

Visual Analytics

REVEALING EXPOSED FORMATION

EV's Optis[®] Infinity Hybrid provides a complete 360° image of the well while substantially reducing operating time and cost.

WELL ABANDONMENT

During pipe recovery operations, the 7 inch surface casing was believed to have collapsed, leaving the operator no option but to mill through the casing. After completing the milling operation, the operator was still unable to latch onto the surface casing, with fears that the casing may have been milled through into the formation.

Unable to comply with regulatory requirements and safely abandon the well, the operator needed a clear understanding of the situation downhole before planning next steps.

360° VIEW OF THE WELLBORE

EV's Optis Infinity Hybrid camera was deployed on E-Line to enable decisive, real-time decision making. Optis Infinity Hybrid features the integration of ground-breaking array camera technology with high capacity memory modules and industry leading surface read-out telemetry.

With the ability to record all four array sideview cameras to memory, combined with simultaneous transmission of live video to surface, Optis Infinity Hybrid enables real-time decision making directly at the well site.

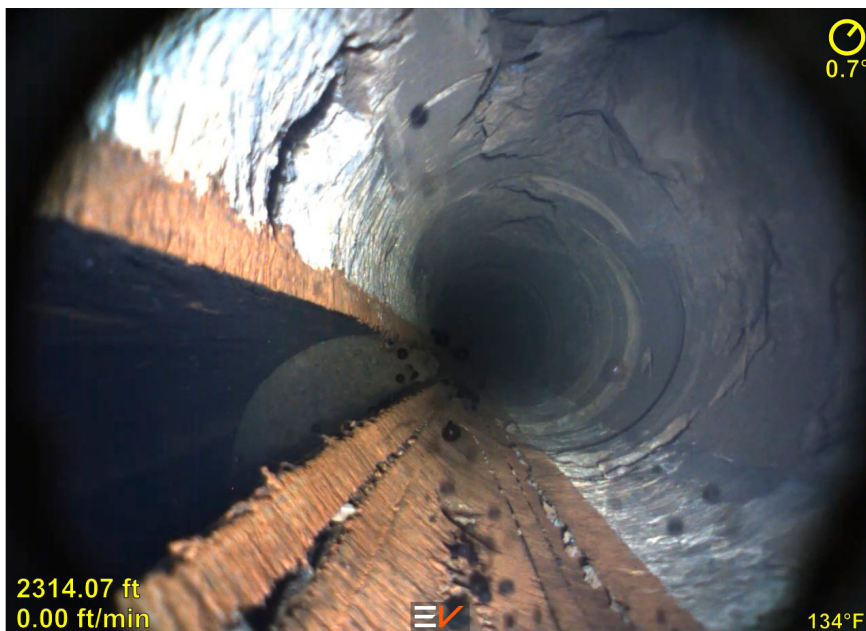


Figure 1: Downview camera revealing milling damage

⚠️ THE CHALLENGE

A US operator experienced a complex issue during a well abandonment. During pipe recovery operations, the 7 inch surface casing was believed to have collapsed, leaving the operator no option but to mill through the casing. After completing the milling operation, the operator was still unable to latch onto the surface casing, with fears that the casing may have been milled through into the formation.

💡 THE SOLUTION

EV's Optis Infinity Hybrid camera was deployed on E-Line to enable critical, real-time decision making. With the ability to record all four array sideview cameras to memory, combined with simultaneous transmission of live video to surface, Optis Infinity Hybrid enables real-time decision making directly at the well site.

✅ THE RESULTS

The Optis Infinity camera was run in hole to a depth of 2300 feet, where the detailed real-time video footage confirmed that the mill had cut through the casing into the formation (**Fig.1**). The 360 degree perspective provided by the four sideview cameras reveal the extent of the damage where the casing was milled through entirely (**Fig.2**). Detailed and accurate measurements were provided of the gap in the casing, to provide quantitative evaluation of the damage and assessment of the severity (**Fig.3**).

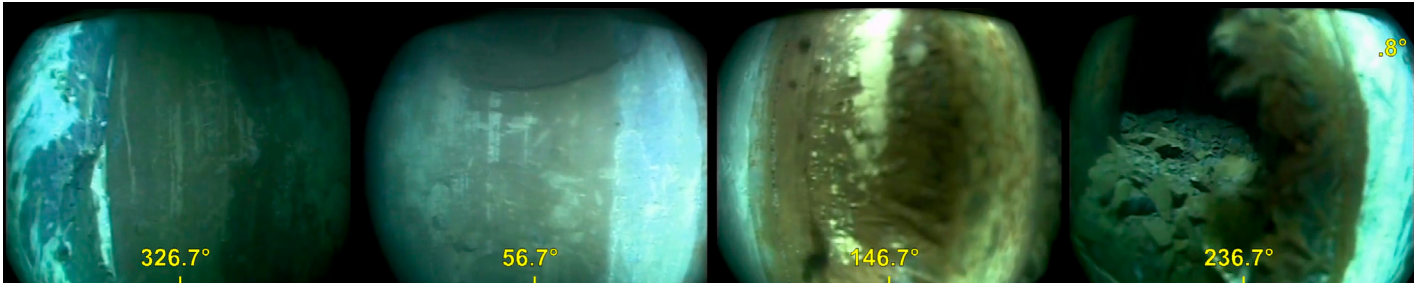


Figure 2: Sideview cameras revealing extent of damage

REVEALING EXPOSED FORMATION

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Further insights were provided through the application of proprietary gigapixel image processing and Visual Analytics, delivering unrivalled evaluation of the extent and severity of the issue.

From the multiple concurrent views of the wellbore, a continuous image of the well environment was generated through an innovative process called 'mosaicing'. Figure 3 shows a 360 degree image of the damaged interval, helping to visualise the area of interest. EV's integrated dimensioning software platform enabled detailed and accurate measurements to be taken of the gap in the casing, providing quantitative evaluation of the damage and assessment of the severity (**Fig.3**).

MAKING INFORMED DECISIONS

Armed with this information, and the ability to visualise in multiple formats, the operator was able to make a decision on their next steps and move ahead with the abandonment operation.



Figure 3: Dimensioned 360° Mosaic image