

GEOTHERMAL

Environmental Sampling to Geothermal Power

For 25 years, ASSOCIATED ENVIRONMENTAL SERVICES LTD has relied on Geoprobe® rigs to drive their success. Their first rig was a Geoprobe® 54UD and their latest — the powerful DM450 — continues that legacy.

"We have four 7822DTs, two 6011DTs, and a 420M. I've had at least 15 Geoprobe® rigs since I've been in business," John Schretzmayer, president, said. "Our 6011DTs handle environmental sampling in tight, low-ceiling spaces around the city, while our 7822DTs focus on geotechnical work. It's been a great relationship for more than 25 years."

Expanding into Geothermal Energy

When the company decided to dive deeper into the growing geothermal market, the DM450 was the natural next step.

"I've been interested in geothermal for more than 25 years, and it's now at a point where there are more projects," Schretzmayer said. "We had another manufacturer's rig and were having issues with it on a project, so we decided to get a bigger rig."

Recommendations from a trusted industry friend combined with Geoprobe's proven reliability and customer support made the choice easy.

"I've always had success with Geoprobe® equipment and their customer service has always been great," Schretzmayer said. "Other manufacturers make a good rig, but they offer no support on how to operate or troubleshoot the rig."

Performance That Delivers

The DM450's first test came on a demanding geothermal project on Long Island — 150 boreholes, each 300 feet deep in tough drilling conditions.

"The rig with its speed, power and ease of use has allowed me to get back on track schedule-wise," Schretzmayer said. "It's a lot quicker and much more durable than the other manufacturer's rig. Plus, it's not difficult to learn. The control layout and ease of operation allowed me to learn and run the rig within three days."

The team later deployed the DM450 on another geothermal project on the water, where it excelled in sandy soil.

Features That Stand Out

- Backloading Carousel: "It's easy and safe."
- Simple Hydraulic Levers: "You don't need buttons and screens. The more simple it is the better."
- Auxiliary Hydraulics: "You can plug into the hydraulics on the rig."

Confidence to Go Bigger

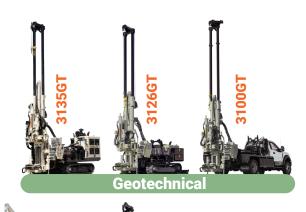
With the DM450 in their fleet, Associated Environmental is positioned to take on larger, more complex geothermal jobs efficiently and confidently.

"The DM450 provides confidence to go after large geothermal jobs,"
Schretzmayer said. "It's easy to train someone, easy to use, safe to operate, and it's exceeding our expectations. Overall it's a solid rig with a lot of support. You can call Geoprobe® and get the answers you need."



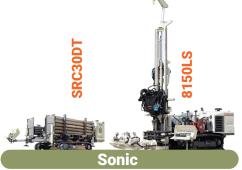
Features like backloading carousel on DM450

provide confidence to tackle large geothermal.

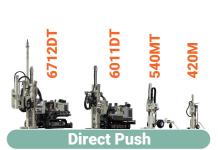


















6X6 All Wheel Drive

To navigate sandy or muddy job sites, Geoprobe® DM450 now offers a proven hydraulic drive assist front axle - the same 6X6 technology used in fire trucks, dump trucks, cranes, and utility digger devices.

- · LOW CENTER OF GRAVITY for stability on uneven terrain
- FRONT AXLE ENGAGES AT THE PUSH OF A BUTTON no park or neutral needed
- **TIGHTER TURNING RADIUS**

The result: simple, reliable power for enhanced traction and maneuverability when traveling on difficult job sites.



DM450 OPTIONS, FEATURES ENHANCE RIG CAPABILITIES

Moving to a Western Star chassis with a 470-horsepower engine gave Geoprobe® engineers extra capacity to add new features and upgrade hydraulic circuits for larger air compressors and dual mud pumps. Other standard features were also improved with the new chassis, including:

600/200 AIR COMPRESSOR

The higher cfm output boosts performance for multiple drilling tasks. In air rotary drilling, it clears cuttings faster, keeping progress steady and reducing stuck rods. When driving steel casing with a hammer, the extra airflow improves efficiency, and lets casings advance smoothly even in tough formations. Maintenance of the 600/200 air compressor is also easier.

MUD PUMP PLUMBING UPGRADE

3-inch piping and hosing from the mud pump to the top head swivel reduces back pressure and increases flow. Upgraded ball valves offer better control, durability, and easier operation, keeping performance consistent during tough drilling jobs.

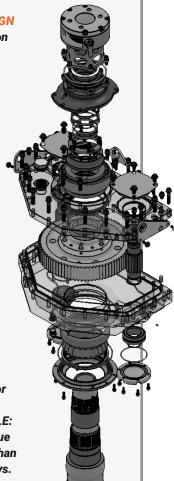
TOP HEAD REDESIGN

Engineers focused on making the DMR6 top head on the new Western Star chassis DM450 stronger, more durable, and easier to service.

- BILLET-**MACHINED GEARBOX**: stronaer. more durable, accurate, and simpler to assemble or service.
- **HIGHER LOAD BEARINGS:** spindle and pinion shaft handle tough field conditions for longer life.
- SPLINED SPINDLE: carries more torque and lasts longer than traditional keyways.

TOP HEAD SWIVEL REDESIGN

Adjust or replace swivel packing on-site quickly, reducing downtime. Keeps drill mud out of the top head gear box, protecting components, lowering maintenance, and extending service life.



Digging Into New Markets: Septic Business Adds Water Well Drilling Compact footprint of DM450 slips into wooded lots with ease, possessing power to

Since the '70s, C&W HANOVER SEPTIC, WELL & PLUMBING focused solely on septic system repair and installation. But in 2024, owner Billy Shaw saw an opportunity to expand the business and tapped James Turner to lead a new venture into water well drilling.

"Not many companies around here are investing into drilling brand new," James Turner, owner/operator, said. "I had come from running traditional water well rigs and started going down the rabbit hole to determine what was best for the dollar we were going to spend."

Shaw trusted Turner to make the final call. After weighing his options, Turner narrowed it down to two rigs.

'The Geoprobe® DM450 still had the old school feel with levers and valves you pull and push," Turner said. "I also liked that Geoprobe® had a a service location in North Carolina and one in Pennsylvania. Being in Virginia, there's a place close if I did have any problems."

Easy Transition

Turner describes operating the DM450 as having an "easy learning curve" both as a veteran driller and for his novice crew.

"I'd been used to operating from the right side of the rig, so everything was backwards at first. Within three wells, we'd become pretty proficient," Turner said. "Everything is laid out so my inexperienced crew can jump up there every now and again, and I can provide some training."

Built for Performance

The DM450 quickly proved its value in the field.

'The DM450 excels at mud rotary with plenty of speed. I've taken it down to 500 feet with no problem. I was worried the winch wouldn't be sufficient to pick up the 3.5-inch rods, but it did just fine," Turner said. "It does exactly what it was designed to do, and does it easily."

The DM450 is Turner's first experience with chains instead of cables - a change that's cut down on maintenance.

"With the cables you always had to adjust and maintain," Turner said. "After 30 wells, I've yet to have to maintenance the chains on the DM450."

Compact Power, Smooth Ride

Mounted on a Western Star chassis, the DM450 delivers a comfortable ride while maintaining a compact footprint ideal for residential work.

"It's small and lighter than a conventional water well rig, so we've been able to squeeze into some tight places and haven't been stuck – yet," Turner said.

On a recent 4.5-inch, 450-foot mud well, the crew completed drilling 8.75-inch borehole, casing, gravel packing, and development in just two days — using less than

"It's fuel efficient. We spent two days on a hole, and burned not quite a half tank of fuel," Turner said. "The rig operates easily, and the speed is nice."

Confidence in the Field

What stands out most to Turner is the DM450's consistency.

"In this trade, every job throws something different at you. The DM450 just keeps showing up and getting it done," Turner said.

See Next Level Drilling Up Close

reach depth and pull rods.

After we saw the factory, we understood Geoprobe $^{\otimes}$ has come a long way. It's a big time set up with big time things going on. Geoprobe® has their hands in everything, including water well, and figuring it all out. Nobody else looks like their professional set up in Kansas. When we came home, we understood how Geoprobe® had taken drilling to the next level."

— Zac Nader, operations manager, Northern Drill Service Inc, Massachusetts



Compact DM250 slips into tight residential lots, satisfying customers particular about their landscaping.

Speed and Efficiency

Since receiving the DM250, Najera has been most impressed by its speed.

'It cuts like butter through caliche and rocky formations. With our old rig it would take 3-4 hours to cut through 30 feet of rock. The DM250 takes 30 minutes," Najera said.

This efficiency allows them to drill, case, and then return to install pumps in record time, completing 3-4 wells per day.

Simplified Air Rotary

Relying primarily on air rotary, the DM250's fastspeed feature and on-board air compressor simplify well development.

We can use the on-board air compressor to develop wells versus having to bring back a pump truck with bailer," Najera said. "Now when you throw the pump in the hole, you know it's going to be cleaned and developed.

Rocky areas in West Odessa that other drillers avoid are now manageable.

"It's rocky and very little water," Najera said. "We drilled a 220-foot well in 1.5 hours compared to all day with our other truck."

Small Footprint, Strong Impression

Local customers value their lawns and prefer the compact DM250 over a traditional water well rig.

'Customers like how modern and compact it is compared to seeing beefy, old dinosaur rigs," Najera said. "The DM250 advertises itself when customers realize it will leave minimal damage to property and landscaping, versus the old heavy table rotary rig."

Transport between sites is easier too.

"I can go through a drive-thru for lunch if I want to, and I'm not worrying about where to park it," Najera said. "Before we were scared to death driving our old 1969 Kenworth truck in town or on the interstate. It was a mission just to get from point A to B everyday."

Better Bottom Line

They can now arrive on site worry-free, get more done each day, and use less diesel.

With our old rig, we'd spend \$300-400 on diesel to drill a well using the auxiliary deck engine," Najera said. "Now with the DM250 using PTO, we barely come off the full mark when drilling a 100-foot well."

The result: increased productivity and happy customers.

Our profit and cash flow have improved," Najera said. "With the DM250, we're doing two to three jobs per day where before we did one job per day. Customers aren't waiting as long, and we can take care of them quickly."

Support You Can Count On

Beyond the rig itself, Najera values the Geoprobe® team behind it.

"Donnie [Wood, water well product line manager] showed up to do 2-day startup training on the DM250, making sure we understood the controls and were comfortable running it. You don't see that level of service elsewhere," Najera said. "If you have questions and call Geoprobe® someone always answers the phone. We've had the rig three months and are very comfortable running the DM250, and we know Geoprobe® is there to have our back."



constant hustle took their toll.

"My wife and I decided to go out on our own and start a residential/commercial water well business," Najera said. January 2020, the couple launched AQUAMAN WATER WELL SERVICE with a 1991 Ford pump truck 5T doing service work.

Expanding Into Drilling

The small family operation eventually expanded into drilling after purchasing a used table rotary rig in 2023. "We got holes done with it, but we were spending a lot of money on breakdowns and repairs," Najera said.

Tired of constant repairs, they sold their old rig and began saving for a new one. When his wife asked what kind he wanted, Najera already knew the answer.

"In 2021, I saw a *Dynamic Driller* magazine at our vendor's office and kept it, thinking to myself 'one of these days we'll get a DM250'," Najera said.

To solidify their choice, Najera, his wife, and son drove from Midland, Texas, to the 2024 Geoprobe® Open House. "We saw the DM series rigs running and got the whole tour. On our drive back, my wife and I discussed how great a DM250 would be - it's small, compact, no CDL required," Najera said. "Open House sealed the deal for me, and definitely for my wife. We liked how everything has a part number and stocked parts in-house. We liked everything Geoprobe® had to offer."



In the geothermal energy business for more than 45 years, BUCHANAN AND HALL built a strong reputation installing excavated and horizontal drilled geo-loops across Ontario. But when customers began requesting vertical loop systems, the company needed outside help.

"We worked with other companies when we needed vertical loops. We thought it would be nice to start installing vertical loops for residential and small commercial projects where vertical is the best option," Al Hopper, drilling manager, said. "I have a background in drilling water wells for more than 30 years, so I have always been interested in what different machines were on the market."

