

SPECTRUM®

Real-Time Hybrid Coiled Tubing Service

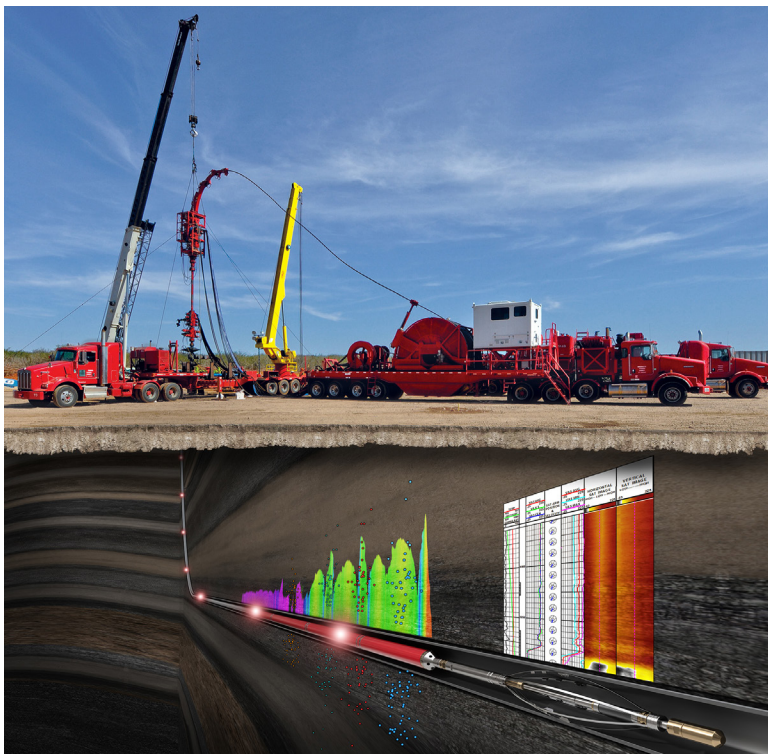
INTEGRATED WELL DIAGNOSTICS AND INTERVENTIONS

OVERVIEW

Halliburton's SPECTRUM® is the new generation of real-time hybrid coiled tubing services. The hybrid system combines intervention and diagnostic capabilities to help operators deliver better wells.

SPECTRUM® service is a step change in the industry by integrating fiber optic and electric communication and power. The system is fully compatible with wireline and mechanical tools, offering unlimited flexibility in diagnostic, design and delivery of the operations.

When equipped with the SPECTRUM® platform, coiled tubing operations are entering a new era of collaboration, informed interventions, and real-time onsite decision-making process for more precise and reliable execution and maximized well performance.



Example of a single trip deployment of distributed temperature sensing (DTS) and distributed acoustic sensing (DAS) and PLT with the SPECTRUM® Real-Time Hybrid Coiled Tubing Service for maximum production insight.

BENEFITS

- » **Integrated logging capability** – SPECTRUM® service can deploy all cased-hole logging tools, in addition to distributed temperature sensing (DTS) and distributed acoustic sensing (DAS), for maximum subsurface insight.
- » **Open architecture** – The system is designed to be compatible with all electric and mechanical tools, helping provide the best solutions for solving industry challenges.
- » **No power limitation** – Due to the hybrid electric and fiber optic concept, no battery is required, so operations are not limited by time or power constraints.
- » **Enhanced single trip** – The ultra-compact design of the bottomhole assembly (BHA) provides the ability to combine with additional intervention and diagnostic tools in the same trip. Tractors and dummy runs can also be eliminated.
- » **Fast rig-up** – SPECTRUM® service provides a step change for rig-up efficiency with plug and play connections, eliminating nonproductive time (NPT).
- » **Transparent to operations** – The system is robust and compatible with acid, solvents, and abrasive fluids. It eliminates the need to have a work reel and logging reel.
- » **Enhanced logistics** – With combined coiled tubing and wireline capabilities, SPECTRUM® service streamlines logistical work flows to reduce operational time and limit footprints on locations.

Specifications

Available sizes	2-1/4 in	3-3/8 in
Maximum pump rates (clean fluid)	4 bpm	8.3 bpm
Maximum pump rates (abrasive fluid)	1 bpm	3.6 bpm
Tensile strength	45,000 lbf	60,000 lbf
Torque	800 ft-lb	2800 ft-lb
Rating (pressure/temperature/shocks)	15,000 psi/350°F/1,000 G	
Length	12.5 ft	13 ft
Ball drop	9/16 in	1 in
Cable disconnect	Yes	Yes
Telemetry mode	Real-time and memory	

SENSORS

- » DTS/DAS (fiber optics)
- » Pressure (internal and external) (P)
- » Temperature (T)
- » Gamma ray (GR)
- » Casing collar locator (CCL)
- » Tension / compression / torque
- » Inclination (INCL)
- » Tool face
- » Vibration
- » Cable disconnect
- » Ball drop capacity
- » Real-time and memory modes



The industry's shortest real-time coiled tubing solution with full intervention and diagnostic capabilities.

For more information, contact your local Halliburton representative or visit us on the web at www.halliburton.com

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