

# Wellbore Instability Eliminated in Kuwait with FLC 2000®

## Middle East

### CHALLENGE:

- ▶ Wellbore instability: differential sticking, torque-and-drag problems, sloughing and hole collapse
- ▶ Costly non-productive time

### SOLUTION:

- ▶ FLC 2000 used as a preventative solution before entering problematic formations

### RESULT:

- ▶ Eliminated wellbore instability and non-productive time
- ▶ Continued use of FLC 2000 in wells in the Burgan Field

### OVERVIEW

The operator set out to prevent wellbore instability issues in known problematic formations in Kuwait. In offset wells, the Mishrif, Wara and Mauddud formations caused differential sticking, torque-and-drag problems, sloughing and wellbore collapse. The operator sought to eliminate costly wellbore instability issues and improve safety performance in the Burgan Field.

### SOLUTION

One approach to drilling microfractured shale, weak sands, depleted formations, or highly interbedded sequences is to prevent the invasion of drilling fluids into the formation. Invasion of fluids can cause changes in pore pressure, microfracture sizes and is a common trigger for wellbore instability events. Eliminating the invasion of fluids is key to mitigating wellbore instability and other drilling problems. FLC 2000, a specially designed low-invasion additive protects the formation and allows normal drilling operations to continue.

### RESULT

Using the low-invasion additive, drilling operations reported no differential sticking, torque-and-drag problems, sloughing or hole closure, whereas offset wells experienced these wellbore instability issues. FLC 2000 allowed the operator to control fluid invasion in the microfractures and tectonically stressed formations. Furthermore, the low-invasion additive did not significantly change the rheological profile of the drilling fluid. The operator's use of FLC 2000 reduced both costly non-productive time and formation damage and reduced the overall cost to drill these types of wells in the Burgan Field. The operator continues to use the FLC 200 technology in the region.

