

Paradigm Slick-O-Line™ Service Identifies Small Annular Leak

Overview

A UKCS operator observed sustained pressure build up on a wells A-annulus building at a rate of less than 10 psi/day. They needed to determine the potential source of the pressure to help plan the plug and abandonment of the well.

Challenge

Traditional leak detection services had been unable to determine the source of the pressure. The very low charge rate and multiple strings of tubing and casing had made leak identification using conventional methods extremely challenging.

Solution

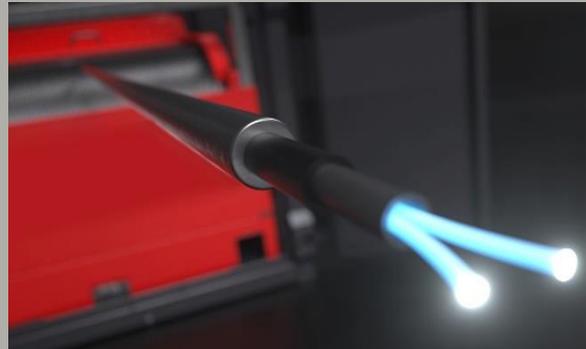
A retro-fit Slick-O-Line™ package was mobilised to the platform to perform a Slick-O-Line™ fibre optic survey. The Paradigm Slick-O-Line™ service had been chosen due to its small portable footprint, quick turnaround time and ability to find potential leak paths through multiple casing strings or cement sheaths.

Result

- Fluid movement velocity and direction were identified through multiple casing strings over a specific interval in the well indicating the origin of the pressure.
- It took 13 hours from Slick-O-Line™ rig-up to rig-down including 5 hours of survey time.
- Data was processed and interpreted within 3 days of acquisition.
- Regular pressure control equipment and procedures were applied saving time and cost.
- In addition to the Temperature and Acoustic fibre survey memory GR, temperature and pressure data were also gathered providing a more comprehensive surveillance package in the well.

Value to client

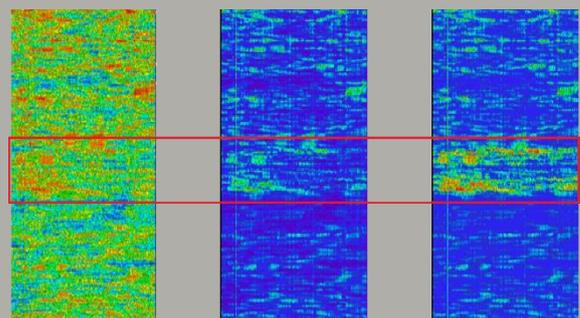
- The Slick-O-Line™ solution enabled the pressure source to be identified and the operator to P&A without the need for a drilling rig intervention to section mill. Thus saving 3 days rig time and associated costs with section milling.
- The operation resulted in minimal disruption to normal well operations.



Slick-O-Line™ offers a combined Distributed Acoustic (DAS), Distributed Temperature (DTS) and memory GR/CCL/Pressure/Temperature data package providing an integrated solution for well integrity and well abandonment.

Main Features / Benefits

- Identify flow through multiple strings
- Utilises regular Slickline PCE & Crew
- Retro-fit package consists of Slickline drum & surface optical interrogation panels
- Sporadic events captured versus point sensor tools



Detailed analysis of multiple frequency bands was able to identify areas of fluid movement within the well, tracking a velocity and direction.

