

Blackhawk BRUTE® Storm Systems provide dual-barrier well isolation for a high-profile deepwater well

During drilling operations on a high-profile deepwater harsh environment well, operations were halted due to a fluid leak within the semi-submersible rig unit. To isolate the casing and BOP in an effort to repair the leak, the operator required that two mechanical barriers be quickly installed: one set deeper in the well close to the exposed zone (open hole section) and one set near the mud-line and BOPs. These requirements were based on both the operator's standard operating procedure (SOP) and the regulatory agency's barrier compliance, as the liner was not yet installed or cemented in place within the 13-5/8" casing section.

With Blackhawk Well Construction equipment and service personnel already on location performing the cementation operations, Blackhawk's BRUTE® Storm Systems were selected to install the required barriers utilizing their multi-service operator (MSO). This eliminated the need to provide additional personnel or logistics, decreasing the operator's spread costs and personnel-on-board (POB).

Blackhawk's multi-service operator and the applications engineering team were able to perform multiple pre-job planning exercises, surge and swab analysis (due to tight mud weight margins and weak formations), slip-load calculations (ensuring casing could sustain the required pressure and tensile), and complete running procedures per application.



CUSTOMER
Deepwater Operator

LOCATION
Deepwater Harsh Environment
+9,000' water depth

JOB TYPE
Dual mechanical barrier installation

PRODUCTS/SERVICES
13-5/8" High Pressure /High-Tensile Storm System

- BRUTE® Packer
- BRUTE® 2 Storm Valve

The requirements including installing the two mechanical barriers without needing to trip the full BHAs out of the wellbore. The technically advanced BRUTE® Storm Valve required only a single overshot to run and retrieve in a single operation, where most other storm systems require multiple overshot assemblies.

With the two 13-5/8" BRUTE® High Pressure/High Tensile Storm Systems (consisting of the million-pound BRUTE® Packer, BRUTE® 2 Storm Valve, and BRUTE® Bumper Sub) on location operations were ready to commence. The first 13-5/8" BRUTE® Storm System was run and set at ~12,800ft, while supporting 6-5/8" tailpipe below the packer. A positive pressure test was completed

successfully up to 1,000psi. With the storm valve disconnected, a negative test up to 2,250psi was successfully completed and a short trip was performed to install the second 13-5/8" BRUTE® Storm System.

While supporting the landing string and overshoot for the first BRUTE® Storm System, the second 13-5/8" BRUTE® Storm System was able to be successfully installed, providing a substantial time savings and preventing the need for tripping additional BHA in and out of the wellbore. Once installed, the second BRUTE® Storm System was successfully tested to 4,300psi.

With both 13-5/8" BRUTE® Storm Systems installed, displacing operations commenced through the BRUTE® 2 Storm Valve overshoot assembly at over 22 barrels per min (BPM). The unique sealing mechanism within the overshoot assembly could readily accommodate the high circulating rates, in comparison to other similar products on the market which use only O-rings that can be removed or become damaged requiring the BHA to be fully removed from the wellbore, increasing rig time and exposure.

After multiple weeks of rig repair and with maintenance operations completed, the BRUTE® Storm Systems were ready to be retrieved from the wellbore to allow normal drilling operations to commence. The second installed 13-5/8" BRUTE® Storm System overshoot was run in the well and reattached to the BRUTE® 2 Storm Valve assembly. The ball valve was opened to check and monitor any pressure trapped below the assembly. Overpull was then achieved to unset the BRUTE® Packer assembly and short-tripped to remove from the wellbore.

With the second 13-5/8" BRUTE® Storm System removed, the remaining BHA (including the first installed overshoot assembly) was then run to the first 13-5/8" BRUTE® Storm System. Once reattached, the ball valve was opened to check and monitor any pressure trapped below the assembly. Overpull was then achieved to unset the BRUTE® Packer assembly and the assembly was removed from the wellbore.

With the successful performance of the BRUTE® barrier systems and personnel, Blackhawk was able to exceed the customer's requirements and expectations, demonstrating our understanding and ability to meet the challenges of the most complex well operations.

Blackhawk product suites, including the BRUTE® High-Pressure/High-Tensile Storm System, are available internationally across the Frank's International global network. For more information about this and other well construction, well intervention, and completions tools, please visit BlackhawkST.com, or visit our parent site, franksinternational.com