

ABSTRAK

Lapangan “DIT” berada pada Cekungan Bonaparte Utara, wilayah pengembangan bersama antara pemerintah Timor-Leste dan Pemerintah Australia perairan Laut Timor. Formasi yang umum dijumpai pada Cekungan Bonaparte Utara yaitu Formasi Plover dan Formasi Elang dengan litologi batu pasir, yang berumur Jurassic.

Analisa petrofisika reservoir Formasi Plover Cekungan Bonaparte Utara di lapangan “DIT” menggunakan validasi data log dari tiga sumur eksplorasi dan seismik 2D *post-stack* yang terdiri dari 70 *lines* seismik. Penelitian ini bertujuan untuk mengetahui petrofisika batuan reservoir serta mengidentifikasi zona reservoir hidrokarbon berdasarkan defleksi kurva log *gamma ray*, resistivitas, kombinasi log desitas-neutron dan seismik inversi pada lapangan “DIT”. Metode yang digunakan dalam penyelesaian penelitian ini yaitu; metode kualitatif dan kuantitatif dengan interpretasi berdasarkan hasil defleksi kurva log dan inversi seismik AI pada lapangan “DIT”

Hasil interpretasi *cross plot* porositas dengan V-shale pada sumur Leste_1 didapatkan nilai rata-rata porositas sebesar 11%, saturasi air sebesar 45%, dan V-shale sebesar 7% yang memiliki *OOIP* = 130,489.56 STB. Sedangkan pada sumur Leste_3 nilai rata-rata porositas sebesar 9%, saturasi air 48% dan V-shale 10% yang memiliki *OOIP* 1987807323 STB

Berdasarkan interpretasi crossplot data log, nilai impedansi akustik rendah pada zona reservoir yang berkisar antara (32623-34258) (m/s)*(g/cc) dimana diinterpretasikan sebagai litologi batu pasir. Sedangkan nilai *gamma ray* rendah pada zona reservoir berkisar antara 25-75 °API. Hasil analisis ini juga diperkuat dengan data seismik amplitudo RMS dan inversi AI dimana menunjukkan bahwa batuan reservoir berada pada kedalaman 3000 m/s sampai dengan 3200 m/s.

Kata kunci: Petrofisik, Formasi Plover, Porosits, Saturasi air, V-shale, *OOIP*.

ABSTRACT

The "DIT" field is located in the North Bonaparte Basin, which is the joint development area between the Timor-Leste government and the Australian Government in the Timor Sea. Formations that are commonly found in the North Bonaparte Basin are the Plover Formation and Elang Formation with sandstone lithology, which is Jurassic-aged.

Petrophysical analysis of Formation Plover in the North Bonaparte Basin in the "DIT" field uses validated log data from three exploration wells and also consisting of 70 seismic lines. This study aims to determine the petrophysics of reservoir rocks and identify hydrocarbon reservoir zones based on deflection of gamma ray log curves, resistivity, combination of neutron- density log and seismic inversion on the "DIT" field. The method used in completing this study is; qualitative and quantitative methods with interpretations based on the results of deflection of log curves and AI seismic inversion on the "DIT" field

The results of the interpretation of the cross plot of porosity with V-shale at the well Leste_1 obtained an average porosity value of 11%, water saturation of 45%, and V-shale of 7% which had OOIP = 130,489.56 STB. While in well, Leste_3 the average porosity is 9%, water saturation is 48% and V-shale is 10% which has OOIP 1987807323 STB

Based on cross plot log data interpretation, the value of acoustic impedance is low in the reservoir zone which ranges between (32623-34258) (m/s)*(g/cc) which is interpreted as sandstone lithology. While the low gamma ray value in the reservoir zone ranges from 25-75 °API. The results of this analysis are also reinforced by seismic RMS amplitude and AI inversion data which shows that the reservoir rock is at a depth of 3000 m/s to 3200 m/s.

Keywords: Petrophysics, Formation of Plover, Porosity, Saturation of water, V-shale, OOIP.