

TELETEST™ FOCUS+ IN DESERT ROAD CROSSING INSPECTION APPLICATIONS

Eddyfi Technologies inspected a below-grade pipeline at road crossings in the Sahara desert, North Africa with the Teletest™ FOCUS+ guided wave system.

These crossings were of particular concern because they did not have cathodic protection.

Guided waves are a suitable method for inspecting road crossings because they offer 100% volumetric inspection of the buried road crossing locations. Best practices require accessing and inspecting crossings from both sides.

Here, a 30.5 cm (12 in) condensate line was buried at depths 1–2 m (3.3–6.6 ft) and areas of metal loss were identified for follow-up inspection.

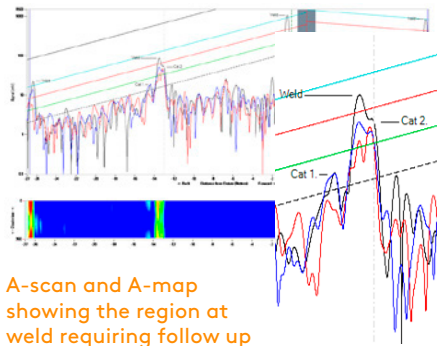


Location photo of typical road crossing

In the buried section, the pipeline changed schedule and was FBE coated.

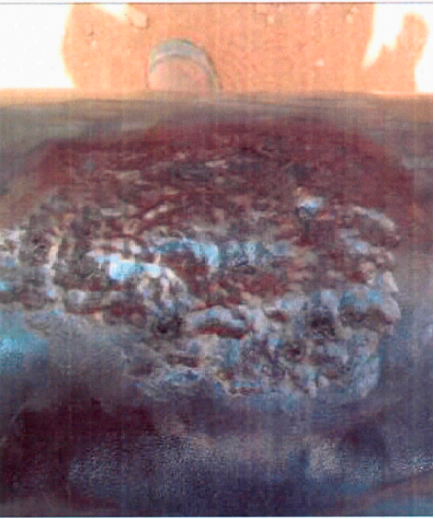
The inspection team managed to achieve full coverage on all the road crossings inspected with the five-ring torsional system, developed for pipelines with high attenuation. This system operates in three-ring torsional wave mode at 30 mm (1.2 in) and 45 mm (1.8 in) spacing. This configuration not only provides more power and better penetration over a two-ring configuration, but also allows the operator to inspect over the full frequency range of the system with having to change the spacing.

A particular region highlighted in the scan above was identified for follow-up. It is clear from the A-scan that the girth weld signal is very irregular when compared to the other three remaining welds. A category 2 and a category 1 indications were also noted adjacent to the suspect weld.



A-scan and A-map showing the region at weld requiring follow up

The customer excavated this region to find extensive external corrosion around the weld and in the region adjacent to it. After performing manual UT, the remaining wall thickness was found to be 5.8 mm (0.23 in) from the nominal 9.6 mm (0.38 in). The road crossing was subsequently decommissioned and production flow rerouted through an alternative crossing.



A close up of one area of corrosion identified adjacent to weld