

CASE STUDY

High-resolution integrity inspection of a 24-year-old water injection pipeline.

Accurate wall thickness measurements through coating and internal scale deposits.

THE CHALLENGE

A major North Sea operator required accurate, high-resolution wall-thickness data to determine the integrity of a 24-year-old water injection pipeline. The measurements would enable the operator to assess corrosion growth to inform a risk-based inspection strategy. However, there were several barriers to conventional inspection techniques. The pipeline was 20mm thick making electromagnetic methods challenging.

To remove the three-layers of various thicknesses of polypropylene and polyethylene coating which would have been necessary for conventional ultrasonic testing would have been prohibitively expensive. There were also scale deposits of various thicknesses and compositions which would have required extensive cleaning runs to remove them and enable a conventional, ultrasonic-testing pigging inspection.

THE SOLUTION

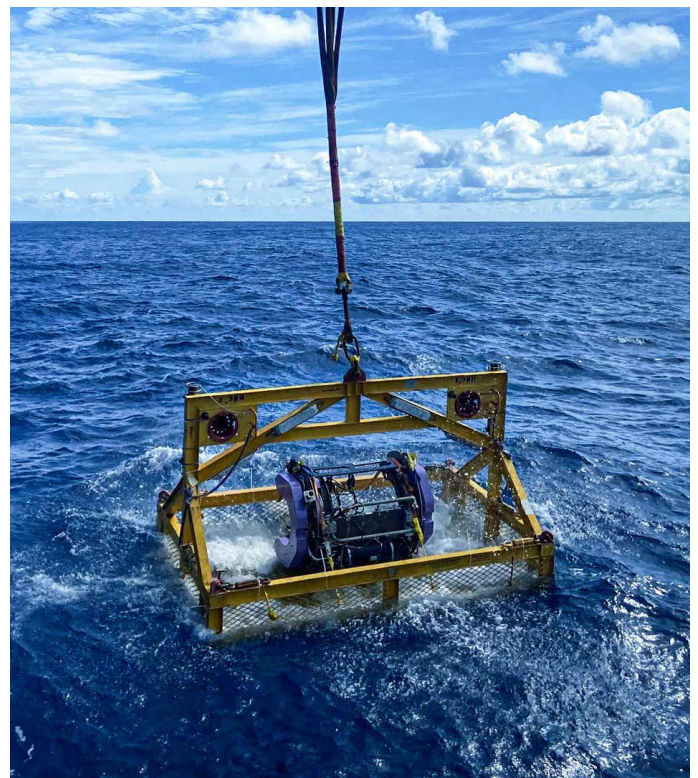
Halfwave's ARTEMIS® inspection tool integrates with a remotely operated vehicle and provides 360° wall-thickness data for areas of interest which have been identified from existing pigging data. Unlike conventional methods ARTEMIS® can provide accurate and high-resolution data and record the wall thickness regardless of its type or the thickness of coating or scale.

The operator wanted to ensure that Halfwave's ARTEMIS® was able to deliver the promised performance and a test was conducted on a sample pipe with axial grooving and pit defects. ARTEMIS® passed with flying colours detecting the location and magnitude of all the defects with high accuracy and repeatability and without any loss of accuracy through the external coating.

THE RESULT

The tool was deployed by the operator and collected accurate, high-resolution data quickly and efficiently. It integrated smoothly with the remotely operated vehicle system. There was no operational downtime, and the work was completed on schedule and within the budget.

The wall thickness measurements have enabled reliable assessments of corrosion growth, which are informing a risk-based inspection strategy that will help the operator to ensure the integrity of its asset.



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UK

Davy Avenue
Knowlhill
Milton Keynes MK5 8PB
UNITED KINGDOM

T: +44 (0)1908 317444

NORWAY

Glasskaret 1
5106 Øvre Ervik
Hordaland,
NORWAY

BRAZIL

Av. Republica do Chile 330,
14o andar, Torre Oeste, Centro,
20031-170 –Rio de Janeiro
– RJ, BRAZIL

T: +55 21 3983 1890

US

c/o NDT Global LLC
15500 International Plaza Dr,
Houston, TX 77032,
USA