TesTrak measured formation pressures during extreme weather

A major UK offshore operator on a semi-submersible drilling rig west of Shetland was experiencing bad weather with rig heave of 13 to 19 ½ ft. (4 to 6 m). The operator needed to assess pressures in the reservoir sands, having drilled to total depth (TD) in the 12 ¼-in. section. They also wanted to minimize the non-productive time (NPT) that could occur while waiting for weather improvement. Baker Hughes, a GE company (BHGE), regularly used the BHGE TesTrak™ formation-pressure-while-drilling (FPWD) service to obtain real-time formation pressures for effective reservoir evaluation. However, this would be the first time to use it during such high rig heave conditions.

The BHGE team was confident that TesTrak could perform the pressure tests, although the rig heave was greater than the BHGE-advised limits, and proposed a non-rotational heave test. The customer agreed with the team’s suggestions and allowed the time to perform the test.

The BHGE team needed to ensure the rig’s compensator system was working well in order to eliminate the movement of the bottom-hole assembly (BHA) downhole. The heave test used a 2 MHz phase resistivity curve, viewed on a time-based scale, to monitor the response of the curve at a bed boundary of differing high resistivity contrast. The logging-while-drilling crew was able to verify that the BHA was not moving, enabling deployment of the TesTrak service prior to weather improvement and without risk of damaging the TesTrak pad.

BHGE also deployed its AutoTrak™ rotary steerable service and LithoTrak™ density and porosity service to drill the section and deliver exact, consistent directional control and lithology information for precise well placement.

BHGE technologies worked together to meet the customer’s objectives and avoided approximately two days of NPT, with significant cost savings for the customer.

Challenge
Acquire TesTrak formation pressure tests in extreme weather conditions and allow rig operations to continue

Results
• Ensured the BHA was not moving downhole so the TesTrak measurements could proceed
• Measured reservoir formation pressures and evaluated new section despite high rig heave
• Avoided approximately two days of NPT the operator would have incurred waiting for better weather