

# AutoTrak Curve RSS drills China's first solo run in 8 1/2-in. section



Due to tool failures and slow rates of penetration, an operator was having to make two to four runs to drill the 8 1/2-in. section in a shale gas reservoir in China's Sichuan province.

Baker Hughes, a GE company (BHGE) recommended using the **Autotrak™ Curve rotary steerable system**. The AutoTrak Curve system can drill curves at a buildup rate of up to 15°/100 ft (30 m) with continuous drillstring rotation, delivering greater precision than a traditional steerable motor system.

In addition, the system lets you drill vertical, curve, and lateral sections, typically in a single run, thereby eliminating slide intervals and improving rate of penetration (ROP) throughout the well and saving time.

Using the AutoTrak Curve RSS, BHGE drilled the 8 1/2-in. section from 2,263 m (7,425 ft) to total depth of 4,630 m (15,190 ft) with zero nonproductive time or tool issues.

With this superior RSS technology, the entire drilling operation was completed within 15 days, setting a new drilling record in this area and also marking the first time this operator has drilled one section in a single run.

The AutoTrak Curve with 6 3/4-in. **Navi-Drill™ Ultra LS motor** and BHGE **AT505S drill bit** delivered high dog leg severity (DLS) capability and horsepower to ensure an accurate wellpath with penetration rates at 9.3 m/hr (30.5 ft/hr).

As a result of this achievement, BHGE was awarded successive jobs, enabling the company to enter a new market.

## Results

- First completion by a service company of entire 8 1/2-in. section in one run
- Record longest footage in shale gas of 2,367 m in a single run
- Fastest time from buildup to TD (15 days) in 8 1/2-in. section in a China shale gas reservoir
- Drilled 3D build-and-turn curve section, achieving 7.6°/30 m

## Challenges

- 3D build-and-turn shale gas well
- Unpredictable, sudden changes in azimuth due to formation
- Multiple BHAs to drill the 8 1/2-in. section

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