4.3 9321 - Full Waveform Sonic Tool

The 9320 tool contains a single transmitter and dual receiver to record formation travel times. The full wave form data are also recorded simultaneously, along with near and far travel times, borehole-compensated delta time, calculated sonic porosity, receiver gains, near/far amplitudes and natural gamma. The tool operates at 24kHz and therefore the period is 41.7usec. The sonic or acoustic log uses the basic principle of sound waves traveling through a media. The Century sonic system uses a single transmitter and dual receiver system for recording the travel times of the formation. The receivers are spaced 0.9m and 1.2m from the transmitter. Therefore, a 0.3m calculation can be made to measure this interval transit time.

Features

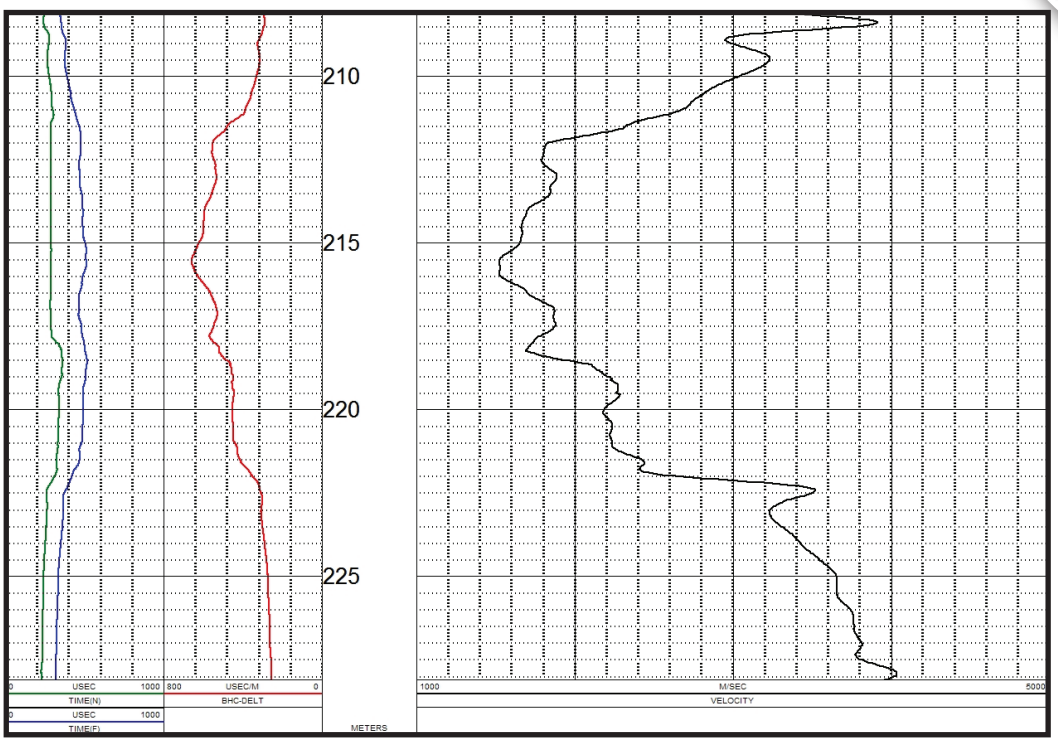
1. *Natural Gamma: 2.5 x 10.2cm scintillation*
2. *Transmitter: 24 kHz piezoelectric*
3. *Acoustic Isolator: Thermoplastic polyester*
4. *Near Receiver: 91.4cm spacing*
5. *Far Receiver: 121.9cm spacing*
6. *CCL*

Tool Specifications

Length: 283cm
Temperature limit: 85ºC
Diameter: 50.8mm + centralisers
Pressure limit: 175kg/cm2
Weight: 9kg
Logging Speed: 4.5m/min

Sensor	Response Limits	Accuracy
Near Receiver	4 to 4,096 usec	+/-0.5usec
Far Receiver	4 to 4,096 usec	+/-0.5usec
Delta Time	4 to 4,096 usec	+/-1.0usec
Sonic Porosity	-10 to 100%	+/-2%
Amplitude (minimum)	+/- 10 MV @ 256 g	-5%
Amplitude (maximum)	+/- 1.5 volts @ 4 gain	+/-5%
Gains	4 to 256	+/-5%
Natural Gamma	0 to 10,000 API	+/-5%

9321 P-Wave Sonic Exampe Log



9231 SONIC FULL WAVEFORM DATA EXAMPLE LOG