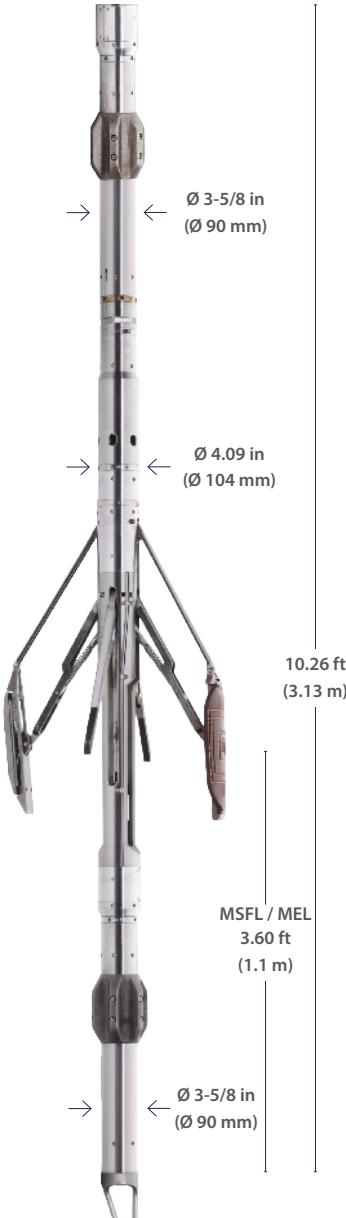




MICRO-SPHERICAL LOGGING TOOL

GOWELL's MSFL tool provides a measurement of the flushed zone resistivity (R_{xo}) with either single or dual axis borehole caliper measurements.

The R_{xo} measurement is used to calculate the flushed zone saturation and to correct other resistivity measurements



MSFL

FEATURES

- Combinable with other Gallop tools
- Measures voltages
- Reads R_{xo} resolution in thick mud cake conditions
- Provides qualitative measurement of permeability
- Combinable with 4 arm caliper but easily close to enter the end of tubing or pass

APPLICATIONS

- Measures flushed zone resistivity
- Calculates flushed zone water saturation (S_{xo})
- Indicates fluid mobility
- Estimates invasion profile (combined with other resistivity tools)
- Corrects deeper-reading resistivity devices for invasion effects
- Identifies thin laminations
- Calculates permeability and porosityFlow Profile

PAD SECTION





MICRO-SPHERICAL LOGGING TOOL

SPECIFICATION

MSFL	
GENERAL SPECS	
Maximum Pressure	20,000 PSI (140 MPa)
Maximum Temperature	350 °F (175°C)
Diameter	4.09 in (104 mm)
Length	10.26 ft (3.13 m)
Weight	380 lbs (172.37 kg)
Max. Logging Speed	60 ft/min (18.29 m/min)
BOREHOLE CONDITIONS	
Borehole Fluids	Water based muds
Tool Position	Pad Type
Caliper Voltage	100 - 150 V DC
Caliper Current	150 - 500 mA
Caliper Output	500 - 900 mV (0 - 1,000 CPS)
HARDWARE FEATURES	
Voltage	220 Vac, 50 Hz
Current	120 mA
Auxiliary Voltage	110 Vdc on motor (100 Vac at cable head)
Auxiliary Current	700 mA
Sampling Rate	10, 20, 40 samples/m selectable
MSF MEASUREMENT	
Principle	Focused Current Injection
Minimum	0.2 Ohmm
Maximum	2,000 Ohmm
Vertical Resolution	3 in (76.2 mm)
Depth of Investigation	1-4 in (25 - 101 mm)
Accuracy	±5%
Primary Curves	Rxo