they do plus air rotary, rock coring, augering, and split spoon," Chronister said. "We're able to set up on hole quickly, and if a tracked skid steer can get there, I can get the 7822DT there."

Drilling 10-inch air rotary with the 7822DT might rattle some bolts, but the backing of Geoprobe® service support provides Chronister confidence despite routinely being assigned their oldest 7822DT.

"When I've called in, I've become good friends with Bryan Lorenson and Roman Burrows," Chronister said. "If I'm back in the woods a mile and can't get the rig started, they've always been very good at helping me get from point A to point B. Geoprobe® always provides good support when you've got a problem."



Versatility and mobility make 7822DT go-to rig for completing air rotary projects.

Needing New Equipment?

We expect ongoing struggles to get raw materials and components in a timely manner as supply chains continue to be stressed. Add to this, nearly half of our machines scheduled for production in 2023 are already sold. You can understand why I recommend you don't wait to begin discussions about your 2023 equipment needs.

In order to best help you overcome your 2023 and 2024 equipment challenges, I encourage you... don't wait to get your order in!

One of our company objectives is to be honest in all our business. This includes not sugar coating delivery dates. We'll tell it to you straight, keep communication regarding progress flowing, and everyone on Team Geoprobe® will do everything in their power to achieve on-time delivery.

"Geoprobe® didn't fall behind on the build schedule so we were able to add capacity when we needed to and do more phase II, shallow well installations," said David Drayback, president of Envirotech Drilling Services LLC in Texas.



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.

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



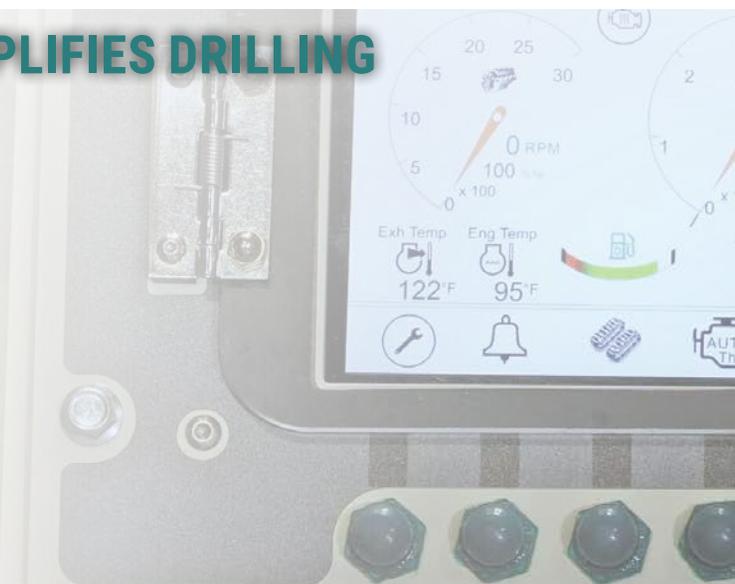
MD4 DISPLAY SYSTEM SIMPLIFIES DRILLING

"The screen tells you everything you need to know about the status of your rig like when maintenance may be needed or making adjustments to power.

— Christian Jackson, Engineer,
Burns Cooley Dennis, Mississippi

ACCESS IMPORTANT OPERATING INFORMATION SUCH AS:

- Maintaining DPF regeneration
- Enabling auto-throttle
- Monitoring hydraulic fluid temperature



SCAN TO WATCH
MD4 Display



Using 7822DT for all geotechnical drilling, simple rig operation earned new driller entry into 100-foot club after just a few months in the field. L to R: Kate Cosnahan, Martin Welch, Aaron Crowley, Shay Oliphant, Julie Oliphant, Brad Long.



Safety, Simplicity Contribute to Easy Learning Curve

As a project engineer with a Ph.D., Aaron Crowley desired to own his own company. So in May 2022 he partnered with Julie Oliphant, owner of Athena Engineering and Environmental, to launch a sister company **ATHENA DRILLING** to complete a range of geotechnical and environmental drilling for airports, municipalities as well as state and federal jobs.

When they researched their desired position in the Tennessee market, they gravitated to the 7822DT and its ability to perform both environmental and geotechnical drilling to align with the engineering services. They were also attracted to the safety provided by the controls on the 7822DT.

“When you run into an issue, it’s your natural instinct to let go. When you take your hands off the levers on the 7822DT, it stops,” Crowley said. **“Other machines aren’t designed that way. This feature makes it easier to train new users; in the instance they cannot hear your instructions, they are naturally inclined to let go of the levers and the rig stops.”**

Crowley credits the organization of the lever-based controls for an easy learning curve.

“I learned how to drill on this machine and within three to four months had drilled past 100 feet,” Crowley said. **“The simplicity of the machine coupled with know-how and understanding has gone a long way.”**

The 4-speed head on the compact, light machine eliminates a tractor trailer to haul a rig suited to complete direct push to rock coring. Quick removal of a couple of bolts to swap out options facilitates outfitting the rig to meet job demands, including all geotech drilling.

“I was initially skeptical the 7822DT would make rock coring production pace, but I believe it rivals anything else in the industry right now,” Crowley said. **“We’ve done 101-foot rock core with weight on bit controls. We hit refusal at 3.5 to 5 feet then cored 120-130 feet in a 10-hour day, using the Moyno 3L6 turned up about 1/3 of the way to run 800 rpm. It cut like a dream.”**

The 7822DT recently handled an I-65 Tennessee Department of Transportation roadway widening project. They completed 80 borings of varying refusal and termination depths, typically hitting refusal around 10 to 15 feet then coring through fill material to 30 feet before encountering bedrock.

“The 7822DT is exceeding our production expectations. If you take care of it and listen to it, it will tell you what to do,” Crowley said. “The machine will fit your need if you understand how to approach the project. We have used it for many tasks that might be considered risky, but it has completed those tasks successfully. If you operate it with care, the lifetime and longevity will be increased.”

The 7822DT has successfully completed every project for the fledgling engineering firm.

“It has proven to be very precise, like a razor blade. By using it carefully and skillfully, you can accomplish anything,” Crowley said. “However, if you hammer on it, you will dull it. Each project presents its own challenges, and you need to eat the elephant one bite at a time.”

While his goal is to eventually train a replacement and step back to manage day-to-day operations while someone else pulls the levers, for now Crowley contributes sweat equity to the startup company as driller.

“Obtaining my Ph.D. was never a guarantee, given my modest upbringing in a blue-collar family. I just happened to be in the right place at the right time and took the opportunity laid in front of me because of my work ethic. I have let hard work open doors but that cannot replace the valuable experience of someone who has drilled for 20 years,” Crowley said. “I know what it is like on both sides of an engineering project. It takes skill and knowledge to be a driller, and not everyone can be successful.”





Geoprobe® sonic rig and tooling prove profitable technology in Alaska. L to R: Travis Drewry and Steve Simas.

Establishing Economical Sonic Services

GEOTEK ALASKA began with a 54DT and environmental drilling as their bread and butter. Through the years the Alaska company has diversified by opening a second location – in Hawaii – and completing a 50/50 mix of environmental and geotechnical drilling. As the company has grown, they've sought opportunities to grow the technologies offered to clients – including sonic rotary drilling.

"We initially rented an 8150LS for a job on an Air Force base in Fairbanks, drilling 2-inch wells to 220 feet from December through January in -30 degree weather," Vojta said. "The 8150LS performed flawlessly in those temperatures. We had more problems with trucks and skidsteers than we did the 8150."

The crew sampled and set a well to 220 feet in a single shift then a second crew performed the surface completions and site preps.

"It was our first sonic project and it went well and completed under budget, and this was all possible because of the durability of the 8150 and the tooling," Scott Vojta, president, said.

They wanted to purchase the rig then, but were hesitant to spend that amount of money on a technology yet to be proven profitable in Alaska. But when Geoprobe® had an 8140LC in on trade, Vojta seized the opportunity to invest in sonic technology and understand where in their region sonic drilling made economic sense.

"For the soils in Fairbanks, it's conducive to use sonic to get to depth. If using auger, you potentially break your tool string or are not able to get cuttings to return to the surface and stall out. Direct push using an 8040 will meet refusal before depth is achieved. Thus you have to use a tricone bit to rotary wash and develop large amounts of investigation derived waste (IDW)," Vojta said. "Sonic technology can sample and set a well to 200 feet in a day. It's extremely fast and collects a large sample. If you do the water correctly, there's not a lot of IDW compared to rotary method."

As they've been establishing their sonic footprint, they've come to realize sonic drilling can reduce the dollar per foot as compared to direct push or conventional auger.

"Some people think sonic costs more to run, but cost wise per foot – when it works, it's less," Vojta said. "We're building a solid foundation of where it will work and clients like it. Our piece of the pie is growing."

He admits clients are curious but slow to warm to the new technology.

"Alaska is a big state with many soil types. Clients wrestle with proven drilling methods versus newer technology, but we are building their confidence level every day," Vojta said. "Every client has been happy it has met the scope of work. People have confidence in running the technology if we tell them the project is a good option for sonic."

