

Santa Cruz, Bolivia

Expandable liner hanger solution reduces operator's cumulative NPT by 542 hours

VersaFlex® and XtremeGrip® expandable liner hanger systems deliver outstanding performance, in selected well conditions, replace conventional systems

CHALLENGE

- Reduce NPT attributed to equipment delivery delays and conventional liner hanger failure
- Minimize risk during liner hanger operations
- Ensure reliable performance in HP/HT conditions

SOLUTION

- VersaFlex® ELH system
- XtremeGrip® ELH system for HP/HT wells

RESULT

- Zero NPT
- Delivered project wells flawlessly
- Improved performance metrics

Overview

In 1997, an operator began to drill in the Caipipendi Block located in the Bolivian Sub-Andean Zone, and kicked off development in 2003. Operations in this highly complex zone can be challenging because of intercalations of hard and abrasive formations. In addition, well depths and high pressure require appropriate liner hanger equipment to avoid excessive loads on the rig and high casing costs.

The operator initially selected conventional liner hangers, but soon experienced problems that led to significant nonproductive time (NPT).

As drilling continued and well depths increased, exposure to higher pressure and temperature necessitated a more robust and efficient liner hanger system than the conventional system could provide.



Superior technology and service quality delivery



Challenge

Conventional liner hanger limitations in the challenging well environment led to difficulty setting the hangers, slow tripping speed, high pressure during circulation, longer circulation time, longer cement operations, and poor cement applications. The operator needed to reduce NPT and the risk involved during liner hanger operations, which required a system suited for high-pressure/high-temperature (HP/HT) conditions and long liner deployment in deeper wells.

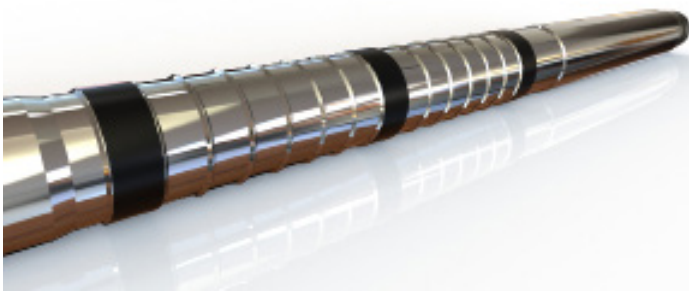


Solution

Halliburton proposed the VersaFlex® expandable liner hanger (ELH) portfolio, noting the number of successful installations and previous experience with deployment of ELH technology in the region. After initial discussion with onsite personnel, the operator requested a meeting to review the VersaFlex ELH options. During this information exchange, which also included drilling, reservoir, completions, and management representatives, the operator opted to continue operations using VersaFlex ELH systems.

The diverse VersaFlex ELH portfolio offers systems suited for various applications. The all-in-one integral hanger/packer systems are designed with no moving parts, which improves reliability and helps minimize costly tool failure associated with conventional liner hangers. A smooth-form exterior facilitates hanger deployment to total depth, safely and quickly, and allows higher circulation and pressure rates without damage to the tool.

For the HP/HT wells, Halliburton recommended the XtremeGrip® ELH system, which offers enhanced capabilities and a simplistic design that minimizes the operating steps typically required to set a liner in elevated pressure and temperature environments.



HAL40800

XtremeGrip® ELH

Result

Halliburton delivered the planned ELH installations flawlessly. Compared to the competitor's convention systems, using VersaFlex and XtremeGrip ELH technology improved operation efficiency, saved the operator significant time, and maximized asset value:

- Average liner running time reduced from 175.73 to 136.35 m/h = 22.41%
- Average cement operational time reduced from 3.31 to 2.93 hours = 11.48%
- Average hanger setting time reduced from 3.17 to 2.17 hours = 31.54%
- Zero NPT — a 100% reduction compared to competitor's technology



Improved performance metrics

The proven reliable technology delivered with superior service quality exceeded the operator's expectations, increased confidence in Halliburton ELH solutions, and ultimately displaced the conventional system provider. Subsequently, based on the experience in Bolivia, Halliburton was awarded an ELH contract on a major project with similar well conditions in the same region.

The engineered liner hanger solution addressed the reservoir conditions within a short timescale, and reduced the impact of future NPT, which allowed the operator to maximize asset value.

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

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