

MULTI BARRIER THICKNESS TOOL



Multi Barrier Thickness Tool (MBTT4) is designed to evaluate the metal loss of the 4th barrier based on emission and measurement of an electromagnetic field with the following data processing. It is a stand-alone survey aimed to save time and cost for the mature well's integrity evaluation.

MBTT4 is applicable for corrosion logging as well as leak detection jobs in tandem with North Side FIND.

Applications:

- Quantitative 4th barrier corrosion evaluation
- Localization of holes, cracks, parted casings
- Allocation of completion elements

Advantages:

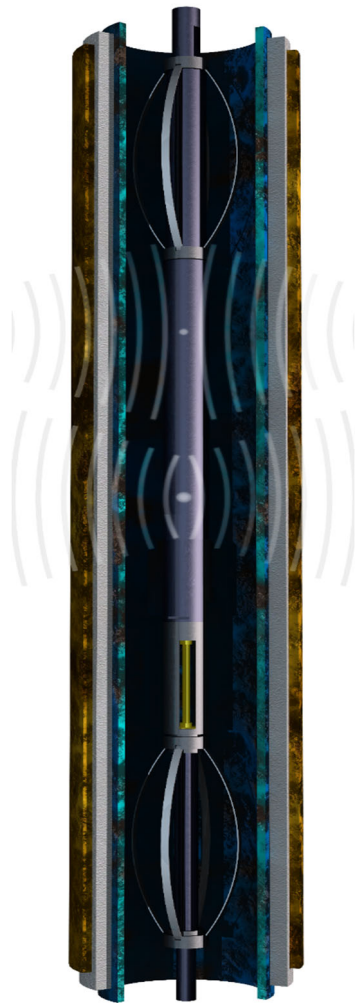
- Not affected by scale deposition
- Through-tubing technology
- Could be combined with MBTT2 and MBTT3 for simultaneous four barriers evaluation in one run

Tool Specifications

Detectable Barrier	4 th
Measurement range (OD)	9.625 – 20.0"
Maximum cumulative casing thickness	1.8"
Minimum detectable hole size (4 th barrier)	1.5"
Chrome pipes evaluation	Yes
Maximum temperature	150°C (304°F)
Maximum pressure	11,600 PSI (80 MPa)
Tool length	4.6 ft (1.4 m)
Tool weight	13.2 lbs (6.0 kg)
Tool diameter	1.65 in (42 mm)
Connections	15/16 SR
Housing material	SS
H ₂ S resistance	25%
Operational time	50 hours
Internal memory	1 Gb



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MBTT4 is the most promising technology for well integrity evaluation. The technology is based on the induction of a current in a string by a pulsed magnetic field and the subsequent recording of electromagnetic field (EMF) decay in pipes. This parameter is used to determine casing wall thickness and to identify and characterize defects. Analysis of EMF decay at various time domains enables the evaluation of multi-string structures. The main advantage of this method is the opportunity to conduct studies in single, double, and multi-string completions.

The MBTT4 works in a pulse-pause mode:

- During pulse mode, the current supplied to generating coil of each probe creates a primary magnetic field in the wellbore.
- In pause mode, the generating coils are switched off, and the eddy currents create a secondary magnetic field in the wellbore, decaying in time. These EMF decays are measured by the receiving coil of each probe.

The extra-powered probe records the EMF decay in the time range from 1 to 800 ms for the third barrier response assessment.