They've been pleased with the rig's reliability as they've worked to grow their sector.

"The durability of the rig has been great. We've had very few issues in the field," Vojta said.

That durability extends to the Geoprobe® sonic tooling they run on the rig. They've primarily utilized the tried-and-true 4X6 sampling method, but recently purchased 8X6.

"Nothing touches Geoprobe® tooling – from the thread design, to the rod thickness, to the durability and the good price. Any drill rod we use, we use Geoprobe®," Vojta said. "We've had a very low failure rate with few issues in the field. It's extremely durable and runs great."



SCAN TO WATCH

8150LS Features



In-house Sonic Drilling Achieves Goals

In the environmental drilling industry for two decades, Scott Densteadt has seen it come full circle.

“When I started, all we did was drill hollow stem auger or mud rotary. Then direct push side of things really took off and became the standard. However, this limits achievable depths,” Densteadt said. “Now its coming full circle with more requests for drilling, but you want to collect the best lithological data possible and hollow stem auger is a crude method.”

A drilling supervisor for the geological services section in the Remediation and Redevelopment Division of Michigan Department of Environment, Great Lakes, and Energy (EGLE), he describes his job as “protecting the environment for the citizens of the state of Michigan.”

“We complete assessments in order to return Brownfield sites back to beneficial use like parks and new businesses,” Densteadt said. “We conduct environmental investigations statewide and provide written reports to our district staff.”

Recognizing sonic sampling provides a good lithological core every time in half the time as hollow stem auger, they conducted a study comparing how much the state was paying outside contractors for sonic drilling versus costs to add those services in-house.

“We determined we could do it ourselves for a cost savings,” Densteadt said. “We looked at other manufacturers, but our past positive working relationship and customer service along with a lower price point, enabling saving tax-payer money, steered the decision toward the Geoprobe® 8150LS.”

Densteadt and his team spent three days in Kansas participating in hands-on training with Geoprobe® Sonic Specialists Jed Davis and Joel Christy prior to delivery of their 8150LS.

On their first job in northern Michigan, the site was predominantly glacial til and sand with solvents coming from different sources. The team worked with the Environmental Protection Agency and the Army Corp of Engineers to complete vertical aquifer samples and soil samples. Geoprobe® Sonic Specialist Jed Davis joined the geological services team on site.

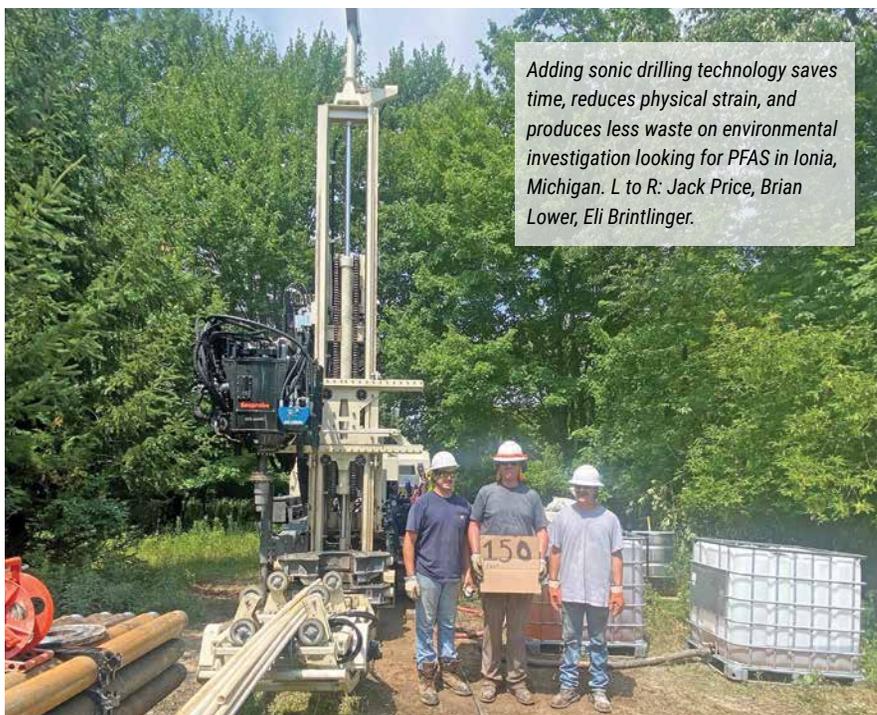
“His presence was priceless,” Densteadt said. “He helped us work through some site challenges.”

This included identifying a PFAS-free lubricant for the threads.

“Lots of pipe lubricants have PFAS in them and that was one of the contaminants in the water there,” Densteadt said. “We didn’t want to contribute to the detection levels so it took a lot of trial and error to eventually find a suitable lubricant.”

Ability to rely on Geoprobe® for assistance on simple things like lubricant to challenges like sampling techniques drove them toward the Geoprobe® sonic rig and tooling line.

“Geoprobe® and its service has always been top notch,” Densteadt said. “If you’ve got a problem, someone is always there to point you in the right direction.”



The team returns to the northern Michigan site soon to drill air sparge and injection wells.

They appreciate the speed at which the 8150LS can drill and collect the quality soil cores a geologist needs to do their job effectively.

According to Densteadt, compared to hollow stem auger drilling, the sonic rig has also:

- **Saved time achieving depth**
- **Reduced physical strain**
- **Produced fewer spoils**

“Coming from hollow stem auger, sonic drilling is way better and faster, especially in difficult formations where high-quality sampling is a priority,” Densteadt said.

Source for Sonic System: Rigs, Tools, Training plus Service, Support

Geoprobe® engineers are expected to get dirty – in the shops building equipment or in the field testing the latest innovations. This helps customers because they can actually talk to the people who build their machines, they know how to run them, and they understand their geographies.

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

Companies buying Geoprobe® sonic invest in a system – machine, tooling, training, and service and support – where one phone call gets you whatever you need, including legendary Geoprobe® support. This includes:



Jed Davis,
Sonic Specialist



Joel Christy,
Sonic Specialist

- **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.
- **EFFICIENCY...** Rod handler and indexing racks eliminate need to muscle large rods into place, reducing crew fatigue and increasing production.
- **PEACE OF MIND...** Two-year unlimited warranty on GV5 Sonic Head and standard Geoprobe® one-year unlimited hour warranty on machine chassis.
- **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.
- **OPTIONS...** Geoprobe® offers many options to set up the machine to best fit geography and operator's needs.
- **TRAINING...** Purchase of Geoprobe® sonic includes factory training on operation and maintenance of the machine.

CALL FOR SONIC RIG, TOOLING, and TRAINING: 785-825-1842



Post Your Used Rig on Geoprobe® Website: 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 YOUR USED RIGS ON GEOPROBE® WEBSITE



geoprobe.com/used

Greatest Invention

Primarily roaming within a 100-mile radius of Philadelphia, **TRISTATE ENVIRONMENTAL MANAGEMENT SERVICES** performs a broad range of environmental field services in New Jersey and Southeast Pennsylvania. Project Manager Ted Sobieski credits their “jack-of-all-trades” approach for allowing the 30-year-old company to stay in business through market fluctuations.

“For a company that’s as small as we are and has been around as long as we have, we’ve diversified our skill set to do a little bit of everything,” Sobieski said. “Limited access work is our niche.”

When drilling regulations in New Jersey changed, the company running “some of the oldest second generation Geoprobe® rigs” sought to provide broader services to their existing clients but were limited without auger capabilities or a larger percussion hammer.

“We’d been running a 5400 and 4200 day-in and day-out for years. However, there’s a limit to what you can do with those types of machines,” Sobieski said. “We wanted to maintain our limited access footprint but also be able to install shallow auger wells and prepack wells through 3.75 rods to 30 feet so when we were working in contaminated ground we could minimize cuttings.”

The 6712DT proved to be the solution to broadening their capabilities within a compact platform.

“It’s not one feature on the 6712DT, but the combination to do so many things in one compact rig. We can push to significant depths, have the ability to auger, and flexibly switch back and forth. It’s the whole package. It’s a versatile machine in a well-engineered, compact platform,” Sobieski said. “Geoprobe® rigs are well engineered so I expected the 6712DT to be an outstanding machine. We expected perfection and got it. Geoprobe® is the ‘Cadillac’ of subsurface exploration.”

On a fairly standard dry cleaner job, completing delineation prior to remediation, they planned to install prepack wells to minimize cuttings. However, clay and moisture content created too much wall friction to be able to drive 3.75 rods, so the team switched to augers.

“With the 6712DT we had the capability to seamlessly switch from one drilling approach to another to get the job done,” Sobieski said. “We were able to make a change of borehole advancement method on the spot.”

For Sobieski, the 6712DT compliments capabilities of their team, allowing them to be an even stronger, more flexible company.

