HALLIBURTON

INTELLIGENT COMPLETIONS | DIGITAL INFRASTRUCTURE

Auris® integrity checker

Reliable acoustic verification and monitoring for dual-trip intelligent completion installations

FEATURES

- Provides interface with hydraulic interval control valve (ICV), CI, and electrical lines via the Fuzion®-EH electro-hydraulic downhole wet-mate connector
- Maintains, generates, and monitors pressure in the hydraulic and chemical lines throughout operation
- Logs embedded sensor and PDG data
- Processes and transmits data to surface using acoustic telemetry
- Remotely disconnects from the lower completion
- Control line outputs: three combined CI lines and four combined ICV lines
- Onboard electronics also power and monitor up to 12 PDGs

BENEFITS

- Confirms integrity of SmartWell® intelligent completion installation in a dual-trip system
- Avoids risk of running upper completion with unknown damage to lower completion, which can save several days of rig time and nonproductive time
- Verifies critical operational steps, such as packer setting
- Fully wireless system with bidirectional communication

Overview

Operators of complex, dual-trip intelligent completions require assurance that the lower SmartWell® intelligent completion has integrity before the packer is set and the upper completion is run.

The Auris® integrity checker allows the operator to remotely confirm the integrity of a SmartWell intelligent completion during deployment and at setting depth via a bidirectional signal sent from the surface through the drillpipe. Once the Dynalink® X system acoustic signal reaches the downhole module in near-real time, the system runs a pressure test on the control lines to help hydraulic system integrity. At the same time, the Auris integrity checker can read the entire string of permanent downhole gauges (PDGs) to make sure the electrical system is undamaged; the diagnostic data are then transmitted to the surface for review.

The capability to install upper and lower completions separately reduces intervention time and maintenance costs and increases operator confidence when dual-trip completions are run in deeper and more complex well configurations.



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Application

The Halliburton SmartWell® intelligent completion system is run on drillpipe with the Auris® integrity checker and the Fuzion®-EH electro-hydraulic downhole wet-mate connector receptacle to verify line integrity before the production packer is set, the upper drillstring is retrieved, and the reservoir is isolated—without surface control lines. This configuration reduces clamp installation time and allows quicker SmartWell intelligent completion deployment, which significantly reduces fluid volume used and/or lost to the reservoir.

Once the SmartWell intelligent completion system reaches setting depth, a bidirectional command is sent from surface to the Auris integrity checker module at depth. The downhole module's self-adjusting hydraulic circuit adapts to well conditions to pressure the SmartWell intelligent completion systems or chemical injection (CI) lines higher than hydrostatic, regardless of well temperature, even in managed-pressure-drilling applications. The module can also read and log data from all downhole gauges.

Gauge monitoring allows the operator at the surface to remotely monitor the packer setting sequence from the downhole sensor and verify pressure, which can prove useful in a multi-packer completion string.

Once the packer is set, a command from the surface allows the Auris integrity checker and upper Fuzion-EH electro-hydraulic downhole wet-mate connector assembly to release from the lower completion.

The Auris integrity checker is then retrieved to surface, and the upper completion is run and connected into the lower completion using the upper Fuzion-EH electro-hydraulic downhole wet-mate connector. This completes the electrical and hydraulic connections back to the tubing hanger via the upper and lower wet-mate connector systems to provide full SmartWell intelligent completion system control and monitoring capabilities.

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

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