



Weatherford®

REAL RESULTS

Hostile-Environment LWD System Guides Discovery Well to Record Depth

Objectives

- Apply a logging-while-drilling (LWD) system capable of drilling and evaluating the deepest section of a well in the Gulf of Mexico.

Results

- Weatherford's PrecisionLWD™ system was used to provide formation evaluation data in the 8 1/2-in. hole section.
- This technology was packaged with a Revolution® rotary-steerable drilling assembly to maintain directional control in the 8 1/2-in. hole and was run to a depth of 29,314 ft (8,935 m).
- The Weatherford LWD equipment was then used in the 6-in. hole section to successfully drill to 34,189 ft (10,420 m) MD, setting a world record for the deepest well ever drilled in the Gulf of Mexico. The well set a second world record for the highest pressure LWD job at 29,976 psi (199 MPa).
- Data acquisition and transmission technology performed successfully under these high-temperature, high-pressure conditions, with a real-time data transmission rate of more than 90% at depths greater than 34,000 ft (10,363 m). This rate was achieved despite maximum borehole annular pressures of 29,976 psi (199 MPa) and temperatures up to 280°F (138°C). There were no equipment failures.

Value to Client

- The well was declared a discovery with 600 ft (183 m) of oil sand in multiple zones. The reliable acquisition and surface transmission of while-drilling geosteering data were critical to the project's successful execution.
- Weatherford's drilling efficiency, accuracy, and ability to reduce risk also saved the operator time and money. These savings were especially important on a well with a spread cost of US\$500,000/day and an estimated additional cost of \$1.1 million for round trips of the drillstring from depths below 25,000 ft (7,620 m).



The *PrecisionLWD* system stands up to shock and vibration stresses of air drilling to perform flawlessly at high temperatures and pressures. The system can work with either mud-pulse or electromagnetic telemetry systems and has a broad range of wireline-compatible formation evaluation sensors, including resistivity, density, and neutron, which come in a full array of sizes. It can also be combined with rotary-steerable systems of virtually all sizes.

Location

Deepwater Gulf of Mexico

Maximum Temperature

280°F (138°C)

Maximum Pressure

29,976 psi (199 MPa)

Depth

34,189 ft (10,420 m) MD

Products/Services

MWD/LWD service

HEL system

Revolution rotary-steerable system

