(Geothermal - Continued)

service firm with locations in Porterville and Visalia, Calif. "We sold the Beretta T-41 to David," explained Bland, "and – for the past year – Consolidated has drilled holes for all of our direct-exchange installations."

About 65 percent of Consolidated's $3 to $3.5 million in annual billings is related to drilling for water wells and geothermal, geotechnical and environmental purposes. Harris' drilling equipment inventory includes an IR TH-60, IR-T3, and an IR-A2000, all truck-mounted, self-contained air percussion mud rotary systems. The company also has a Failing F-10 and a Mobile B80, both high-torque auger rigs; a limited-access trailer-mounted deep rock drill rig, and the Beretta T-41 that it purchased from Bland.

Harris' territory of operation spans from Sacramento to Los Angeles, staying within the state, but chiefly focuses on business within the San Joaquin Valley. "Thanks to Glenn, we're doing more small-bore drilling these days," says Harris. "We prefer to use the continuous and hollow-stem auger drilling equipment for these. The site conditions determine whether to put the manifold pit in before or after drilling."

That's just one of the many insights that Harris offers relating to small bore drilling. "Drilling is very specialized work, as any reader of *National Driller* knows," says Harris. "It's taken us years and years to learn the craft, and we're still smarter at the end of every day. We've learned from experience that one wrong move can cost a lot of money." As Glenn learned from experience, it's a tough sport. "Even here where much of what we do is drilling, it's hard enough to train and prepare drillers for the many variables and unexpected challenges seen routinely on any jobsite," he notes.

But one expert who takes a different approach to that is Gemma (pronounced jem-ma) McKee-Tiller, owner of Air Brokers HVAC LLC, based in Branson, Mo. McKee-Tiller has been selling and installing direct-exchange geothermal systems for years and is recognized as one of the country's leading experts in the field.

"When the demand for DX systems increased dramatically – a shift that really gained speed in 2003 – I became concerned about my friends and associates at Bandimere Geothermal Drilling Systems being able to meet my drilling needs along with their own growing business," says McKee-Tiller. "Although I had jokingly said I may become a driller myself, I really had no intention of adding drilling to my résumé at that time. But as sales increased sharply, I decided to go through testing and certification for the Missouri Heat Pump Well Driller's license and have had it for over a year now.

Where ground space is limited, diagonal configurations are common.

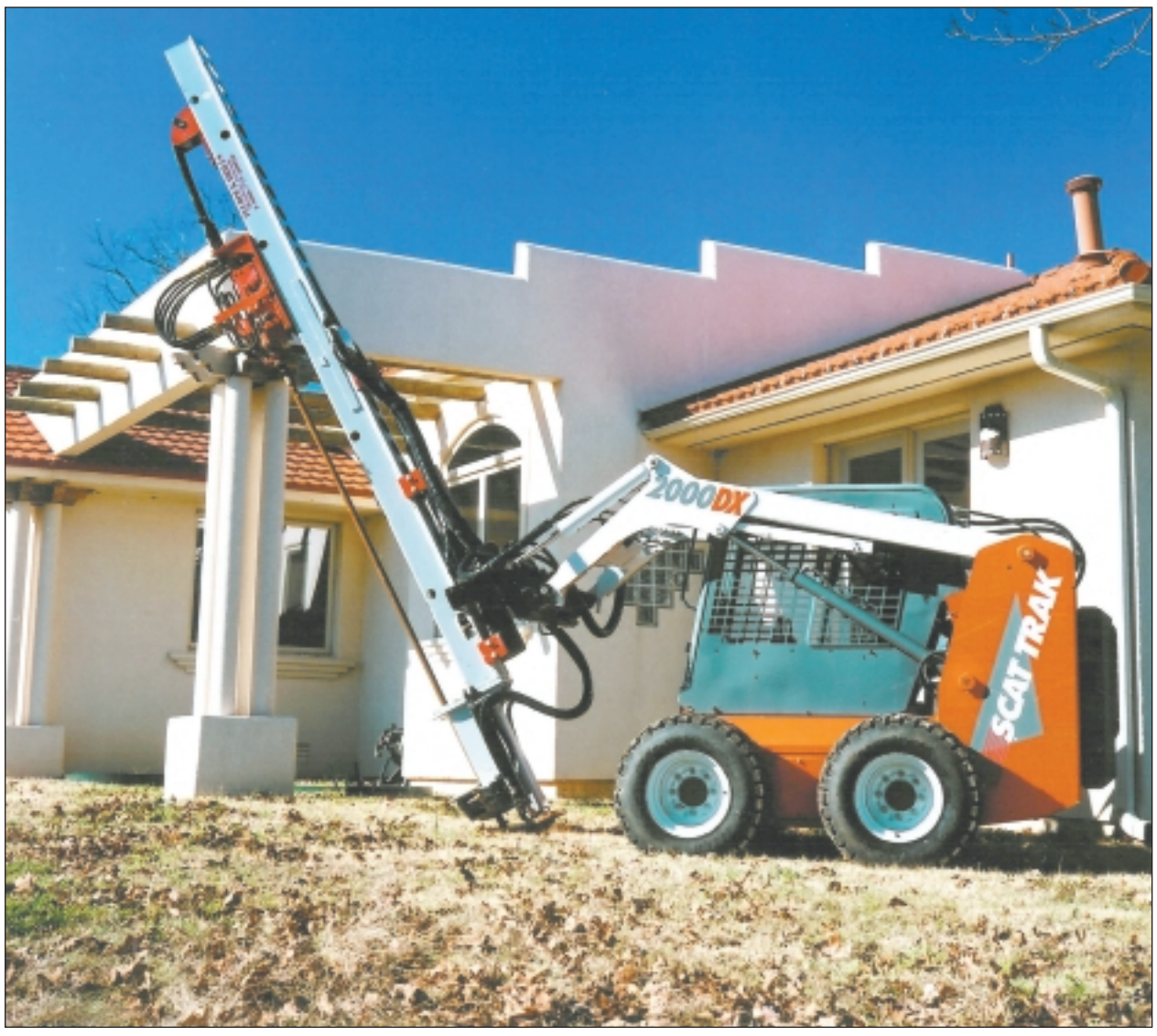
"While I certainly agree with the Bandimeres that not all HVAC contractors are cut out for DX drilling, I feel better knowing that when the increased business justifies the commitment to buy or lease a drilling rig, I'll be ready," she adds. "And based on current sales, I'd have to say that next step is coming quickly. But when the time comes, I wouldn't consider buying from anyone but Sam Bandimere (yes, the company sells drill rigs, too). With a rig purchased from Bandimere Drilling, you get Sam's expertise with it. There's simply no one better in our industry for that. I expect to be in the drilling business by this fall."

