

Wireline Solution Saves \$300,000 by Freeing Stuck Pipe Without Explosives in Geothermal Well

Objectives

- Cut 5-in. stuck drillpipe at a depth of 6,014 ft (1,833 m) in downhole temperatures of up to 480°F (250°C) to enable continuing operations in a geothermal well. During the cement plug job, the high temperatures had caused the cement to prematurely set and the drillpipe to become stuck.
- Increase efficiency to save significant rig time and costs during pipe recovery operations. The standard method using explosive material requires 5 days for mobilization, extensive administrative work, and extremely high transportation costs. In addition, explosives have a maximum temperature limit of 375°F (190°C) for cutting applications, which confines their successful use to shallower depths.

Our Approach

- The customer contacted Weatherford and indicated the challenges of the job. In this specific case, because of the temperature profile of the well, explosives would help to free only the first 2,461 ft (750 m) of drillpipe, and a mechanical back-off operation over an estimated 2 weeks would have to recover the rest of the pipe. This approach would accumulate rig time and costs on top of a prior attempt by a coiled tubing company that cleaned out the drillpipe for 10 days and made unsuccessful cuts.
- Weatherford suggested using an explosive-free wireline solution—including a motorized anchor tool, PTC™ perforating torch cutter, and RCT™ radial cutting torch—for immediate mobilization and bottomhole temperatures up to 500°F (260°C). The customer agreed to this option.
- The Weatherford team deployed the solution with the PTC and RTC tools. Each had 2.5-in. (60-mm) IDs, which enabled passing through a 2.75-in. (70-mm) restriction.
- The PTC tool perforated the drillpipe at a depth of 6,017 ft (1,834 m) with a downhole temperature of 482°F (250°C). The resulting 2.2-in.² (14-cm²) hole enabled the customer to restore circulation and cool down the well.
- On the next run, in combination with the motorized anchor tool, the RCT tool cut the drillpipe at 6,014 ft (1,833 m).

Value to Customer

- The Weatherford wireline solution enabled the customer to cut the stuck drillpipe, quickly resume well operations, and save rig costs of approximately US \$300,000.
- The safe, effective, non-explosive approach provided an alternative that worked up to 500°F (260°C) and delivered in just a few hours. It saved the customer significant time and costs by avoiding the need to use explosives, transport them, coordinate the associated approvals, and perform a long mechanical back-off operation.



The wireline solution enhanced operational safety by avoiding the use of hazardous chemicals or explosives. The top image shows the perforation, and the bottom image shows the cut, made with non-explosive tools.

CUSTOMER
Enel Green Power

LOCATION
Tuscany, Italy

FIELD
Radicondoli

WELL TYPE
Geothermal

PRODUCTS/SERVICES

- PTC perforating torch cutter
- RCT radial cutting torch
- Motorized anchor tool



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