“Our company has always survived by being able to fill different niches and be nimble to react on site to changes in job scope. The 6712DT further advances the ability of our people to be flexible in their thought process to find solutions to problems,” Sobieski said. “As a company, we have gone through many iterations and at one time had full-size, conventional rigs. After the progression of Geoprobe® rigs, I don’t know why you would have a conventional rig when you can have the same power in a compact platform.”

Their projects also include fuel oil and pesticide investigations. On some of them PFAS has become an ancillary issue or even a major component. For all their jobs the past 15 or 20 years, they’ve exclusively used Geoprobe® tooling.

“We’ve been around and run Geoprobe® rigs for such a long time that we repeatedly found knockoff tooling to be less refined – from heat treating to fit and finish. Geoprobe® has quality machining using defect-free steel and heat treating for a more durable product,” Sobieski said. “All the thought put into tooling is innovative – the screenpoint sampler, closed point MC5 sampling, dual tube – all bright ideas from engineers in the shop that make their way to the operator to use.”

On PFAS investigations they’ve used 1.5-inch rods, MC5, and screenpoint samplers.

“In our experience, screenpoint accomplishes vertical delineation without putting in multiple depth zone wells,” Sobieski said. “We literally can accomplish screenpoint sampling in a single day in the field versus multiple-day installation events.”

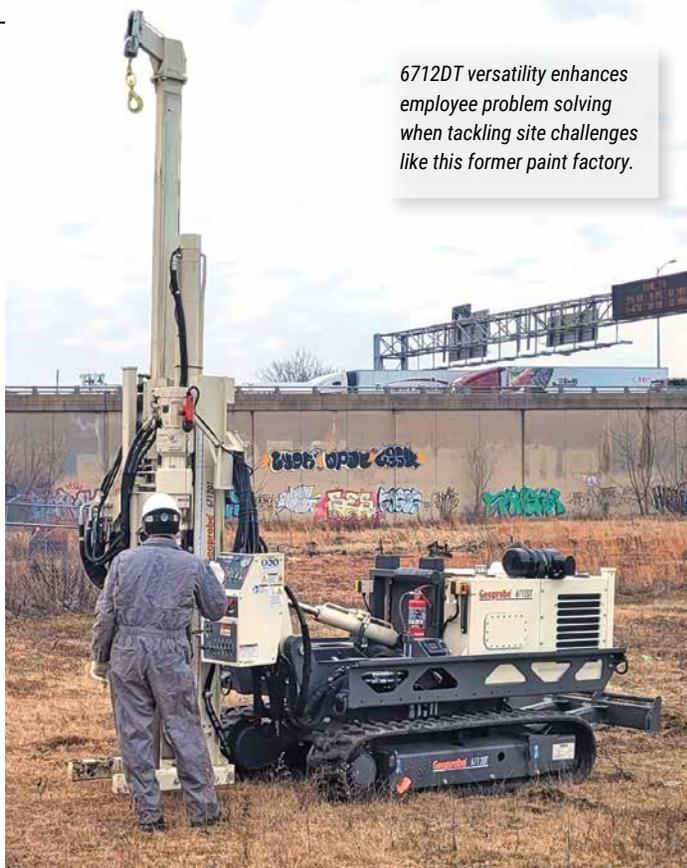
He attributes the engineering and manufacturing behind new – and old – Geoprobe® products for continually producing profit.

“We are 29-year users of Geoprobe® equipment, and it’s a testament to brilliant engineering that we’re still using machines we first purchased, which doesn’t negatively affect our ability to be competitive from a footage standpoint,” Sobieski said.

Reflecting on decades using Geoprobe® equipment reminds Sobieski of TV shows presenting the 100 greatest inventions of all time.

“I rank the Geoprobe® system and the approach to direct push technology as one of the greatest inventions ever. It certainly revolutionized our business and the entire environmental industry. Not only was the application of the technology groundbreaking, but the engineering of the machines is exceptional. We have run other machines and there’s no comparison,” Sobieski said. “Geoprobe® revolutionized the environmental industry. They’ll do a Netflix series on it 20 years from now.”

6712DT versatility enhances employee problem solving when tackling site challenges like this former paint factory.



Geoprobe® Groundwater Sampling Tools and Liners Tested Nondetect for PFAS

As PFAS gains momentum as a challenging, developing target for environmental investigations, direct push advancement of tooling proves to provide advantages by eliminating churning contaminants with augers and ensuring discrete nature of samples. Geoprobe® made its name and continues to innovate these high-quality sampling tools and techniques, making it feasible to easily, efficiently, and profitably achieve PFAS project goals.

“The job couldn’t have been done with a conventional machine or other method of drilling. SP16 and SP22 are proven sampling methods,” Mark Zork, then president of Technical Drilling Services in Massachusetts, said of a profitable two-year PFAS investigation.

To eliminate concern regarding cross contamination, Geoprobe® tested a range of groundwater sampling tools and systems, including:

- Hydraulic Profiling Tool (HPT) system
- 175GWP groundwater profiling system
- Screenpoint 16 (SP16) groundwater samplers
- Screenpoint 22 (SP22) groundwater samplers
- 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 PFAS TESTING RESULTS:
geoprobe.com/PFAS



SCAN TO WATCH
Innovation of Screenpoints



SUCCESSFUL PFAS SAMPLING WITH SCREENPOINT

“SP16 and SP22 are proven sampling methods. 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.”

— Mark Zork, Retired-president, Technical Drilling Services, Massachusetts

GROUNDWATER SAMPLING OPTIONS INCLUDE

- SP16 – used with 1.25- or 1.5-inch probe rods
- SP19 – used with 1.75-inch probe rods
- SP22 – used with 2.25-inch probe rods as standalone or in conjunction with DT22 soil sampling system
- Latching systems available for SP16 and SP19 isolate screen from water in drive rods above SP drive head.

Rig Speed, Ease Expands Market

Focused on vapor intrusion, **H&P MOBILE GEOCHEMISTRY** is one of few companies in their region of California to offer a one-stop-shop for completing vapor probe installation, soil gas sampling, and analyses.

“We’ve been specializing in vapor intrusion since inception 30 years ago,” Eric Corson, field services manager, said.

The majority of their work involves shallow drilling to around 30 feet. So when they sought to upgrade their drilling rig, they focused on their need to complete work indoors and at remote locations, not on the power of a bigger machine.

“The 6011DT hit all our needs while providing more power than the equipment we’d used in the past,” Corson said.

They had previously relied on an older, truck mounted machine. The small footprint, off-road ability, and direct push capabilities of the 6011DT were big selling points.

“Previous field work was limited by our ability to access the site, so the tracks on the 6011DT were appealing. It’s much more versatile coming from a truck-mounted machine,”

Corson said. “We also have a lot of EPA emission regulations for truck-mounted equipment, and with the 6011DT we didn’t have to worry about that.”

The biggest surprise since receiving the rig has been how simple it’s been to operate.

“It only took a couple of trips to get used to running the rig. It’s fairly easy to operate and very quick,” Corson said.

“It saves a ton of time compared to what we were used to using.”

They appreciate the LED display providing cues to understand how to operate the rig and correct errors, enabling troubleshooting while in the field. And while their current focus is on shallow direct push projects, they value the opportunity to add tooling and expand the use of the 6011DT in the future.

On a recent project they completed continuous core samples and then installed permanent vapor probes for future sampling events to 25 feet at 30 locations.

“The drilling was definitely easier, even in condensed clay where its typically hard to manage soils. We adjusted to those conditions quickly,” Corson said. “The 6011DT took a day off what we typically need for this type of job.”

By exceeding their production expectations, the 6011DT positions them to take on larger projects and in remote areas.

“With the older, slower equipment we limited ourselves on linear feet per day. The 6011DT opens us up to bid bigger jobs,” Corson said. “The accessibility also opens more opportunity to bid on jobs.”

Now capable of completing more feet in less time, accessing confined spaces, and operating the rig with ease, the company project pricing can be more competitive.

“When bidding jobs and estimating times, we feel we can be more aggressive,” Corson said. “Thanks to the rig’s speed and ease, we won’t need buffer time we typically included in scheduling.”

Considering Geoprobe® the standard in direct push equipment, they appreciate the quality of the 6011DT as well as the tooling used on their projects.

“The quality is excellent, and when you order tooling, you know it’s going to work and be available when you need it,” Corson said. “The ability to interchange tooling components easily is really nice as well.”



Small footprint and efficient production of 6011DT increases range of direct push jobs considered.

Geoprobe® Implants Make Soil Gas Sampling Easy

Did you know the first Geoprobe® machines and tools were designed specifically for soil gas sampling? Our capabilities in soil and groundwater sampling were follow-up developments to our initial soil gas sampling systems.

In addition to our early soil gas sampling systems designed to “grab” samples from one-time sampling events, we also developed a series of soil gas implants left in the ground and used for repeated soil gas sampling events over time.

Soil gas implants are convenient and inexpensive devices for long-term soil gas monitoring, air sparging, and groundwater sampling. The double woven, stainless steel wire screens can be inserted down the bore of a probe rod and anchored at depth.