After researching options - reviewing trade magazine ads, studying websites, and watching videos to see how different features work - Hopper found the Geoprobe® DM250 to be the ideal fit.

"I like the quality of the manufacturing and the simple design for operating," Hopper said. "It makes training new drillers easier."

Dependable Support, Right Here in North America

The deciding factor: reliable Geoprobe® support network and customer portal (see page 29).

"With the service centers and Centerpoint Connected, it has simplified any minor things we had to diagnose," Hopper said. "The DM250 opens up more options we can offer our customers depending on drilling conditions and space required to go with geothermal."

Proven in the Field

One of Buchanan and Hall's first DM250 jobs was a light commercial geothermal project requiring 30 boreholes on a 20-foot grid spacing.

"The machine was easy to move to each spot using the 4-wheel-drive. We only had to use mats on one site," Hopper said. "It was less work than moving a larger drill to each hole."

Features That Make a Difference

Hopper highlighted several DM250 features that simplify vertical geothermal installations:

- Size-to-Power Ratio: "It has a big rig feel in a lighter package while still running 20-foot
- Compact Footprint: "We had one residential site with many sprinkler heads to avoid. The machine was easy to drive in and not damage existing landscaping."
- Rod Carousel: "It saves a lot of looking up and holds 160 feet of drill rod in the carousel."
- Quality Manufacturing: "The fit and finish of the machine is high quality. The deck panels are aluminum with a textured no-slip finish, which are easy to remove to get access and will stay looking great for years."
- Array of Options: "The variable speed 4X3X13 mud pump is lightweight and has good flow for any conditions. The onboard compressor is also a handy option."

The Perfect Fit

From maneuverability to operator comfort and North American support, the DM250 has proven to be exactly what Buchanan and Hall needed to expand their geothermal capabilities efficiently and confidently.



MORE DM250 OPTIONS, MORE FLEXIBILITY

185/150 AIR COMPRESSOR

For customers drilling bigger, deeper wells, Geoprobe® answers with the 185/150 air compressor. Higher output and efficiency mean faster hole development, cleaner wells, and full DM250 performance.

AUXILIARY AIR CONNECTION

Extra air? No sweat. The DM250 is preplumbed for plug-and-play connection, so supplemental compressors hook up fast and keep drilling running smoothly.



Brothers Travis, DJ, and Dylan Busselman all come from different industries: construction, water well, and oil field drilling/service respectively. Trained in the field by his father-in-law, Kenny Neuendorff, DJ has dedicated nearly 18 years to the water well industry.

But when he decided to strike out on his own, he didn't want to do it alone.

"He wanted to include us. We all bring something different to the table." Travis said. "DJ runs the drilling operation, Dylan runs the service side, I run the back office, and DJ's wife, Juliee, is our bookkeeper."

Based in Columbus, Texas, BUSSELMAN WATER WELLS opened for business in November 2023 with a 1979 Mayhew 1400 as their first rig.

"A few wells in, it was great because we were slow. Then December came, and we got a lot of jobs at one time," Travis said. "At this rate, by that summer we would be booked out six months in the future."

Seeing the Difference Firsthand

When thinking about purchasing a new rig, the DM250 came up as an option. DJ had some familiarity with the rig and heard good things about Geoprobe®, but the brothers still had questions about the company's operations.

"One of the key reasons we started the business with a Mayhew was because they built them out of Austin, Texas," Travis said, "We were more comfortable buying a rig from a place two hours away so that if we were missing parts, we could get them. When we were making a decision to buy a DM250, we wanted to see how Geoprobe® operated, the kind of manufacturer they are, and the quality control."

The rig was ready for pick up in July 2024, giving Travis the opportunity to tour the Geoprobe® facility. He had a chance to see the floor where the DM250 was built, meet the service team and phone staff, and was impressed by the attention to detail.

"Roman [Burrows, Kansas Service Center manager] walked me through what they do during the phone calls and what notes they fill out every time. It's nice to know that Geoprobe® is always trying to improve the equipment. It's hard sometimes to track and log everything, so it's helpful that they do it for us," Travis said.



Growth Fueled by Performance

The DM250 quickly demonstrated its power.

"We hit the ground running, and we increased our productivity by over a 100 percent. We were drilling four to six wells a month; then we were drilling 12 to 16 wells a month with the DM250," Travis said. "Our workhorse is the DM250. When we finished 2024, we saw how the market was, and we bought our second rig."

Their second DM250 was picked up in May 2025 less than a year after receiving their first. Now 80 percent of their workload is done by a DM250.

"I've ran rotary table rigs most of my career, and still do occasionally on larger jobs," DJ said. "But the DM250 is fast, efficient, and packs a punch for its size. Instead of taking the larger rig to a residential or supply well, we can jump in the DM250, get to the location, and set up in a reasonable time — and we don't have to worry about being the right size and weight."

Quality-of-life features jump out to DJ in particular.

It's hard to pinpoint one feature when the rig works so well. But the holdback helps with setting your drill speed to where everything is just right and running smoothly," DJ said. "Having a carousel also helps speed up the first 160 feet of drilling, because you can operate it by yourself while your rig hand is getting other things ready.

The DM250 isn't just appealing to its owners, but to customers as well.

"We like the rig because the weight of the rig is lower than CDL and it's very easily transported," Travis said. "I got a phone call today asking if we had a smaller rig that could go in their backyard without tearing it up, and we said we did. That



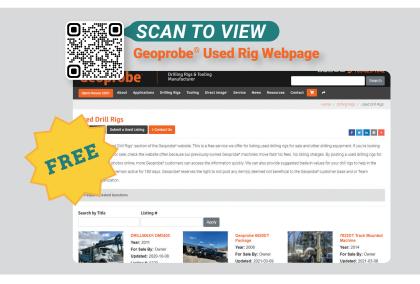
NATER WELL



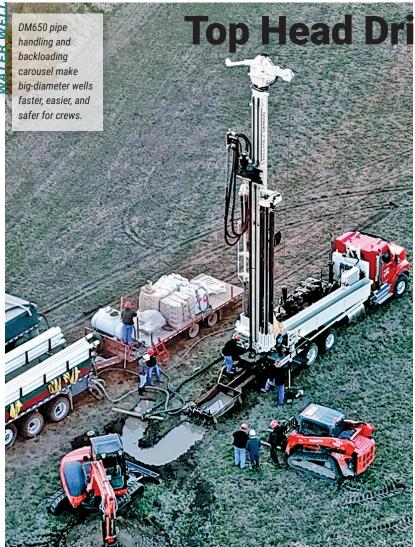
POST YOUR USED RIGS ON GEOPROBE® WEBSITE

WE'LL HELP CLEAR OUT SOME OLDER EQUIPMENT AND MAKE ROOM FOR NEW

- · Hundreds of eyes from around the world view the used rigs page on a daily basis.
- · Includes used machines of any make or model and other drilling-related equipment.
- · Add your listing for FREE as a service to our customers.
 - · VISIT used machine page
 - · CLICK submit a new listing
 - · COMPLETE required information

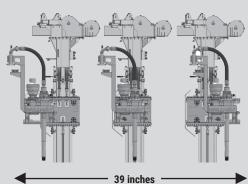


8 Geoprobe DYNAMIC DRILLER • Winter 2025



DM650 TOP HEAD AND DRILL MAST FEATURES TO DRILL DEEPER, FASTER, SAFER

- SHIFT TOP HEAD BOTH WAYS: 39 inches total travel lets you work tools and casings with winches over centerline while keeping the head out of the way.
- 2-SPEED ROTARY DRIVE: 8,000 ft-lb torque, 200 rpm, 3-inch spindle thru-bore for smooth, powerful rotation.
- DUAL PIVOT JIB:
 Minimizes downtime –
 driller loads carousel
 while helper moves rods
 to the box.
- FULL RIG ACCESS:
 - Primary winch swings to helper side (12,000– 17,500 lb) for pulling, transferring, and backloading rods or heavier casing.
 - Secondary winch swings to driller side (1,800–5,000 lb) for lighter objects and PVC casing.
- CARRIAGE ROLLERS:
 Quiet, smooth head travel with fast adjustments and easy service to keep the rig running like new.





Top Head Drive Total Game Changer

As one of the largest family-owned well drilling companies in the United States, **SARGENT DRILLING** got their start doing irrigation wells. They've expanded to municipal wells and industrial engineering from eight offices.

"We drill anywhere from 4-inch, 50-foot wells to 15-inch, 1,000-foot wells – all with the same style rig," said Nathan Jacobson, operations manager out of the Geneva, Nebraska, office. "We've always been a table drive rig company, until we saw a demo of a top head drive rig. Then we decided we wanted two."

Their pursuit of a top head drive rig led them to Geoprobe® manufacturing facilities in Salina, Kansas, to consider the DM series rigs.

"We liked the DM model better, appreciated parts and service center were only two hours away from our shop, and the number of options available on the rig," Jacobson said. "We actually went to the factory to look at and order our DM650 when we saw the DM250. That's when the light bulb went on. We were used to drilling everything with one style rig, but we could see the advantage of the smaller unit for our smaller wells."

They left the factory placing an order for both a DM650 and a DM250.

DM250 — The Game Changer

The DM250's performance has Jacobson raving.

"I've been surprised by the DM250's versatility, power, and depths it can achieve — it's an awesome rig," he said. "It's a really special rig. Geoprobe $^{\tiny \oplus}$ hit a home run with that one."

FAVORITE FEATURES

- Ease of Operation: "People who don't want the responsibility of operating a complex rig are very comfortable operating the DM250 because it's very simple."
- Carousel and Pipe Handling System: "You don't have to touch the pipe. It's basically a one-man show."
- Safety: "It's 300-times safer than a table drive rig."
- Speed: "It doesn't look like it would be as fast as a table drive rig, but each step of the drilling process is more efficient."

THE RESULTS

Since receiving their DM250, they've been able to revolutionize their work. "With the DM250, we've cut drilling times, and we don't need a CDL driver — that's huge. It took a drilling rig to rethink our whole program," Jacobson said. "We've now looked at everything we're doing to make it simpler and more profitable. The DM250 is key to that."

DM650 - The Workhorse

Sargent has put their DM650 on deep, big diameter wells in northwest lowa drilling 12- to 14-inch bits 500-600 feet.

"It's performed magnificently," Jacobson said. "You can add pipe and keep drilling. You're drilling as fast and handling pipe less compared to a table drive rig."

FAVORITE FEATURES

- Power: "It can manage 4.5-inch pipe and you don't have to handle it."
- Ease of Operation: "At the end of a 12-hour day, the crew isn't exhausted."
- Backloading Carousel: "The way you can add to the carousel from the drill stem rack is light years ahead of the competition."

The Verdict

"We've been used to table drive, piston pump rigs. Now we're top head drive, centrifugal pump, and I can't believe how well it performs," Jacobson said. "I'm 61-years-old, and change is hard. But I've jumped in the river of change, and I'm enjoying the bath."

With dual centrifugal pumps and the ability to upream, DM650 has power and speed to tackle deep western Kansas wells.

Reluctant Driller to Confident Operator

When Trevor Nash began doing well service work for a drilling company in 2009, he never imagined becoming a driller. But buying out the service work in 2010 eventually led him to purchase the company's old Midway rig.

"I didn't ever want to drill. Being young with a couple of kids, I just thought it was too risky," said Nash, owner of NASH WATER WELL SERVICE LLC. "But we had wells booked so I ended up buying it. It's been a challenging, fun ride — it's been good."

Seeking Efficiency and Versatility

As Nash gained experience, he realized the limitations of his older rig. He wanted more efficiency, the ability to drill deeper and larger wells, and a transition from piston to centrifugal pumps.

"We wanted the efficiency in time and a reduction in breakdown costs of a new rig. We wanted a simpler rig for the helper to run," Nash said. "We also wanted the ability to diversify - doing cathodic protection, monitoring wells, irrigation wells, and geothermal loops. We needed a rig to do these different techniques and get down the road safely."

Determined to upgrade, and "not getting any younger," Nash researched options. Talked to other drillers. Watched DM series rigs run.

"We saw the integrity of the derrick to hold up to the drilling we do. We recognized the availability of the parts and service. We're close to the Geoprobe® Kansas headquarters," Nash said.

