

Substantial ROP increase accomplished with NOV tools

Performance
Summary

First combined run of a 6 ¾" FluidHammer and a 6 ½" Agitator™PLUS system outperformed the previous RSS run, achieving an ROP increase of 222%.

Challenge:

To drill the difficult 8 ½" section of the well with a competitive ROP while maintaining the tangent inclination of 17 degrees.

Solution:

Before running the FluidHammer and the Agitator™PLUS system combination, the directional company was drilling with an RSS that was POOH at 5,454 m MD after drilling only 60 m due to low ROP and high drag. In order to improve performance, the 6 ¾" FluidHammer, fitted with a 7/8 5.0 ERT™ power section and a 1.5° bend, was made up to the BHA along with a 6 ½" Agitator™PLUS system. From the beginning of the run, drilling time decreased dramatically, drilling with constant parameters (ROP: 6.6 m/hr | WOB: 4-8 Tonnes | RPM: 40 Rotary, 102 Motor | TQ: 7.5k-9 klbs/ft | GPM: 350). At 5,471 m MD, drilling parameters were changed in order to maximize performance, achieving an ROP of up to 7.5 m/hr until reaching 5,499 m MD. At 5,552 m MD, with an average ROP of 6.43 m/hr (Rotating: 6.7 m/hr | Sliding: 3.4 m/hr) and a total interval drilled of 98 m, drilling operations were stopped and well control operations were implemented to control the well.

The cretaceous formation drilled was composed mainly of a high-compressive strength limestone.

Results:

- 222% increase in ROP (6.43m/hr vs 2.00 m/hr) compared to the previous RSS run on the same section of the well.
- Improved weight transfer to the bit and decreased drag.

Client	Confidential
Well Name	Confidential
Field/Block	Villahermosa / South Region
Country	Mexico
Date	Q3 2015.

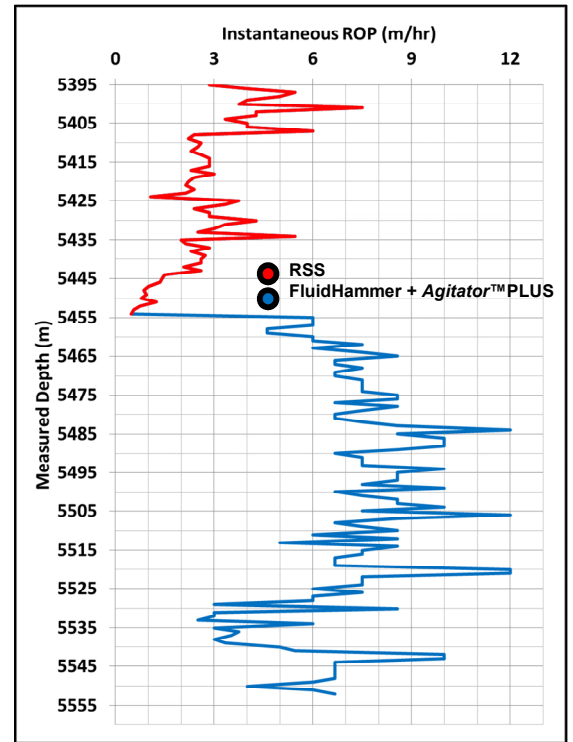
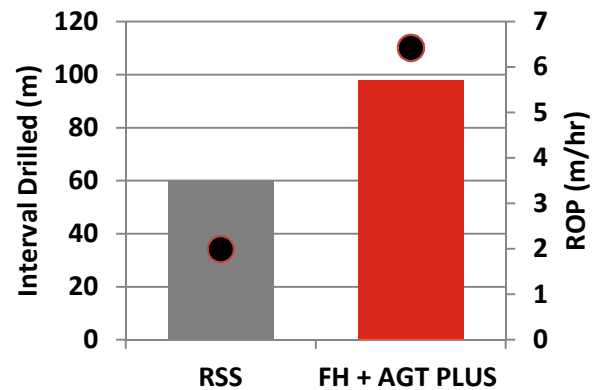


Fig 1. Performance of the 8 ½" section



Run	Bit Type	Depth in (m)	Interval Drilled (m)	Drive Type	Avg. WOB (tonnes)	Avg. ROP (m/hr)	Dull Grade
Run 1	813	5394	60	RSS	10	2.00	1-1-LT-A-X-I-CT-PR
Run 2	813	5454	98	FluidHammer	9	6.43	1-0-WT-C-X-I-CT-HP