Case Study

MARCIT[sm] Technology in Producing Wells

Lessons Learned from Over 300 Producing Well Water Shut-off Gel Treatments (SPE 52127)

The Science of Enhanced Oil Recovery

Situation

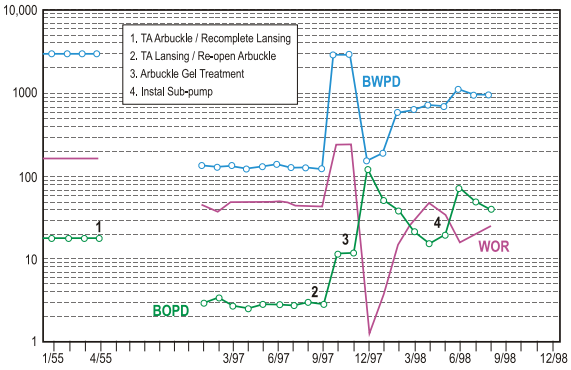
This paper focuses on providing practical polymer gel information that, when used in conjunction with normal operations data, can be readily reduced to practice. Topics discussed include candidate selection criteria, job sizing, gel strength, treatment strategies, treatment monitoring and evaluation, risk factors, results and lessons learned. Economic data including project payout, cost per incremental barrel of oil produced and success rate will also be discussed. Case studies presented demonstrate what is actually working in the field and what can be expected from a successful treatment.

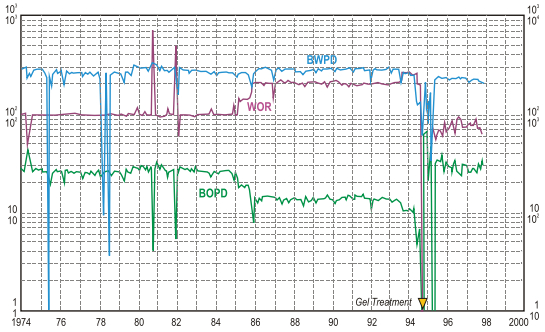
Program

In multi-layered reservoirs where crossflow is believed to be limited, one strategy is to inject a small gel volume in order to improve the vertical profile in the near wellbore region. If crossflow is believed to exist between layers or within a layer, significant gel volumes are recommended for deeper placement in the offending zones so that water cannot easily bypass the gel treatment.

Results

Polymer gel technologies have been applied in several reservoirs that represent a broad range of depositional environments and petrophysical characteristics. Traditionally, polymer gels were believed to be applicable exclusively in naturally fractured reservoirs. However, none of the reservoirs described in this SPE paper are characterized as naturally fractured. The results suggest that high permeability anomalies in matrix reservoirs should also be considered candidates for gel treatments.





Version 1.1 January 2009

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