

Formation	Marcellus Shale
Environment	Unconventional
Hole size	8½ in
TVD	5,800 ft [1,767 m]
Run Length	17,463 ft [5,323 m]
Total Depth	22,040 ft [6,718 m]

Background

An operator requested that Schlumberger provide single-run directional services for the curve and horizontal sections of a well in the Marcellus Shale. The team recommended a BHA incorporating several advanced Schlumberger and Smith Bits technologies to deliver high dogleg severity (DLS) in the curve, while yielding high ROP and low DLS in the lateral.

Technology

- Smith Bits
- PowerDrive xCL* at-bit rotary steerable system
- DynaForce* high-performance drilling motor
- xBolt* accelerated drilling service
- Continuous automatic hold inclination and azimuth

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PowerDrive xCL At-Bit RSS and xBolt Service Achieve 450-ft/h Instantaneous ROP

Schlumberger BHA drills curve and lateral in single run through complex geologic area while staying 100% in target zone, Marcellus Shale

Using a PowerDrive xCL at-bit RSS, Schlumberger kicked off from a cement plug to drill the curve and lateral through a complex geologic area. Throughout the run, instantaneous ROP was frequently measured at 450 ft/h. Continuous automatic hold inclination and azimuth, combined with near-bit directional sensors and gamma measurements, enabled the team to maintain the wellbore 100% within zone. Additionally, the combined technologies in the BHA not only minimized DLS and tortuosity in the lateral, but also delivered azimuthal target updates across multiple drilling cycles, enabling the team to drill around a hardline. This well represented the longest single run to date with PowerDrive xCL RSS, drilling 17,463 ft of curve and lateral sections.

