

Shallow Expandable Liner Hanger Installation Saves Nine Days of Rig Time

VERSAFLEX® EXPANDABLE LINER HANGER SET AT APPROXIMATELY 61 METERS OFFSHORE HELPS OPERATOR AVOID COSTLY REMEDIAL OPERATIONS

ASIA

CHALLENGES

- » Liner stuck at a very shallow depth
- » String cannot be moved or rotated; only circulation is achievable
- » Need to achieve a good cementing job
- » Lack of available surface weight to ensure liner is set to provide good liner-top integrity
- » Only two stands of drillpipe available to operate downhole

SOLUTIONS

- » VersaFlex® ELH system
- » Cement the liner at current depth
- » Set the liner hanger and release the running tool
- » Drill out the 7-inch liner and run the 5-inch liner

RESULTS

- » Successfully cemented the liner, set the liner hanger, and retrieved the running tool
- » Performed positive test for liner integrity
- » Drilled out the 7-inch liner, deployed the 5-inch liner, and set the 5x7-inch liner hanger
- » Saved the operator time and costs associated with remedial operations

OVERVIEW

An operator planned to perform a 7-inch liner cementing job offshore. During tripping in hole to deploy a 7-inch liner and expandable liner hanger (ELH) to target depth of 6,512.5 feet (1985 meters), the bottomhole assembly (BHA) became stuck at 5,380.6 feet (1640 meters) and failed to continue tripping in after 18 hours of attempts. The maximum pickup was 160 tons (90% of rig limit), and the maximum torque was 33,000 foot-pounds (the operating limit of the string weak point). The customer met with Halliburton and the related service contractors to determine the best solution. Ultimately, the team decided to cement the liner at its current depth and set the ELH at its current position [top of liner at 201.8 feet (61.49 meters), rotary kelly bushing elevation of 154.8 feet (47.16 meters), with 47 feet (14.33 meters) of 9 5/8-inch casing]. The liner cementing job was performed smoothly, the ELH was set, and the running tool was released successfully. Afterward, the customer and Halliburton successfully completed a liner integrity test, and then ran a 5-inch liner and 5x7-inch ELH to cover the remaining open hole. Currently, the operator plans to perform a lower completion with a Halliburton 5-inch Stack Pack (SP) system.



NINE Days
of Rig Time
SAVED

CHALLENGE

At 201.8 feet (61.49 meters), the liner hanger's setting position was too shallow and should never be set at this depth. Setting a conventional liner hanger at this depth was not possible because it relies on surface weight to achieve liner-top isolation. In addition, with only two stands of drillpipe downhole, the set-down weight might be insufficient to release the tool. Because the 7-inch liner did not cover the formation, smaller-size tools were necessary for further operation.

SOLUTION

Halliburton collaborated with the operator to determine a reliable solution, which included torque and drag simulation for the current situation and an engineer on standby at the customer's office for real-time support. Communication with the customer and field crews for on-rig operation details was also crucial.

The Halliburton team assembled and mobilized the smaller 5×7-inch VersaFlex® ELH tools immediately for operations to cover the remaining open hole. Additionally, Halliburton prepared the 5-inch SP system for further completion requirements.

RESULTS

During attempts to activate the string, the 7×9 5/8-inch liner hanger provided a robust solution with its high-tensile, high-torque, and high-circulation rate and pressure limitation. The VersaFlex ELH system allowed the customer to set both the liner hanger and top packer without any weight requirements because the system is fully hydraulically activated.

Using the Halliburton ELH solution helped prevent costly remedial operations that might involve fishing and pipe recovery, which saved at least nine days for fishing and sidetrack operations and maximized asset value.



VersaFlex® ELH system

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