

FLC 2000® Stabilizes High Differential Pressure Naricual Formation in Venezuela

Latin America

CHALLENGE:

- ▶ High differential pressure over 7,000 psi
- ▶ 14-well drilling program
- ▶ Reduce drilling intervals through the Naricual formation

SOLUTION:

- ▶ FLC 2000 was introduced to the drilling program at 5 lb/bbl

RESULT:

- ▶ Naricual formation was drilled in one section
- ▶ Reduced total well costs
- ▶ Reduced drilling time
- ▶ 93% reduction in formation damage
- ▶ For additional information, refer to "SPE-186409-MS"



OVERVIEW

While drilling in the Northern Monagas Basin, high pressures are encountered in the Naricual Formation. In an effort to control these pressures, the Naricual Formation is typically drilled in multiple intervals, including the 8½-in. and 6½-in. sections. Typically, the differential pressure requires a complex drilling fluid and well design

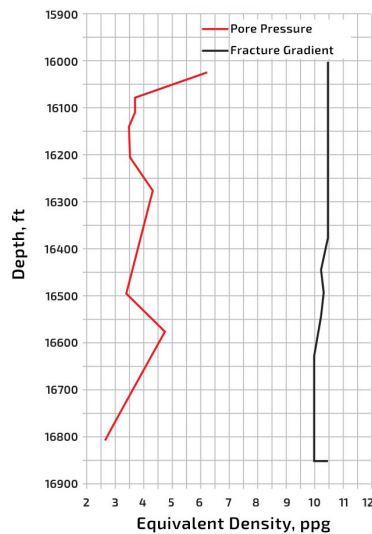
SOLUTION

Impact's FLC 2000, an ultra-low invasion fluid additive for Wellbore Shielding® and stabilization, was used to drill multiple intervals in the formation in a 14-well drilling program at 5 lb/bbl. Electrical logging confirmed high differential pressures, including more than 7,000 psi in the MUC-166 well (see charts below).

RESULT

In multiple wells, the Naricual formation was drilled in one section (8½-in.), eliminating the 6½-in. section originally planned. FLC 2000 performed at high differential pressure, eliminating the need to drill the additional interval, saving the operator on drilling costs—by eliminating the casing string—and reducing drilling time. Testing by the operator also demonstrated a 93% reduction in formation damage.

Pore Pressure - 8½-in. Section
MUC 166



Depth Feet	Pressure, psi		
	Hydrostatic	Formation	Differential
16022	9020	5167	3853
16027	9022	5168	3854
16080	9053	3058	5995
16087	9057	3062	5995
16094	9061	3065	5997
16102	9067	3062	6005
16107	9068	3065	6003
16146	9089	2963	6126
16152	9094	2965	6130
16154	9093	2965	6128
16156	9091	2966	6126
16181	9089	2965	6124
16206	9120	2984	6136
16262	9151	3525	5626
16278	9158	3666	5492
16452	9251	3087	6164
16492	9272	3003	6270
16497	9274	2990	6284
16578	9318	4078	5240
16810	9429	2386	7042

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