# NANOSHIELD sealing polymer helped drill depleted reservoir with no fluids-related NPT

#### CHALLENGES

- Increased risk of fluids losses due to 580 psi overbalance in a depleted reservoir drilling application (8½-in. section)
- High bottomhole circulating temperature (161°F / 71.7°C)
- Complex well plan with maximum inclination up to 90°
- Significant risk of wellbore instability and fracture propagation
- Specific maximum thresholds identified for both fluid loss and "spurt" loss

#### SOLUTION

NANOSHIELD<sup>™</sup> wellbore sealing polymer was deployed in a low-solids, non-dispersed mud system to:

- Provide effective sealing of the depleted reservoir and minimize fluid losses
- Strengthen and stabilize the wellbore while drilling
- Minimize preparation time and material consumption on the rig and meet all drilling KPIs
- Lower coefficient of friction and torque values while drilling



A Permeability Plugging Apparatus (PPA) was used to run filtration tests up to 160°F (71°C) while drilling to TD. Results showed that the NANOSHIELD polymer maintained fluid and "spurt" losses within the required range.

### bakerhughes.com

Copyright 2023 Baker Hughes Company. All rights reserved. 84437

## results 500 ft/hr maximum ROP achieved

1.7 days saved in rig time

55, 124 kg CO<sub>2</sub> eq emission reduction based on rig days saved

ZERO HSE incidents and fluids-related NPT

