



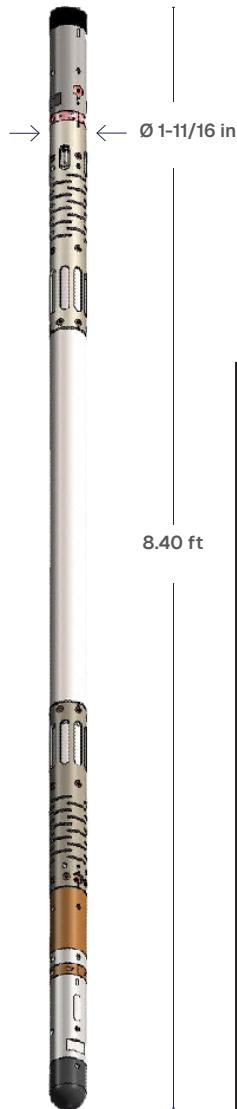
ARRAY NOISE TOOL (ANT-B)

ANT-B is a next generation wireline leak detection and fluid movement evaluation instrument. The continuous recording tool utilizes a segmented array of wide-band acoustic sensors to produce an innovative data set of differential measurements. This allows excellent rejection of unwanted “road noise” produced by tool movement in the wellbore. The sensor array allows inventive propagation-direction processing to further extract weak fluid movement sounds from behind multiple pipes. Cutting edge machine learning algorithms facilitate more precise location of downhole sound sources and paths.

By paring differential sensors with array processing, the ANT-B tool can acquire accurate measurements while ascending or descending in the wellbore, improving acquisition efficiency in any sound source detection logging application.

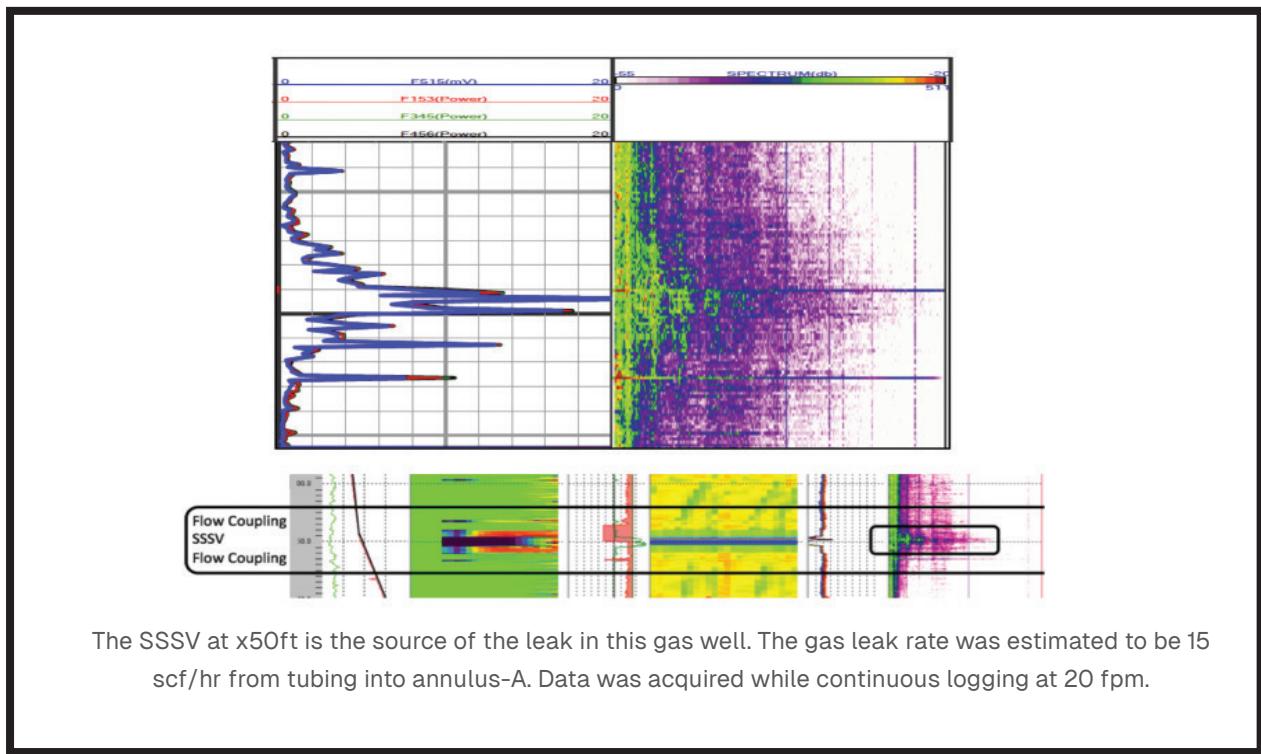
FEATURES

- Total of 38 Hydrophones
- Sensor Configuration: 3 monopole + 6 differential
- X & Y Differential + Wave Propagation
- Provides accurate results while logging continuously
- Spectral Analysis
- Excellent (> 30dB) Road Noise Rejection
- Azimuthal Sensitivity
- Post-processing accuracy and efficiency enhanced by machine learning algorithms



APPLICATIONS

- Leak Detection (tubing/casing/packer leaks)
- Diagnosis of Sustained Casing Pressure
- Location of open perforations
- Identification of flow zones behind pipe
- Identification of channeling behind pipe



The SSSV at x50ft is the source of the leak in this gas well. The gas leak rate was estimated to be 15 scf/hr from tubing into annulus-A. Data was acquired while continuous logging at 20 fpm.

PEOPLE TECHNOLOGY SUPPORT

SPECIFICATIONS

ANT -B	
GENERAL SPECS	
Maximum Operating Pressure	20,000PSI (140 MPa)
Maximum Operating Temperature	350°F (175°C)
Diameter	1-11/16 in (43 mm)
Length	10.1' (3.07 m) / Transport length <6ft (1.82 m)
Tool Weight	37 LBS (16.0 KG)
Logging Speed & Range	15 FPM / 47,700 ft.
Logging Sample Rate	4 SPF
Channels/Frequency Range	14CH 800-60 kHz
Sensor Configuration	5 level array, differential spectrum
Power	18V DC, 7 Watts
Data Recording	Hybrid - Internal memory and Subset SRO
Internal Measurements Temperature, Voltage	Hybrid - Internal memory and configurable SRO
Feedthrough Wiring Through Wired for Inline	Pegasus™ dual CAN-Bus, 18V to 36V for 3W

ADVANCED PROPAGATION POST-PROCESSING ELIMINATING "ROAD NOISE" BY DIFFERENTIAL MEASUREMENTS

