



# Limestone, Horses, Bourbon And Trenching

North-central Kentucky is famous for its exceptional horses and bourbon, and fans of each believe the limestone found under the surface in that area of the Bluegrass State plays a role.

Underground construction crews, however, can be forgiven for not celebrating the hard rock. They are often tasked with breaking through it and that can make for slow and challenging work.

When G&W Construction bid on a municipal water line project in that section of the state, owner Darrell Alderman knew he'd have to upgrade his fleet because of the limestone.

The job calls for 48,000 feet of 24-inch ductile iron pipe to be installed in Winchester, which is near Lexington. The trench needed to be 42-inches wide and seven feet deep.

"It was pretty much a no-brainer that we were going to have to have a big trencher to cut this," Alderman says.

He opted to purchase a Vermeer T1255 Commander 3 trencher. The work is ongoing, but Alderman says the track trencher has been a difference-maker in getting through the limestone and installing the large diameter pipe.

Alderman's father started G&W Construction

50 years ago constructing commercial buildings. They then got into the utility business and these days its focus is on installing wet and dry utilities, including sewer, water, gas and telecommunications.

The company is based out of Morehead, KY, which is 45 miles east of Winchester. They are well aware of the limestone that's prevalent in the area.

Limestone is made largely from calcium carbonate, a chemical compound. Most limestone was formed from the shells and skeletons of marine organisms. Whether real or just the stuff of legend, the minerals found in limestone are believed by many people to play an important role in Kentucky's famed bluegrass, horses and bourbon.

Some people assert that early settlers found that horses that ate bluegrass in the calcium-rich, limestone-laden soils of north-central Kentucky were more robust. Another claim is that the limestone-filtered water gives Kentucky racehorses an edge.

Many distillers and whisky aficionados swear Kentucky's bourbon whiskey is superior because the water used to make it flows through and is filtered by limestone, removing iron.

## Trenching through limestone

G&W Construction's work for Winchester is also related to water. The company is installing a water transmission line as part of a larger municipal water system upgrade that will include a new water intake system. The project is being overseen by Winchester Municipal Utilities.

G&W Construction started on the transmission line in November and is expected to take a year to finish. The crew has about 20 people and is running several excavators, two wheel loaders and two bulldozers in addition to the track trencher.

The work began at the Kentucky River several miles outside of town and will end with a connection to an existing 12-inch water main within the city. Most of the work is in rural settings, but roughly two miles will be inside the city. The terrain includes rolling hills, which is yet another trait associated with Kentucky limestone.

"There are some places that are steep and hilly," Alderman says. "Where we're running along the right-of-way and having to go down at the toe of the slope to get around culverts is usually pretty tight and challenging with the big pipe."

On some of these sections, the crew cuts a

## Trenching In Kentucky

bench for the trencher to run on. That too adds to the complexity of the job because they are operating in a tight right-of-way along a road and trying to avoid private property.

Additionally, they have existing water, sewer, telephone and electric lines to avoid. The locating has progressed without a hitch so far.

The biggest challenge remains the limestone. The rock is typically two- to five feet deep, with clay on top.

"When you are cutting 42-inches wide, seven feet deep, it's just a lot slower in limestone than other ground and you're wearing out a lot of

teeth," Alderman says. "But this big T1255 track trencher does a very nice job on it."

He also credits the TEC Plus electronic control system by Vermeer with boosting productivity. The TEC Plus system monitors real-time machine performance data and troubleshooting.

### Succeeding in challenging times

Alderman cites increased competition and a tighter bidding environment as among the biggest challenges in the underground construction industry, and he says having the right employees and equipment are vital to working

efficiently and productively.

G&W Construction bought the Vermeer T1255 trencher specifically for this job. An alternative would have been hoe ramming, but that would have been much slower and wouldn't have given the company the production it needed to get the project done on time and to submit a competitive bid.

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"We get around 200 feet of production a day on average with ramming," Alderman says. "With the trencher, we can cut 400 to 600 feet of trench a day, and there's some cross-country work that we might get 800 feet in one day."

G&W Construction is using a chevron formation for the trencher teeth, and they go through about 20 to 30 teeth per day.

Because of the size of the 24-inch water pipe, they are using an excavator with a clamp to install the product. The job specifications call for the pipe to be covered with a plastic sock, bedded with a fine material, and then covered with more than a foot of fine material to protect it from the soil and the rock.

"With using the trencher, the spoil is smaller and fine, and we can put some of the spoil back in the ditch for bedding cover," Alderman says. "That material doesn't have to be hauled off and gravel hauled in."

Despite the limestone, the depth of the trench and the large pipe, the work has gone smoothly so far. In fact, the only thing that slowed the crews down was record-breaking cold temperatures and snow that shut down production for two weeks in February.

Operations are back to normal now, and Alderman expects to land similar projects in the future now that his company has a large track trencher at its disposal to cut deep and wide through the limestone.

"It will definitely open that door for us," he says. "We can go deeper with this machine. We can go up to 18-feet deep and 48-inches wide. There are a lot of sewer projects that this machine would work fine on."



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