

INTISARI

Karakterisasi Reservoir Berdasarkan Analisis Petrofisika dan Estimasi Cadangan Volumetrik Gas pada Lapangan Yasmin Formasi Tawun Cekungan Jawa Timur Utara

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Lapangan Yasmin adalah salah satu lapangan hidrokarbon yang aktif dieksplorasi dan terletak di Cekungan Jawa Timur Utara. Eksplorasi hidrokarbon diperlukan karakterisasi reservoir hidrokarbon. T-H11 adalah zona target Lapangan Yasmin yang terletak pada Formasi Tawun. Zona target T-H11 terbukti dapat mengalirkan gas berdasarkan data *Drill Stem Test* (DST).

Pada penelitian ini dilakukan untuk mengetahui karakter zona T-H11 berdasarkan analisis petrofisika dan estimasi cadangan volumetrik gas pada zona target. Analisis petrofisika tersebut mencakup evaluasi properti fisika batuan dari data geofisika log sumur. Properti fisika batuan, seperti porositas, saturasi air, dan *net pay* kemudian digunakan dalam perhitungan estimasi cadangan volumetrik gas.

Berdasarkan hasil analisis petrofisika, reservoir gas memiliki kualitas baik dan tersebar pada sumur PUC-02, PUC-04, dan PUC-1X pada litologi batupasir Formasi Tawun. Reservoir gas pada zona target memiliki estimasi cadangan volumetrik gas awal dan cadangan volumetrik gas yang dapat diperoleh sebesar 26.43 BSCF dan 20.59 BSCF.

Kata Kunci: Analisis petrofisika, karakterisasi reservoir, volumetrik gas.

ABSTRACT

Reservoir Characterization Based on Petrophysical Analysis and Gas Volumetric Reserve Estimation in Yasmin Field of Tawun Formation North East Java Basin

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Yasmin Field is an active hydrocarbon field explored that is located in North East Java Basin. Hydrocarbon exploration is required a characterization of hydrocarbon reservoir. T-H11 is a target zone of Yasmin Field that is located on Tawun Formation. The target zone T-H11 is proven and able to flow gas based on Drill Stem Test (DST).

This research aims to characterize the T-H11 zone based on petrophysical analysis and gas volumetrics reserve estimation. Petrophysical analysis was conducted by evaluating rock physics properties from geophysical well log data. The rock physics properties, such as porosity, water saturation, and net pay were then used in calculation of gas volumetrics reserve estimation.

Based on the result of petrophysical analysis, gas reservoir has a good quality reservoir and distributed along PUC-02, PUC-04, and PUC-1X wells in sandstone lithology of Tawun Formation. Gas reservoir on target zone may have initial gas volumetric reserve estimation and recoverable gas volumetric reserve estimation of 26.43 BSCF and 20.59 BSCF.

Key Words: Petrophysical analysis, reservoir characterization, gas volumetric.