Geoprobe® permanent soil gas implant advantages include:

- Placed through bore after rods have been driven to depth
- Variety of implant lengths to suit the application
- Designed to fit a wide array of tubing materials and sizes
- Can be set at any depth attainable by soil probe (100+ ft. [30 m])
- Convenient and inexpensive devices for long-term soil gas monitoring, air sparging, and groundwater sampling
- 0.0057-inch (0.15 mm) pore screen size made entirely of stainless steel
- For use with 5/8-inch and 1/2-inch ID rods



DOWNLOAD SOP:
geoprobe.com/SoilGasImplants



SCAN TO WATCH
Innovation of Soil Gas Implants



SCAN TO WATCH
Big Power of Small 6011DT



6011DT PROVIDES BIG POWER, SMALL PACKAGE

“The 6011DT hit all our needs while providing more power than the equipment we’d used in the past. It saves a ton of time compared to what we were used to using.”

— Eric Corson, Operations Manager, H&P Mobile Geochemistry, California

6011DT SLIPS INTO TIGHT SPACES WITH POWER OF GH63 PERCUSSION HAMMER

- 48-inches wide, 4,800 lb direct push only platform, 44 horsepower engine
- Uses 5-foot tooling with option for low clearance cylinder
- Rear stabilizer blade works with Geoprobe® drop racks while load-sense hydraulics reduce fuel consumption
- Well suited for Direct Image® logging tools and cone penetration testing



High Resolution Site Characterization (HRSC) provides accurate, real-time data to craft effective remediation strategy.



Extensive HRSC Career Clarifies Advantages

Progressing up the ladder from consultant to senior project manager, David Heicher found himself spending more time managing people and budgets and less time in the field.

"I'd been in the business 12 years and had a young family so felt stuck," Heicher said. "I had my resume online and got a phone call from a guy who was looking for people to train on Membrane Interface Probe (MIP). I looked into the technology and thought 'if this works, this is the wave of the future and where assessment needs to go.'"

Heicher caught that wave spending 300 days a year traveling the United States conducting High Resolution Site Characterization (HRSC). When a drilling company in Australia who had purchased MIP discovered they needed an experienced operator, he and his family rode the wave across the ocean.

"I was the only one who knew how to run the system and having been on the consulting side, I knew what clients needed," Heicher said. "I spent two years doing projects and moving into business development, teaching people about the technology and generating awareness across Australia."

When the family decided to return to the U.S., he seized the chance to launch a Southeast presence for a company doing HRSC work. As the company grew he trained operators and returned to business development. Along the way he considered starting his own company.

"January 2022 I started **GEOIMAGING SYSTEMS** as a single owner/operator company," Heicher said. "I had a good 2022, but in 2023 I've already done half of what I accomplished all 2022."

His extensive experience with HRSC has put him in some interesting situations. On one project he found himself surrounded by cattle in a cow pasture, which had formerly been used as a landfill for an HVAC component production facility. Another project had him navigating dense woods and hilly terrain on a UTV to conduct an MIP investigation of a trichloroethylene (TCE) drum burial site with a creek nearby exhibiting cVOC impacts. For his first GeoImaging project he wheeled a dolly rig and 3-foot tooling into the lower-level of a multi-story apartment building. He sat in the kitchen floor of the vacated apartments in search of an unidentified water source suspected of causing foundation issues and instability, studying the hydrogeology and lithology in efforts to save the sinking building.

For his current work he uses Geoprobe® Direct Image® logging tools — Membrane Interface Hydraulic Profiling Tool (MIHPT), Optical Image Profiler Hydraulic Profiling Tool (OIHPT) and Hydraulic Profiling Tool (HPT).

"I'm a big proponent of Geoprobe®, I know the strength of the tooling and technology," Heicher said. "Over almost 20 years, I have 'beta tested' many iterations (small and large) of Geoprobe® Direct Image® technologies, and I've been very impressed with the dedication the Direct Image® team has shown in making these tools more robust, accurate, and user-friendly."

Not surprisingly given his extensive background, he's also a big proponent of HRSC for its ability to provide so much more data.

"Conventional monitoring wells are for monitoring, not for site characterization. They're holes in the ground that lie to you," Heicher said. "With MIP you get 20 readings per foot. Conventional sampling you might take five soil samples per boring, then set a 10- to 20-foot monitoring well to collect groundwater, which then provides one data point."

Data combined with years of experience provide proof of contamination's inconsistencies.

"Concentration of contamination isn't stable throughout a whole screen level. There are lenses and layers," Heicher said. "Conventional methods are like a black and white TV with an antenna — everything is fuzzy. You don't get dots per inch and clarity HRSC can provide."

Through the years he's identified two consistent advantages of completing HRSC assessment.

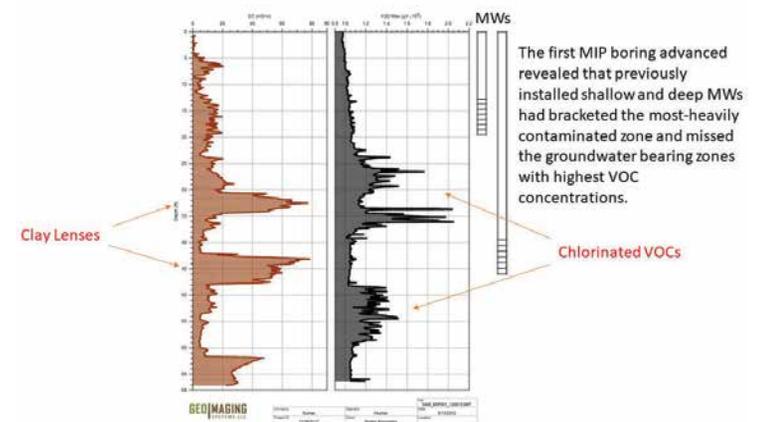
Accuracy Facilitates Effective Remediation

Heicher finds that on 80 to 90 percent of sites, the first Direct Image® logging tool boring changes the entire site conceptual model.

"That's the power of the tool. Direct Image® tools just make sense to use so that a High Resolution Conceptual Site Model can be developed quickly, effectively, and accurately," Heicher said. "Most of the time monitoring wells haven't been placed at the right depth or location. Generally most of the contamination is below the well."

On a World War II Air Force base in Australia, monitoring wells had been installed where tanks were once placed on ramps to rinse out engine compartments. Some of the screens stopped at 20 feet. A few were deeper at 50 feet. The deeper ones continued exhibiting contamination despite remediation.

"On the first boring, we discovered contamination at 25- to 27-feet below ground surface and 47 to 60 feet. The dozens of monitoring wells were installed at insufficient depths where the worst of the groundwater contamination existed," Heicher said. "HRSC crunches time scale down and moves to more effective remediation, faster."



MIP log from World War II Air Force base in Australia

Real-time Data Drives Dynamic Work Plan

Utilizing Direct Image® logging tools enables decisions directly influencing the investigation to be made in the field. In Heicher's experience this facilitates obtaining the most pertinent data required to meet the project objectives.

For example, conventional investigations had identified contamination at the top of a confining clay layer at 20 feet on a TCE site near the coast of South Carolina. Despite injection work, elevated concentrations of TCE persisted in their monitoring wells. Heicher spent a day and a half conducting MIP logs, discovering lenses and layers.

"We didn't detect any contamination in the clay layer, meaning the previous injections had worked, but found pockets elsewhere," Heicher said.

Using the real-time data, the remediation team was suited up to immediately perform injection into the zones where MIP identified contamination.

"Assessment identifies exactly where to focus efforts and reduces costs and time for actual remediation," Heicher said. "Decisions can be made in the field to help drive the field investigation so horizontal and vertical delineation of subsurface contamination can be achieved in one mobilization."



NEW Logging Tool Characterizes Saturated Soil Porosity: Nuclear Magnetic Resonance (NMR)

Nuclear Magnetic Resonance (NMR), a widely used borehole wireline logging technology in the petroleum industry for characterizing hydrocarbon reservoirs, has been adapted for hydrological investigations within monitoring wells and open boreholes. During the last two decades, technological innovations have significantly increased the efficiency of NMR as a field characterization approach by reducing tool size (from more than 6 inches down to 1.75 inches in diameter) and measurement time (from 15 minutes to less than 90 seconds per interval). Recently, Geoprobe Systems® in conjunction with Vista Clara Inc., Washington, has developed the DP NMR Dart probe for 2.25-inch direct push applications.

NMR works by using an induced magnetic field to affect and align the nucleus of the hydrogen atoms within water molecules. A high-voltage electrical current is pulsed through a coil of shielded wire at the specific resonant frequency of hydrogen nuclei. This 'excites' the nuclei, causing them to realign with the induced field. Next, the current is turned off; as the nuclei 'relax' to the original state, they generate an electromagnetic response signal that is measured on the same coil that was used to excite them.

Because the recorded NMR signal is emitted directly by hydrogen nuclei in water, it directly measures the total amount of water within the measured zones and the relaxation rate of water molecules, the latter of which is sensitive to the size distribution of pore spaces. Smaller pore sizes result in short T2 relaxation times, larger pore sizes result in longer relaxation times. These measurements allow us to measure the volumetric water content within the formation, as well as estimate the subfractions of mobile, capillary, and bound water.

