

Fracture porosity of a fractured granite basement (FGB) reservoir in the Cuu Long Basin, Vietnam

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ABSTRACT

Fractured granite basement (FGB) reservoir is not a common type in HC exploration worldwide as this type of reservoir makes up only a very small fraction of the world HC reserve and production. However, for Vietnam FGB reservoir is the main oil producer, contributing from up to 80-90% of the national yearly production. Since 1987 when the first oil was found and extensively produced afterwards from the Mesozoic fractured granite basement in the Cuu long basin of Vietnam there are still many issues that need to be better understood on double porosity system of this unconventional type of reservoir, e.g., how many fracture systems exist in a FGB reservoir? what is contribution from each of them to the total porosity? How to identify and estimate a fracture porosity? Does the weathered granite top part of the fractured granite basement contribute as component of this special type of reservoir? etc. In this study, a petrophysical model consisting of macro-, micro-fractures and intact granite background was revisited for an oil field location in the Cuu Long basin, Vietnam. Resistivity models to determine fracture porosity were both revisited and newly-derived to estimate the macro-fracture porosity for an oil field in the Cuu long basin, southern offshore Vietnam. It is expected that the results presented in this study help to provide with a further elucidation into the petrophysical model of a fractured granite basement (FGB) reservoir.

Keywords: *fractured granite basement (FGB), fracture porosity, petrophysical model, Cuu long basin, Vietnam*