Rapid Assessment Techniques for Reservoir Optimization and Monitoring: Mauddud Reservoir – Bahrain Field

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This poster describes the application of a practical process to develop a systematic workflow for production optimization and reservoir analysis; Identify and highlight reservoir trends, patterns and anomalies; Identify and highlight the under performing wells/areas and recommend solutions, and Identify essential patterns for consideration in overall development plan. It is required to quickly identify infill locations, reserves, and underperforming areas in Mauddud Reservoir – Bahrain Field. The area used for the study consists of 431 wells. The challenge was to evaluate large data sets in a short time and cost-effective manner.

The technique uses a streamlined workflow of reservoir assessment processes, which require a sequence of data gathering, formatting and validation through combining the data with several processes associated with both the static and the dynamic model of the reservoir. Quick interpretations of these models generate opportunity regions, re-completions and workover candidates, and new infill potential in the reservoir. Based on the processes run in the Mauddud zones it was possible to understand rapidly the reservoir performance and main issues associated with field development (water production, gas injection, potential transfer areas) and also to determine underperforming wells and potential undrained areas (high remaining reserves zones with low water cut and low Gas Oil Ratio) in a low-cost, timely manner. The main focus was to rapidly analyze the reservoir and identify areas that may contain potential for additional production and identify anomalies in the wells that could lead to a production enhancement campaign in the field.