NMR has been shown very effective for estimating critical aquifer properties governing the flow and storage of groundwater, such as porosity and permeability. These properties have been of great interest to regional water boards looking to determine areas of high groundwater storage capacity where managed aquifer recharge is being considered. Porosity (which under saturated conditions, is directly measured by NMR) can also greatly affect the bearing capacity of soils which can be of great geotechnical interest for construction as well as within mine tailings.

To deploy the DP NMR Dart via direct push, 2.25-inch empty casing is driven to depth with an expendable point. Upon reaching terminal depth, the NMR Dart with logging cable attached is lowered to the bottom of the rod string using extension rods. After adding water to the rod string to prevent sediment clogging, the outer casing is retracted to expose the Dart probe to the formation. NMR logging is performed as the rods are retracted back to the surface. Measurements of the NMR Dart are obtained at 5.5- and 6-inch diameter surrounding the Dart probe, well beyond the 2.25-inch driven casing disturb zone.



DP NMR Dart Applied to Kansas Geological Survey Research Site

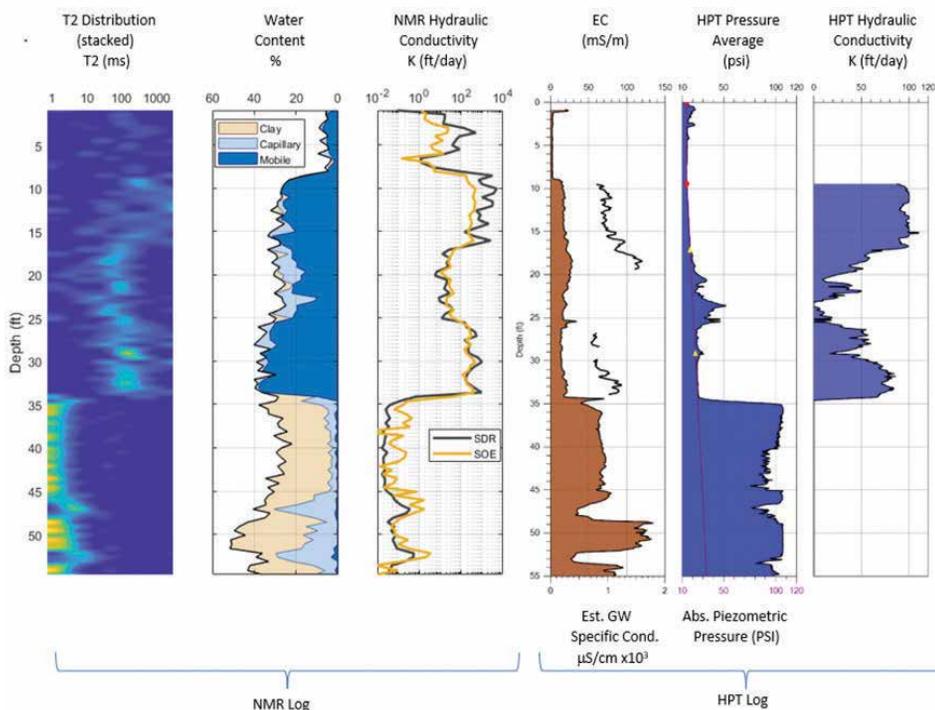
The DP NMR Dart probe has been applied at a Kansas Geological Survey research site (LRS, or Larned research site). LRS, located in the Arkansas River valley near the city of Larned in west-central Kansas, was established for studying stream-aquifer interactions and riparian zone processes. The shallow unconsolidated subsurface at the site consists of three major units: the Arkansas River alluvial aquifer at the top, a clay-dominated confining layer in the middle, and the High Plains aquifer (HPA) resting on Pennsylvanian bedrock (shale and limestone) at the bottom.

A Hydraulic Profiling Tool (HPT) log and DP NMR log (1.5-feet apart) display very comparable lithology at LRS (see log at left). At the water table (9 feet), the NMR-measured water content shows an abrupt increase. The HPT indicates the alluvial aquifer contains a significant amount of low-permeability, fine-grained sediments, as displayed by the increase of injection pressure between depth 17 and 26 feet. Within the same zone on the NMR the percentage of capillary water increases while mobile water percentage decreases, indicating smaller pore size. The estimated hydraulic conductivities (K) show similar general trends between NMR and HPT, however, the range of K on NMR is orders of magnitude above and below what is possible with HPT.

In the middle clay zone, at 47 to 48 feet, the percentage of capillary water increases while the percentage of clay water decreases, corresponding to the decrease of EC and injection pressure in the HPT log. Similar observation can be made at 52 to 53 feet.

Importantly, the application of DP NMR at LRS illustrates its great potential for characterizing low-permeability zones. The HPT has a low detection limit for hydraulic conductivity and cannot provide estimates in the middle clay layer. The NMR, by contrast, provides effective characterization of water in both large and small pores.

"Future works should be performed to establish the use of NMR in low-permeability formations," said Gaisheng Liu, associate scientist at Kansas Geological Survey.



Geoprobe® Innovation Influences Water Well Industry

Geoprobe® continually advances the drilling industry, designing and manufacturing equipment to make jobs faster, easier, and safer.

Beginning in 2017, Geoprobe® began focused efforts to release a new line of rigs for use in the water well, geothermal, and cathodic protection industries, ensuring durability and easy maintenance.

Customer input inspires ongoing investment in innovation to continually refine a range of Geoprobe® and DRILLMAX® drill rigs. Constant contact with drillers in the field gleans knowledge on challenges faced and proposed solutions. This atmosphere of innovation and driller feedback fuels our work to make rigs built in 2023 and 2024 better than they were a few weeks or months ago.

 **VIEW COMPLETE LINE OF RIGS:** drillmaxrigs.com/DRILL-RIGS

DRILLMAX®

 **PRODUCTS SPECIFICALLY DESIGNED FOR WATER WELL AND GEOTHERMAL CONTRACTORS**



Existing relationship with Geoprobe® was convincing factor when choosing a DRILLMAX® DM250 with torque to handle augering 14-inch hole through cobble and clay while still sized to fit into tight spaces.



NEW DM250

Drillers across the country — using the capabilities of the DM250 to handle 20-foot drill pipe without requiring a class A/B CDL — have been fueling our engineers with suggestions for improvements. In ongoing efforts to make drilling faster, easier, and safer the DM250 on Ford F600 incorporates a number of those requests, including:

- **INCREASED REAR OUTRIGGER STROKE by 10 inches, providing more clearance to push and pull conductor pipe.**
- **STANDARD HYDRAULIC TABLE (see below)**

BETTER GROUND CLEARANCE provided by pads sitting 4.5-inches higher and split shaft sitting higher, improving ability to access job sites.

IMPROVED HYDRAULICS including:

- **increased cooling capabilities**
- **adjustable holdback improving control of down-the-hole hammer when driving casing and finer adjustments to see formation change when completing gravel pack wells**
- **improved auxiliary hydraulics for increased flexibility when choosing rig options**



FASTER DM250 HYDRAULIC TABLE

- **Bushing closest to mast incorporates hydraulic movement.**
- **Eliminates chattering pins in coarse sands and gravel for quieter job site.**
- **Table slips to clamp and hold up-to 6-inch steel casing tight.**



SCAN TO WATCH DM250 Hydraulic Table



Going Distance with Geoprobe®/DRILLMAX®

Getting their start in 1992 doing mostly environmental work at gas stations, **SHEPLER WELL DRILLING** does 75 percent environmental and 25 percent residential work. Lately a lot of their work involves production wells and recovery wells in oil fields. Running predominantly Geoprobe® rigs and larger rotary rigs, Randy Shepler, president of the Michigan company, sought a solution to their mobilization woes.

“I bought the DRILLMAX® DM250 for environmental and residential because we travel so much,” Shepler said. “Another manufacturer stopped by and had us look at one of theirs, but I decided to go with what I know. Geoprobe® offers superior service and that means a lot.”

His history and experience with Geoprobe® tipped the scales to DRILLMAX®.

“I knew we would have service after the sale and would be able to get questions answered. They’re available when you call, and you’re not spending time playing phone tag,” Shepler said. “I’ve had a few questions and needed to order some tooling. We had a hydraulic leak when I first got the rig, and they came right out and fixed it. That’s why you buy from Geoprobe®/DRILLMAX® — they’re really helpful.”

They primarily use the DM250 installing 5-inch PVC residential wells and some deep environmental 2-inch wells. He’s surprised by the amount of torque on the DM250.

“They say it has a lot, but it’s more than anticipated. We use a 14-inch auger to set the conductor, and at this time of year, it’s all frost, but I have torque to complete the work,” Shepler said. “We’ve done 80-foot to 160-foot wells, used air rotary recently on a landfill, and augered 14-inch hole through cobble and clay to set a conductor on top of bedrock. I was prepared to mud rotary drill in conductor, but the rig had no problem turning the 14-inch auger.”

