



Weatherford®

REAL RESULTS

DwC™ System with Defyer™ Tool Enables Operator to Extend TD, Restore Geothermal Well to Productivity

Objectives

- Return a geothermal well to production by casing off a trouble zone experiencing total losses and extending total depth (TD).
- Overcome the soft and unconsolidated formation and two fish lost in hole from previous operations.

Results

- Weatherford's drilling-with-casing (DwC) system with the Defyer DT406 drillable casing bit was selected for the operation. The existing 13 3/8-in. shoe was set at a depth of 1,167 ft (356 m) measured depth (MD) below the rotary table, an 8-in. slick bottomhole assembly (BHA) with a TCI bit were worked past one of the stuck fish, and a 12 1/4-in. hole was drilled to 1,479 ft (415 m) MD.
- Weatherford ran 9 5/8-in., 47-ft/lb casing with two 402A float collars and a 9 5/8- × 12-in. OD Defyer DT406 tool. A light bentonite mud, weighted to about 8.6 ppg, was used.
- Reaming-with-casing was performed from a 13 3/8-in. casing shoe to TD of the pilot hole, 1,361 ft (415m) MD below the rotary table in 7.5 hr. The final depth of 1,479 ft (451 m) MD below the rotary table was achieved after 27 hr of drilling-with-casing.
- The operator set an initial minimum target depth of 1,394 ft (425 m) for the 9 5/8-in. DwC operation, and was able to case off an additional 85 ft (26 m) of the troublesome formation.

Value to Client

- Using Weatherford's DwC system and Defyer DT tool enabled the operator to case off trouble zones through a soft and unconsolidated formation that would not have been possible using conventional methods, extending TD in the well and returning it to production.
- Well abandonment operations were not needed, saving rig time and the associated equipment costs.



The DwC system and Defyer DT tool were used to successfully case off trouble zones through a soft and unconsolidated formation that would not have been possible using conventional methods in a New Zealand geothermal well.

Location

North Island, New Zealand

Formation

Rautehuia

Well Type

Onshore, geothermal

Hole Size

12 in.

Depth In

1,167 ft (356 m)

Setting Depth

1,479 ft (451 m)

Casing Type

9 5/8-in., 47-lb/ft L-80

Products/Services

- DwC system
- Defyer DT406 drillable casing bit

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Drilling-with-Casing (DwC)
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