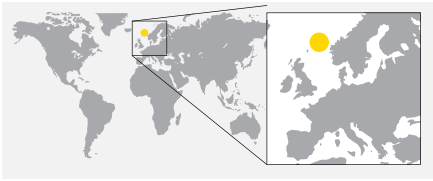
Case study: Stronghold Defender

Pressure test formation behind 13 3/8" casing through perforated 9 5/8" casing and cement.

Challenge

The main challenge was to locate the 6 ea perforated intervals of only 1 feet between 2078,2 m to 2160 m and pressure test them to 40 Bar.



Region: North Sea
Customer: Statoil
Field: Statfjord
Well type: A-36A
Reference: Thanong Hongdul and Jørgen Bugge-Mahrt

Key capabilities

- Effective rock-to-rock cement barrier
- Significant time and cost savings
- Efficient one-trip system
- Eliminates need for section milling and swarf handling
- No surge or swab effect

Typical applications

- Permanent abandonment
- Screen washing

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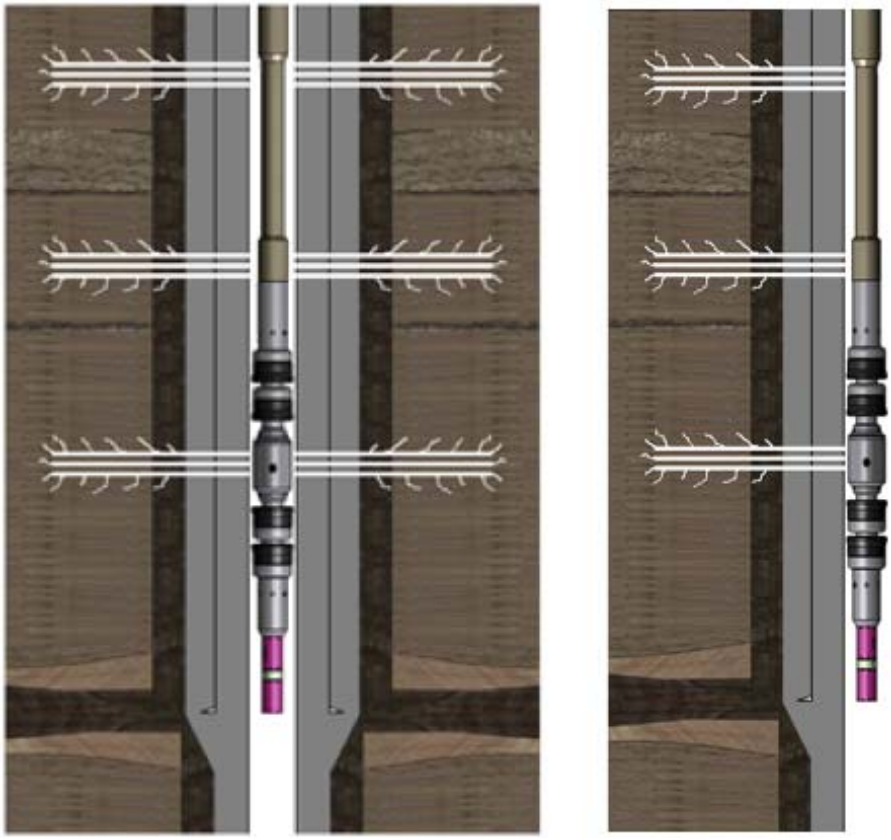
Solution

To resolve the issue we ran in hole (RIH) to below 2160 m and pressure up to 31 Bar and slowly pulled out of hole (POOH) to when we saw a pressure drop to 27 Bar. This confirmed that we had placed the perforated interval between our swab cups in the PWT. The next step was to pressure test the formation behind 13 3/8" casing and also test communication between the perforated interval.

40 Bar was applied after 70 litres was pumped. A leak into the formation was observed with no return to surface. 60 litres were bled back, confirming that the formation had taken 10 litres.

Results

The conclusion was that there was communication between perforations and formation behind 13 3/8" casing but not between perforated intervals. After each interval had been tested with same result a dart was dropped to disconnect the tool and place a cement plug on top of the tool and past the perforated interval.



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