

NEXT-GENERATION AZIMUTHAL RESISTIVITY TOOL DESIGNED TO WORK WITH BOTH RSS AND MOTOR

Hit the most productive zone and maintain desired distances from bed or fluid boundaries with the next-gen boundary mapping technology.

Navigate your reservoirs continuously in any drilling mode (rotating or sliding) and with any type of BHA.

Both standard version (150°C and 20,000 psi) and HTHP version (175°C, 25,000 psi) are available.

FEATURES & BENEFITS

- Tracks bed boundaries with electronically steerable electromagnetic waves
- Measures 256, 16-sector fully compensated azimuthal resistivities
- Measures up to 12 fully compensated propagation resistivities at 3 frequencies (400 kHz, 2 MHz, and 4 MHz)
- Maps approaching bed boundaries up to 20 feet apart
- Expands resistivity measurement range up to 4,000 ohm
- Works with any type of BHA (RSS or motor) in any drilling mode (rotating or sliding)
- Short sub (11.3 ft. or 3.5m) to shorten the BHA
- Modular electronics design improves shop or rig-site tool serviceability
- Compatible with virtually any type of drilling fluids

APPLICATIONS

- Navigate reservoirs and make timely adjustments to well trajectory
- Track and maintain desired distances from reservoir boundaries
- Monitor water zones and avoid contact
- Eliminate relogging of sliding sections
- Refine the earth model with the high-definition azimuthal & propagation resistivity measurements

BoundaryTracker tracks reservoir tops and/or bottoms and places the wellbore in the sweetest spots to maximize production.

BoundaryTracker offers ultra deep depth of investigation which, when interpreted jointly with the approaching angle of the reservoir boundary, provides early warning of exit.

BoundaryTracker interfaces with top- or bottom-mounted pulsers thru the specially designed datalinks.

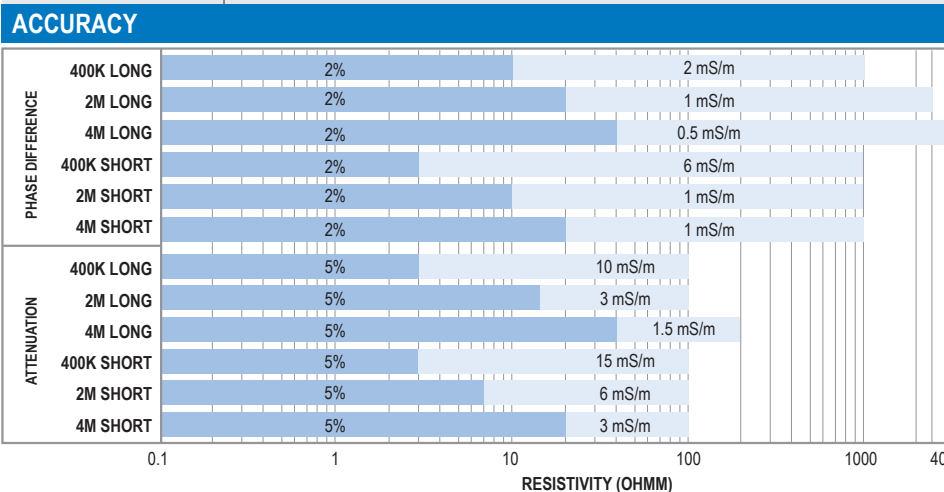
BoundaryTracker is designed to be run above RSS or mud motor and capable of boundary tracking in sliding mode.

TOOL FEATURE HIGHLIGHTS

- Compatible with virtually all types of mud, making it a suitable choice to run in complex hole conditions
- Extra large memory allows days of runs
- High measurement accuracy expands the applicability range
- Modular electronics design improves tool serviceability
- H2S-resistance upgrades available
- Available in 3-1/2 in., 4-3/4 in., 6-3/4 in., and 8-1/4 in. collar sizes

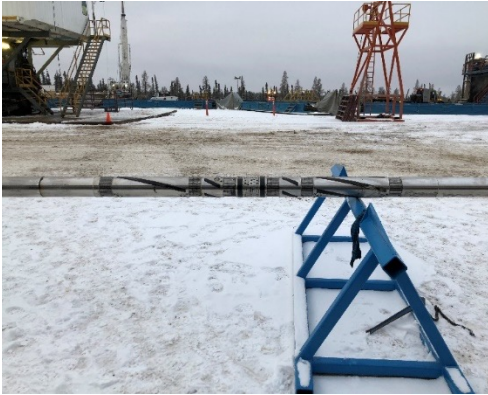
SPECIFICATIONS				
Tool Size	3-1/2 in.	4-3/4 in.	6-3/4 in.	8-1/4 in.
Hole Size Range	4-1/4 to 5-1/2 in.	5-7/8 to 6-3/4 in.	8-3/8 to 10-5/8 in.	11 to 12-1/4 in.
Nominal OD/MAX OD	3.-1/2 / 3-3/4 in.	5 / 5-1/4 in.	6-3/4 / 7 in.	8-1/4 in./ 8-1/2 in.
Nominal Length	136 in. (3.45m)			
Top/Bottom Conx	Customer's Choice			
Connection Makeup Torque	2,500 lbf-ft.	10,000 lbf-ft.	30,000 lbf-ft.	46,000 lbf-ft.
Max DLS	Rotating	20'/100 ft.	15'/100 ft.	8'/100 ft.
	Sliding	40'/100 ft.	30'/100 ft.	16'/100 ft.
Max RPM	200			
Max WOB	20,000 lbf*	50,000 lbf*	100,000 lbf*	150,000 lbf*
Max Sand Content	<1%			
Power	External			
Max Flow Rate	150 gpm	350 gpm	750 gpm	1000 gpm
H2S-resistant upgrade	Optional			

