PERFORMANCE BULLETIN

DSI PBL® BYPASS SYSTEM ensured a successful double coring operation (93% recovery of sample) while displacing fluid to change density in an offshore well in the Southeast basin of Mexico.

Overview

A major independent oil company in Mexico requested a 4-3/4 PBL bypass system to be used above a double core barrel 5-7/8" x 4-3/4. The target was to facilitate maximum core sample recovery followed by fluid displacement to change density from 12.86 to 13.94 ppg using the same BHA.

Challenges

- Successful core sample recovery at depth of 3,705 m
- Double core barrel (2 barrels x 9 m, total length of sample 18 m)
- High inclination well of 66.34°
- Coring operation with MPD system due to high mud losses scenario
- Need to circulate fluid after cutting the core sample, displace fluid to change density from 12.86 to 13.94 ppg.

Solutions:

- Implementing best-in-class coring tools from client
- Following best practices and procedures
- Drilling parameters optimization
- Good BHA design and incorporation of PBL bypass system to displace fluid after core cutting operation
- PBL's autolocking ball allowing pulling out of the hole with "dry".

Results

A successful coring operation, 93% of the coring sample recovered (16.78 m recovered from the total 18 m). Additionally, by placing a PBL sub above the core barrel, 100% bypass was achieved, preventing core sample washout during fluid displacement to change density which was required to ensure hole stability while tripping out.

BHA configuration for a double core barrel (total sample 18 m) positioned below a PBL sub to by-pass fluid to change density.

An excellent mitigation technique to avoid washouts of the core sample.

BYPASS SYSTEMS BY DSI

The customer was able to acquire geological data from the well, providing a tremendous benefit in characterizing the reservoir for further development.

“Assure critical geological information by using the PBL by-pass system which mitigates core sample washouts during fluid displacement and pulling out”