

CASE STUDY

Successful leak detection in the Middle East with multifinger caliper and Archer VIVID™

THE CHALLENGE

A national operator of a mature field in the Middle East discovered a suspected tubing-to-annulus leak path following a failed C-section inflow test.

The operator therefore needed to evaluate the tubing integrity and identify any leaks in the primary tubular barrier and associated completion components.

Due to READ's exceptional track record in production logging and well integrity, and our in-depth knowledge of the Middle East oil and gas market, the client engaged with us to develop a solution that would deliver the accurate and insightful answers they needed.

THE SOLUTION

The READ team discussed the project with the operator to fully understand the objectives and to propose an effective methodology.

We recommended performing a single run using a 40 finger caliper combined with Archer VIVID™ acoustic technology, to be deployed on slickline.

Archer VIVID™ is a highly sensitive acoustic technology that detects, investigates and locates barrier leaks in real-time in the presence of road noise, offering time and cost savings compared to other tools that require static measurements.

We successfully performed one logging run totalling 6 hours, and dynamically recorded data during 2 passes: run in hole and pull out of hole.

Our in-house ANSA data analysis team delivered a comprehensive report to the client which included a detailed assessment of the tubing condition and a leak detection report.

CLIENT OVERVIEW

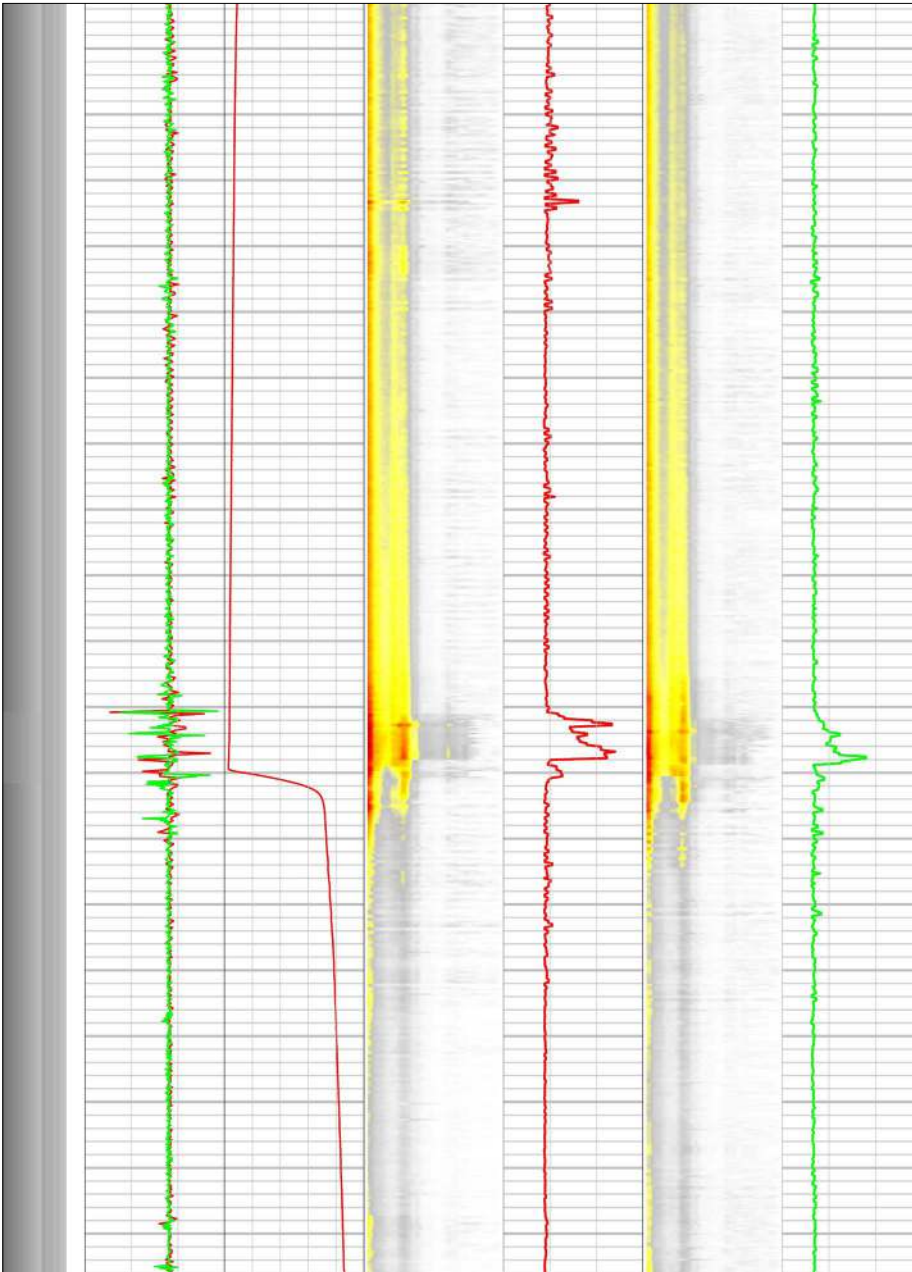
A national operator
Middle East mature field

SERVICES

- Tubing integrity
- Primary barrier leak detection

TECHNOLOGY INVOLVED

- 40 finger caliper combined with Archer VIVID™ acoustic listening platform



Barrier leak as identified by READ's 40-finger caliper and Archer's VIVID™ acoustic listening platform.

THE RESULTS

The answers delivered by our ANSA data analysis team demonstrated that the tubing was in good condition with no indication of significant metal loss or deposition throughout.

The Archer VIVID™ acoustic listening platform revealed the source of the leak channel, which was corroborated by conventional centerline sensors. The acoustic data indicated a leak path from the tubing to the A-annulus at the Side Pocket Mandrel (SPM).

The leak was identified by an acoustic energy signature recorded while injecting to tubing and bleeding off the A-annulus to create sufficient differential pressure to activate the leak.

Elevated levels of acoustic energy detected above the leak could be attributed to gas flow from the leak in the A-annulus.

The client was extremely pleased with the results. They were able to precisely identify the source of the leak and take appropriate remedial action.

READ's solution achieved a time saving of >8 hours for the client, compared to a conventional station-based acoustic leak detection survey.

KEY RESULTS

- First deployment of Archer VIVID™ in the Middle East
- Time saving of >8 hours compared to a conventional station-based acoustic leak detection survey
- Fast, precise answers enabling in-field decision making for targeted remedial action