

APPLICATION NOTE

October 2022



Smart Monitoring for Hard-to-Access
Refinery Systems Using WAND Solution

Refinery Operator

OVERVIEW

APPLICATION	Monitoring hard-to-access refinery locations using WAND solutions
CLIENT	Refinery operator
ASSET	Overhead systems in distillation tower - pipe straight sections & elbows
TEMPERATURE	100°C (212°F)
DEGRADATION	Sweet corrosion & sour corrosion
INSPECTION FREQUENCY	Once / month - Once / year

CHALLENGES



Scaffolding had to be set up each time a thickness measurement was required – this is a costly and time-consuming process.



Insulation also had to be removed each time a thickness measurement was required. As well as being an expensive and laborious process, this was adding to their CUI risk by regularly exposing the pipe surfaces.



Poor repeatability of the customer's manual UT thickness readings meant the data could not be used to accurately trend the corrosion rate.



SOLUTION

The customer installed WAND sensors at TMLs underneath insulation, and at heights using the preinstalled scaffolding; data from the sensors was collected using the WAND handheld data collector. ECHO extension coils for accessing WAND sensors under insulation, and the REACH extendable pole was used for accessing WAND sensors at height.

REACH



ECHO



RESULTS

Thanks to the WAND accessories: ECHO extension coils and the REACH extendable pole, the costs associated with removing/reapplying insulation and setting up scaffolding (for every thickness measurement) were eliminated.

The permanently installed WAND sensors provided the customer with repeatable thickness measurements that enabled accurate trending of internal corrosion.



Figure 1.



Figure 2.



Figure 1. Accessing measurement locations easily using the REACH attachment for WAND-HDC.

Figure 2. Measurement locations underneath insulation, accessed using the ECHO extension.