MEASUREMENTS				
Operating Frequencies	400 kHz & 2 MHz (4 MHz optional)			
Coil Spacings	18 in. & 46 in.			
Resistivity Range	0.1 – 3,000 ohmm (4,000 ohmm with 4 MHz)			
Vertical Resolution	1.25 ft. at 1 ohmm			
Depth of Investig. - Propag. Resistivity	Up to 14 ft.			
Depth of Detection – Azimuthal Resistivity	Up to 20 ft.			
Azimuthal Gamma Option	No	Yes	Yes	No
PWD Option	No	Yes	Yes	Yes
Power Consumption	Configurable			

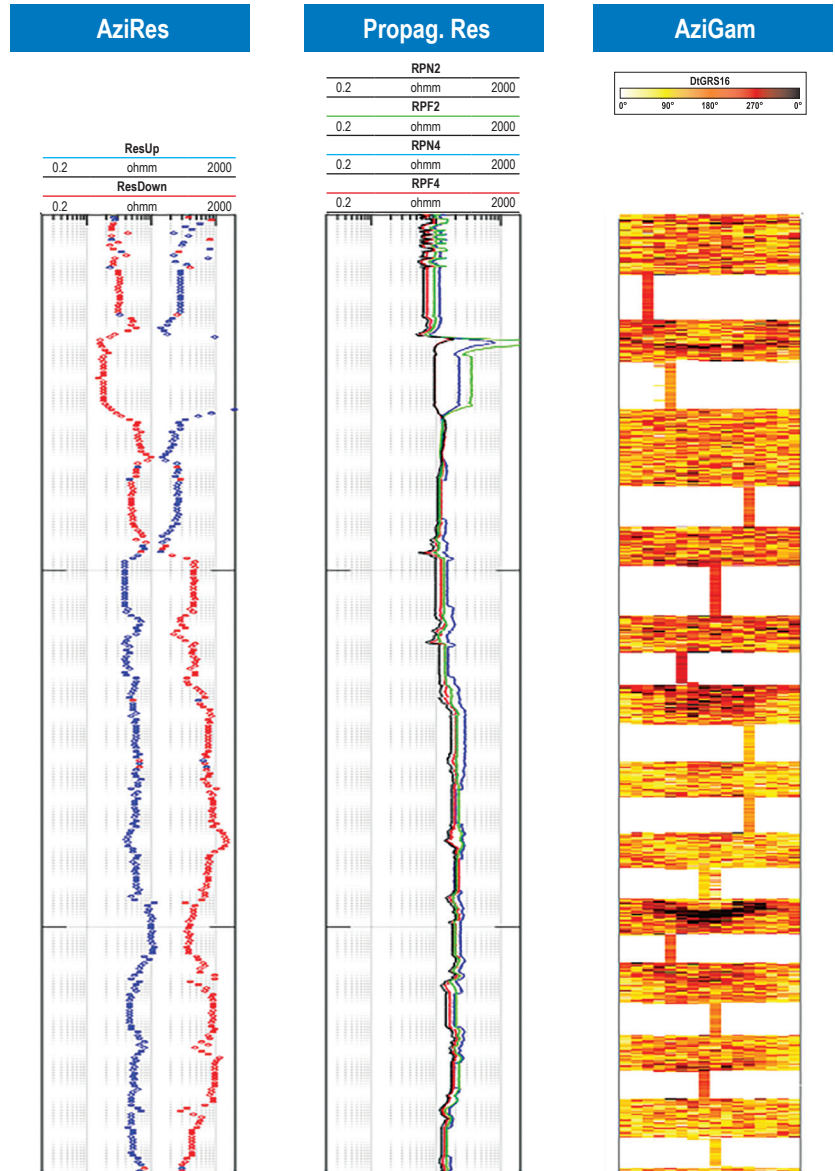


CONTINUOUS RESISTIVITY MAPPING WITHOUT SLIDING GAPS

WELL LOCATION: CANADA



- SAGD injection well
- The BoundaryTracker™ tool above a motor



BOUNDARYTRACKER™ AS A BOUNDARY MAPPING TOOL – THE COMPETITIVE ADVANTAGES

	Max distance of boundary detection	Max temperature rating	Max pressure rating	Best for RSS?	Best for motors?	Interfacing with TMP	Interfacing with BMP
WRT (BoundaryTracker)	20ft	175°C	25,000 psi	Yes	Yes	Yes	Yes