For Shepler, the rod handler and operation ease provides an advantage for training the next generation of driller.

“The DM250 is small so it isn’t intimidating and is easy to run, but it can still do everything we need a big rig to do,” Shepler said. “I’ve got my new guy running it, and it was easy to train him on.”

Shepler says the purchase has met expectations and then some — including easing their travel troubles.

“It’s nice to hop in a small rig to drive long distances,” Shepler said.

NEW DM650

Large Residential • Light Commercial • Farm Irrigation
WATER WELL AND GEOTHERMAL DRILLING

DRILLMAX® DM650 offers options to outfit for air or mud with power to pull and push required for deeper drilling.

Drillers seeking rotary drilling options for larger, deeper wells in tough geologies choose the DRILLMAX® DM650 offering power of 28.5-foot stroke and 40,000 lb pullback. Additional advantages, include:

MUD DRILLING setup with 6X8 piston pump along with 4X3 centrifugal pump with ability to run either pump independently or supercharge piston with 4X3.

AIR ROTARY setup with up to 1070 CFM/350 PSI air compressor.

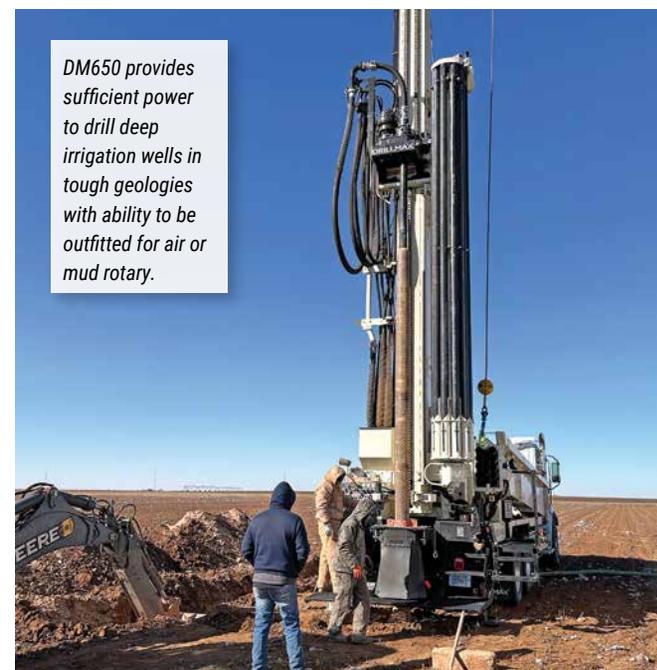
2-SPEED ROTARY DRIVE provides 8,000 ft-lb rotational torque and 200 rpm with 3-inch spindle thru bore.

SIDE SHIFT TOP HEAD BOTH DIRECTIONS with 39 inches of total travel to work with carousel and clear path along centerline.

ROD CAROUSEL capable of backfeeding while running drill pipe frees helper to complete other site chores. Options available to accommodate preferred drill pipe size.

TABLE ASSEMBLY hydraulically retracts and is easily accessed from driller's platform, providing up to a 24-inch opening and plenty of room to weld well casing. Various slip sizes available for drill pipe or casing.

DM650 provides sufficient power to drill deep irrigation wells in tough geologies with ability to be outfitted for air or mud rotary.



Power to Pull, Push

Growth east of Burnet, Texas, has Robbie Barnard owner of **J&J WATER WELL & WINDMILL SERVICES** concerned whether he's equipped to drill the 1,000-foot deep wells.

"The DM650 capabilities caught my eye, and its similar operation to my current rig means I wouldn't have a huge learning curve," Barnard said.

He perched on the DM650 at the National Ground Water Association show, taking in every inch of the new rig.

"What impressed me most was the engineers stuck to what has proven to work — manual controls," Barnard said. **"Manual valves mean not much to go wrong, and you have the ability to stay safe and confident it will work."**

He appreciates the DM450 and DM650 share a similar simple control center with everything within reach.

"The controls on the helper side and extra rack for them to stand on is also an impressive addition," Barnard said.

He was also impressed by the attention to detail engineers placed on simplifying fieldwork.

"The way they built the breakout wrench, they actually put handles on it. It's the little luxuries that make our day easier," Barnard said. "I looked at all the rigs there and routing of plumbing and hoses on DM650 are very clean."

Mark Kelly of **EMERALD COAST** in Alabama concurred.

"Man, I love the DM650. It looks like it's built well," Kelly said. **"I appreciate the design of the new mud pump and the amount of power it has. It's a very nice, heavy-duty machine."**

Kelly believes it would help get a lot more of his 4- to 12-inch domestic farm and sprinkler pivot wells completed.

"It's much faster, heavier, and has more pull down," Kelly said. "I could do jobs a lot faster."

Other features catching drillers' eyes include:

- **Ample power, both on and off the road**
- **Increased speed and efficiency running multiple functions without losing hydraulic power**
- **Speed and labor savings of the rod carousel**

4.5-INCH OD DRILL PIPE NOW AVAILABLE

Engineered to withstand the bigger, deeper work performed by the NEW DM650, the NEW 4.5-inch OD DRILLMAX® drill pipe incorporates a high-strength, lightweight mid-tube between heat-treated, alloy steel ends. Wrench flats are extended to 6 inches for heavy-duty breakout wrenches, holding forks, or irons. Designed to withstand repeated loading and unloading, all DRILLMAX® drill pipe features a proprietary stress relief groove.

MAYHEW REGULAR – MORE THAN 15% LIGHTER. MORE THAN 15% STRONGER. MORE THAN 30% MORE FLOW CAPACITY.

Multiple sizes available in 20-foot length.



SCAN TO WATCH
DM650 Overview



FACTORY SERVICE CENTER

Factory Refurb Renews Valued Asset

With six offices across four states — Kentucky, Illinois, Tennessee, and Connecticut, **CHASE ENVIRONMENTAL GROUP INC** provides primarily environmental field services and remediation. They increasingly subcontract drilling services for other companies out of their Kevil and Louisville, Kentucky, and Springfield, Illinois, offices.

“We started as Chase Environmental Group in 1993 primarily as a consulting firm but have evolved, with the market, into being more focused on field services,” Todd Mills, operations manager, said. “We also handle a lot of transportation and disposal of radioactive materials.”

While they appreciate the power of their three 7822DTs, they depend on a simple, durable 6620DT for a number of jobs.

“The 6620DT has a smaller footprint, is more agile, and its simple operation makes it ideal for those 30-foot direct push jobs,” Mills said. “The 6620DT is absolutely the best thing ever made for that. In our minds it can’t be replaced by anything currently sold.”

Even though the 6620DT isn’t as powerful or able to run augers as well, they put it in a lot of places their 7822DTs can’t go due to the smaller footprint and lighter weight. So, rather than put money toward a new 7822DT, they chose to have a Factory Refurbishment completed on their 6620DT.

“In our minds, the flexibility the 6620DT offers makes it worth the expense and effort to have it refurbished,” Mills said. “We can get into tighter areas and have the same probing power as a 7822DT, which makes the 6620DT a valuable asset.”

Their dependence upon the 6620DT meant the rig was functionally and visually showing its age.

“It didn’t have any major issues, but was developing lots of little issues – wires pinched or broken and worn hydraulic hoses – and we were bypassing things to overcome issues. All the little stuff was adding up to make it less than reliable,” Mills said. “It just looked worn out, and we try to maintain a certain level of corporate image.”

Everyone in the company has been pleased with the Factory Refurbishment process.

“The communication was great. Whether it was unanticipated items discovered during the process or things that were anticipated that didn’t need to be addressed, the information kept flowing,” Mills said. “When we sent it to the Factory Service Center, it had been well loved. Now the rig looks fantastic and the performance has been everything we expected it to be. Looks almost like its brand new. We’re hoping to get another almost 20 years out of it.”

Mills always had confidence he could depend on Geoprobe® to provide top support and service.

“Geoprobe® is always spectacular to deal with,” Mills said. “The customer service is second to none and the service department guys knock it out of the park every time.”

SOUTHEAST SERVICE CENTER

Expert Service Technicians Provide Peace of Mind

Providing Florida with geotechnical and environmental drilling, materials testing, remediation system installation and maintenance, and ground penetrating radar services, the 44-year-old **IMPERIAL TESTING & ENGINEERING** relies on the Southeast Service Center (SESC) in Ocala, Florida, for everything from hammer exchanges to regular servicing.

“It’s nice to take our rigs to a Geoprobe® shop versus someone not as familiar with the rigs,” Randy Duncan, consultant, said. “With it being so close, it’s easy to get in and out and have no worries about whether the service technician knows what he’s doing.”

So when one of their rigs needs a repair, they give Todd Ewing, rig specialist, a call. They even had a repair and service completed on a used 5400 they purchased, removed from truck, and placed on a skid platform. He appreciates the responsive, helpful SESC crew, even when calling for the fourth or fifth time with an issue.

