A SPERRY DRILLING SERVICES SUCCESS STORY


tnttin action

Customer   BP, East Azeri Field, Azerbaijan

Challenge
BP needed to drill a well through a difficult section of formation well-known to cause tool-damaging vibration.

Solution
Sperry Drilling Services deployed a Geo-Pilot® 9600 series rotary steerable system, quad-combo logging-while-drilling (LWD) suite and Geo-Pilot FMF3653Zi bit from Security DBS for optimized drilling performance.

Results
Sperry set a new Caspian record by delivering a 3,385 meter (11,105 feet) 12-1/4” x 13” hole section in a single run. This is the longest 12-1/4” open hole section drilled to date in the Azeri asset.

Geo-Pilot® System Sets New Caspian Drilling Record

Drilling Vibration a Concern
BP needed to drill a well in the East Azeri field, Azerbaijan, located in 150 meters (492 feet) of water in the Caspian Sea. They required good quality LWD and Pressure-While-Drilling (PWD) data through a very difficult section prone to cause tool-damaging vibration. Also, during the running and cementing of 9-5/8” casing in the Azeri field, it is not uncommon for mud losses to occur due to pressure surges and unstable formation breakdown. Wanting to avoid any major non-scheduled event such as stuck pipe, lost circulation or wellbore stability problems, the drilling program called for delivering the 12 1/4” x 13” hole section in one bit run along the required directional path.

Real-Time Continuous At-Bit Steering and Formation Evaluation
Sperry Drilling Services deployed the Geo-Pilot® 9600 series rotary steerable system, quad-combo LWD suite and a Geo-Pilot FMF3653Zi bit from Security DBS to simultaneously drill and ream the section for optimized drilling performance. Using point-the-bit technology, the Geo-Pilot rotary steerable system precisely steers

Sperry's PWD sensor provides annular pressure, internal pressure and temperature measurements in real time.
the wellbore while rotating the drillstring to help increase rate of penetration (ROP) and reduce drilling days. The Geo-Pilot® service delivers real-time continuous at-bit steering control and formation evaluation to help provide an accurate assessment of the wellbore position at all times.

The section was drilled from 60 degrees inclination at the 13-3/8” casing shoe to 75.6 degrees at the 9-5/8” casing point and turned from 258 to 294 degrees in azimuth. Excellent directional response was observed throughout the section and minimal vibration was experienced. After reaching the section target depth, pressures in two formations were taken using the GeoTap® formation pressure tester. The GeoTap tester provides real-time formation pressure measurements, delivering early and reliable measurements which help in determining and maintaining optimal mud weight, reducing formation damage and increasing ROP. Hole conditions were excellent while tripping and the bottom-hole-assembly (BHA) was pulled out of the hole without problems. Casing was run smoothly to depth and cemented in place at 5065 meters (16,617 feet) measured depth (MD). Good PWD information helped ensure that the drilling mud weight was kept at an optimum value, resulting in no fluid losses and full well integrity.

Unprecedented Reliability Results in Record Breaking Run

The 3,385 meter (11,105 feet) 12-1/4” x 13” section from 1690 to 5075 meters (5545 to 16,650 feet) MD was delivered in a single run, beating the previous field record of 3204 meters (10,512 feet). This was the longest 12-1/4” open hole section drilled to date in the Azeri asset, reaching the 9-5/8” casing point in just over 30 days with zero non-productive time (NPT) for Sperry and overall NPT for the customer at less than 2%.