CASE STUDY: PERMIAN BASIN, USA

Baker Hughes deploys integrated mud pulse solution to overcome lost circulation risks and effectively log challenging well

CHALLENGES

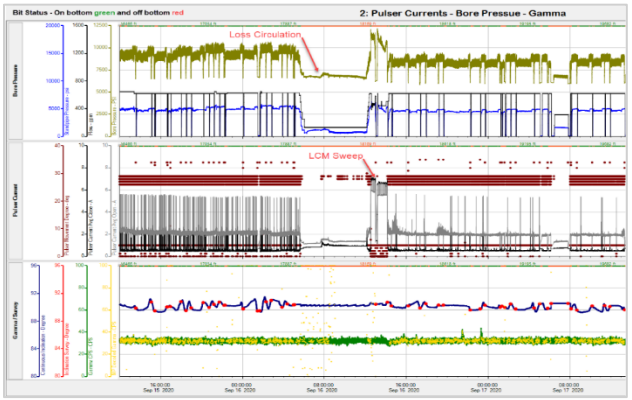
- Expected well conditions anticipated the need for high concentration of lost circulation material (LCM)
- Healing the hole with LCM raised risks of plugging measurement-while-drilling (MWD) tools or making an additional trip to lay down directional tools
- Dual agitators in the BHA have a tendency to attenuate the mud pulse, making signal decoding more difficult

SOLUTION

- Baker Hughes deployed a unique solution comprising:
  - A pulser anti-jam technology with robust carbide rotor/stator and high torque 50:1 drive line
  - A mud pulse telemetry tool that operates under high volumes of LCM
  - The ability to load eight different EM and eight mud pulse configurations as needed for the application
  - The flexibility to speed up or slow down the telemetry depending on the situation

RESULTS

- Pulser successfully handled 80 lb/bbl sweep of LCM, without packing off or excessive jamming
- Pulser telemetry decoded as expected to TD of 21,448 ft
- Delivered consistent decoding even with dual agitators in the BHA by adjusting telemetry rates



Post-run software clearly shows onset of lost circulation event and the positive effect of the LCM sweep. The anti-jam technology and mud pulse tool allowed for high-speed telemetry of high-density hole inclination and gamma ray.

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