



CASE STUDY

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MAG-ST SCREENING INSPECTION OF DEEP WATER UNPIGGABLE GAS PIPELINES

1. INTRODUCTION

A client operated a number of subsea pipelines in dry gas service. These lines were not designed for in-line inspection but had been in service for some time and a validation of their condition was necessary. The inspection to validate condition was, therefore, to be performed using externally applied tools.

2. MAIN CHALLENGES

As there were hundreds of kilometres of pipeline for inspection, a fast screening technique was required to initially identify areas for follow up inspection with corrosion mapping. The pipelines were at depths of <1,000 MSW. They were of different diameters and wall thicknesses and had differing coatings. This did not allow the use of a single inspection technique. The requirement was to detect metal loss greater than 20% of NWT of the pipe which in some cases meant the detection of less than 3mm metal loss. As the lines were on the seabed and partially buried there was only access to the top half of the pipe.

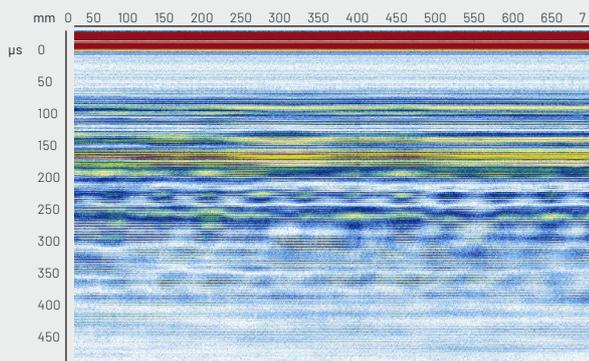
3. INNOVATION

Sonomatic designed and developed a bespoke magnetic wheeled, steerable scanner that is deployed from a support vessel by an ROV. The screening inspection tool, MAG-ST, was then used to screen hundreds of meters per day utilising one of three different techniques that are all deployable from the same tool. These techniques were SH-EMAT, L-EMAT and Multiskip. Sections of pipelines in high risk areas, e.g low points, were identified by the client and a representative sample of each pipeline was screened. By positioning the transducers at 2 and 10 o'clock it was possible to inspect the full circumference of the pipe in one pass.

4. OUTCOME

The inspection and analysis performed by Sonomatic provided information on the condition of the lines without the need for expensive modifications to facilitate in-line inspection. The inspection performance delivered, exceeded client requirements and provided significant data along the length of line inspected as well as identifying areas for follow up. This was critical in determining pipeline overall condition based on low coverage inspection.

EXAMPLE OF L-EMAT DATA:



MAG-ST ON 10" PIPE AT 950M WD:

