

Noise Logging Tool (NLT)

The Noise Logging Tool (NLT) is a sound detection downhole logging tool that contains a very sensitive ceramic piezoelectric transducer that works as a microphone. The primary purpose of the tool is to detect fluid flowing either past the tool or outside the casing in order to detect possible anomalies or changes in fluid behavior.

DESCRIPTION

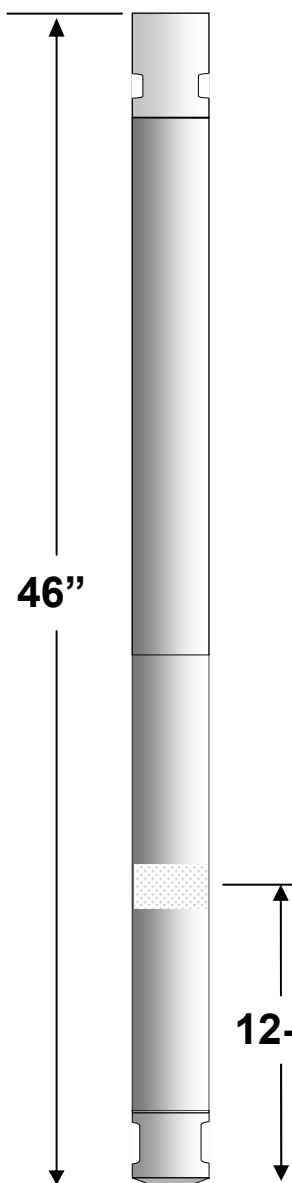
The tool is run downhole without centralizers and the information is recorded with the surface logging system as a set of discrete points at different depths. The logging system records different frequency cuts typically at 200 Hz, 600 Hz, 1000 Hz, 2000 Hz, 4000 Hz and 6000 Hz. The logging system will record the data rejecting any frequency lower than the cut and the recordings will be available for interpretation.

APPLICATIONS

- Detection of active flow through channels in the cement
- Identification of crossflow in producing or shut-in wells
- Detection of liquid or gas leaks in the production pipe or casing
- Inspection of gas lift valves to determine their correct operation
- Determination of two phase flow rate (200 Hz and 600 Hz curves)
- Measurement of fluid velocity around the tool (600 Hz curve)
- Detection of active bridge plug or packer leaks
- Measurement of single phase gas flow outside of the casing (1000 Hz and 2000 Hz curves)

FEATURES

- The tool is run in combination with a high resolution temperature tool that is used for primary detection of anomalies and positioning
- The tool can be switched between low and high gains, the high gain being 10X greater than the low gain
- The acoustic piezoelectric transducers are contained in an oil filled receptacle that uses a floating piston for pressure compensation
- Low maintenance



**12-1/2" - Center of
Noise Detector**

SPECIFICATIONS

NLT - Noise Logging Tool	
General Specs	
Maximum Pressure Maximum Temperature Diameter Length Weight Recording Mode Data transmission Minimum hole size Maximum hole size	20,000 PSI (140 MPa) 400 °F (205 °C) 1-11/16 Inches (42.86 mm) 46 Inches (116.84 cm) 18.3 Lb (8.3 Kg) Stationary Analog 2 Inches (50.8 mm) Any borehole size
Borehole Conditions	
Fluid in the borehole Position of the tool	Water, brine, drilling mud, oil, any liquid and gas Decentralized
Measurement	
Principle of measurement Depth of investigation Frequency Range Pressure Compensation Voltage Current	Piezo Electric Crystal Disturbance Variable, depending on the application 0 to 6 KHz Piston 120 VDC 15 mA