

LeakVA

TUBING LEAK REPAIR ENABLED WITH VISUAL ANALYTICS

EV's Optis Infinity M125 provides a complete 360° image of the well while substantially reducing operating time and cost

THE IMPACT OF DOWNHOLE LEAKS

Leaks can undermine the production potential of a well and become a serious risk to safety and the environment. The most common leaks occur between the production tubing and production casing annulus, having an immediate impact on the safe operation of a well, but often proving difficult to pinpoint with conventional production logging and integrity evaluation services.

For well operators, it's crucial to determine the location, size and scale of any leaks, as implementing the correct remediation technique can avoid costly well workover operations and rapidly restore production to its optimum level.

WELL INTEGRITY COMPROMISED

The presence of sustained 'A-Annulus' pressure was reported during routine pressure diagnostics. The pressure was proving difficult to bleed down to a minimum. With the integrity of the well seriously compromised, the operator needed to quickly understand the root cause of the pressure build-up, to enable effective remediation and safe guard production from the well.

Having performed a leak detection survey, EV's Optis Infinity Memory Camera was run on Slickline with both downview & sideview footage acquired to confirm the leak location, measure its extent and evaluate the condition of the surrounding area.

Armed with this information, the operator would be able to understand the root cause and the severity of the issue, enabling them to select the most appropriate remedial action.

THE CHALLENGE

The presence of sustained 'A-Annulus' pressure was reported during routine pressure diagnostics. The pressure was proving difficult to bleed down to a minimum. With the integrity of the well seriously compromised, the operator needed to quickly understand the root cause of the pressure build-up, to enable effective remediation and safe guard production from the well.

THE SOLUTION

EV's Optis Infinity Memory Camera was run on Slickline with both downview and sideview footage acquired to confirm the leak location, measure its extent, and evaluate the condition of the surrounding area.

THE RESULTS

The downview footage immediately revealed two small holes in the pup joint (**Fig.1**). The four sideview cameras visualised the two leak points in more detail, revealing the full extent of the damage (**Fig.2**). Detailed and accurate measurements of the two leak points were provided for meaningful assessment of the severity of the damage (**Fig.3**). The Sliding Sleeve Devices and Safety Valve were also inspected and appeared to be in good condition with no scale build up or debris visible (**Fig.4**). With no visible corrosion, debris or sand accumulation identified at the leak points, the operator has scheduled to set a pack-off straddle over the zone, to isolate the leak points and re-gain the integrity of the well.

