

Ecuador

First global installation of 7 × 9 5/8-in. VersaFlex® XSL-ZE expandable liner hanger system

First liner hanger with full metal-to-metal anchor and seal technology overcomes challenging well conditions and temperature limitations associated with elastomeric seals

CHALLENGE

- Continuous rotation and circulation of abrasive formation material affected the capability to provide a fully compliant seal on set at top of liner (TOL)

SOLUTION

- VersaFlex® XSL-ZE ELH system

RESULT

- Successfully installed with ZERO NPT or HSE issues
- Achieved fully tested liner-top seal after continuous rotation in an abrasive environment

Overview

Halliburton has successfully run the standard VersaFlex® XSL expandable liner hanger (ELH) system in Ecuador since 2018, which combines both metal-to-metal (MTM) and elastomeric seals. However, continuous rotation to get the liner to depth and abrasive debris circulation during these operations affected elastomer seal performance and the capability to achieve a liner-top seal. Halliburton recognized an opportunity to improve the sealing technology and proposed a new design to remove all elastomers from the VersaFlex XSL ELH body. To prove the zero-elastomer design, the team performed validation testing of the engineered extrusion limiter spikes in an MTM sealing scenario without elastomeric backup seals.

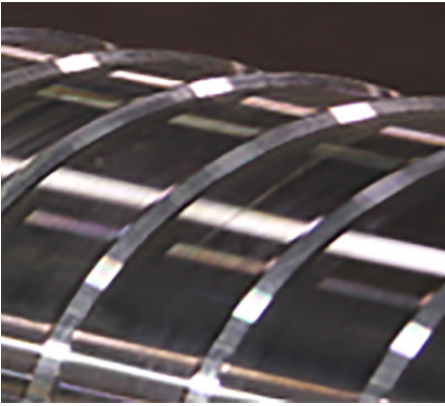
The test results provided the operator with confidence to field trial the VersaFlex XSL-ZE expandable liner hanger system to address the wellbore environmental challenges experienced during previous installations.

Halliburton and the operator selected an appropriate candidate well. The experienced workshop and field personnel in Ecuador prepared and flawlessly installed the VersaFlex XSL-ZE ELH system in a directional wellbore according to plan, which included rotation during the cement operation, with ZERO nonproductive time (NPT) or HSE incidents.



Team before liner hanger run





VersaFlex® XSL-ZE ELH metal-to-metal ribs

Challenge

To achieve a reliable liner-top seal in the challenging well environment, the operator needed a liner hanger system with sealing elements that could withstand continuous rotation and circulation of abrasive debris-laden formation fluid.

Solution

After thorough analysis and exploration of various sealing options, Halliburton proposed the VersaFlex® XSL-ZE ELH system, which removes all resilient elastomers from the VersaFlex XSL ELH body and features rigorously tested, engineered interference ribs to provide full MTM sealing and anchoring. The zero-elastomer design mitigates wellbore environment compatibility issues and allows higher temperature ratings to help ensure a reliable liner-top seal upon setting.

Result

Halliburton successfully installed the VersaFlex XSL-ZE ELH system with ZERO NPT or HSE issues. The zero-elastomer design enabled rotation through tight spots and during cement displacement. Furthermore, the new sealing system successfully passed a rigorous 1,000-psi positive pressure test at the TOL, which ensured system integrity and confirmed the effectiveness of the VersaFlex XSL-ZE ELH system solution.

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

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