

Utah

Fiber-optic feed-through system preserves isolation in complex Utah exploration lateral

Utah operator maintains well integrity and gains continuous reservoir insight in Cane Creek lateral with long-term fiber-optic monitoring

CHALLENGE

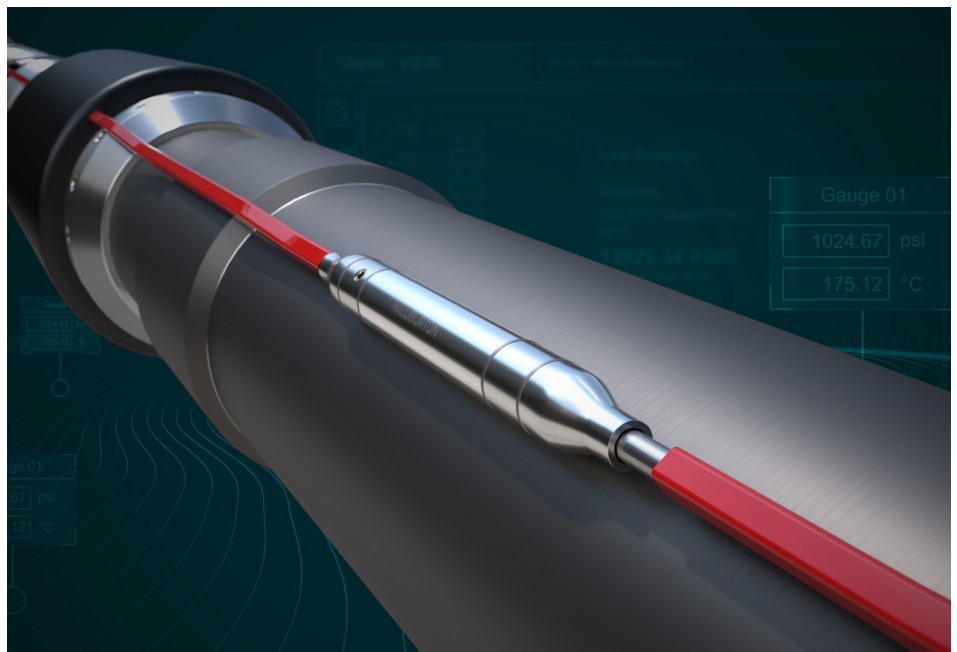
- Support evaluation of 5,000-ft exploration lateral
- Help maintain well integrity and provide a long-term monitoring solution
- Integrate with third-party liner hanger and hardware

SOLUTION

- Design feed-through completion solution for long-term fiber-optic monitoring
- Integrate DataSphere® Array permanent monitoring suite system
- Execute real-time data streaming via standalone self-acquisition system

RESULT

- Delivered high-sensitivity data that helped support reservoir evaluation
- Identified intervals with higher flow contribution
- Improved productivity through improved perforation spacing
- Provided insights to refine completion strategies and future well designs



HCT1779-011

DataSphere® Array permanent monitoring suite system

Overview

A Utah operator in development of a 5,000-ft exploration lateral in the Cane Creek reservoir required a long-term monitoring approach that would help maintain wellbore integrity, as it provides high-quality data for reservoir evaluation. The objective was to assess the reservoir's commercial viability and to quantify contributions from natural fractures and matrix permeability. This required a reliable pathway to monitor instrumentation and fluid flow, without compromising zonal isolation.

Halliburton engineered a long-term monitoring system that helped preserve isolation throughout the wellbore and provided continuous, high-sensitivity fiber-optic data acquisition capabilities.

Challenge

The operator required a tieback completion that could deliver an airtight seal between the casing and packer, tapered to a smaller internal diameter to house fiber-optic monitoring equipment, and still maintain an unobstructed flow path for well fluid. The design demanded precise integration with third-party hardware and support continuous monitoring without risk to well integrity.

Solution

Halliburton delivered a feed-through completion system designed to integrate seamlessly with the operator's third-party liner hanger and to provide long-term monitoring using fiber-optic technology and the DataSphere® Array permanent monitoring suite system.

The system centered on a Halliburton-designed feedthrough no-go locator, which aided the transition from 2 7/8-in. to 2 3/8-in. tubing and accommodated the fiber cable and monitoring suite. The locator incorporated internal 3/8-in. EUE pins and external 4 1/2-in. LTC pins to provide reliable engagement with the seal assembly and maintain pressure integrity.

It also included a mule shoe for smooth entry into the liner hanger, nipples for wireline plug deployment, and a tailored seal assembly to match the existing hanger design. A fluted centralizer aided proper alignment during installation.

Together, these components created a cohesive, reliable system that supported real-time data acquisition and well integrity objectives.

Result

This standalone, self-acquisition monitoring system delivered high-sensitivity fiber-optic data that allowed the operator to evaluate reservoir potential for non-frac hydra-jet perforating and acid completions, distinguish natural fracture from matrix flow, identify reservoir facies with higher flow capacity, and help optimize well spacing.

Stimulation effectiveness was supported throughout the lateral based on the fiber acoustic data collected while the well flowed. The fiber system revealed that tighter perforation spacing in lower-permeability zones could improve productivity. The data also helped identify which zones actively contributed to flow and indicated potential production-rate variations between intervals. These findings gave the operator actionable intelligence to refine completion strategies and help improve future well designs.

The DataSphere® Array permanent monitoring suite system delivered high-sensitivity data that helped support reservoir evaluation and helped improve well design and performance.

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

Sales of Halliburton products and services will be in accord solely with the terms and conditions contained in the contract between Halliburton and the customer that is applicable to the sale.

H015212 06/26 © 2026 Halliburton. All Rights Reserved.

halliburton.com

HALLIBURTON