Weatherford®

REAL RESULTS

SurgeMaster™ II Tool, Auto-Fill Float Collar Run Liner to TD Safer, Quicker, Avoid Mud Losses, Save Rig Time

Weatherford's *SurgeMaster* II multiple-opening diverter tool, as part of the WellMaster™ all-in-one deepwater system, ran the liner in the wellbore at a rate of 40 ft/min (12 m/min), enabling the operator to reach TD quicker and more safely than conventional technology, saving rig time and associated costs.

Objectives

- Run 9 5/8-in. liner to total depth (TD) in a depleted well with low pore and fracture pressure. Due to tight tolerances with previous 11 3/4-in. casing, high surge and circulating pressures were expected during liner running.
- Minimize mud losses and avoid fracturing.

Results

- Based on hydraulic SurgeMOD simulations, Weatherford personnel deployed the following configuration: WPHS Hanger, WTSP4R Packer, and the auto-fill float equipment (L222 guide shoe, large-bore auto-fill collar L45WP) in conjunction with the Sub-Surface Release™ Mid-Bore Plug Set, and the *SurgeMaster* II multiple-opening diverter tool.
- The liner system was safely run to 4.691 ft (1430 m) total depth at about 40 ft/min (12 m/min), about 2-1/2 minutes per stand without losses, surpassing a typical running rate of 4 ft/min (1.2 m/min) with conventional systems.
- The L45WP auto-fill float collar was converted with a flow rate of 2 to 4 bpm (0.3 to 0.6 m^3/min) and a consequent dropping pressure of about 600 psi (4.13 MPa). A 2 1/8-in. brass ball was dropped to land on the mechanical ball seat (MBS), the WPHS hanger was set, and then the "R" hydraulic running tool was released. The MBS disk was sheared with 2,700 psi (18.6 MPa), and a cement job was performed by releasing the Sub-Surface Release™ plugs and darts from the top-drive cementing head.
- The WTSP4R packer was set and successfully tested with 1,000 psi (6.8 MPa), as per the operator requirement.

Value to Client

- Using Weatherford's auto-fill float equipment and the *SurgeMaster* II tool enabled the operator to run the liner hanger to TD quicker and more safely than with conventional technology, completely avoiding mud losses and saving rig time.
- The auto-fill collar's low-flow-rate conversion eliminated the requirement to drop any sheer ball, thus limiting flow rate conversion to 2 to 4 bpm (0.3 to 0.6 m^3/min), reducing to the circulating pressure on the well bore to the minimum and avoiding losses.
- The *SurgeMaster* II tool enabled the operator to maintain a clean rig floor with zero mud spills and zero recordable incidents.

Location
Adriatic Sea, Italy

Field
Brenda

Wells
Brenda #6
Brenda #4

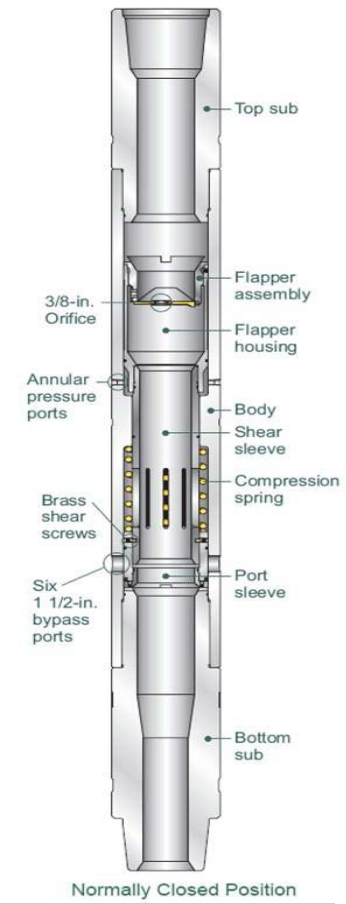
Well Type
Offshore
gas production

Rig
Perro Negro 8
Saipem

Hole Size
10 5/8-in.

Total Depth
4,691 ft (1430 m)

Setting Depth
2,949 ft (899 m)



Normally Closed Position

Casing
9 5/8-in., 53.5-lb/ft (79.7-kg/m), T-95.1
TSH-Blue® Near Flush

Products/Services
- Guide Shoe L222
- Auto Fill Collar L45WP
- WTSP4R Packer
- WPHS Hanger
- *Sub-Surface Release* mid-bore plug set
- Mechanical Ball Seat MBS
- *SurgeMaster* II multiple-opening diverter tool
- SurgeMOD casing running simulator
- *WellMaster* deepwater system

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Weatherford
Matteo Recchioni
Coordinator Liner Hanger and Cementing Products
matteo.recchioni@eu.weatherford.com