“They’re always willing to help us out. It’s rare to wait on a call back,” Duncan said. “Someone usually answers the phone, and we can talk directly to the service technician right away.”

Traversing the state to tackle their work, the SESC being just a phone call or a few hours away provides Duncan peace of mind. He



Geoprobe® rigs used for environmental and geotechnical drilling run smoothly with help of Southeast Service Center in Florida.

also acknowledges the SESC team attacks challenges completely understanding the critical role the rig plays to company success.

“When we do have a rig in for a repair, they understand we’re not just paying money to have it repaired but also losing money by the rig not being out in the field,” Duncan said. “They respect the fact that we need to get equipment back out to make money, and they do a good job of keeping things out in the field working.”

Centerpoint Connected Critical to Company Communication, Schedule

Starting out in Mississippi in the ‘90s with a couple auger rigs, the **WALKER HILL ENVIRONMENTAL INC** fleet now includes 27 Geoprobe® rigs — ranging from 7822DT combination drill rigs to 8150LS sonic drilling rigs — across their offices in four different states. Responsible for ordering all parts for the fleet, Bo Barnes immediately signed up for the Centerpoint Connected customer portal when Geoprobe® service technicians suggested he check it out.

“From Centerpoint Connected, I can review parts ordered, look at notes the service guys put in, and see where parts or tooling are in the shipping process,” Barnes said.

Logging onto Centerpoint Connected if not daily then at least three or four times per week, Barnes now considers the customer portal critical to their operation.

“If we’ve got a machine in the field or at the office, I can let our mechanics know what Geoprobe® has talked to our driller about. That helps us diagnose problems with the rigs,” Barnes said. “A lot of times the driller will get something fixed in the field to keep working on the job, so the service notes in Centerpoint Connected serve as a reminder there’s still something more we need to do to resolve the issue.”

The ability to see notes to know what needs repaired along with tracking parts shipments improves communication not only with their own mechanics but also their scheduler.

“Geoprobe® is the only company we deal with on rigs and parts who has provided me the ability to look and see what’s going on with machines, tooling, and parts,” Barnes said. “If we have a piece of equipment down, I can look it up in Centerpoint Connected to see when parts will be in and communicate with our scheduler accurate dates when the rig should be ready to return to the field.”

Ability to connect their company unit numbers with the rig serial numbers within Centerpoint Connected also smooths communication with Geoprobe® service technicians.

“Every Geoprobe® we own is listed in there by our unit number associated with the rig’s serial number so we can easily communicate regarding a specific rig,” Barnes said. “The service guys at Geoprobe® can look up a rig by our unit number, or I can look to see what the specific serial number is relative to our unit number.”

For Barnes, Centerpoint Connected customer portal is just another way Geoprobe® provides industry-leading service.

“Your guys can give step-by-step instructions to repairs unlike anyone else we deal with,” Barnes said. “Geoprobe® has the best guys out there and Centerpoint Connected is just an added plus to see what’s going on.”



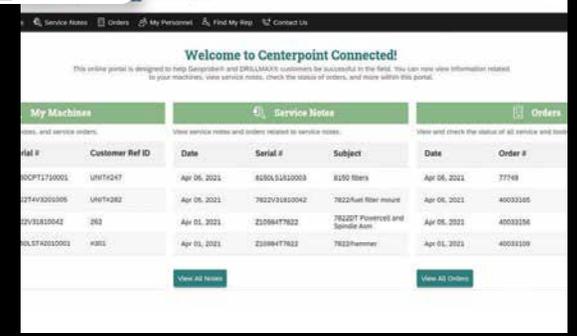
SCAN TO WATCH
Factory Refurb Timelapse







SCAN TO WATCH
Centerpoint Connected Value



- find facts quickly: > machine records > service notes > tooling/service orders
- store own machine notes

SIGN UP FOR FREE:
geoprobe.com/CP



Back to Our Roots

Four decades ago Michael Barlow began installing pumps and drilling wells with one rig. He diversified into commercial geothermal projects in the early '90s. Today **MICHAEL BARLOW DRILLING & SERVICE INC** completes as much service volume as drilling. This includes whole house and point of use water treatment as well as pump service and repair.

"In 2000-01, we completed what was then the largest geothermal project in North Carolina drilling 656 boreholes, 500-feet deep to serve as the main heating and cooling for the entire 100-acre campus," Barlow, president, said. "The commercial market became more competitive and with the market saturated, margins weren't there anymore. We diversified, adding services, and got back to our roots."

With the high price of new equipment, Barlow sought a way to get into a newer drill without years of financing.

"We felt like for half the money we could basically have a new machine, which was a better return on our investment," Barlow said. "We could use it to make some money and double the resale value if we decided to sell it, bringing us halfway to buying a new rig."

Familiar with Geoprobe®/DRILLMAX® East Coast Service Center's knowledgeable mechanics and previous quality refurbishments, Barlow employed them for his refurbishment.

"The refurbished rig lived up to every expectation we had, and they stand behind it. They came out and helped us with start up. They're good mechanics who know what they're doing," Barlow said. **"We had the refurb done nearly two years ago, and it's performed like a new one. They did a great job."**

He's been so impressed, he's scheduled a second refurbishment at the Geoprobe®/DRILLMAX® East Coast Service Center.

"Equipment is not designed to continually take abuse, especially in geothermal where it's all about production," Barlow said. "It's like your body. If you're working 12-hour days, not sleeping, not taking care of it — your body and everything around you suffers."

His desire to take a basic drill machine, get it as new as he could, and get the best return on investment he could has been met — and more.

"We used a company we can count on and who really cares about the industry," Barlow said. **"Geoprobe®/DRILLMAX® is now backing us. They're good people willing to help us out and ensure we have what we need."**



Attention Schramm Rig Owners

We recognize the ever-changing challenges customers face in our industry. Please know we are here to help with parts and service so you continue to succeed in the field.

Our East Coast Service Center team has extensive expertise sourcing parts and servicing Schramm drill rigs. With their history within the Schramm organization, they offer:

- **60-YEARS COMBINED SCHRAMM EXPERIENCE:** *engineering, service, assembly, operations*
- **SPECIALTY TOOLS**
- **PARTS INVENTORY & SOURCING CONNECTIONS**

Give us a call, and we'll work to find you a solution: 610-467-1750.

Geoprobe®/DRILLMAX® EAST COAST SERVICE CENTER
Oxford, Pennsylvania

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Parts

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- Schramm
- REICHdrill
- Ingersoll Rand
- Boart Longyear
- Sandvik
- Sullair
- Eaton
- Timken
- Lovejoy
- American Mfg Company

CALL FOR AVAILABLE PARTS



610-467-1750

Solid Tooling Engineering, Customer Support Aid Company Success

Serving Southeast Alaska with environmental and geotechnical drilling for the past seven years, Cuff Blakely and his wife have progressed their company CLEARVIEW from a Geoprobe® 8M to a 66DT.

“We’re old school – having a few custom modifications – but it’s working excellent,” Blakely, owner, said.

When Blakely sought to cover as much scope of work as possible without upgrading to a huge auger machine, they found the DT325 Driven Casing SPT (OTE) system to be the desired solution for their shallow soils to bedrock.

“We have been amazed we can be competitive with our little rig and your new technology,” Blakely said. “The speed using that tooling system has been amazing.”

They recently completed work on an airport terminal expansion in Sitka, Alaska, completing borings on the apron where planes are parked. They encountered shallow bedrock between four and 12 feet as they moved around the property.

“If we’d done hollow stem auger rather than the 325 OTE, they would have had huge holes in the apron,” Blakely said.

“It saved a ton rather than fixing up surfaces they were going to keep using until demolition.”

Much of their work requires mobilizing to islands where the rig sits for long periods of time.

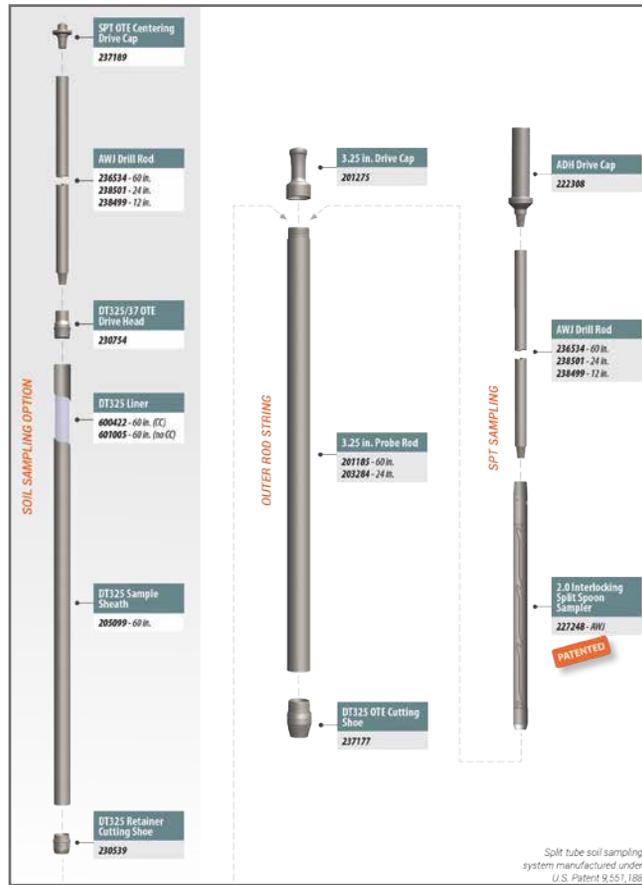
“Using the 325 OTE eliminates having a ton of money in tooling sitting out there,” Blakely said.