A Partnership, Not Just a Rig

Beyond the metal, Nash valued the partnership that comes with buying a Geoprobe® rig.

"We liked having sales, engineers, and service all involved and having those connections and relationships with the individuals within the company. You can network with sales, engineers checking on me, answering questions

The DM650 Delivers

With the purchase of a DM650 air rig, he's achieved his goals and more.

- Efficient: "I can adequately tweak how much foam while drilling air."
- **Drill Deeper: "I can carry an extra 100-feet** of drill rod."
- **Switch from Piston to Centrifugal Pump:** "With the dual centrifugal pumps, I can run separately or boost without using power from the mud machine."
- Faster: "It saves me a whole day on a deep well. The capability to upream and not have to ream a hole twice due to clay means we can go down 500 feet, drill back up 500 feet, and have a clean hole."
- Simple Operation: "A new guy can run the levers quickly."
- Ability to Diversify: "You can option the rig to meet your needs and tailor it to your formations. There's a lot of things on the rig that help us out, like the sandline."

Confidence on the Job Site

Nash also notes the influence on client confidence. "Clients have more confidence having a new, updated rig on job sites," Nash said. "It puts customers" minds at ease and gives them confidence in the job you're doing for them."





When a competitor's sonic rig broke down mid-job, ENVIRONMENTAL WORKS INC turned to Geoprobe® for a fast solution.

"We were told it would be two months for parts for the other manufacturer's sonic rig to be sent from overseas. That's one of the things I've appreciated about working with Geoprobe®, they always have parts available. A lot of other companies don't have that," said Daniel Yoakum, vice president of the drilling division. "Geoprobe® helped us out in a pinch by letting us test drive the 8150LS V3 in exchange for providing feedback."

Notable Upgrades from V2 to V3

Yoakum, already operating a 2019 8150LS V2, immediately noticed improvements on the 2025 8150LS V3:

- Breakout: "No joint the breakout wrenches couldn't break apart. In my opinion, its power to break joints is untouched in the industry."
- Rod Handler: "Increased speed but still operating at a safe pace."
- Deuce Holder: "A low-cost addition that's a big help in the field. That piece of 2-foot pipe is constantly used and produces more metal burs, so it's most likely to puncture through a glove when picking up by hand. Now you don't have to handle it, which makes the whole project safer using the rig itself to set the deuce off to the side completely hands-free."
- Safety: "Geoprobe® safety has always been standout with the E-stops and extra safety features, but the Mine Safety and Health Administration (MSHA) and Occupational Safety and Health Administration (OSHA) regulators saw the rig on the mining sites and were impressed."

"The 8150LS V3 is just a better rig to me," Yoakum said.

Field Performance Across Industries

They put the 8150LS V3 to the test on several different types of jobs.

- Environmental Drilling and Sampling: "At a refinery in Texas, we did 20- to 250-foot monitoring well installations using 10-inch casing. The V3 performed as well as our V2 model with decreased fuel consumption."
- Mining Exploration: "In Southern Colorado we drilled and sampled 120- to 150-feet per day through cobble and flowing sands, which typically slow down a driller. The 8150LS V3 surpassed client expectations."
- Geotechnical Engineering: "We were installing tiebacks along a riverbed for a future power plant drilling 7-inch diameter, 300- to 500-feet per day for 14 days through gravel, sands, and clays. The V3 had better power at lower torque for going through tough formations. With the new breakout, we had no issue breaking tooling through the entire 4,000 feet, which we're not used to on our V2."



"I wouldn't have hesitated to put our 8150LS V2 on any of these sites, but the V3 stood out to me," Yoakum said. "With its ease of use, improved helper ergonomics, and increased finetuning on controls for sonic vibes, everything just flowed easier in the workspace."

Upgrading the V2 Breakout Wrenches

Impressed by the stronger breakout on the 8150LS V3, Environmental Works Inc. upgraded their V2 model to match.

"After Geoprobe® added the new breakout wrenches to our V2 we ran it on a job in Ohio installing monitoring wells 30- to 75-feet deep on a military installation," Yoakum said. "The crew enjoyed the faster wrench speeds, and the added ability to adjust the wrench pressures on the fly."

Efficiency Equals Profit

To him, the upgraded breakout was "definitely worth the investment."

"We are seeing a much longer life out of wrench jaws," Yoakum said.

"The cost savings, along with the faster breakout speeds, saves our drillers frustration and offers savings to us and our clients."



INDUSTRY COMPATIBLE:

4X6 Sonic Sampling System

Customers now recognize 4X6 sonic sampling as the industry standard, leading us to develop industry-compatible 6-inch casing and 4X6 sampling components. We'll continue to stock our legacy sonic tooling, and now you can get on-the-shelf Geoprobe®-quality tooling in sizes the sonic industry relies on.

3.5 AND 6.0 GPS SONIC CASING

Along with our 3.5 GPS sonic casing, we're now offering 6.0 GPS casing with industrycompatible threads - backed by Geoprobe® quality controlled manufacturing and reliable availability.

4X6 SONIC SAMPLING SYSTEM

Everything you need for 4X6 sonic sampling industry-compatible components like 4.75 core barrel, bit options, drive heads, and core catchers.

BREAKOUT JAW PAD

Customer feedback led us to redesign the geometry for better grip and longer life.

Geoprobe® manufactured 3.5 and 6.0 sonic casing



8150LS UPGRADE KITS: Renew Your Legacy Geoprobe® Sonic

lacktriangle Breakout is awesome... much faster, and the rod handler is much smoother."

That's what customers are saying about the re-engineered Geoprobe® 8150LS — designed using customer feedback to deliver maximum field performance and reduce operating costs.

You can now update your legacy Geoprobe® sonic rig with some of the new features available on the 8150LS V3. Refresh your current rig for enhanced productivity and operator ease. Contact Doug Koehler, sonic expert, to learn more about options for your model.





© CALL TO DISCUSS AN **UPGRADE: 785-825-1842**

V3 14-INCH BREAKOUT

Robust breakout improves handling 2- to 14-inch tooling

- increased clamp force from 21,000 to 31,000 lbf
- · increased twist force from 13,500 to 37,000 ft-lb
- replace common wear components rather than entire breakout

DEUCE HOLDER

Protects drillers from burs on the 2-foot pipe by using the ria to move the deuce aside and into the holder completely hands-free.



ADJUSTABLE CONTROL PANEL

uses swing-arm to position control panel as close or as far from tool string as desired

- next generation controls include larger display and increased reliability
- simple weighton-bit controls
- hank of five analog displays indicate holdback pressure. pulldown pressure, rotation torque, top clamp pressure, bottom clamp pressure



See Sonic Power in Action

Whether you're new to sonic drilling or a seasoned operator, now's the time to see how the Geoprobe® sonic rig delivers big power in a compact package.

During a tools-in-the-ground demonstration you'll see our entire sonic system, including:

- · 8150LS V3 with 50K GV5 sonic head
- · Rod handler with elbow + wrist movement for uneven terrain and angle drilling up to 45°
- SRC30DT self-propelled sonic rod carrier
- Geoprobe® sonic casing and weighted wireline sampling system



Sonic Expert



CALL TO SCHEDULE A DEMO: 785-825-1842



or **LEGION DRILLING PTY LTD** — a leading provider of environmental drilling services, geotechnical drilling, and sonic drilling in Australia — sonic technology has proven essential for addressing the country's demanding drilling conditions.

"Direct push methods face limitations in Australian lithology, so the prospect of obtaining continuous samples in challenging formations and landfill sites using sonic technology was highly compelling," Matthew Hansen, owner, said.

Although the company had previously acquired a sonic rig from another manufacturer, their established relationship with Geoprobe® — dating back to their first rig in the early 2000s — facilitated a seamless transition to Geoprobe® sonic equipment.

"Given our long-standing relationship with Geoprobe®, it was a logical choice to explore their sonic rigs. We acquired our first 8140LS sonic rig in 2013," Hansen said.

Scaling Operations and Meeting Demand

Since acquiring the company in 2020, Hansen has significantly expanded the fleet and established four offices, spanning 4,000 km along Australia's east coast: Brisbane (QLD), Townsville (QLD), Sydney (NSW), and Albury-Wodonga (VIC). A core principle driving this growth is a commitment to continual expansion and technological improvement, which creates opportunities for senior drillers to advance into management, training, and safety management positions; thereby, establishing clear career pathways within the industry.

"We continue to expand at a rapid pace," Hansen said.

In 2023, the addition of two new Geoprobe $^{\!\circ}$ 8150LS sonic rigs was prompted by increasing client needs.

"In 2023, we undertook a major project involving the installation of deep groundwater monitoring wells for a mining operation in Queensland, Australia," Hansen said. "It's noteworthy that while sonic technology faced adoption challenges in 2013, by 2023 it had become the preferred method among clients for environmental and geotechnical drilling."

Sticking with Geoprobe® Sonic: Rod Handling

The choice to invest in additional Geoprobe® sonic rigs was significantly influenced by their advanced rod handling capabilities, which are critical for safe and efficient operations in challenging Australian drilling environments.

"Our clients prioritize efficient rod handling and minimizing manual contact with drill rods," Hansen said. "The SRC30DT sonic rod carrier resolves 90 percent of these risks."

This feature enhances equipment adaptability across diverse job sites, from urban contaminated land assessments to remote mining projects.

"Geoprobe® provides the most effective rod loading solutions available on the market. Unlike other systems that are integrated with the rig, the Geoprobe® rod carrier is straightforward and allows us to operate the rig independently if needed," Hansen said. "This flexibility to deploy it based on site-specific requirements is invaluable."

A Sought-After Solution: The SRC30DT Sonic Rod Carrier

For years, Legion Drilling considered developing a custom rod handling system — until a visit to Geoprobe® headquarters in Salina, Kansas, revealed an ideal alternative for enhancing sonic drilling efficiency.

"During a prior visit to Salina, Joel Christy, sonic rig specialist, presented a concept Geoprobe® was developing," Hansen said. "Upon seeing it, I immediately recognized it as the exact system we had been attempting to design in-house — Geoprobe® had already perfected it."

Hansen highlights four primary advantages of the SRC30DT sonic rod carrier:

- Rod Capacity: "It accommodates sufficient rods for most projects, where we typically drill to depths of 300 feet, installing 4-, 6-, or 7-inch wells"
- Rod Loading Options: "For overcasing scenarios requiring larger diameters, the ability to load additional or varied casing sizes from the rear is a significant benefit."
- Self-propelled Carrier: "Its independent mobility ensures quick and efficient setup."
- Simplicity: "The design is mechanically straightforward, which is preferable to more complex systems from other manufacturers, especially for maintenance in remote areas."

In the Field: Positive Driller Feedback

Hansen notes that minimal feedback from drillers is a positive indicator of the equipment's reliability in real-world geotechnical and environmental drilling.

"The absence of complaints from our drillers indicates the system is performing effectively," Hansen said. "Feedback has been positive, with comments noting that manual rod handling previously caused significant physical strain. Now, operators simply manage controls, reducing contact with steel, alleviating fatigue, and minimizing crew discomfort."

Relationships Matter: In-Person Collaboration

To optimize operations with the newer sonic rigs, the Legion team returned to Geoprobe® headquarters. Hansen emphasizes the value of direct engagement for advancing drilling technology and safety standards.

"No virtual meeting or phone call can substitute for face-to-face discussions," Hansen said. "These visits allow us to observe new equipment in operation, review design updates and innovations, and strengthen relationships with the team we depend on for optimal machine performance."

Trusted Support and Long-Term Performance

Hansen relies on Geoprobe® for consistent support, readily available parts, and equipment durability, which are essential for maintaining high standards in Australian drilling services.

"The Geoprobe® team consistently collaborates with our mechanics and drill fitters," Hansen said. "Parts availability is reliable, with prompt shipping timelines."

Most critically, in high-demand environments, Geoprobe® delivers peace of mind.

"In an environment where our equipment is subjected to rigorous use, there is significant reassurance in Geoprobe®'s thorough testing and robust

For more information on Legion Drilling's environmental drilling services, sonic drilling expertise, or to request a quote for geotechnical drilling in Brisbane, Townsville, Sydney, or Albury-Wodonga, visit www.legiondrilling.com.au.



