

Polymer Pilots Preparing OMV Austria for a Chemical EOR Field Redevelopment – A Production Technology Review

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Abstract

OMV Austria E&P GmbH operates 26 oil fields in Lower Austria. The majority was developed in the 1950s and 1960s and shows an extended decline period. The challenge of operating brown fields is seen to maintain a reasonable oil production over time in a cost effective manner - this is going to be tackled by a major chemical enhanced oil recovery field redevelopment project.

OMV follows the strategy to pilot new reservoir and production technologies before the application in field rollouts. The scope of the polymer field rollout is to create and efficiently operate horizontal polymer injection patterns in two horizons in Lower Austria.

Due to the large project investment volume it is crucial to derive information and lessons learnt from existing pilot patterns to optimize conceptual decisions on artificial lift, completion, sand control and production strategy and reduce technical risk.

In the past 10 years several vertical pilot patterns were created to analyze the efficacy of polymer injection in the tortonian horizon. Significant operational experience in water treatment, polymer injection and polymer back production was established.

Since the vertical polymer patterns showed not only operational success, but also significant incremental oil production potential, the idea of horizontal flooding patterns was born. To confirm and understand the impact of polymer also in horizontal wells, a first horizontal pilot pattern was drilled; additional pilot wells are currently following. For the field redevelopment the technology selection should be de facto based on either standard or pilot-proven technologies.

This paper describes measures undertaken in the discipline of production technology to prepare for one of the largest field redevelopment projects in the history of OMV Austria. These measures include the application of several pilot projects in the field of artificial lift, completion design and sand control, production and injection allocation. Therewith production technology serves the needs for active reservoir management and thus follows a holistic field development approach.