TECH REPORT

GULF OF MEXICO

Background

A major operator in the Gulf of Mexico requested that M-I SWACO design a 15.4-15.6 lbm/galUS [1.84-1.87 sg] zinc bromide-based delayed breaker to dissolve the RDF filtercake post gravel-pack operations. A customized DIPRO* high-density divalent reservoir drill-in fluid and a zinc-bromide-brine-based filtercake breaker featuring D-STRUCTOR HD* organic acid precursor were designed to clean up the RDF filtercake. The system provided the necessary delay to minimize losses before closing the formation isolation valve.

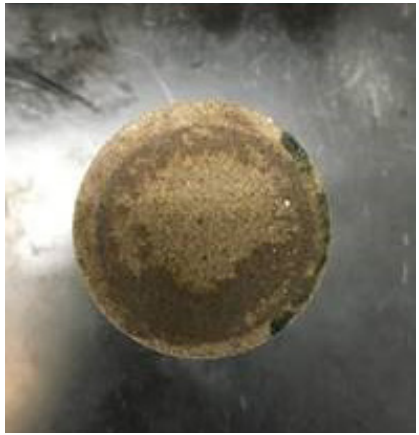
A return permeability test was performed to assess the damaging effect of the RDF and the capacity of the breaker to help remove the filtercake and restore near-wellbore permeability. The results were 85.7% of return achieved in the production direction and 86.1% in the injection direction with complete cleanup of the filtercake post breaker soak.

Technology

- D-STRUCTOR HD organic acid precursor
- DIPRO high-density divalent reservoir drill-in fluid

Test Results Show 85.7% Regained Permeability Achieved With D-STRUCTOR HD Organic Acid Precursor

Slow-acting breaker enables complete filtercake removal



Wellbore face of the core plug.

Core plug after breaker soak and flowback showing complete removal of the filtercake.

slb.com/drilling