Tight Oil Reservoir Characterization for Maximizing Oil Rim Production

Steven Ownby[1], David Hill[1], and Johannes H.C. Reichwein[1]

[1]Brunei Shell Petroleum, Seria, Brunei (Steven.Ownby@shell.com)

Abstract

Reservoir characterization studies for infill development opportunity identification have historically relied on analysing the major uncertainties such as faulting, contacts, and production allocation to much success. These studies can typically be conducted over large areas of the field quickly, however infill identification in an oil rim with thinly-bedded lower permeability reservoirs often require further analysis to make decisions. This analysis focuses more on the remaining uncertainties of the net sand, oil saturations, and wellbore inflow mechanics. Integrating the geologic observations of thin-bedded reservoirs into a detailed reservoir characterization study not only identified the preferred infill drilling locations but also the preferred completion style to maximize oil rim recovery. Integrated data analysis across multiple disciplines can help identify the true cause of reservoir performance. Even low permeability reservoirs show conventional behaviors if the data is presented in an integrated fashion. A better understanding of the reservoir's static and dynamic behavior can identify optimal infill opportunities.