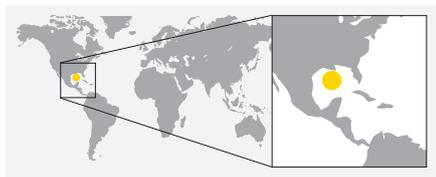


Effective BOP cleaning using 3-Stage Tornar® BOP Cleaner and BOP Magnet



Region: Gulf of Mexico (GOM)

Field: Green Canyon

Well type: Oil & Gas

Case benefits

- Cleans deep cavities without conventional jetting method
- Allows short trip with wellbore clean out string
- Integrates magnet and cleaner in single assembly

Key capabilities

- Tornar creates powerful suction effect
- 3-stage ports enable selective displacement path and full well control
- Tornar Extreme magnets are used for high flow area and metallic debris extraction

Typical Applications

- Tornar BOP Cleaner clears debris from BOP ram cavities
- Tornar Sub Sea BOP Cleaner clears debris from BOPs and marine risers



Challenge

A customer was in the operations phase of the first completion for their forefront Gulf of Mexico (GOM) asset and challenged Archer to run an effective BOP cleaning job for them. The BOP cleaning had to be in combination with the displacement BHA design and should support large circulation rates and volumes along with over 1 million pound tensile capability.

The BOP cleaning is conventionally done with a smaller diameter jetting tool that requires several up and down passes, relying on the velocity to move material from the BOP, possibly resulting in pushing debris deeper into the cavities rather than flushing it out.

Solution

The customer chose Archer's 17.45" **Tornar® Sub Sea BOP Cleaner** in combination with the powerful high flow magnet sub. The well was initially cleaned to a plug back total depth (PBSD) of 31,895' (9721 meters)

The displacement began from synthetic based mud and was circulated to 10 pounds per gallon completion brine. The cleanout string was short tripped out of the hole and the **Tornar® Sub Sea BOP Cleaner** was placed in the string with over 28,000' (8534 meters) of cleanout tools and workstring tubular below.

Once back at PBSD, the 3-stage circulation sleeve directed flow through the bottom of the string for a full well displacement. A primary dart was dropped to activate Tornar flow ports positioned within the large body stabilizer to create a high-velocity fluid vortex, generating a powerful suction force across the BOP to extract debris.

Result

The Tornar Sub Sea BOP Cleaner operation resulted in a total of 45 pounds of metal recovered from the BOP and Riser.

The displacement was considered a success and was used in the lessons learned for the completion program of the field.

Once the BOP was pulled to surface shortly after it was noted that the ram cavities and the general cleanliness of the internals was excellent with minimal mud and debris present.

Archer is a global oil services company with a heritage that stretches back over 40 years. With a strong focus on safety and delivering the highest quality products and services, Archer operates in 40 locations over 19 countries providing drilling services, well integrity & intervention, plug & abandonment and decommissioning to its upstream oil and gas clients. **We are Archer.**

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