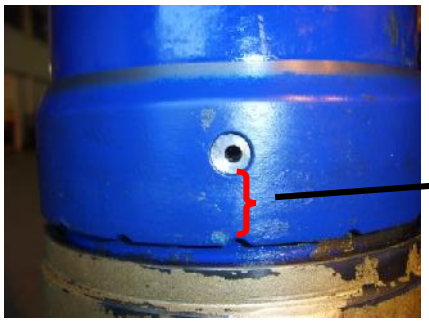
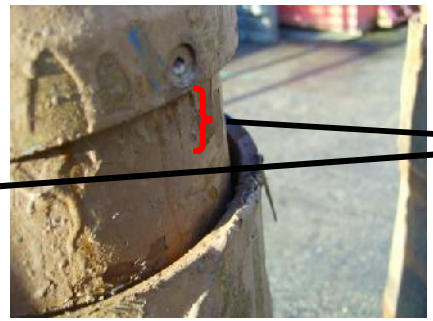
SPIRO-TORQ® CASE HISTORY #1
Exploration/Appraisal Well
North Sea

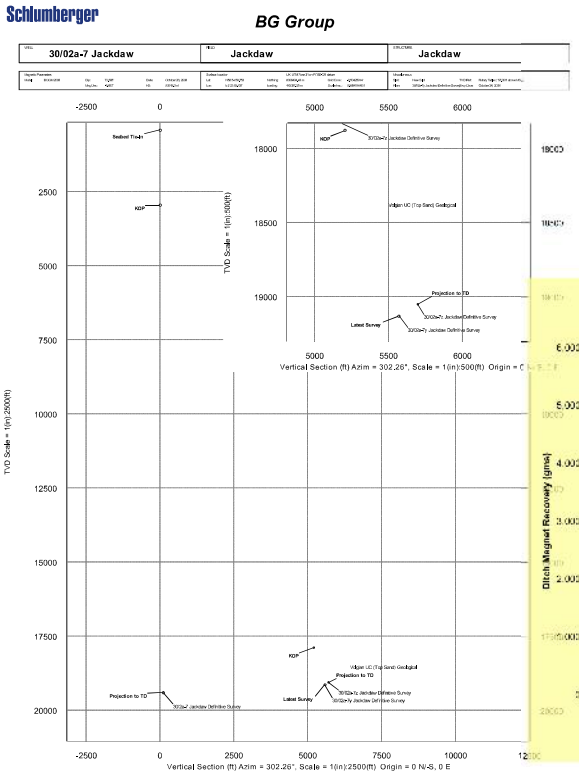
Technical Learning Bulletin

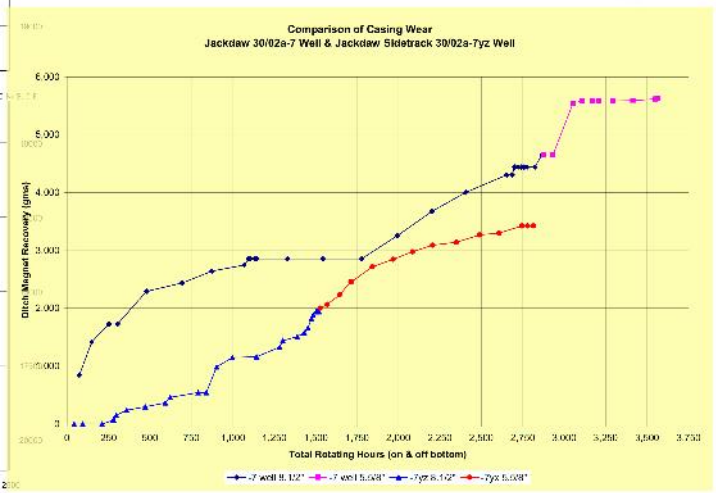
Background: June 2008, UK North Sea, Jackdaw 30/2a-7z & -7y. Performed a shallow sidetrack from below the 20" shoe in 30/2a-7 to acquire a new target. Well trajectory was built to 22º inclination and held to TD. Torque reduction / casing wear prevention subs were run through the build section. The maximum temperature recorded during drilling was in 5.5/8" -7y wellbore: 394ºF (201ºC) 24th Nov 2008 at 20,444ft MD BRT.





Note wear between new sub and sub run on the Jackdaw Sidetrack





Equipment

- Spiro Torque subs were supplied by Drill Tech (www.drilltech.com).
- 58 subs were run through the build section spaced out to ensure no repositioning required during drilling of the 8.1/2" & 5.5/8" intervals.

Operations

- Base line & post-drilling 60 finger MFCT logs run in 10.3/4" casing strings for both vertical & deviated wells.
- Subs were installed during RIH to drill 8.1/2" interval.
- Wear on subs was monitored on every trip & those failing Drill Tech specifications were laid out.
- Prior to deepening well, all subs were replaced.

Results

- Planning for vertical well concluded casing wear subs were not required, however would be used for deviated sidetrack.
- Negligible recordable casing wear identified by MFCT log in vertical well post-drilling.
- Deep sidetrack in hostile HPHT environment achieved with negligible recordable casing wear identified by MFCT log post-drilling.
- Surface torque in range 9-12k.ft.lbs drilling sidetrack 5.5/8" interval.
- Ditch magnet recovery confirmed negligible wear to casing (thought majority of swarf originated from torque subs themselves).
- Vertical well ditch magnet recorded 5,638 grammes from 3,564 hrs of rotation (1.58g/hr).
- Sidetrack ditch magnet recorded 3,425 grammes from 2,815 hrs of rotation (1.22g/hr).

Lessons Learnt

Torque reduction / casing wear subs are critical to ensure protection of production casing strings and are recommended in all deviated HPHT wells (exploration thru to development), as well as for reduction of surface torque during drilling.

For more information:

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Date: June 09