

Case Study

Milling Optimization

F5 Motor Mills 122 Plugs in a Single Trip

Case Study No. 4416

DETAILS:

Location:	Guernsey County, OH
Formation:	Utica
Casing Size:	5-1/2" 23#
Conveyance:	2-7/8" PH-6
Total Measured Depth:	27,739' 8454m
Lateral Length:	19,500' 5944m
Well Orientation:	Horizontal
Fluid:	Produced Water
Operation Type:	Milling Composite Bridge Plugs
Tools Used:	3-1/8" TTS Milling Assembly

RESULTS:

A natural gas company in Pittsburgh, known for their extremely long wells, needed to complete a record 19,500' lateral section with 122 stages. At 27,750' TMD, it is likely one of the longest most complex wells ever drilled. In an effort to minimize costs, the customer's objective was to complete the entire lateral without any non-productive time (NPT); pushing technical barriers to their limits. Thru Tubing Solutions' F5 Downhole Motor was the best option for this demanding operation. The F5 was designed with high quality components and is capable of handling higher flow rates for optimal well cleaning and annular velocity. TTS' F5 Milling BHA drilled through all 122 plugs in a single run, maximizing operational efficiencies. The average milling time per plug was 10 minutes with the motor being in hole over 150 hours throughout the operation; proving once again, that TTS is continuing to set the standard for what's capable downhole.

HIGHLIGHTS



- Milled thru 122 Plugs in a Single Run
- Average Milling Time of 10 min/plug
- Increased Flow Rates with Larger OD Tools
- Improved Annular Velocity and Debris Cleaning due to Larger Flow Rates



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