CASE STUDY
AUGER BORING | ROCK BORING

Project Name:
Kansas Modernization Effort, Project C-60266

Prime Contractor:
The Tunneling Company USA, LLC

Location:
Ottawa, KS

Owner:
Southern Star Central Gas Pipeline, Inc.

Ground Conditions:
Varying Clay and Rock

Akkerman Equipment:
Rock Boring Unit, Model RBU 36

Pipe:
36-in. Steel casing

Total Length/Longest:
(16) bores, 120-lf. ea.

PROJECT OVERVIEW

Southern Star Central Gas Pipeline, Inc., a Midwest transporter of natural gas, embarked on the $94.6M Kansas Modernization Project to improve its infrastructure's safety and reliability.

Part of this larger initiative, Project C-60266, called for a new 36-in. natural gas pipeline between Anderson and Franklin Counties in Kansas.

Minnesota Limited of Big Lake, MN, was the general contractor responsible for 30-miles of open-cut gas pipelines between the two large compressor stations.

Along the pipeline stretch, 30 trenchless crossings with an average length of 120-ft. were to be constructed by the HDD method and awarded to The HDD Company. A handful of the longer rock crossings would be completed using the auger boring method.

As excavations were opened up, the ground conditions were notably different, which changed the project scope to nearly all rock crossings.

The HDD Company enlisted support from their sister-company, The Tunneling Company (TTC).

THE CHALLENGES

- Crossings scope changed to all rock profile mixed with clays
- Narrow time frame for completion
- Limited amount of on-site equipment to complete the bores

THE SOLUTION

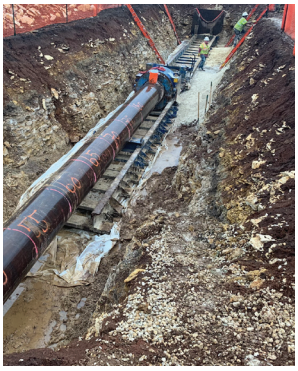
TTC crews mobilized to Kansas and enlisted the use of an Akkerman RBU to tackle the additional rock crossings. The RBU 36 was mated with TTC's 42, 48, and 60-in. auger boring rigs. The crew welded the RBU's outer casing to a lead section of 36-in. steel casing and connected the hex to the auger string.

The operator introduced jetting water to assist with material transfer from the RBU cutter head to the auger string. This process actively cooled the cutter head tooling and bearing assembly resulting in extended performance, reduced wear, and lower operating costs.

For efficiency, TTC crews set up three crossings with the auger boring rigs. When the Akkerman RBU completed one bore, it was removed from the lead casing, inspected, and installed on the next bore. Often referred to as leapfrogging, crews on the first bore began tripping augers and installing the final product pipe while the second system commenced boring operations.

OUTCOME

- TTC completed 16 consecutive drives in challenging ground with the Akkerman RBU, without the need for a cutter head rebuild
- The three crews worked in tandem to expedite the installations to meet the project deadline



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