8150LS OPTIONS: Maximize Productivity

Since releasing the re-engineered 8150LS, we've listened to customers and the changing demands of the field. Drill crews today face tougher formations and tighter timelines, often needing one rig to do it all. The 8150LS V3 builds on proven performance with new features that expand its versatility — another step forward in our committment to deliver sonic rigs built for real-world results.

DMR7 ROTARY HEAD WITH 5,250 FT-LB TORQUE, 1,000 RPM ADDS VERSATILITY

Eliminate downtime and logistics of casing off overburden, moving your sonic rig, and bringing in another rig for deep rock coring. With the 8150LS and DMR7 rotary head, do it all with one machine posessing torque for mud rotary and speed for diamond coring.

Dual GV5 and 4-speed DMR7 head gives the 8150LS flexibility to switch between sonic, mud or air rotary drilling, and diamond core drilling as geology or scope of work changes — maximizing productivity, reducing mobilization costs, and keeping projects moving with one versatile rig.

950- OR 1,600-FOOT WIRELINE WINCH

With more horsepower, higher rpm, and advanced pump capacity, customers are drilling sonic borings deeper than ever. The 950- and 1,600-foot wireline winch makes retrieving casing from greater depths easy.

DRILL MAST SIDE SHIFT

Maneuver the drill mast quickly and easily to line up on the hole without moving the tracks. Shift the drill mast fore, aft, left, and right relative to the hole.



Geoprobe® engineered and manufactured GV5 sonic head with DMR7 rotary head along centerline head side shift to position over hole without moving machine.

GEOPROBE® GV5 SONIC HEAD BUILT TO PERFORM. BUILT TO LAST.

Sonic drillers worldwide have long struggled to find a head that delivers both power and durability. Geoprobe® engineers changed that. After years of R&D and testing, the GV5 sonic head delivers high production power and long service life. Because we design and build GV5 heads in-house, we control quality and continuously improve performance. From Turkey to New Zealand, operators count on the GV5 to run season after season — without keeping a spare head on the shelf.

3-YEAR / 1,000-HOUR HEAD WARRANTY

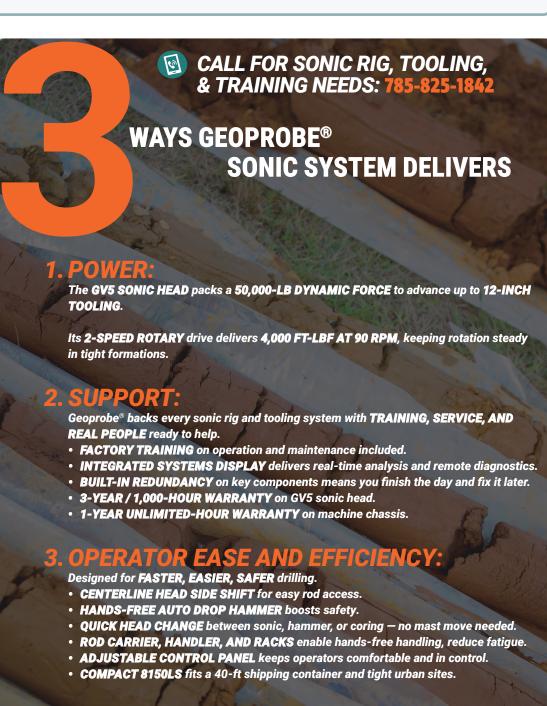
Innovation and solid design give the GV5 sonic head the muscle and life to handle any formation. With just basic maintenance, it keeps running.



MULTIPLE CONFIGURATIONS

Pair the GV5 head with the field-ready option you need, including:

- DMR7 rotary and coring head with 5,250 ft-lb torque, 1,000 rpm
- High-speed coring head
- · Auto drop hammer



CDL-Free Solution for Highway Success

Landing a large I-70 contract, employee-owned **OWN INC.** needed a capable rig — without requiring a Class A/B CDL.

"We looked at a conventional rig, but weren't finding what we were looking for," Gary White, drilling manager, said. "We knew about how the little Geoprobe® rigs could do environmental and had seen a demonstration of the 3100GT when Lee [Shaw, sales representative] buzzed through town a year ago."

After visiting Geoprobe® headquarters, the team quickly realized the 3100GT could do it all.

"The 3100GT is a truck-mounted drill rig that does everything we needed it to do. We could sample with 4-inch augers, core, and it weighed less than 26,000 GVW," White said. "It has the ability to do what we need and one of our secretaries could run it. In fact, one in Kansas City really wants to."

Efficient and Easy to Operate

Since this September, the 3100GT has bounced between the I-70 and I-44 expansion projects — drilling, sampling, and coring through shale.

"I can just hop in and go. I don't have to have a CDL or send a semi-trailer to haul the rig," Tim Carriker, driller, said. "It makes it faster and easier to do the jobs. I could almost run the whole rig by myself — everything is just right there."

Carriker especially likes how the mast swivels and tilts, allowing quick, precise alignment on every hole. The intuitive control layout, clearly marked with icons, helps streamline operation and minimize training time.

From Conventional to Compact

With more than four decades in drilling, White acknowledges switching from a conventional rig to the 3100GT was simple.

"I've run conventional mud rotary and air rotary rigs for 41 years, and it's really not bad to get used to drilling on the other side of the rig," White said. "Plus I don't need a truck and trailer to haul it, and we can get into smaller spaces."

All the Power, None of the Hassle

Compact yet capable, the Geoprobe® 3100GT gives OWN Inc. the performance they need without the logistical headaches.

"It's everything we ever want or need compacted into one truck-mounted rig," White said.



IMPROVE I-70: BLUE SPRINGS TO ODESSA

A \$350 million design-build project that will add a third lane to each direction on Interstate 70 from just west of MO Route 7 in Blue Springs to approximately MO Route H. The project also includes I-70 interchange improvements at Route D in Bates City and at MO Route 131 in Odessa.

PROJECT GOALS INCLUDE:

- Provide an additional lane of travel in each direction on I-70 from Blue Springs to Odessa.
- Modernize I-70 while improving the existing pavement, bridges, and interchanges to enhance safety and mobility.

source: modot.org

MWD READY RIGS AND EXPERTS

ALL GEOPROBE® GEOTECH RIGS — 3135GT, 3126GT, and 3100GT — now come PREPPED FOR MEASUREMENT WHILE DRILLING (MWD) and BACKED BY GEOPROBE® EXPERT TECH SUPPORT.

Harness the power of emerging data technology with built-in **WIRING**, **MOUNTING POINTS**, **AND PROGRAMMING** for an easy future install.

MWD Benefits:

- DATA LOGGING: records drilling + machine parameters by depth or time
- ISO 22476-15 COMPLIANT
- SENSORS + MEASUREMENTS designed by Team Geoprobe®
- CAN BUS J1939 OUTPUT to your logging system

Value

- Capture real-time drilling and operation data
- Detect lithology changes and voids in soil or rock
- Backed by expert tech support and readily available parts



Capabilities to Bid the Big Jobs

GEOSTRUCTURES, founded in 2001, accelerated production when they added a Geoprobe® 7822DT in 2018.

"We went from doing our own projects to subbing and bidding other drilling projects," Rick Miller, operator, said.

Aiming to compete in all phases of geotechnical and environmental drilling, they invested in a 3126GT.

"We were in the market for the 3126GT to reach deeper depths with bigger tooling. We considered several other manufacturers, all of which I have experience operating and know their capabilities," Miller said. "We decided on the 3126GT for its game-changing features such as the drop rack, blade, tower oscillation, and multi-function drilling capabilities."

Game-Changing Features

Miller calls out innovations that matter in the field.

- Mast Dump: "Using the outrigger to lift the foot and rod clamp up over a mud tub makes SPT much more efficient and safe. You can also place the controls at a comfortable height."
- Drop Rack and Blade: "They are a one-of-a-kind feature that is very effective. To place tooling within arm's reach and the ability to grade uneven terrain or clear brush is key to safety and efficiency."
- Hands-free Rotation and Head Feed: "The auto drill and detent are a key upgrade."

The biggest surprise?

"The overall speed, power, technology, and efficiency of the machine. The 3126GT is dialed in and wastes no time," Miller said. "The torque and speed of the 6-speed head is very impressive compared to the 4-speed on the 7822DT."

Penn Landing Cap Project

GeoStructures put the 3126GT to work on a demanding Department of Transportion (DOT) project.

"We utilized 3-inch spin casing with a tri-cone casing advancer to drill through overburden of 80 to 100 feet of sands and gravel," Miller said. "Followed by open hole mud rotary with tricone in 50/5< weathered bedrock material to depths of 120 feet. Followed by rock coring with NQ tooling to depth of 175 to 200 feet."

The 3126GT exceeded their production expectations.

"On this DOT footage job, we were able to complete a 175-foot boring in a day and half," Miller said. "Our revenue streams more than doubled on this footage job compared to our daily standard rate."

A Business Transformed

The 3126GT expanded their competitive edge.

"It allows us to bid bigger jobs with deeper depths. The versatility and efficiency makes this rig a game changer for us," Miller said.

He praises the versatility of Geoprobe® rigs with achieving multiple revenue streams using different drilling methods without skimping on geotechnical prowess.

"This rig has erased all skepticism whether Geoprobe® rigs can compete in the geotech industry. The 3126GT has asserted itself in the game in a big way," Miller said. "They have the ability to effectively and efficiently operate traditional geotech tooling such as wireline and casing advancer systems. There's no job that this rig can't do."

Better Life

For Miller, the innovation is also personal.

"The commitment to R&D is why Geoprobe® continues to evolve and be a leader of innovation in the industry," Miller said. "I am coming off of a life-changing injury. I shattered my pelvis and broke three vertebrae. This machine, with its user-friendly operation, makes drilling as comfortable and efficient as possible."





Top: Adjusting mast dump to position control panel and using blade to optimize drop rack positioning make the workspace more comfortable. Bottom: The 3126GT's hands-free rotation and head feed speed up coring on the Penn Landing Cap Project.

Powering Through Quartz and Granite

Securing a mineral exploration job doing nine borings running 300- to 400feet deep through quartz and granite, CATAWBA VALLEY ENGINEERING
AND TESTING knew it was time to up their drilling power with the
Geoprobe® 3135GT delivering 10,000 ft-lbs of torque.

"We've cored to 300 feet with our 3126GT, but the maximum rpms were falling off and the pump struggled to keep up with the water needed at that depth," Cody Dobbins, drilling operations manager, said. "With the 3135GT, it still has a lot left to give at 400 feet. I was a little surprised by how well it handled it and am excited to take it deeper when we get the chance."

Built for Rock

Dobbins said the 3135GT's rock coring "bells and whistles" make a real difference in the field:

- Weight-on-Bit: "It allows for hands-free coring, allowing us to dial in the head pressure for different formations of rock we're in."
- 10,000 ft-lbs Torque, 1,000 rpm: "The higher torque allows us to maintain high rpms for coring at depth."
 - Hands-free Rotation: "Makes rock coring or standard drilling easier.
 You're able to do other tasks while the machine is doing the work,
 whether dialing in the weight-on-bit or getting another rod. You can just
 be more efficient."
 - Three Winches: "You can pull more tooling at one time without going back in and out of the hole."

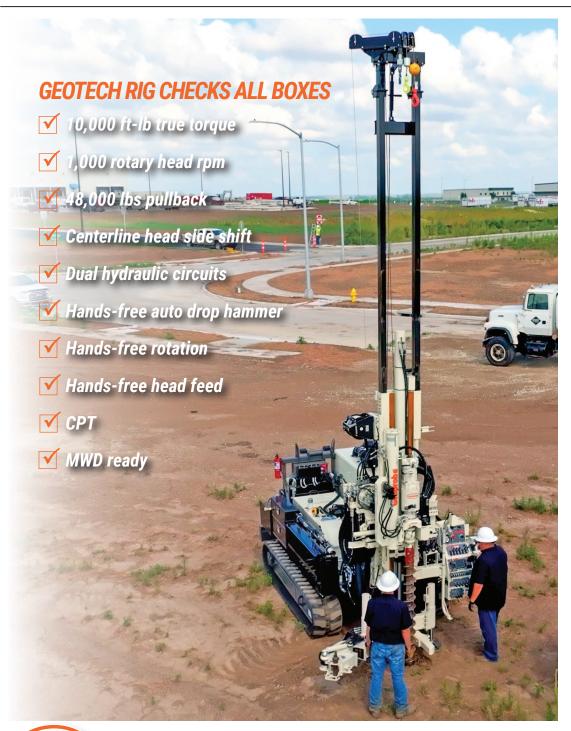
Results that Pay Off

That performance helped Catawba Valley secure annual coring contracts with mining clients. The upgrade in torque and rpms provides production confidence for their service area.

