

Case History: HydroPull™



71 Frac Plugs Drilled in Eagle Ford Shale with 2 5/8-in. Coiled Tubing and a HydroPull™ Tool in a 12,000 ft. Lateral

Case Study, Eagle Ford Shale, Dimmit County, TX

- Casing 5 1/2-in. 20 lb./ft.
- KOP 6,752 ft. TVD; PBTD 19,339 ft. MD
- 2 5/8-in. Coiled Tubing
- **70 Composite Plugs + 1 Dissolvable Plug**

The Tempress HydroPull technology was required by a prolific operator in South Texas to mill a total of **71 frac plugs** from a horizontal lateral almost 12,000 ft. long to a total measured depth of 19,339 ft. The job was initially called out to mill 70 composite frac plugs and 9 dissolvable plugs, but as the plugs were encountered in the well bore, plugs 71 to 73 and 75 to 79 were fully dissolved. The well bore possessed a bottom hole circulating temperature of 220°F and contained 5 1/2-in. casing. The job was conveyed on 2 5/8-in. coiled tubing and the 3 1/8-in. BHA measuring a total length of 30.36 ft. consisted of a coiled tubing connector, a quad back pressure valve, a set of jars, a hydraulic disconnect, a screen sub, a 3 3/8-in. High Flow-High Impact Tempress HydroPull, a 3 3/8-in. high flow-high torque motor and a 4 1/2-in. tri-cone Varel rock bit.

Per the operator's policy, a weight check was required after the milling of every fifth plug and gel sweeps in volumes ranging from 5-10 bbl followed the milling of each plug. In addition, a 10, 15, or 20 bbl sweep-spacer-sweep followed the milling of plugs 20, 26, 52, 64, and 79. Once milling operations commenced, the wellhead pressure ranged from 2,900 to 3,200 psi and the pump pressure ranged from 5,300 to 6,500 psi.

All 71 plugs were milled with zero motor stalls in 48 hours with a set down weight of 2,000 to 4,000 lbs, and an average plug milling time of 8.2 minutes per plug.