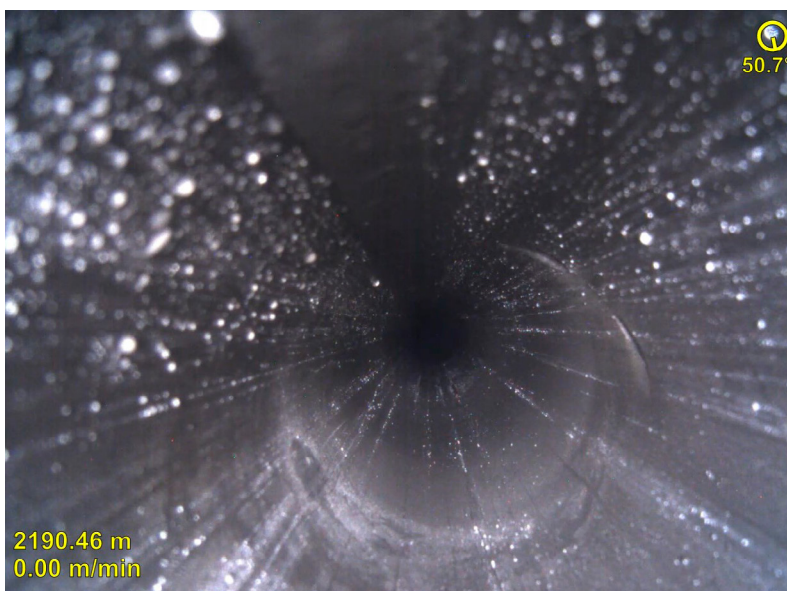


Figure 1: Downview image of leak points in pup joint

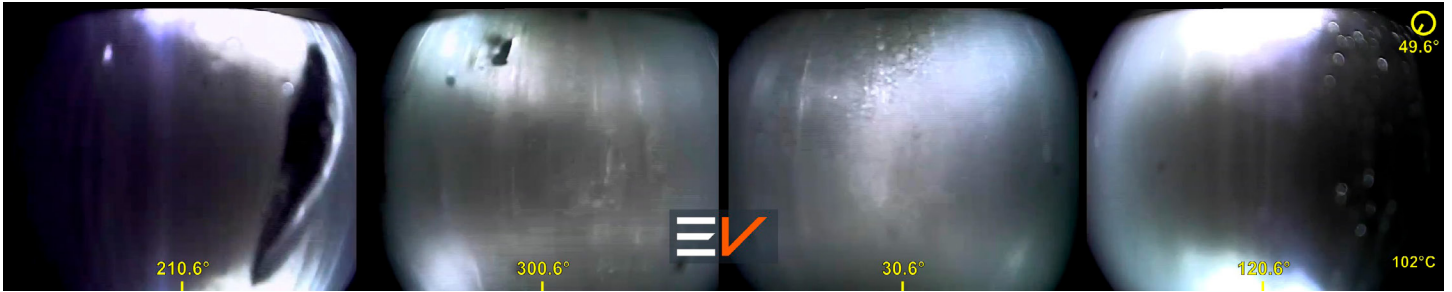


Figure 2: Sideview images revealing the extent of damage

PINPOINTING LEAK POINTS

The camera was run in hole to a depth of 2100 metres. No visible corrosion, debris or sand accumulation was identified in the footage. However further down, the downview footage immediately revealed two small holes in the pup joint (*Fig.1*).

The four sideview cameras visualised the two leak points in more detail, revealing the full extent of the damage (*Fig.2*). EV's integrated visualisation and dimensioning software enabled detailed and accurate measurements of the two leak points, providing meaningful assessment of the severity of the damage (*Fig.3*).

The Sliding Sleeve Devices and Safety Valve were also inspected and appeared to be in good condition with no scale build up or debris visible (*Fig.4*).

TARGETED REMEDIATION

With the quantified information provided by LeakVA, and with no visible corrosion, debris or sand accumulation identified at the leak points, the operator has scheduled to set a pack-off straddle over the zone, to isolate the leak points and re-gain the integrity of the well.

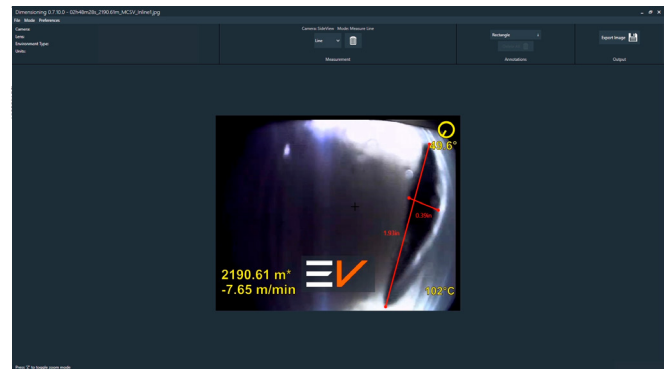


Figure 3: Detailed measurements of the severity of damage

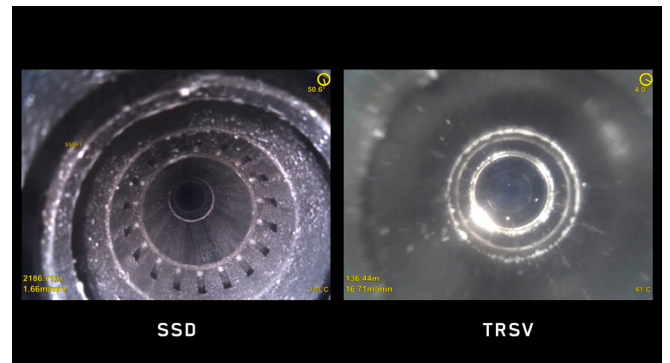


Figure 4: SSD & TRSV Inspection