

## CASE STUDY

# SOLID STATE QUEST 4¾" GWD UTILIZED IN 6" WHIPSTOCK ORIENTATION FOR CUSTOMER IN THE UK NORTH SEA SAVING OPERATOR IN EXCESS OF \$480,000

### ▶ TECHNOLOGY

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

### ▶ APPLICATION

- High-accuracy wellbore surveying
- Wellbore placement
- Whipstock Orientation

### ▶ LOCATION

- North Sea, UK Sector

### INDUSTRY CHALLENGE + OBJECTIVE

An operator was required to sidetrack a vertical well in the 6" hole section with a 4¾" BHA at a depth of 9,412 ft using a whipstock and motor assembly. Gyro surveys were required to orient the whipstock in casing and to verify direction for at least 400 ft from the window or until free of magnetic interference. Adding to the complexity, the sidetrack would be initiated in a salt formation where there was a high probability of stuck pipe. A wireline gyro orientation would take more than three hours for each run including rig up and keeping the pipe stationary for this amount of time would dramatically increase the chance of the BHA becoming stuck.

## TECHNOLOGY + SERVICE SOLUTION

- 4¾" Quest GWD™ was recommended instead of the client requested wireline gyro service.
- Utilization of Gyrodata's SPEAR solid state gyro platform enabled industry leading survey times of only 1 minute 20 seconds, minimizing the amount of time the BHA had to remain stationary between connections.
- When coupled with realtime telemetry from the drilling contractors 4¾" MWD tool, unlimited surveys could be performed as well as the provision of continuous toolface readings.

## RESULTS + VALUE DELIVERED

- Quest surveys were recorded at each connection and checkshots taken at half stand intervals.
- Continuous toolface was provided allowing realtime control of the reactive torque acting upon the motor.
- 24 surveys were taken with Quest which would equate to saving of over 72 hrs if the same number of surveys were taken with a gyro tool on wireline. A saving of \$450,000 of rig spread rate.
- 9 surveys were used for definitive wellbore placement, this was in addition 7" casing whipstock orientation. Surveying time for this operation would typically be in excess of 35 hours. A conservative estimate of six hours of rig time would yield a savings of \$36,000.
- Due to customer preference, this operation was conducted with both on rig personnel and remote operational support. Gyrodata's ability to run GWD services remotely from our Remote Operating Center in Aberdeen, reduces the need for personnel on board, the risk and cost of having personnel offshore and ultimately reducing the carbon footprint of the operation. A further potential savings of \$27,000 could have been realized had the operation been run fully remote.