"The 3135GT also speeds up hollow stem auger drilling through dense piedmont residual soils in Western North Carolina," Dobbins said.



Along with extra torque and rpm, 3135GT features like weight-on-bit, hands-free rotation, and three winches make rock coring easier.





FIELDWORK SIMPLIFIEDTM

FASTER.

134HP Cat C3.6 engine powers:

- GR10.1 6-speed rotary head (10,000 ft-lb torque, 1,000 rpm)
- GH64 percussion hammer (36,000 lb push, 48,000 lb pull)
- Dual hydraulic circuits (maintain hydraulic flow and pressure for both drilling functions and fluid circulation)

EASIER:

Mobilize one rig, with minimal mast or machine movement to complete:

Augering • Mud rotary • SPT Shelby tubes • Hard rock cores CPT • Direct push

Reduce operator strain and stay out of danger zone using:

- · Hands-free automatic drop hammer
- · Hands-free rotation and head feed

NEW COPIDE

3135GT Features

With 10,000 ft lbs of torque and 1,000 rpm, the compact 3135GT delivers job site success with more power combined with proven features like:

- Centerline Head Side Shift: quickly switch between high-speed coring, augering, direct push, and SPT with minimal machine movement
- GR10.1 6-speed Rotary Head: 10,000 ft-lb torque, 1,000 rpm
- GH64 Percussion Hammer: powerful direct push sampling
- Class-leading Push/Pull: 36,000 lb push, 48,000 lb pull
- Dual Hydraulic Circuits: separate flow and pressure for drilling and fluid circulation
- Hands-free Functions: automatic drop hammer, rotation, and feed reduce operator strain and keep them safe
- CPT Ready: Automatic head feed control for a steady 2 cm/sec push rate
- MWD Ready: Built-in wiring, mounting points, and programming for a plug-and-play future install

An expanding list of options helps you maximize the rig's capabilities, including:

LARGER, WIDER TRACKS

Now standard, the larger and wider tracks boost ground clearance, reduce ground pressure, and improve off-road performance.

TRIPLEX PUMP

Rock coring performance improves with the triplex pump, providing steady flow and pressure to cool the bit, maintain downhole pressure, and clear cuttings.

950- OR 1,600-FOOT WIRELINE WINCH

With 134 HP, 1,000 rpm, and a high-capacity pump, customers drill deeper than ever. The 950- or 1,600-foot wireline winches simplify pulling rods from those depths.



CPT Brings Efficiency and Excitement

Turning his geology degree into a water well drilling job, Jake Bram discovered geotechnical drilling was a better fit both for his education and his lifestyle.

"I was doing a lot of commercial and municipal water wells. It was long 60-70 hour weeks with a lot of traveling," Bram said. "Transitioning to the environmental/geotechnical side, it's a little less demanding physically and has more manageable days, which is a better fit for me."

The Geoprobe® 7822DT won him over early in his career.

"The 7822DT was track-mounted and had the options to do SPT, hollow stem auger, Macro-Core®, coring, and mud rotary," Bram said. "It had everything we needed for the depths and types of borings we were doing — with the ability to add additional stuff as we needed it."

When Bram joined **RAUCH INC**, a 41-year-old engineering company, the company bought that 7822DT to come with him. Rauch Inc. manages residential and commercial development — engineering and architectural design, surveying, soil sampling, data analysis, construction planning — all in-house. Bram is part of a five-person environmental/geotechnical fieldwork team whose workload follows the pace of the architects and engineers.

"We're a small department, so when engineering and architects get busy, we do too on geotechnical drilling projects," Bram said.

Adding CPT to the Mix

Looking to work smarter, Bram's team landed a project that justified adding Cone Penetration Testing (CPT). "We knew CPT could save us weeks of labor in the field," Bram said. "But all we really knew about it was that it existed. I just knew the theory of CPT, in terms of not requiring rotation to assess soil characteristics." Knowing the 7822DT was CPT-ready, they turned to Geoprobe® for guidance.

"I knew the 7822DT had the CPT switch, and that the 7822DT was strong enough and capable of doing CPT. But I'd never seen it done," Bram said. "Geoprobe® had provided great customer service since we bought the rig, so that's where we started and ended when looking into adding CPT."

The five-person team all had a college education and brought 30 years of field experience among them, but they were a blank slate when it came to CPT.

"Troy came out and did a day-and-half demonstration. Learning the equipment was very simple," Bram said. "Troy did a great job of teaching us. The fact that four days after he taught us, I took it to the field and taught someone else speaks volumes on the Geoprobe® ASTRA CPT's simplicity."

Since training, the team has needed technical support only once.

"We had one instance of needing to get the data report displayed correctly for a particular geotechnical engineer," Bram said. "We called to get advice on building the report, but that's the only technical help we've needed since our training."

Weeks Saved and Work Made Easier

Since purchasing their Geoprobe® ASTRA CPT system, they've used it at any opportunity possible.

"We did 30 borings to 20-60 feet as part of preliminary data collection. It took us two weeks less than what we would expect to have taken doing solely SPT," Bram said. "On another job, we did $\frac{3}{4}$ of the borings CPT, which saved us more than a week on that job. Plus it's so much less invasive — not hammering on casing and split spoons or leaving spoil piles from the auger borings. It allows us to have a much cleaner and noise-friendly job site."

The efficiency boost gives the team breathing room in packed schedules.

"CPT gives us wiggle room in the schedule to deal with the unexpected when we're booked for months at a time," Bram said. "We can get the data to 60 feet in 25 minutes by simply adding rods. We're still doing SPT with the CPT, but it's nice to do one SPT for every 4-6 borings."

And it's added something unexpected: fun.

"It also keeps everyone involved with the drilling portion of the company happier. We're all still trying to learn and having something new to learn like CPT actually added some fun to it," Bram said. "I never thought I'd have a laptop sitting on a drill rig while drilling. It's still kind of shocking, but it's super easy."



ASTRA CPT: 15 cm² Cone

Geoprobe® manufactures ASTRA CPT cones in both 10 cm² and larger 15 cm² sizes. The 15 cm² cone, with its 44 mm (1.73 in) diameter, offers several advantages depending on soil type:

- STRONGER AND MORE DURABLE due to increased diameter
- LESS ROD FRICTION, which can improve depth in fine-grain soils and clays

Choosing the Geoprobe® ASTRA CPT system also brings added benefits of inhouse manufacturing:

CONE DURABILITY

The ASTRA CPT neck is more robust, reducing breakage risk.

FAST AND EASY CALIBRATION

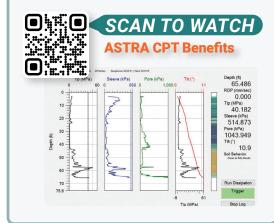
One week turnaround when you send cones to Geoprobe® Kansas headquarters for calibration — saving time and money.

SIMPLE USER INTERFACE

Software is easy to use with clear buttons and an intuitive interface, helping new operators get up-to-speed quickly.

"Geoprobe® software is super easy to use. Someone who's never done CPT could get trained on it."

> — Todd Ives, Drilling Operator, Amdrill, Florida





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

WAYS GEOPROBE® EQUALS EASIEST CPT EVER

Rigs built for performance with:

- Up to 15 TONS OF DOWNFORCE (20 tons on 3230DT and 20CPT Press).
- AUTOMATIC HEAD FEED CONTROL for a steady
- 2 cm/sec push rate ASTM compliant.

Durable cones manufactured by Geoprobe®

- ASTRA CPT cones in 10 cm² or 15 cm²
- REINFORCED NECK to handle tough soils Anchors, rods, and polyfilters — all from Geoprobe $^{\circ}$.

- **INTUITIVE SOFTWARE INTERFACE** helps new operators get up-to-speed quickly.
- Save time and cost with U.S.-BASED REPAIR AND **CALIBRATION** with one week turnaround on calibrations.

N-HOUSE EXPERTS

- HANDS-ON TRAINING to be job-ready with confidence.
- Rig to cone repairs, calibration, and live expert **HELP** AFTER THE SALE BY GEOPROBE® CPT SPECIALISTS.



CPT Specialist

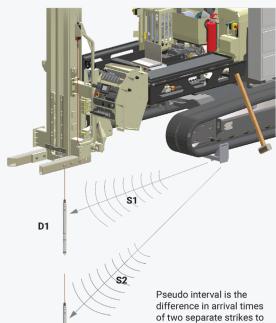
ASTRA TRUE INTERVAL SEISMIC CPT MODULE:

One Swing, Two Waves

Calculating shear wave velocity requires recording shear wave travel time between two depths. Traditionally, this meant taking two separate hammer strikes - one for each depth - using a standard seismic CPT module. With a TRUE INTERVAL SEISMIC CPT MODULE, the process becomes simpler and more precise. Two sensors are positioned exactly 0.5 METERS APART, allowing a SINGLE HAMMER STRIKE to be recorded at both depths at the same time. This design eliminates the variability introduced by multiple strikes, improving data consistency. It also saves valuable time in the field, reducing operator fatigue, and the chance of error. The result: FASTER TESTING, CLEANER DATA, AND **GREATER CONFIDENCE IN YOUR SHEAR WAVE VELOCITY CALCULATIONS.**





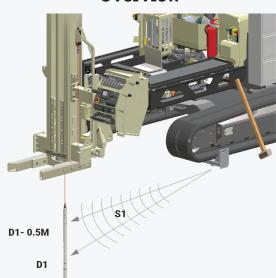


D2

a single geophone array when placed at two different

distances from the source

True Interval Seismic CPT Overview



With True Interval, the travel time of a single strike is measured between two geophone arrays spaced a known distance inside a single sensor. This significantly reduces and can eliminate possible errors in wave selection, trigger speed and consistency, and the accuracy of the geophone distance.

BENEFITS OF GEOPROBE® ASTRA TRUE INTERVAL SEISMIC CPT MODULE

· Increased accuracy:

sensors spaced exactly 0.5 m apart capture waves from the same hammer strike. Real-time software visualization confirms successful strikes in the field.

Fasier in the field:

sensors 0.5 meters apart rather than 1 meter increases seismic wave resolution without extra effort. By collecting data from two locations at once, see real-time velocity calculations plotted as pushing cone.

Simpler set up:

swap out one cone section and keep your existing electronics to enjoy true interval seismic simplicity. With a piezotrigger on the shear plate, there's no need to wire the plate and hammer — whether using traditional or true interval seismic.

D=Depth, S=Shear Wave



Overgrown Rigs to Geotechnical Powerhouse

ord Rose joined **ENVIROPROBE INTEGRATED SOLUTIONS**when their fleet consisted of two old conventional drill rigs out
back, overgrown with weeds. For the past 15 years, he's helped grow
the company's geotechnical capabilities.

"We purchased a Geoprobe® 7720DT and an 8040DT, doing 95 percent environmental work running those two rigs," Rose, drilling department manager, said. "We began growing, so we bought a 7822DT and split the driller's helper off the 8040DT and taught him how to core rock."

When their 8040DT was totaled in a truck wreck, Geoprobe $^{\tiny{\$}}$ had just released the 3230DT.

"The 3230DT offered better coring capabilities and more direct push power than the 8040DT," Rose said. "We can install 8-inch PVC casing with 10.25-inch augers. It opened us up to drilling any hole we want in West Virginia. We can do a 6-inch diameter hole even in bedrock."

Tackling Geothermal Challenges

When owner Rod Moore wanted geothermal energy for his new home in South Charleston, they chose the 3230DT to cut rock via air rotary and install geothermal loops.

"Initially we started with down-the-hole hammer, but the hammer failed," Rose said. "We decided to roller bit and cut the hole 6- or 8-inch diameter to 120-feet deep for the geothermal loops."

