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CTDirect MWD coiled tubing measurement-while-drilling service

Provides enhanced drilling mechanics to optimize drilling performance and production potential

Temperature:
up to 347 degF [175 degC]

Dogleg capability:
up to 50°/100 ft

Where it is used

- Vertical, horizontal, and directional wells
- Underbalanced and overbalanced drilling
- Reentry drilling
- Thru-tubing drilling
- High-temperature applications

How it improves operations

- Maximizes reservoir contact
- Improves production potential in reentry wells
- Increases ROP in underbalanced applications
- Eliminates cost of removing completions
- Avoids risk of taking well offline during reentry drilling
- Enables better geosteering with full 3D directional capability
- Lowers maintenance cost and service turnaround time

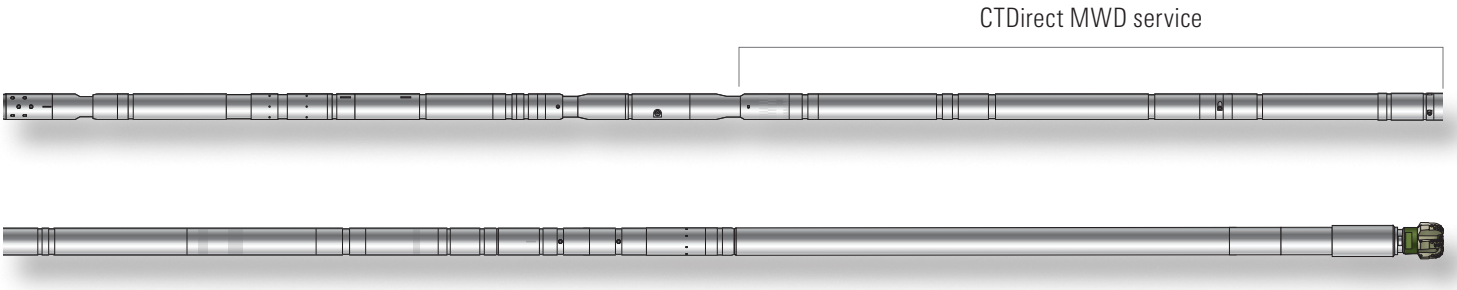
Key measurements

The CTDirect MWD* coiled tubing measurement-while-drilling service uses enhanced drilling mechanics to optimize drilling performance and production potential. Using torque-on-bit (TOB) calculations, the service enables early motor and turbine stall detection and prevention. TOB also indicates the torsional load on the BHA to better locate and mitigate stuck pipe incidents. Weight-on-bit (WOB) calculations provide the surface weight transferred to the bit, helping to improve ROP and drilling performance.

What else I should know

In addition to TOB and WOB calculations, the CTDirect MWD service provides measurements of pressure and temperature, shock and vibration, inclination, azimuth, gamma ray, and toolface data. The system seamlessly transmits real-time data to the surface, where it is continuously monitored at the wellsite for precise directional control and immediate drilling performance decision making.

The service also optimizes underbalanced drilling by eliminating the need for drillpipe connections and minimizing reservoir damage.



The CTDirect MWD service improves efficiency, increases productivity, and enables better trajectory control by using advanced drilling mechanics, including TOB and WOB data.

CTDirect MWD

CTDirect MWD Service Specifications	
Nominal OD	3.12 in [79.25 mm]
Hole size	3.625–4.75 in [92.08–120.65 mm]
Max. allowable operational overpull	30,000 lbf [133,447 N]
Max. WOB	11,500 lbf [51,155 N]
Max. dogleg severity	50°/100 ft [50°/30 m]
Max. orienter torque	
Forward	500 lbf.ft [678 N.m]
Reverse	1,900 lbf.ft [2,576 N.m]
Nominal length, including motor†	60 ft [18.3 m]
Max. internal pressure	15,000 psi [103.4 MPa]
Max. annular pressure	10,000 psi [68.9 MPa]
Operating temperature range	14 to 302 degF [–10 to 150 degC]
Max. flow rate	130 galUS/min [492 L/min]
Produced fluids	Gas and water
Hydrogen sulfide	Up to 20%
Operational	
Cable requirement	Heptacable inside coil
Pressure barriers	Multiple
Measurements	
Inclination	Industry standard
Azimuth	Industry standard
Toolface	Gravity and magnetic
Natural gamma ray range	0 to 250 gAPI
Shock and vibration sensor peak range	500 g_n
Annular and internal pressure sensor range	0 to 10,000 psi [0 to 68.9 MPa]
Resistivity	Optional arcVISION* array resistivity compensated service in recorded mode
Surface formation evaluation	Optional quantitative hydrocarbon analysis with FLAIR* real-time fluid logging and analysis service
Fluid Compatibility	
Nitrogen	Up to 99% nitrogen, 1% water
Lubricant	Radiagreen® lubricant, up to 3%
Methanol or ethylene glycol	40% methanol or 100% ethylene glycol
Caustics	Sodium hydroxide
Corrosion inhibitor	ASTM International SA193 (amine based)
Potassium chloride	Up to 2%

† Dependent upon motor

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