CASE STUDY

ONE QUEST GWD SYSTEM USED IN MULTIPLE GULF OF MEXICO RUNS, ACHIEVING MORE THAN 50 DAYS OF OPERATING AND STANDBY TIME

TECHNOLOGY

- Quest™ gyro-while-drilling (GWD) system
- SPEAR™ solid-state sensors

APPLICATION

- Wellbore placement
- Collision risk mitigation

LOCATION

- Gulf of Mexico

INDUSTRY CHALLENGE + OBJECTIVE

An operator in the Gulf of Mexico intended to drill a sidetrack and needed to take accurate wellbore surveys through an extended area of magnetic interference (almost 3,000 ft) for anti-collision purposes. We were called to assist with setting a vertical whipstock in the casing and navigating the directional BHA through the interference to TD by implementing our solid-state Quest GWD system. The project involved several runs with a single Quest GWD system, highlighting its ruggedness and improved battery life.

TECHNOLOGY + SERVICE SOLUTION

- We suggested implementing our Quest GWD system, powered by SPEAR solid-state sensors.
- The solid-state SPEAR sensors measure the earth's rotational rate precisely and accurately.
- The sensors are able to handle harsher downhole environments when compared to conventional GWD systems.
- The shorter SPEAR sensor package, loaded into a compact collar, allows greater steerablility and sensor placement closer to the bit without the need for non-mag.

RESULTS + VALUE DELIVERED

- On the first run, the Quest GWD system allowed us to successfully orient the whipstock in the casing to prepare for drilling the sidetrack.
- On the following run, the same system was implemented as part of a motor-assisted BHA to obtain approximately 250 ft of separation from the original wellbore while building and turning towards the new target.
- On the final run, the same Quest GWD system was implemented in the RSS BHA to allow the operator to achieve their directional target while mitigating collision risk and eliminating survey quality issues from the magnetic interference.
- Due to the improved battery life of the Quest GWD system versus conventional gyro offerings, we were able to drill ahead with the system for more than 270 hours without any need to change the battery. In addition, the total battery life of this one system exceeded 50 days when combining active drilling time and standby time.

40 gyrodata YEARS OF INNOVATION

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This graph shows the original well in blue and the sidetracked well in red. Survey data from the Quest GWD system, taken a closer intervals than with the MWD tool, highlights the proximity of the adjacent wellbore as separation was achieved, as well as the benefit of having accurate survey through the section of magnetic interference.