

Expandable Liner Hanger System Provides Robust Alternative in Challenging Well Environment

FIRST XTREMEGRIP® SYSTEM SUCCESSFULLY INSTALLED IN OMAN, DISPLACING LONG-TERM PROVIDER

OMAN

CHALLENGE

- » Avoid previous difficulties during drilling, including historical problems with conventional liner hangers
- » Work through tight spots successfully and deliver isolation of the well section, while also avoiding NPT

SOLUTION

XtremeGrip® ELH system, which was designed to:

- » Allow for more rigorous liner manipulation, compared to a conventional liner hanger system
- » Decrease risks for losses

RESULT

- » Installed XtremeGrip ELH system with zero downtime while overcoming wellbore challenges
- » Reached TD successfully without needing to pull the liner
- » Provided improved cementing job compared to previous wells in the same field

OVERVIEW

A major operator in Oman experienced challenging well conditions in a field known for well construction issues. Use of a liner hanger was planned as the primary method of isolating the challenging section of the well. Historical problems with conventional liner hangers in similar sections had led to contingency operations. Difficulties during the drilling phase of the previous section heightened the expected probability of challenges, along with concerns for isolating the section successfully and without non-productive time (NPT).

Increased tool capabilities of the Halliburton XtremeGrip® expandable liner hanger (ELH) system allowed for the string to reach the planned total depth (TD), followed by a successful cement job and hanger setting operation, and, overall, an increased efficiency of installing barriers within the well.

CHALLENGE

Tight spots associated with multiple highly reactive shale zones, along with debris and wellbore-integrity losses were seen while pulling the drilling bottomhole assembly (BHA) out of the hole after drilling the section. Expectation of tight spots would likely result in high circulation rates to clear and bypass these restrictions. Losses were expected to be seen due to reactivity of the formation in combination of different formation pressures, which results from increased equivalent circulating densities (ECDs) while running in hole with a liner hanger system. Shortly after the liner string entered the open hole, it was unable to progress further, using typical limitations that would restrict conventional liner hanger operations.

SOLUTION

The operator was able to utilize higher circulation pressure, flow rates, compression, and torque capability of the XtremeGrip system to successfully work through tight spots and isolate the wellbore section. Working the string within the system capabilities (up to 6 bpm, 15 rpm, 5,000 ft-lb, 1,500 psi) for multiple hours enabled the team to gain clearance through the section and reach the liner setting depth.



XtremeGrip® liner hanger on rig floor prior to running in hole

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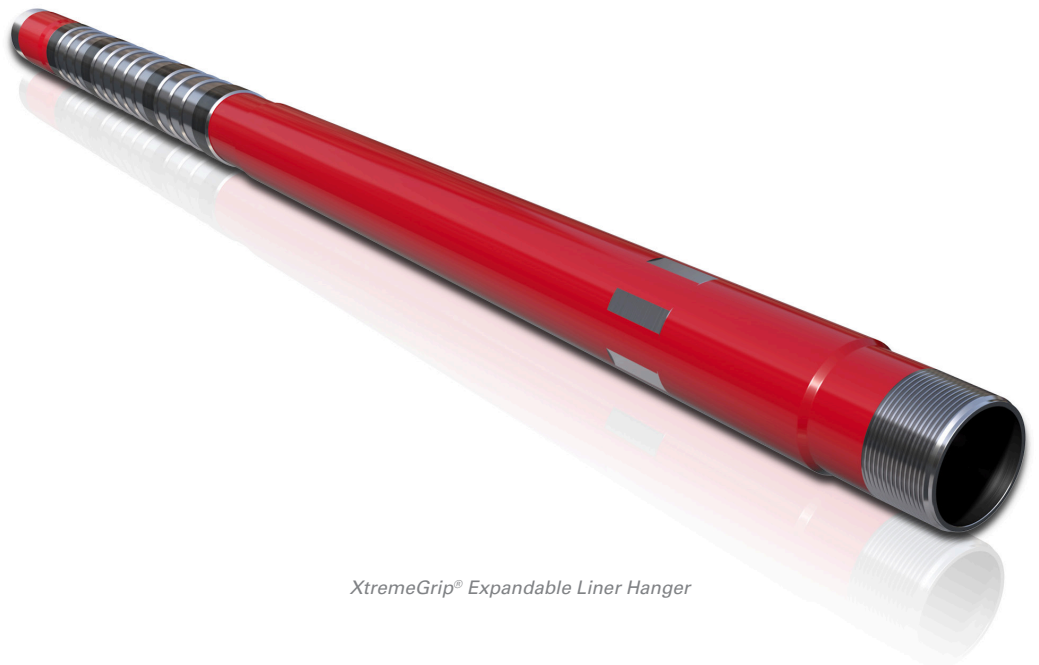
SOLUTION (CONTINUED)

This was performed without the risk of hanger/packer premature setting through high circulation rates or exposure of external components to pre-setting forces. After making it through the first tight section, the XtremeGrip system was able to reach TD without any further issues. With the aid of a full Halliburton installation (including darts/plugs, casing equipment, and cementing), the team was able to set and cement the hanger system in place without any issues. Typical losses seen while cementing conventional systems were not seen during this cementing job, leading to a more reliable well construction in this well than with previous wells in the same field.

RESULT

Despite a very difficult well construction phase in most areas, Halliburton was able to deliver the planned liner hanger installation, overcoming well challenges with zero downtime. The XtremeGrip system allowed for successful deployment and an increase in the effectiveness of the cement barrier associated with the job.

Halliburton displaced a long-term historical provider of conventional liner hanger systems, with this being the first of many installations to come for this customer. Reaching TD without the loss of wellbore integrity or the need to run a separate cleanout trip saved numerous amounts of potential time and money. Halliburton was able to meet the customer's goal of being on budget, on schedule, and as per the primary plan.



XtremeGrip® Expandable Liner Hanger

HCT1561-002

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