Their clients are surprised by the amount of information they can provide them in such a compact footprint.

“They expect us to accomplish four holes, but we do six or seven because we can do it so much faster. Thanks to the 325 OTE we can accomplish more than they expect,” Blakely said. “It’s incredible the scope of work we can complete due to the well-designed tooling. It’s made the difference in being able to make a go of it for us.”

They also credit Geoprobe® customer support for success in their remote location.

“The support – both for fixing machines and identifying what tooling set up to use – when calling Geoprobe® is exceptional. The guys take such good care of helping me figure out how to make things work,” Blakely said. “The good engineering and service makes it possible for us to run our business up here in Alaska.”



DT325 Driven Casing SPT (OTE) Efficiently Expands Scope of Work

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.



Reduce Cost, Space, and Weight with NEW Rod Grip Puller: Adjustable Rod Grip Puller

Job sites requiring multiple sizes of rods historically forced drillers to tote the weight – and expense – of multiple sizes of rod grip pullers. Now there's one tool to cover the scope of several other individual tools. Consider the NEW adjustable rod grip puller similar to carrying a single adjustable wrench versus an entire set of wrenches.



Mike Carlin,
Tooling Design
Engineering Manager

“We’ve engineered a solution to make it possible for a single puller to cover a large percentage of tooling systems – from 1.25- to 3.75-inch,” Mike Carlin, tooling design engineering manager, said. “Not only does this simplify what you have to take to the field, it also minimizes tooling costs allowing the end user to buy one tool to fit entire family of rods versus one rod puller per size of rod.”

The NEW adjustable rod grip puller can do the job of five rod grip pullers at a fraction of the cost. Simple markings along the tool visually indicate common rod sizes to make it simple to use.

ADJUSTABLE ROD GRIP PULLER ADVANTAGES INCLUDE:

- Provides full adjustment range – 1.25 inch to 3.75 inch
- Minimizes cargo weight from carrying multiple pullers, weighing less than a 3.75-inch rod puller
- Saves money versus purchasing five rod pullers, which together cost more than \$4,000



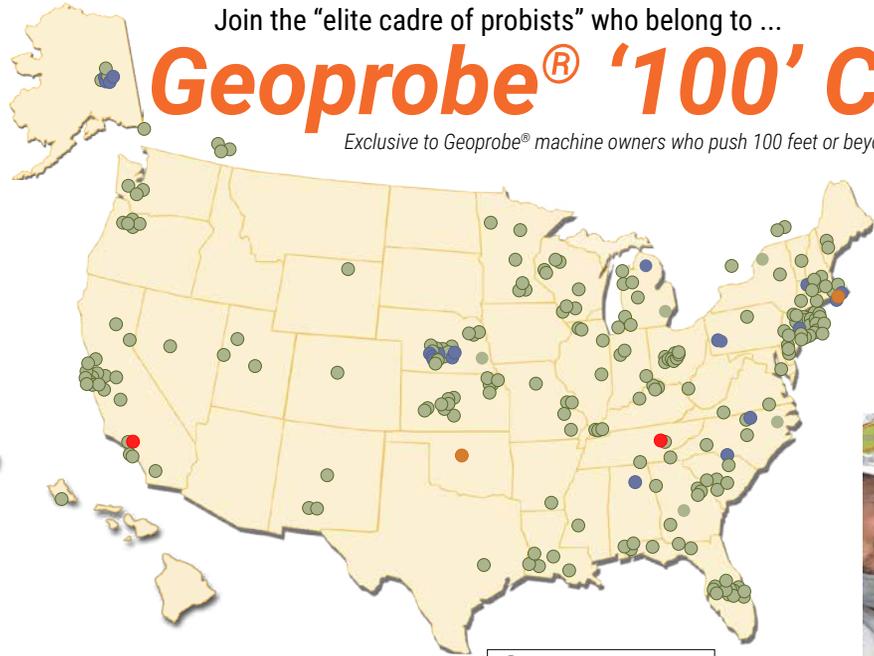
SCAN TO WATCH
NEW Adjustable Puller



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● Pushed to 100 - 199 feet
 ● Pushed to 200 - 299 feet
 ● Pushed to 300 - 399 feet
 ● Pushed to 800 - 899 feet



101 feet

Athena Drilling LLC

Field Team: L to R Kate Cosnahan, Martin Welch, Aaron Crowley, Shay Oliphant, Julie Oliphant, Brad Long.
Field Site: Nashville, Tennessee
Depth/Date: 101 feet / Oct. 27, 2022
Field Data: Continuously sample bedrock for foundation designs using 7822DT and 3.25-inch hollow stem auger to 1.5 feet, NQ wireline diamond rock coring equipment to 101 feet



101 feet

Geo Lab Probing Services

Field Team: L-R Lat, Jimmy
Field Site: Albany, Georgia
Depth/Date: 101 feet / Oct. 12, 2022
Field Data: HQ Core with 7822DT

352 feet

Hawkston Drilling

Field Team: Tony Warren & Mo
Field Site: Durham, North Carolina
Depth/Date: 352 feet / November 2022
Field Data: rock core using 3230DT



200 feet

Applied Geotechnical Engineering Company

Field Team: L-R Derek Wolfe, Nate Salazar
Field Site: Brigham City, Utah
Depth/Date: 200 feet / May 4, 2022
Field Data: CPT to 200 feet



112 feet

Geolmaging

Field Team: L-R Robert Taylor, David Heicher
Field Site: south Georgia
Depth/Date: 112 feet / March 28, 2022
Geoprobe® Owner: Geo Lab
Field Data: MIHPT



150 feet

Michigan Department of Environmental Quality

Field Team: L-R Jack Price, Brian Lower, Eli Brintlinger; not pictured: Olivia Sly
Depth/Date: 150 feet / August 2022
Field Data: sonic soil sampling



200 feet

PG Environmental

Field Team: L-R Luis Vanegas, Oscar Peralta
Field Site: Brooklyn, New York
Depth/Date: 200 feet / December 2022
Field Data: 6-inch diameter casing to 25 feet, tricone roller bit to 200 feet; cored boulder at 125 feet, installed well to 200 feet



110 feet

Geo Lab Drilling

Field Team: L-R Trent Dobbs, Tim Parks
Field Site: Warner Robins, Georgia
Depth/Date: 110 feet / Nov. 8, 2022
Field Data: 7720 with DT22

101 feet

Geo Lab Drilling

Field Team: L-R Trent Dobbs, Phil Ricker, Steven Stipe
Field Site: Kingston, Georgia
Depth/Date: 101 feet / Feb. 17, 2022
Field Data: type III outer casing set with mud rotary at 70 feet, rock cored to 101 feet for inner casing



SCAN TO WATCH
 Who Is Geoprobe®?



Rigs, Tools, and Techniques for Fieldwork Simplified

- Geotechnical
- Environmental
- Mineral Exploration
- Construction
- Dewatering
- Mining
- Water Well
- Geothermal
- Cathodic Protection
- High Resolution Site Characterization
- Cone Penetration Testing

Team Geoprobe® Growing

We're growing and ready to invest in passionate, skilled individuals based in Canada and Western United States to represent our products. If you check 'yes' to the questions below, complete an application at: geoprobe.com/RepJob

I WOULD LIKE TO USE MY DRILLING BACKGROUND TO...

- ✓ run rigs in the field, teaching new techniques.
- ✓ connect drillers to solutions, talking daily.
- ✓ provide top customer service, contributing ideas for innovation.
- ✓ engage industry leaders, traveling to help customers.



SCAN TO LEARN
 More about Career Options

“We love to put tools in the ground, and any opportunity we can, we will. We know the power of putting tools in the ground and letting people pull the levers themselves.

And when they come to the factory, and we take them on a tour, they'll often comment about how everybody is working, seems happy, and enjoys their jobs. Everybody works together to make sure our customers are taken care of. Everyone is going toward the same goal — deliver the best product we can.

We have engineers in-house developing and designing rigs and tools so when you visit the factory, you know you're going to see a new feature, a new tool, a new function our machines can do. And when those engineers are designing new tools and rigs, they go out and run them themselves to find ways to make your job easier.

— Doug Koehler, Sales Manager



Geoprobe® DRILLMAX® team of machine design engineers

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• **APRIL 2024 – Salina, Kansas**



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SCAN TO WATCH
Product and Maintenance Videos Continually Added to the Website

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