

Application of different EOR techniques for the energy and recovery of Ashal'cha oil field

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Abstract

© 2018 Taylor & Francis Group, LLC. In this research, utilizing the reservoir and produced oil data, different enhanced oil recovery (EOR) techniques known as in-situ combustion, CO₂ flooding, and steam flooding were applied for Ashal'cha oil field in Republic of Tatarstan, Russia. For this purpose, In-Situ Combustion Predictive Model (ICPM), CO₂ Miscible Flood Predictive Model (CO₂PM) and Steam-flood Predictive Model (SFPM) are used. In addition to oil recovery, economic analysis of the discussed EOR applications was also conducted. By using the oil price forecast for 10 years, each EOR method is analyzed using their expenses and outcomes separately. Comparison among the EOR applications regarding the oil production, and economic feasibility was also given. Taking the reservoir and produced oil characteristics, oil production rate and economical payout time into account, it was observed that in-situ combustion is the most feasible and practical EOR method for Ashal'cha oil field.

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Keywords

Ashal'cha oil field, crude oil, energy, enhanced oil recovery, feasibility, predictive models

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