They hit bedrock in the first 5 feet, and the rest was solid rock. As they proceeded, the tooling became extremely tight.

"Because of the double breakout on the 3230DT, we weren't killing the guy with the breakout wrench or a conventional table with only one set of jaws," Rose said. "We could clamp the tooling with the bottom jaw to hold it, and then clamp it with the top jaw to rotate the tooling to break the joint. The rig does the work for you."

Why the 3230DT Stands Out

Two features make it a favorite:

- All Hydraulic: "With direct drive, you have to hit the kill switch or clutch
 to stop rotation. With hydraulic, you let your finger off the lever to stop
 it. You're also less likely to break stuff. It absorbs the shock of hitting a
 boulder without breaking a chain or a drive shaft."
- Direct Push Capabilities: "We can install a monitoring well through the casing and be way more efficient."

Versatility in Action

Today, Enviroprobe keeps seven rigs busy coring rock, spinning casing and casing advancement systems, and completing air rotary. They often opt to run one of their Geoprobe® rigs.

"The Geoprobe® 3230DTs are versatile rigs. Auger, core, drive spoons, casing, air rotary, direct push, CPT — all with one rig. That's why we like Geoprobe® — for the versatility," Rose said. "Our Geoprobe® rigs stay busy."

Above: Double breakout on the 3230DT shines on a unique geothermal energy loop project.

DYNAMIC DRILLER • Winter 2025 Geoprobe 21

Decades of Drilling, One Trusted Name

Terry Jacques has spent nearly 35 years in the drilling industry, working for multiple companies across the Pacific Northwest. Sometimes a driller, sometimes an operations manager. But throughout the years, one thing has always been there:

"I've always worked for other companies that had Geoprobe® rigs," Jacques

said. "The first rig I ever ran was a 5400, and I've used everything up to the latest sonic rigs."

In 2013, he started OREGON GEOTECHNICAL EXPLORATIONS with the goal of focusing on CPT sampling. Initially, he relied on a couple of truck-mounted legacy rigs to

get the job done - including a trusty 5400 - and later a track-mounted 6622CPT rig. But in

2024, one of his truck-mounted rigs quit on him.

"Truck-mounted rigs work great, but the life of the truck wears out quickly. So when it came time for me to buy another truck-mounted machine, Doug Koehler [geotechnical/environmental product line manager] gave me several options, and I looked at the possible combinations," Jacques said. "That's when I got the 7822DT."

Although he didn't start off the year thinking he was going to purchase a 7822DT, Jacques found it to be the right decision for his company.

"I weighed the options between the 7822 and another truck-mounted machine, I even looked at other manufacturers. But I've always had my needs met whenever I operated a Geoprobe®," Jacques said. "It just seems like Geoprobe® rigs were built better and with the operator in mind."

Though this is the first 7822DT Jacques owns, this is far from the first one he's operated.

"I've been running 7822DTs since they first came out," Jacques said. "The companies I've worked with in the past had one, and I've been impressed with how versatile it is. When I was in the position of manager, I probably purchased 10 7822DTs over the past 20 years."

Versatility that Delivers

The 7822DT's versatility has helped Jacques with a variety of unique projects:

- Augering
- · CPT
- Shallow infiltration
- Pre-drilling for CPT
- · Confirmation sampling via direct push

But one thing that stands out to him the most is the rig's power.

- Pullback: "My 6622CPT is great for pushing the cone and shell sampling. Once it gets
 past 20 feet, though, it loses its effectiveness, and it's more difficult to pull back. I
 need that force. That's why I picked the 7822DT lots of power, pullback, and the
 winchline needed to handle some of the heavier tooling."
- Rotation Torque: "It makes a big difference. Compared to such a small platform, it has
 plenty of power and works well in difficult geology. I've been really impressed with
 the power this rig has compared to full-sized drill rigs."



7822DT's power and versatility excel at pushing cones and handling diverse geotechnical tasks like here at a Nike facility in Beaverton, Oregon.

NEW ***

Versatile 20 Ton Rated CPT Press Option

Geoprobe® adds a NEW 20-ton CPT platform option: the **20CPT STANDALONE PRESS**. It can be mounted on any carrier, letting you tailor transport for your fieldwork. The 20CPT Standalone Press uses the carrier's weight — no anchoring needed. This reduces soil disturbance and speeds up each hole.

- Hydraulic Requirements: open center system with 24 gpm maximum flow, 2500 psi maximum and 300 psi maximum back pressure
- Compact Size: weighing 1090 lbs, dimensions are 72-inches high, 48-inches wide, and 36-inches deep
- Mounting Base: simplifies deck mounting

CONTROL PANEL

- top mounting location for CPT computer
- extra valve banks to use for other platform functions

TWIN CYLINDERS

- 40,000 lbs push and 60,000 lbs pull
- 54-inch stroke

HYDRAULIC CLAMPS

- Top: hydraulic back jaw, manual front jaw adjusts for larger tools
- Bottom: prevents rods from sliding back down the hole





Leveling Up with 7822DT

Starting a dozen years ago, running a couple crews a day doing mostly environmental drilling, NORTHERN DRILL SERVICE INC now runs six to seven crews.

"We have a 6620DT that's used a lot for Phase I environmental," said Zac Nader, who has been with the company 10 years — first in the field and now as operations manager, maintaining the fleet.

As the company grew, so did requests for geotechnical work. Around 2018, Northern Drill Service added another manufacturer's rig to its lineup.

"Clients like the size, and it's great for borings where there is overhead limitations or it's limited access," Nader said. "However, the service and what it takes to keep it running was a challenge. So we wanted something in between that rig and our 6620DT."

Discovering the 7822DT

At Geoprobe® Open House 2024, Northern Drill Service found their answer.

"After seeing the 7822DT, we knew it could do the environmental and geotechnical work, taking the heat off the other manufacturer's rig, while running bigger casing and offering different sampling options than the 6620DT," Nader said. "The 7822DT is as much geotechnical as it is environmental."

Confidence in Geoprobe®

The trip to the factory also shifted Nader's perspective on Geoprobe® as a manufacturer.

"After we saw the factory, we understood Geoprobe® has come a long way from making 66s and 54s. It's a big-time set up with big-time things going on," Nader said. "Geoprobe® has their hands in everything — including water well — and figuring it all out. Nobody else looks like their professional set up in Kansas. When we came home, we understood how Geoprobe® had taken drilling to the next level."

Proven in the Field

On the sands of Cape Cod, the 7822DT proved its worth.

"With the other manufacturer's rig, it's a problem driving and pulling casing due to the friction from the sand. The 7822DT has so much pullback, we could drive and pull HW 4-inch casing without a problem," Nader said. "Other rigs could drill down, but other rigs that size don't have the pullback to pull the rods back out. The 7822DT has unbelievable pullback, it's actually kind of crazy."

One Rig, Many Options

Beyond raw power, the 7822DT impressed Northern Drill Service with its adaptability. The crew points to its:

- oscillation in multiple directions
- easy transition from rotary to pneumatic
- $\bullet \ \ quick \ switchovers \ between \ casing \ and \ drive-and-wash$

"We can run a crew who, in one package, has multiple options. If one option isn't working, there's another option on the table," Nader said. "Really, if you're going to start your own business from ground zero, the 7822DT is the rig to do it with. It really hits every niche with one rig. When clients call, you can do anything with it so you don't have to say 'no' to the clients."

Tooling that Simplifies Fieldwork

Northern Drill Service also sees benefits from Geoprobe® tooling, particularly the adjustable rod grip puller.

"It's nice that you don't have 10 rod pullers. From 1.25 to 3.75, it works for everything, especially when setting wells," Nader said. "It's nice to pullback with the adjustable rod grip puller and be able to maintain a visual to ensure the well is staying as compared to having the pull caps at the top."

Raising the Bar

For Northern Drill Service, the addition of the 7822DT has not only leveled up their fleet but also strengthened their ability to meet customer needs with confidence. From environmental to geotechnical, the rig has proven itself as a versatile, powerful solution that makes saying "yes" to clients easier than ever.

Top: Pullback power of 7822DT outperforms conventional rigs, overcoming sand friction when driving 4-inch casing.



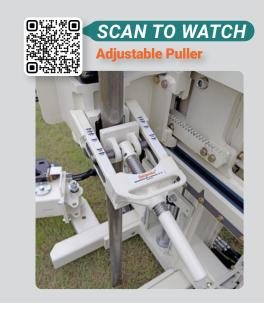
GEOPROBE® ADJUSTABLE ROD GRIP PULLER

DOES THE JOB OF FIVE ROD GRIP
PULLERS AT A FRACTION OF THE COST

Instead of carrying multiple rod pullers, drillers can now use one adjustable tool that fits several sizes — like using a single adjustable wrench instead of a whole set.

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





Direct Connection to Expert Service Support

ARDVARK DRILLING launched in 2002 by Matt England and Darren Juneau with the purchase of equipment from an engineering company. By the next year, they opened offices in Southwest Ontario and Bermuda. Since then, the company has steadily grown — buying machines or acquiring companies and working to diversify industries.

"We run mostly conventional and dual rotary drill rigs, but purchasing a company with Geoprobe® rigs started our relationship with Geoprobe®," Kyle Smith, project manager, said. "The Geoprobe® rigs are a nice complement to better serve environmental customers with Macro-Core® sampling and vapor probe installations and remediation injections versus just installing larger diameter wells."

They own five Geoprobe® rigs, from a GH40 portable unit, to a 6610, to a 7822DT. They recently acquired a 420M skid steer mounted unit.

"We own 18 conventional rigs, but the 7822DT will do everything below or in between," Smith said. "The 7822DT is the best all-around machine."

Speedy Service, Less Downtime

Smith's career mirrors the company's growth: starting as a driller's helper, moving into drilling, branch management, expansion oversight, and now project management. Often turning wrenches on the rigs himself, he appreciates the expertise of the Geoprobe® international service team.

"I'd spent a couple of days trying to troubleshoot one of our 7822DTs. Within a couple of hours on the phone with Roman Burrows [Kansas Service Center manager], he identified a connector on our particular model that could be suspect," Smith said. "It always comes down to his expertise and knowledge of the particular vintage of machine. We were able to get the machine back out in the field later that week and keep the client happy."

Since Geoprobe® began handling parts and service directly in Canada, downtime has dropped dramatically.

"They basically removed the middleman. I'm going right to the people who have the parts on the shelf and have the expertise. That eliminates any lag time," Smith said. "The Geoprobe® service support has seen the changes on most of the models and knows the system without me having to dig into the schematics, which really saves downtime."

Looking Ahead

As Aardvark expands into water well services, they're also paying attention to the Geoprobe® DM series water well rigs.

"Geoprobe[®] is a very smart company and their segue into domestic water well is taking off," Smith said. "Every product they put out is top of class."

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Small Rig, Strong Results

Running three, 10-day shifts, **HANA ENGINEERS AND CONSULTANTS** used their 6712DT and 7822DT to complete 300 injection points — up to 35-feet deep — on a chlorinated solvents remediation project in Marietta, Pennsylvania. Faced with varied rock, uneven terrain, and tight railroad access, the compact 6712DT emerged as the top performer.

"The 6712DT did more injection points than the 7822DT. It has all the power and hammering force of the 7822DT in a smaller platform, so it was easier to maneuver between injection points and lines on the ground," Charles Sweet, operator, said. "The 6712DT had no problems getting to depth running 2.25-inch rods and was easy to keep work steady. I love that rig."

Initially skeptical about the smaller rig, Sweet quickly changed his mind once he ran the controls. "When I started four months ago, I looked at the 6712DT and wondered 'what could it do?' I had a mentality that because it was smaller it couldn't do much," Sweet said. "Running it on the injections job, I understand it has a place in the company. I wasn't lacking any power just because of the size. It's a smaller platform with the same hammer and same pullback as the 7822DT. Nothing stuck. Not once did I regret running the 6712DT."

Simple by Design

Sweet's favorite 6712DT feature? Its simplicity.

"It doesn't have a bunch of accessories or unneeded stuff," Sweet said. "As a direct push platform, I could be more productive with the 6712DT because I didn't have to swing the breakout or have the auto drop hammer in the way."

Support That Stands Out

He credits Geoprobe® for making "great, user-friendly machines that make everything easier in the field." But for him, what sets Geoprobe® apart is support.

