



O&G Case Study - Integrity

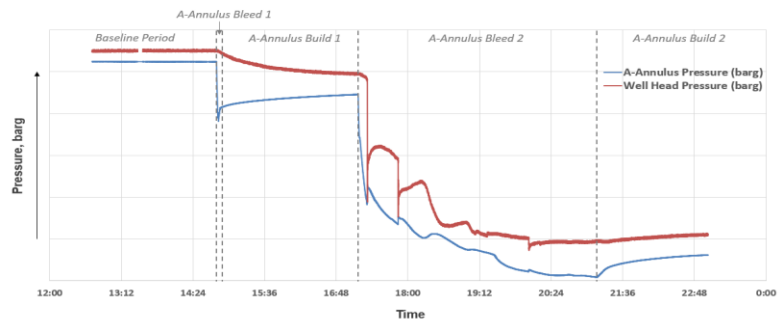
Challenge

Tubing leak detection and well remediation

An O&G operator was experiencing pressure building up in the “A” annulus in an offshore oil well equipped with fiber optic cable up to the packer. The leak investigation was initially done via wireline where a Multi-finger Calliper (MFC) log confirmed a leak at a specific section in the tubing. A straddle was installed and the well was put back into production, however the pressure built up again in the A annulus. The straddle was then pulled and other wireline diagnostic tools were run to better understand the source of the issue, but the results were inconclusive. The operator decided to shut the well in to ensure compliance with regulations and it remained shut in for three years causing considerable OPEX and lost production.

Solution

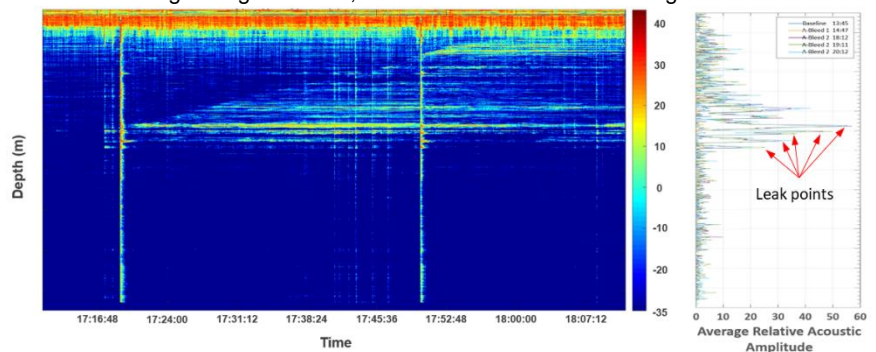
LYTT’s well integrity monitoring application was then run on the DAS data acquired by connecting to the permanent single mode (gauge) fiber that was installed. A defined acquisition program was established to monitor ‘fluid flow logs’ using LYTT’s analytics across various stages – to monitor the response during baseline logging and during a series of pressure bleeds to identify leak(s) through distributed and continuous fluid flow profiles established using LYTT’s application.



Operational sequence executed in the well to establish fluid leaks using LYTT’s analytics

Result

LYTT’s integrity monitoring application was able to not only identify the primary leak point, which was captured by the MFC, but also identified leaks at other sections that were missed by the MFC and the other intervention tools. The results also showed the movement of the fluid front behind casing during the bleed, as can be observed in the image below.



Observations on DAS and processing results from LYTT’s leak detection app

Value

This insight was delivered by the LYTT app as dynamic leak logs which were then used for targeted remediation of the well. The well that was previously shut in for three years was then brought back into production with no leaks or pressure build up observed in the A annulus, validating LYTT’s findings. This added substantial production benefit to the asset as a well that was declared unusable was brought back to life.

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