

# Revolution<sup>®</sup> Core RSS, SpectralWave<sup>®</sup> Sensor, and CrossWave<sup>®</sup> Tool Log Well Without Wireline; Save 7 Days and \$350,000 in Rig Time

## Objectives

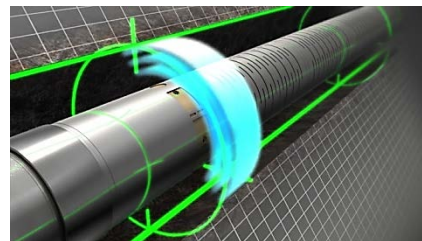
- Drill a 1,456-ft (444-m) lateral to planned depth in a single run.
- Acquire comprehensive formation evaluation data without the use of traditional wireline or pipe-conveyed logging (PCL) technologies. The well could not be logged using traditional wireline because of the high angle of inclination (90°), and the client wanted to avoid the increased time and costs associated with PCL.

## Our Approach

- Weatherford Drilling Services designed a penta-combo bottomhole assembly (BHA) based on a full torque-and-drag hydraulic analysis. The BHA consisted of the Revolution Core rotary-steerable system (RSS), the SpectralWave azimuthal gamma ray sensor, the CrossWave azimuthal sonic tool, and other logging-while-drilling (LWD) tools.
- The Revolution Core RSS provided bit control and LWD measurements to drill a smooth, accurate borehole.
- The SpectralWave and CrossWave tools logged formation porosity and enabled advanced petrophysical analysis.
- DownLink Commander<sup>®</sup> technology facilitated rapid, two-way communication between the RSS and the rest of the BHA.
- The Drilling Services team drilled the entire lateral section in a single run with an average rate of penetration (ROP) of 41 ft/hr (12.5 m/hr) and zero nonproductive time.

## Value to Client

- By eliminating the need for a wireline logging unit and PCL technologies, use of the penta-combo BHA reduced the time and complexity of the logging operation.
- The Revolution Core RSS achieved an above-average ROP and left behind a smooth wellbore, which enabled the well to be cased more quickly and to begin producing sooner.
- Weatherford drilled and completed the well in less than 6 days. Similar wells in this field were drilled and completed over 13 days. Drilling Services saved the client more than 7 days and \$350,000 in rig time and associated operating costs.



## LOCATION

Middle East

## WELL TYPE

Onshore, horizontal, oil

## HOLE SIZE AND ANGLE

5-7/8 in., 90°

## DEPTH IN

15,603 ft (4,756 m)

## DEPTH OUT

17,059 ft (5,200 m)

## AVERAGE ROP

41 ft/hr (12.5 m/hr)

## MAXIMUM TEMPERATURE

250°F (121°C)

## MAXIMUM PRESSURE

3,000 psi (207 bar)

## PRODUCTS/SERVICES

- Revolution Core RSS
- SpectralWave azimuthal gamma ray sensor
- CrossWave azimuthal sonic tool
- Azimuthal density (AZD<sup>™</sup>) sensor
- Thermal neutron porosity (TNP<sup>™</sup>) sensor
- Hostile-environment-logging (HEL<sup>™</sup>) MWD system
- Multi-frequency resistivity (MFR<sup>™</sup>) sensor
- DownLink Commander bidirectional communication technology