Although not yet familiar to everyone, ground-source heat pumps have been installed for more than 30 years and are recognized by EPA and DOE as the most highly efficient heating and cooling systems available today. "Geothermal heat pump technology offers a renewable energy solution that's right for almost any home," says McKee-Tiller. "Thermal energy of sufficient temperatures anywhere in the United States and Canada is harvested from the earth and transferred into buildings by a heat pump that provides heating and cooling."

A ground-source unit works like a conventional heat pump to cool a home in the summer, and heat it in the winter. "The key difference between an air source heat pump – which can't heat a building efficiently when outdoor temperatures dip below 35 degrees F – and ground-source is that the ground-source unit harvests the stable and renewable heat from beneath the earth's surface," explains Dan Bandimere.

"The equipment transfers virtually endless thermal energy (heat) from the earth into the home during the winter months and transfers excess heat from interior spaces into the earth where it's stored during the summer," adds Sam Bandimere.

As a result, a ground-source unit saves energy, which reduces greenhouse gas emissions and can cut utility bills by up to 70 percent. And, very little maintenance is required. Surveys of ground-source owners conducted by the Geothermal Heat Pump Consortium show that they rank their systems higher in comfort than do the owners of other heating and cooling systems. And more than 95 percent



Dan Bandimere's rig, custom-made by his cousin Sam Bandimere.

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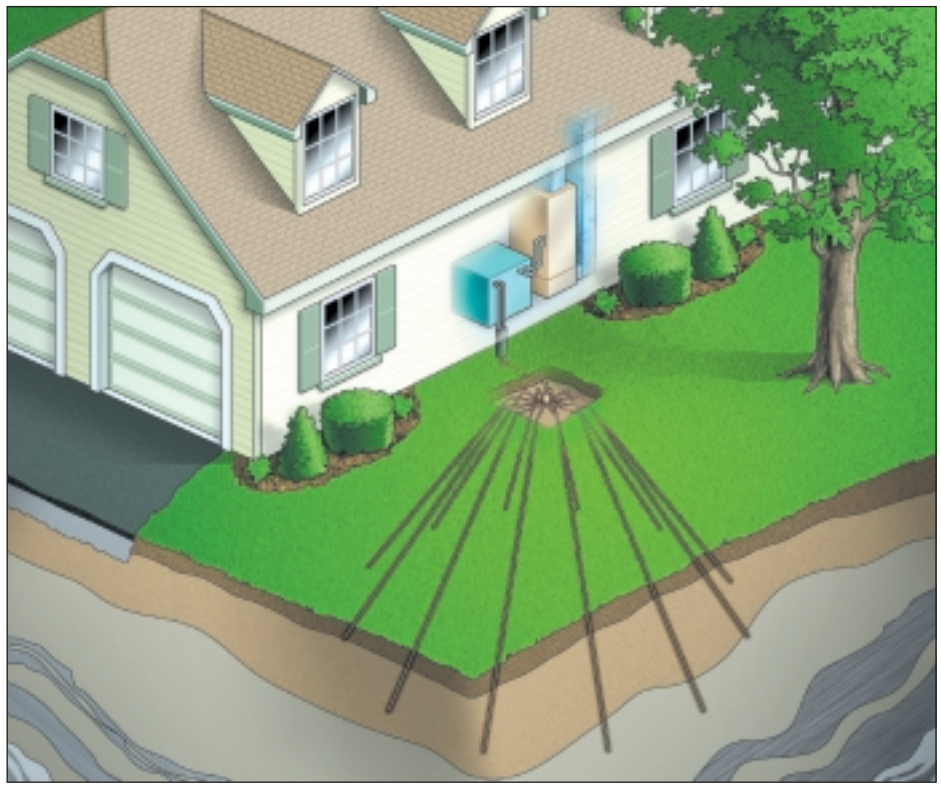

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