"Anything that comes up, I can get someone on the phone and in one phone call, I can get the situation resolved," Sweet said. "If I can't fix it over the phone, then someone will come out right away and help keep the rig going."

He's especially appreciative of the technical expertise Geoprobe® provides.

"I've dealt with Vic Rotonda [sales representative] for quite a few years. If I have a question about any type of tooling or drilling, he's always pointed me in the right direction," Sweet said. "They're great people all around the board."

Big Value in a Small Package

He now cautions against discounting Geoprobe® rigs based solely on size.

"Even though Geoprobe® rigs are small, they add big value and big benefit to any company," Sweet said. "They add experience, knowledge, and service when you buy their rigs."

Geoprobe Systems® Honored by National and State Organizations

This fall, Geoprobe Systems® earned recognition for its unwavering commitment to safety, global market expansion, and exceptional export performance.

National Drilling Association Recognizes Safety Excellence

During the NDA Drill Expo 2025 awards ceremony in October, Geoprobe® received the 2025 Manufacturer's Safety Award, honoring the company's dedication to safety across the drilling industry.



"This award reflects our team's ongoing focus on safe practices and ensuring our customers can operate confidently in the field," said Doug Koehler, geotechnical/environmental product line manager.



Kansas Governor Names Geoprobe® Exporter of the Year

October 16, Geoprobe® was named the 2025 Kansas Governor's Exporter of the Year. The award, presented annually for more than 30 years, recognizes a Kansas company that succeeds in international markets, highlighting them as role models of exporter success.

Key factors considered by the 25 member voting committee include:

- · Contributing to the Kansas economy
- Producing innovative and high-quality product
- Being strategic in global business

"It is an honor to be chosen as this year's Kansas Exporter of the Year. This award recognizes our team's dedication to supporting our customers, both here in the U.S. and around the world," Tom Omli, president, said.

The voting committee consists of members from the Kansas Department of Commerce, Kansas International Trade Coordinating Council, and past award winners. During June 2025, eight members toured the Geoprobe® Salina, Kansas, headquarters.

During September, Tony Bowell, international sales representative; Kyle Riedel, production director, PE; and Omli presented on the company's international business to all members of the voting committee at the state capitol in Topeka, Kansas.

Geoprobe [®] **Sales Team: Helpful Experts Focused on Relationship Building**

Geoprobe® sales representatives run tools and rigs, so they understand your formations and challenges. That firsthand knowledge means you get expert support in one call — from recommending the right drilling solutions to advising on sampling methods and shipping parts the same day.



Dan Pipp



Donnie Wood



Doug Koehler



Gahe Prater



Jamie Meade



Lee Shaw



Luke Shiew



Matt Hodges



Scott Rosebrook



Tonv Bowell



Vic Rotonda

SCAN TO LEARN MORE ABOUT JOINING OUR SALES TEAM, WHO...

- √ runs rigs in the field, teaching new techniques
- connects drillers to solutions, interacting daily
- provides top customer service, contributing ideas for innovation
- engages industry leaders, traveling to help customers

Expanding Capabilities

When Ryan Galbreth joined **ANDERSON ENVIRONMENTAL CONTRACTING** (AEC),

his goal was clear: launch a remediation direct push division built on "quality over quantity." Starting with one 7822DT, AEC focused on buying new to stay productive.

"We're buying new to minimize downtime," Galbreth said. "Geoprobe® is always on the forefront of drilling technology."

Consistent quality control and overall responsiveness keeps him loyal to Geoprobe®.

"They stand behind the equipment.
Their tooling is great. Other tooling's metallurgy isn't great, and the Geoprobe® quality control shows with the threads always cut the same," Galbreth said.
"You know what you're getting when you order Geoprobe® tools and rigs, and the customer service is great."



Smaller Rig, Bigger Possibilities

After adding another 7822DT, AEC expanded further with a 6011DT, selected for its compact footprint and power.

"We chose the 6011DT for its width, tower height, GH63 hammer, and rotary head in order to be able to put it in areas the 7822DT can't go with the ability to get to depth in limited-access sites," Galbreth said. "At its size, we can use a crane or barge, put it in any dry cleaner building, or on a tank farm."

The 6011DT proved its worth on a major remediation project, pushing 200,000 units of product into the ground.

"It would have been difficult for anything else to accomplish the job," Galbreth said. "Its got a great footprint, good percussion power, and ability to maneuver between points."

Built for Real-World Work

Their newer 7822DT brings even more to the table — dual winches, improved durability, and integrated SPT capability.

"The dual winches on the new 7822DT are a great addition. It also seems more durable. We've done a lot of geotechnical with integrated SPT using the OEM auto drop hammer, which clients really appreciate," Galbreth said. "Being able to remove the drop hammer is helpful and gives us versatility. We put them where we shouldn't and have gotten jobs done because of the quality of the rig."

In addition to multiple dry cleaners, they put the 7822DT on a barge to move it along the shoreline of the Willamette River.

"It was more versatile to drive off the barge onto the shore as we completed 30 holes doing DT37," Galbreth said.

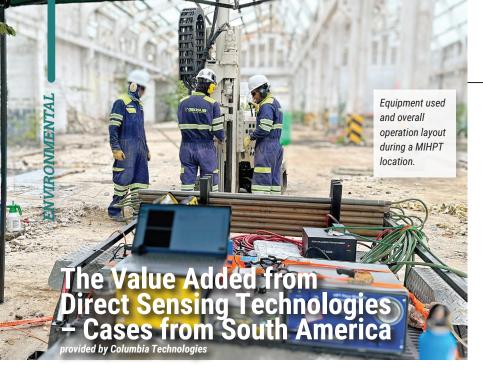
Versatility That Drives Results

AEC's six-rig fleet — three sonic and three direct push — keeps the team busy across the Pacific Northwest. And whenever possible, they turn to their Geoprobe® rigs.

"We can price jobs at a reasonable rate and accomplish goals more economically when the 7822DT or 6011DT can accomplish the scope versus sending sonic or hollow stem auger rig," Galbreth said.

Above: 6011DT's compact design and GH63 hammer let you reach depth in tight-access sites.





OLUMBIA TECHNOLOGIES has long partnered worldwide to deliver highquality direct sensing for high-resolution site characterization (HRSC). Recently, they teamed with GEOSUB and Novambientti in Colombia to handle projects from site characterization to remedial design and financial assessment.

While direct sensing is common in Brazil, countries like Argentina and Colombia are newer markets. Columbia Tech has led the way in applying Geoprobe® Direct Image® (DI) systems such as the Membrane Interface Hydraulic Profiling Tool (MIHPT) and Optical Imaging Hydraulic Profiling Tool (OIHPT) in Brazil (since 2012), Argentina (2020), and Colombia (2023).

"We count on local partners to successfully deploy the tools, improve site investigation practices, and support the creation of more robust conceptual site models," Mateus Evald, senior project manager, said.

Recently they finished a challenging project in Colombia deploying the OIHPT and MIHPT — among other methods — to acquire multiple lines of evidence.

Tackling Complex Conditions

The site was a former industrial facility with known historical impacts from chlorinated volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPH). It presented several challenges:

- difficult infrastructure with unknown historical sources
- missing links between source areas and deep contaminant locations
- a complex geological setting with carbonate formations

"We initially tried drilling with stem auger without success and had to use a bottom hammer to crack through the carbonate," Evald said. "We were able to assess the carbonate in areas where it was more weathered, discovering that this layer was not impacted and — therefore — not of interest."

With this finding, their strategy changed from spending excessive time trying to drill through carbonate with DI tools. Instead, they conducted a shallower investigation until reaching the carbonate, then resumed deeper investigation after that layer.

"Throughout the project, DI tools allowed us to communicate effectively with the client and provide real-time updates," Evald said. "All changes in the work plan and strategy were immediately aligned with the client, keeping our end goal in focus: What data did we need to collect and where, in order to reduce uncertainties impacting the remedial design?"

Tracing Vapor Migration Pathways

After characterizing that no shallow sources were present, the remaining uncertainty was to evidence the migration pathways of vapors generated from the contaminant mass centers. To achieve this, they installed temporary vapor probes at different intervals based on HPT data collected:

- close to the surface (1.5- and 3-meters depth)
- in a storage layer with high HPT pressure (5 meters)
- at two intervals below it (6 and 7.5 meters)

This allowed them to evidence vapor generation and migration to the surface.

"We also monitored biodegradation products including methane, CO², CO, oxygen,

and VOCs," Evald said. "This biodegradation evidence allowed us to refine the remedial design further."

Together with the client and its site priorities, a solid management and remediation plan was created and approved, with measurable key performance indicators and mapped uncertainties.

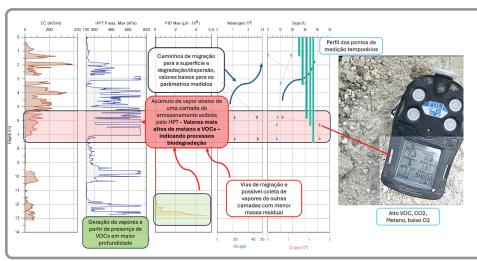


Figure 2: A cross section displaying the results from HPT, MIP detectors and the correlation with the vapor probes displaying the concentrations of biodegradation parameters and migration pathways.

Real-Time Data Drives Smarter Decisions

The main goal for site management was to conduct the investigation to achieve a robust conceptual site model and proceed with a financial assessment of possible remedial scenarios.

"We deployed Geoprobe® DI systems from day one to acquire data from primary zones of interest and evaluate changes in impacted volume in real time." Evald said.

This approach allowed them to modify the remedial design while delimiting the source areas.

When they encountered impenetrable carbonate layers, they adapted their drilling approach. Figure 1 shows a piece of carbonate recovered from a DT22 soil sample during an exploratory sampling location to understand the lithological challenges.



Transforming Site Investigation Practices

"Our 26 years of experience with Geoprobe® DI technologies and this Colombian project demonstrate how direct sensing technologies transform complex site investigations from guesswork into data-driven decision making," Evald said. "By adapting our approach in real-time based on the MIHPT and OIHPT results and geological challenges, we reduced investigation time while building a more accurate conceptual site model. The integration of multiple lines of evidence — from direct sensing data to vapor monitoring — enabled precise remedial design that directly addressed client priorities and site-specific conditions."

As South American markets adopt these technologies, projects like this prove that successful DI deployment depends not just on advanced tools, but on local partnerships, adaptive strategies, and clear communication with stakeholders.

"Special thanks to the GEOSUB and Novambientti teams for partnering through this excellent project," Evald said.



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REACTION TO GEOPROBE® 4.25 HOLLOW STEM AUGER CONTINUOUS SAMPLER

The 4.25 HSA Continuous Sampler is versatile and easy to use when collecting large sample volumes. It works with both solid and split barrel samplers, adapts to changing conditions, and its lightweight design reduces operator fatigue. By keeping material contained, it delivers cleaner, more accurate samples. Optional PVC liners fit both assemblies for added flexibility. Customer reactions have been positive, including:

CLEANER

"We're not losing volatiles out of the sampler because it's in a liner versus in a standard split spoon. The liner is fully enclosed, so we just drill a hole in it where we need to take a reading."

LIGHTER

"The actual tube is considerably lighter than a standard split spoon, so it's less wear and tear on the guys."

ADJUSTABLE •

"It was an advantage to be able to adjust the height of the sample tube depending on the compactness of the material. Other similar samplers don't allow you to adjust to the conditions."

SIMPLER

"The other manufacturer's version was cumbersome. You were looking at taking hours just to transfer from a traditional sampler to that one."

FASTER

"The sampling system has not only provided time savings but has increased sample volume, making logging and sampling more efficient."

FASIFE

"I really like the bearing on top so the rods aren't spinning and getting so tight you can't get them apart."

SAFF

"The rod adapter locks in place so we can use the drive head to thread the rods versus having our fingers in there."

GEOPROBE® PATENTED INTERLOCKING SPLIT SPOON:

"We didn't have to deal with the samplers bowing out, which makes it impossible to get the end caps off."

