Case History

Kronos™ delivers low-ECD performance for a series of 12 ¼" sections in deepwater Australia

Carnarvon Basin

Challenge
Low fracture gradient and potential lost circulation while minimizing ECD in the deepwater Carnarvon Basin

Solution
Newpark's Kronos™ synthetic-based fluid formulated for a flat rheological profile and low, flat gel strength

Results
The Kronos system enabled successful liner run and cementing while exceeding high operator expectations

An operator in offshore Western Australia planned the delivery of five critical, batch-drilled intermediate sections in support of its deepwater drilling campaign. An anticipated low fracture gradient below the preceding shoes created a potential for lost circulation.

On the first intermediate section, the operator displaced to Kronos SBM with a density of 1.22 s.g. Throughout the course of the interval, Newpark maintained the maximum observed ECD with cuttings between 1.26-1.28 s.g. The average deviation in low shear rheology and gel strengths throughout the interval was less than 10%.

The flat rheological profile of the Kronos SBM provided low-viscosity even at low flowline temperatures. This provided efficient fluid separation at the shakers, thereby allowing the initial use of 170 API mesh screens without overflow and improving cuttings dryer efficiency compared to conventional SBM. The low, flat gel strength of the fluid system minimized break-circulation pressure, reduced ECD spikes, and eased surge pressures while running the liner. Despite the low-ECD and low, flat gel strengths, no evidence of barite sag was observed at any time during the operation.

Newpark delivered the sections on-time and within budget. Only minor seepage losses to the formation occurred.

NEWPARK DRILLING FLUIDS