

# Auger Boring in Virginia: Crews Are Installing Two Bores for a New Water Line

By [Jim Weist](#) on June 1, 2016 [Auger Boring](#), [Features](#)

Construction of a water transmission line — called the 342 Pressure Zone transmission line — in Stafford County, Va., includes the use of auger boring to install at least two sections of the line.

One portion of the line includes 16,000 lf of 30-in. diameter of water line from the intersection of Greenbank Road and Sanford Drive to the Olde Forge neighborhood, which will ultimately connect the new treatment facility to the southeastern part of the county. The second phase of the line is approximately 16,000 lf with a significant 42-in. bore under I-95.

The 342 Pressure Zone transmission line is part of the Lake Mooney/Rocky Pen Run Water Treatment Facility Project and is one of two significant transmissions lines for this overall project. According to a Jan. 29 Fredericksburg.com article, the reservoir is part of Stafford's largest public works project and will supply water for southern Stafford residents. The reservoir and water-treatment facility were needed to meet the county's water needs into the future, the article said.

Water and wastewater services are provided to Stafford residents by the Department of Utilities. According to its website, the demand for services increased approximately 1.4 percent for fiscal year 2011 and was projected to grow at least 1.5 to 2 percent per year. This growth is due to increased population and the need for new water and wastewater infrastructure to support current and future development. Stafford County Department of Utilities serves approximately 32,100 active accounts, with approximately 1,450 of these being non-residential customers.

The Department is responsible for the system within Stafford's service area which consists of approximately 50,000 acres along three major transportation corridors: Interstate 95, U.S. Route 1, and U.S. Route 17. There are no private water and wastewater providers within Stafford and the Department handles overall planning, administration, customer service, daily inspection and daily operation/maintenance of the system.



After adjusting their cutting head and making adjustments along the bore, including encountering chain link fence from fill used for the road, Kruckenburg Service exited the bore right on line.

## The Project

[Kruckenburg Service Co.](#) of Stafford, Va., was awarded multiple 42-in. diameter steel case bores with critical line and grade requirements for the 342 Pressure Zone transmission line. One of the 42-in. bores extended to more than 420 ft in length and crossed under I-95. A guided pilot bore was performed without encountering any significant obstacles on the bore line when the pilot tube punched out.

The 42-in. diameter casing was bored using a traditional Michael Byrne D60-1.2 Auger Boring Machine and a new Michael Byrne swivel cutting head designed to follow guided and pilot bores accurately and efficiently with existing Auger Boring technology. The swivel cutting head has an elongated tapered snout to enable the contractor to readily re-engage the pilot tube with little difficulty and continue boring on the precise path of the pilot bore. The main body of the swivel is adaptable for various styles and sizes of cutting heads.

The bore encountered by Kruckenburg Service Co. is one dreaded by the underground contractor, a hard rock layer running along the bottom of the bore 150 ft into the 420-ft bore. The guided swivel head enables the contractor to pull the cutting head and adjust with a new cutting head that can slide over the body of the dirt style head to a rock cutting head without having to pull casing or losing your location on the pilot tube. After adjusting their cutting head and making adjustments along the bore, including encountering chain link fence from fill used for the road, Kruckenburg Service exited the bore right on line.

Dave Kruckenburg has employed this method of trenchless technology with good results and is planning more of his underground projects to include the [Michael Byrne Swivel Cutting head](#)

method due to the accuracy, efficiency, versatility, and economy they have experienced employing this trenchless method.

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