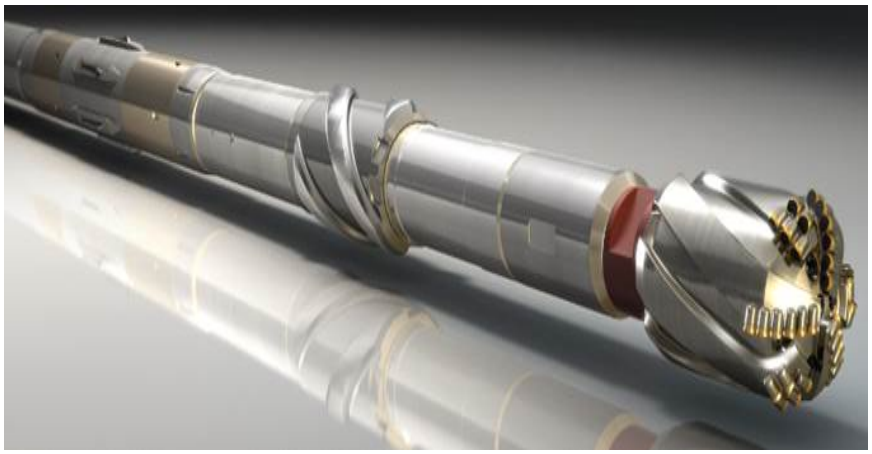
Revolution® Core Rotary-Steerable System Doubles Drilling Rate and Saves Operator $5 Million Across 10 Wells Compared to Alternative Methods



Using the Weatherford Revolution Core RSS in 10 wells more than doubled the drilling rate of a previous service provider, eliminated both cleanup cycles and wiper trips for hole diagnostics, and reduced rig time by 7 days.

Objectives

- Drill ten 18,000-ft (5,486.4-m) wells using conventional bent-housing motors for the vertical, curve, and lateral sections. Another service provider had produced unsatisfactory results while drilling an initial well, so the operator enlisted Weatherford to drill the remaining wells.
- If possible, increase the lengths of the laterals beyond 18,000 ft (5,486.4 m) to maximize reservoir exposure while minimizing the surface footprint.

Our Approach

- Weatherford deployed the Revolution Core rotary-steerable system (RSS) to maximize the depth of vertical and lateral sections of the wells. The Revolution RSS facilitates this by constantly rotating the drillstring at a high rotation per minute (rpm), which enhances hole cleaning. Additionally, the Revolution RSS minimizes pressure drops to maximize flow rate at total depth, improves weight transfer to the bit, mitigates buckling forces by eliminating the need to slide for directional control, and reduces time needed to orient tools in high-stress regions.
- Drilling in the Wilcox sand formation tends to result in a hole size that is near or at the size of the RSS BHA. This can cause the RSS to become stuck when tripping tools out of the hole. For this operation, drilling an 8 3/4-in. hole for the vertical section and then an 8 1/2-in. hole for the curve section provided a safety margin for tripping out of the hole.

LOCATION
Atascosa County, Texas, USA

WELL TYPE
Onshore, horizontal, gas, oil

FORMATION
Eagle Ford

HOLE SIZE AND ANGLE
8-1/2 in., 90°

CASING SIZE AND TYPE
5-1/2 in., 23 lb/ft (34.2 kg/m), P-110

MAXIMUM TEMPERATURE
300°F (148.9°C)

DEPTH
18,000 ft (5,486.4 m)

PRODUCTS/SERVICES
- HyperLine mud motor
- Revolution Core RSS
- Hostile-environment-logging (HEL) measurement-while-drilling (MWD) system with HAGR™ gamma ray sensor
- Real-Time Operation Center

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Our Approach (continued)

- The Weatherford Real-Time Operation Center (RTOC) monitored the formations that the RSS drilled through and enabled the RSS to steer around extended laterals from other offset wells in the field and avoid collisions.
- Compared to the average of 680 ft (207.3 m) drilled per day by the previous service provider, Weatherford drilled an average of 1,555 ft (474 m) per day.

Value to Client

- The Weatherford Revolution Core RSS successfully drilled the 10 wells to an average depth of 19,000 ft (5,791.2 m) per well—1,000 ft (305 m) beyond the required depth—and extended the laterals into the target zones.
- The Revolution RSS more than doubled the drilling rate of the previous service provider and eliminated both cleanup cycles and wiper trips for hole diagnostics.
- Compared to the conventional drilling systems used by the previous service provider, the Revolution RSS reduced rig time by 7 days and saved the operator US $500,000 per well. Across all 10 wells, this amounts to a savings of US $5 million.

* Revolution is a registered trademark of Weatherford in the US and Canada.