Case Study

MARCIT^{sm} Technology in Injection Wells

A Review Of Over 100 Polymer Gel Injection Well Conformance Treatments In Argentina And Venezuela: Design, Field Implementation And Evaluation (SPE 101781)

The Science of Enhanced Oil Recovery

Situation

Results from several field projects in four hydrocarbon basins in Argentina and Venezuela are described based on the application of two available polymer gel technologies: MARCIT^{SM} and UNOGEL^{SM}. The types of reservoirs and reservoir conditions where polymer gels have been successful, and unsuccessful, are illustrated. Fundamental reservoir rock and fluid characteristics, reservoir temperatures, polymer gel designs, and project evaluation are presented for each of the field projects. A high temperature (275°F) reservoir is included.

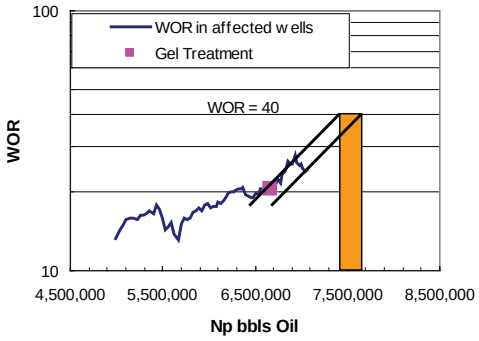
Program

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.

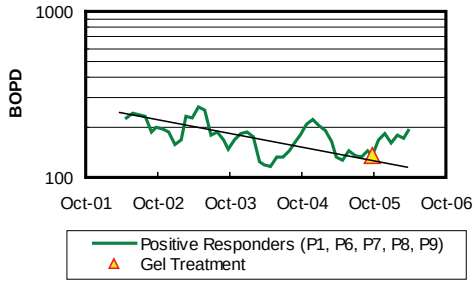
Results

Polymer gel technologies have been applied in several Latin American 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.

Incremental Oil from Vizcacheras Gel Treatments



Oil Response from El Tordillo gel treatments



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