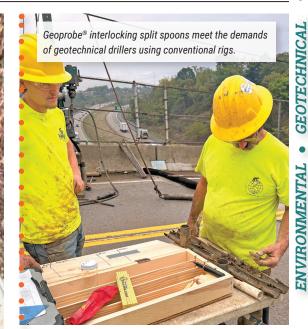
SCAN TO WATCH

4.25 HSA Continuous Sampler



INNOVATIVE

"When we bought the 4.25 HSA continuous sampler, the sales team called us the next week to check in and see if we like it or if there was anything we wanted to see changed. Lee Shaw [sales representative] took our ideas to engineering, and they've followed up with schematics. Geoprobe® really listens to the customer more than other tool and rig manufacturers across the industry. They take complaints seriously and when they hear multiple similar concerns, they take action to offer a solution."



125 Years of Tradition Meets Innovation

PENNSYLVANIA DRILLING COMPANY

has focused on geotechnical work for more than a century. With eight crews running a dozen conventional rigs every day, they know what works in the field. In 2022, a small test sparked a big shift. The now retired drilling manager ordered a couple of Geoprobe® interlocking split spoons to try.

"Geotech drillers all have their preferences
— from style of gloves to split spoons — so
it's hard to get a consensus on anything,"
Justin Derrico, current drilling manager, said.
"For most everyday purposes, the Geoprobe®
interlocking split spoons seem to be preferred
by the crews."

Crews liked the efficiency. Helpers appreciated the ease of assembly. Operations valued the durability.

"You don't see the swelling in the splits like the traditional split spoons we've used, they're easier to put together and take apart, and they never seem to need filed down like some other spoons that need some work to get them to fit right," Derrico said. "If it makes every sample easier, then it's doing something right."

Now the purchasing team is on board too.

"We've been ordering them regularly since 2022, and they now make up probably 75 percent of the spoons we have in the shop. We have them on all our field rigs," Derrico said. "I can't remember the last time I ordered traditional style spoons."

What began as an experiment has become the new standard for a company built on more than a century of drilling tradition.



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



Geoprobe SERVICE

We're here to help, no matter the make or model

Geoprobe® • DRILLMAX® • Schramm REICHdrill • Ingersoll Rand Boart Longyear • Sandvik

SOUTHEAST SERVICE CENTER

Reliable Rigs, Reliable Service

Since 1969, **DICK JOYCE WELL DRILLING** has been providing a variety of well drilling and well maintenance services to Central Florida. Ryan Hadden, grandson of the founder, has worked as a driller for his family's business for the last 15 years.

The rig he relies on to get the job done? A DM450.

"2018 was when we bought our first DM450," Hadden said. "We ran two DM450s for a time, then consolidated down to one and have been working steady with it since then."

Local Support Matters

Dick Joyce Well Drilling has operated rigs from other manufacturers in the past. However, one factor that drew them to the DM450 was the nearby Southeast Service Center (SESC) in Ocala, Florida.

"All the rigs we had in the past had manufacturer service that was out of our area. We didn't have anything close to us," Hadden said. "That was one of the things that attracted us to the DM450. The Geoprobe® Southeast Service Center has been a crutch to lean on, with the quick turnaround time and parts available. Having someone close to you that you can rely on is a great tool."

Specialized Service, Less Downtime

Many projects on Hadden's DM450 — including a top head rebuild and bracket updates — have been handled by the SESC.

"Before SESC, most of our repairs were done in-house. We do have local hydraulic shops and very good heavy-equipment mechanics that can aid repairs; but when you don't have a designated repair center close to you, you're not getting specialized service. You're getting broad knowledge, and you have to do a lot of work on your end — like getting the schematics, or figuring out 'how does it work'?" Hadden said.

Working with the SESC, he never has to worry about a lack of knowledge. "Seth [SESC manager] is a wealth of knowledge, and if he doesn't know something, he'll find you an answer in a couple hours," Hadden said. "I've had instances where I was in the field with an issue, and the SESC came to that job to make that repair; or they were on the phone walking me through on how to finish the job and get it back into the service center for repairs."



Fast Response Keeps Jobs Moving

The quick-response time of the SESC is another major benefit.

"Any time I've had a breakdown, it's been expedited. It's not 'I'll call you back in the morning', it's 'let's get to work on finding a solution', whether it's getting a part shipped or service scheduled," Hadden said. "Even the woman answering the phone [Ali Rady] is great. She makes sure I can find someone to talk to, and I'm not left on hold for too long."

Solutions That Last

Bottom line: support that keeps rigs — and crews — working.

"The service is phenomenal, and the team makes sure it's going to be a solution that's going to last," Hadden said.

KANSAS SERVICE CENTER

60 Days Not 6 Months Downtime

June 20, **ROY SIMMONS & SON WELL DRILLING'**s DM250 was T-boned. The impact bent the rear axle and the back jack. Relying on the rig for the bulk of their work, Steve Simmons, owner, worried about the influence on their bottom line.

"I figured it would be six months, and here in Michigan, it's busy from May to December. I was concerned going from three to two rigs, especially since the DM250 does 90 percent of the work," Simmons said. "But instead Geoprobe® had it done in two months, getting it repaired pretty quickly given July Fourth and Labor Day holidays were in there."

Geoprobe® Handles the Heavy Lifting

Geoprobe® coordinated transportation from their Michigan shop to the Kansas Service Center (KSSC) and handled the insurance company communication.

"They took a lot of pressure off of me by dealing with the insurance company. I didn't have time for that, being down a rig," Simmons said. "They would keep me in the loop, which was very convenient for me."

Clear Communication Builds Trust

Simmons praises the quality of the communication he received.

"Jason Lindenmuth [rig service specialist and shop lead] and I would talk every Monday, and he'd tell me everything going on. He had been to our shop before to work on a rig. So he knew what I wanted and expected, and they delivered," Simmons said. "They fixed the truck up, and I had it serviced while it was there just so it was ready to go when we got it back."

Back to Work - Better Than New

Just as the KSSC wrapped up work, Simmons had another rig go down. Geoprobe® jumped on shipping the DM250 back to Michigan.

"They did a phenomenal job. My son runs the rig, and he says it's as good — if not better — than brand new," Simmons said. "They're all about the customer and trying to keep them going. When you call, you talk to someone — even if it's the receptionist who gets you to who you need to talk to. Geoprobe® is just user-friendly."







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NORTH CAROLINA SERVICE CENTER

From Downtime to Drill Time

For the last four years, Ernest Retzer has been the owner of a small water well company, **HICKORY WELL DRILLING**. Based in the town of Hildebran, North Carolina, the company has been servicing the Hickory, North Carolina, area since the 1940s.

"We're a small team of about five to six people, and we do well pump services, water filtration, and well drilling," Retzer, owner, said.

In late 2024, Hickory Well Drilling paid a visit to the recently-opened Geoprobe® North Carolina Service Center (NCSC). Conveniently located just a mile away from their home office, the team quickly found the NCSC helpful in doing some basic repairs and maintenance on their pump trucks.

Getting a Used Rig Field-Ready

In March 2025, Retzer dropped by with a special project he needed help with: a used 2003 Sterling T25K Driltech rig.

"We bought the used rig, took it out, and tried to get a couple of wells in. But we had to get some work done to make it usable," Retzer said. "So, we made a list of the things we needed done and took it to the NCSC."

Working with Retzer, the NCSC came up with a list of service items that would repair the rig and keep it running in the field. Repairs were scheduled over the course of three different services:

- Stage 1 Fluid and filters
- · Stage 2 Mechanical filters
- Stage 3 Manifold and lighting system

There were a few unexpected fixes that needed to be made — such as changing the exhaust manifold and replacing the helper handles. But through it all, Retzer was thankful that the NCSC was keeping things moving.

Professional Service from Start to Finish

"They were quick to respond when I had an issue, professional in communicating what the solutions were, and they did what they said they were going to do, at the price they were going to do it at, and in the time they were going to do it," Retzer said. "That's everything that you want with service."

The rig is now operational, and he sees himself taking more projects to the NCSC in the future.

"I just bought this rig, and it's a pretty critical time when you buy a machine to get it rolling quick," Retzer said. "Every day that I'm not out in the field drilling, we're losing money. It needed to work, and I'm happy that Geoprobe® was right in the backyard and able to get it running."

DRILLERS PRAISE SERVICE SUPPORT

GEOPROBE® SERVICE SUPPORT FOR ANY MAKE OR MODEL TAKES THE WORRY OUT OF DRILLING. HOW DO WE DO IT?

- ACCESSIBLE, EXPERT SERVICE SUPPORT: Experienced technicians are just a call away, ready to troubleshoot in the field or over the phone, guiding drillers through any challenge.
- SATELLITE SERVICE CENTERS:
 Strategically located service centers
 make it easy to get rigs and parts serviced
 quickly without long travel times.



- PARTS STOCKED AND SHIPPED FAST: Critical components are on hand and often shipped the same day, keeping downtime to a minimum.
- LONG-TERM RELATIONSHIPS: Many customers work with the same technicians for years, building trust.

These are just a few of the ways Geoprobe® helps customers minimize downtime
— no matter the rig's make or model.
From refurbishments to repairs, the team ensures rigs are back in the field fast, fully operational, and ready to work hard.





What began as a high school job for Kevin Letchworth in the early '90s has grown into a multi-generational, family-owned drilling business serving a wide range of industries.

"In 1996, my father contracted with N. W. Poole to do some work, and discussions turned into buying the company from him," Letchworth, current owner, said. "N. W. Poole owner-financed the sale of the business to my father and his brother in July 1997."

In 2016, the next generation — including Letchworth — purchased

N.W. POOLE WELL & PUMP COMPANY. Now in its third generation, the company takes on just about anything that requires drilling a hole in the ground: water wells, geothermal systems, pipeline grounding, and foundation holes.

"We even drilled fence post holes for the federal prison in Butner, North Carolina," Letchworth said.

DRILLING WITH PURPOSE

When Kevin Letchworth and his family bought N.W. Poole from their parents, he felt called to give back.

"That got me prayerfully considering going outside the country to drill wells," Letchworth said. "We did our first well in Kenya, and when we got back, everyone around us wanted to know how they could help."

That interest led to the creation of the World Wide Wells Foundation, which has since received support from people around the world

"We've done 16 wells — in Uganda, Peru, Kenya — and we're prepping to go to Tanzania," Letchworth said. "It's very exciting to see what God does when you let him." "When Schramm went out of business, we decided to refurbish our fleet instead," Letchworth said.

While exploring refurbishment options for their T450 rig, a timely visit from Jamie Meade, Geoprobe® water well sales representative, changed the course of their search by suggesting the Geoprobe® East Coast Service Center (ECSC).

"He said the guys in Pennsylvania could refurbish our rig. He really got the ball rolling," Letchworth said. "I also knew Trevin [Bolick, North Carolina Service Center lead] had gone to work at Geoprobe®. So when David Sim [ECSC manager] called and said a refurb opening had come available, we jumped on the opportunity."

Exceeding Expectations

From start to finish, the refurbishment process went smoothly and the results surpassed expectations.

"David Sim and Dave Harrison [ECSC service lead] are very responsive. We were very pleased with the communication and the whole project," Letchworth said. "They did what they said they would do in the time frame they said they would."

When the rig was ready, Sim, Harrison, and Meade were all there for the start up. "We've been very happy with it — there's nothing I would change," Letchworth said. "It has exceeded our expectations."

Advice for Other Drillers

Anyone thinking about refurbishing, Letchworth has a clear message:

"Give the Geoprobe® guys a call. David and Dave came from Schramm, and they have Schramm parts around," Letchworth said. "It's very refreshing for something in this industry to go as planned. Not much does, but we're thankful and pleased this one did."

Changing Course

To keep production on track, the family regularly purchased a new rig every 3-4 years until their preferred rig manufacturer, Schramm, closed its doors.

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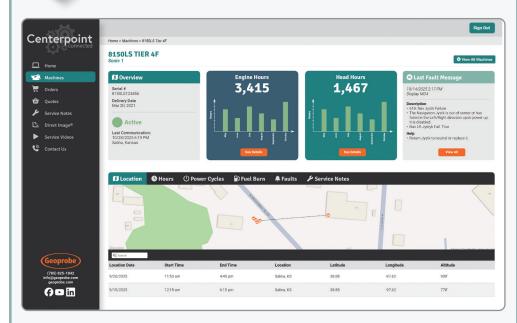
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