Case Study

Aqueous exceeds operating parameters and saves over $50,000

APPLICATION
5-1/2” production string for plug and perforation application.

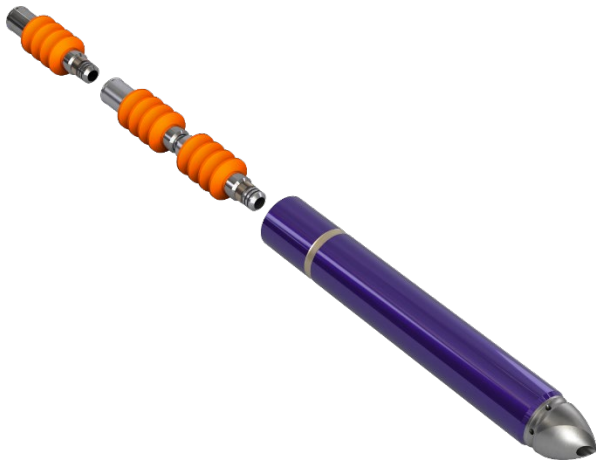
TECHNOLOGY
AQUEOUS™ Compact Injectable Shoe
7/8-inch dissolvable ball

LOCATION
Texas, USA Haynesville Shale

CUSTOMER CHALLENGE

Work 5-1/2” 20# casing in an extended reach lateral from 14,421 feet (4,395m) to 16,348 feet (4,983m). Circulate for 39.5 hours at 10 -12 bpm while waiting on cementing operations. Displace plugs through toe initiation sleeve at calculated displacement. Hold back pressure for 45 days until completion. Test casing and open toe sleeve using first ball seat, establish injectivity, and over displace 4.5 bbl. Secondary ball must withstand 9,400 psi, 80 bpm hydraulic fracturing for 2 hours and 30 minutes.

AQUEOUS Compact Injectable Shoe



VAREL SOLUTION

AQUEOUS™ Compact Injectable Shoe with dual wiper plug and top wiper plug with high pressure rupture disk. Utilize 1-7/8-inch dissolvable ball to test casing and open toe initiation sleeve. Commence first stage hydraulic fracturing through toe initiation sleeve using secondary ball seat.

CUSTOMER VALUE

Run casing to 16,348 feet within 19 hours. Safely delivered 5-1/2-inch production string without issue considering unplanned 39.5 hours of circulation. Reduced operations by 3 days, reduce connections and equipment cost totaling $52,000.

U.S. Land – Haynesville Shale
(Rigsite Operations)

VAREL ENERGY SOLUTIONS