

# Managed Pressure Cementing Application For Liner Tie Back with Reverse Circulation Maintained Constant SBP, Saved Rig Time, Costs

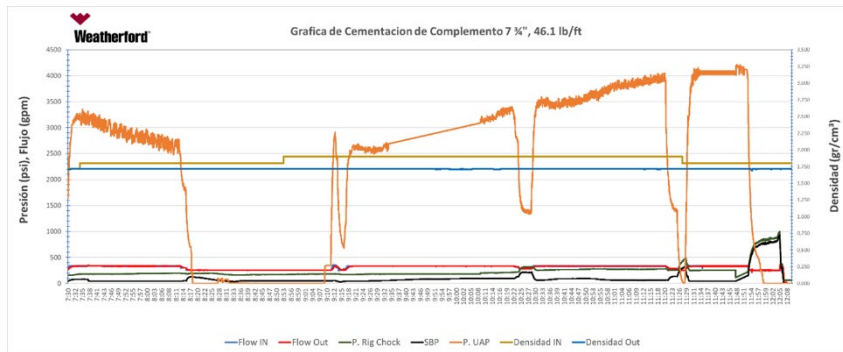


Chart of reverse circulation operations for 7 3/4-in. casing cementing.

## Objectives

- Avoid the free fall effect during cementing operation with reverse circulation for the 7 3/4-in. liner tie back.
- Reduce cement reaming time by preventing cement from entering the casing.
- Ensure that pumped cement is between casing and the drilled hole.

## Our Approach

- During the planning of the managed pressure cementing (MPC) campaign with reverse circulation, a flow path diagram was made to establish the correct valves alignment.
- With the well flow aligned through the managed pressure drilling (MPD) equipment, the spacer fluid was pumped at 2 bpm (84 gpm) while the Victus™ Intelligent MPD system, in flow mode, adjusted the pressure between 44 and 80 psi (0.30 to 0.55 MPa), keeping the flow in and flow out equal.
- After the spacer was pumped and while field personnel prepared the cement slurry, the Victus system maintained the surface backpressure (SBP) in the well at 125 psi (0.86 MPa) circulating with the auxiliary pump.
- The Weatherford Victus system was used to adjust the SBP from 54 to 96 psi (0.37 to 0.66 MPa) and monitor the balance between flow in and flow out during pumping of 240 bbl of cement slurry into the well.
- When the cement pumping process was finished, the SBP in the well was maintained at 333 psi (2.29 MPa) circulating with auxiliary pump.

### LOCATION

Mexico

### WELL TYPE

Offshore, HPHT development, J-type

### FORMATION

Lower Cretaceous

### HOLE SIZE AND ANGLE

8-1/2 in., 35.1°

### CASING SIZE AND TYPE

7-3/4 in., 46.1 lb/ft, TAC-140

### LINER SIZE

Tieback, 7-3/4 in.

### DEPTH

19,377 ft (5,906 m)

### PRODUCTS/SERVICES

- Victus Intelligent MPD system
- Constant bottomhole pressure (CBHP) application
- RCD Model 7875



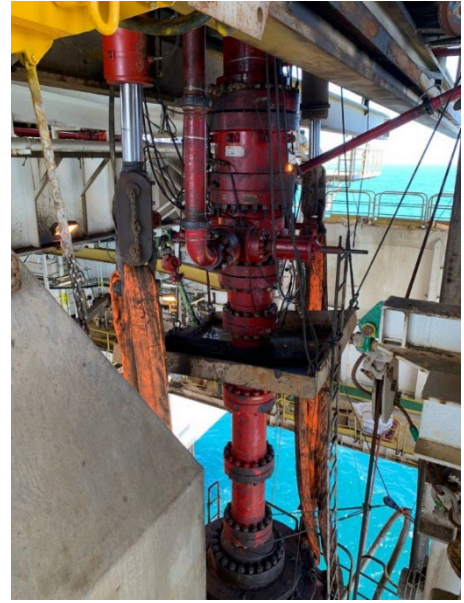
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## Our Approach (continued)

- Subsequent displacement operations with spacer were carried out while maintaining 40 to 145 psi (0.27 to 0.99 MPa) with the Victus system, observing a constant stable flow. Upon suspending pumping, it was closed in the Victus system with 880 psi (6.06 MPa).
- The pressure was vented in the cementing unit, maintaining the SBP of 880 psi (6.06 MPa).
- A weight of 15 tons was applied to the liner hanger seat seals, and the SBP was then released, decreasing it to 0 psi.

## Value to Customer

- Anchored by Weatherford MPD equipment, the Victus MPD system, in Flow Mode, controlled the pressure and prevented the free fall effect, allowing an efficient cementing operation according to the plan.
- No health, safety, or environment (HSE) incidents were recorded during the MPC job's flawless execution.
- Considering that cement reaming in casing was reduced due to less cement volume to be drilled, the Weatherford solution saved rig time for the operator.



The fully automated Victus Intelligent MPD system integrates rig equipment—in deepwater, shallow water, or land deployments—for machine-to-machine communication, real-time analysis of downhole conditions, and rapid automated responses from a central location, enabling operators to drill with confidence.

