



# Weatherford®

## REAL RESULTS

### DwC™ Technology, Defyer™ Bits Establish New Drilling Standards, Enable Operator to Save Significant Rig Time, Costs

#### Objectives

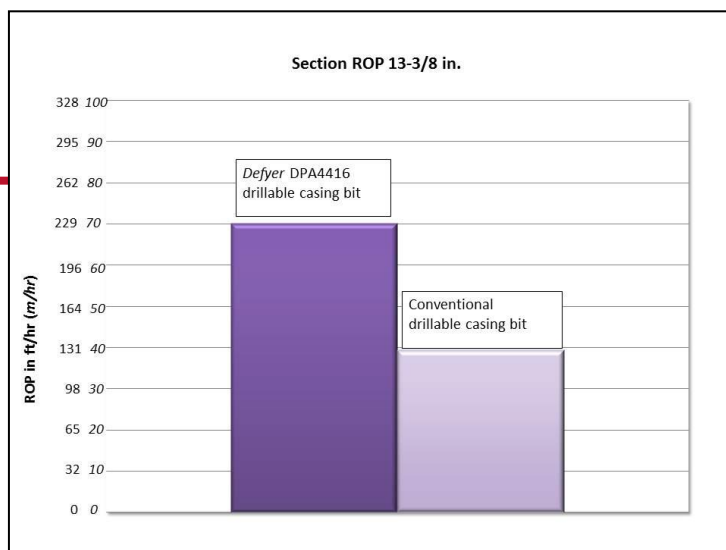
- Establish technical limit for drilling-with-casing (DwC) operations in an offshore Malaysian well in 20-in. and 13 3/8-in. well sections.
- Compare the results with previous and subsequent bit runs to determine optimal rate of penetration (ROP), annular velocity, cuttings removal, and drillout time to establish the technology as time and cost effective.

#### Results

- After analyzing the application and offset well formation strength and drillability, Weatherford used DwC technology to deploy a 20- x 24-in. Defyer DT306 drillable casing bit for the 20-in. conductor casing section, drilling to 486 ft (148 m) with an on-bottom ROP of 104 ft/hr (32 m/hr).
- Weatherford used DwC technology to deploy the 13 3/8- x 16-in. Defyer DPA4416 drillable casing bit for the 13 3/8-in. surface casing section.
- The Defyer DPA4416 drillable casing bit was used to drill 63 ft (19.4 m) of the previous 20-in. shoe track and the Defyer DT306 drillable casing bit, and continue drilling down the 13 3/8-in. casing string with an average on-bottom ROP of 230 ft/hr (70.2 m/hr). This ROP was an increase of 78% compared to offset well sections drilled with conventional casing bit technology.
- The 13 3/8-in. surface casing-string interval of 1,486 ft (453 m) was successfully set and cemented in 28 hours, from the first rig up of the first shoe joint. The Defyer DPA4416 was drilled out in only 11 minutes without any damage to the drillout bit, enabling the operator to drill the next section in one bit run.

#### Value to Client

- Using Weatherford's Defyer DT306 and Defyer DPA4416 drillable casing bits enabled the operator to drill in the casing string and drill out the casing bit more efficiently with an excellent ROP, realizing significant time and cost savings.
- DwC technology helped the operator to complete two well sections in record time and prepared the operator to drill to the next well section using only one bit run, saving valuable rig time and associated costs.



Weatherford deployed the 13 3/8- x 16-in. Defyer DPA4416 drillable casing bit to a TD of 1,486 ft (453 m) with an on-bottom ROP of 230 ft/hr (70.2 m/hr), an increase of 78% over previous runs with conventional technology.

#### Location

Sarawak, Malaysia

#### Formation

Sandstone and claystone

#### Well Type

Offshore, appraisal

#### Hole Size

16 in., vertical

#### Depth

- To the cement top : 485 ft (148 m)
- Casing top setting depth: 1,486 ft (453 m)

#### Run Length

1,000 ft (305 m)

#### Casing

- 20-in., 133-lbf X56 E60MT connector
- 13 3/8-in., 54 1/2-lbf K-55 BTC

#### Products/Services

- DwC technology
- 20- x 24-in. DT306 Defyer drillable casing bit
- 13 3/8- x 16-in. DPA4416 Defyer drillable casing bit

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