

# Karakterisasi Reservoir Lapangan "Dewi" Cekungan Bonaparte Maluku Tenggara Menggunakan Analisis Seismik Multiatribut dan Probabilistic Neural Network = Reservoir Characterization of the "Dewi" Field in the Bonaparte Basin, Southeast Maluku Using Multi-Attribute Seismic Analysis and Probabilistic Neural Networks

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## Abstrak

Lapangan "DEWI", yang berlokasi di Cekungan Bonaparte Maluku Tenggara merupakan lapangan gas dengan reservoir utama yang terletak pada Formasi Plover, yang didominasi oleh batu pasir. Berdasarkan analisa struktur didapatkan bahwa lapangan ini memiliki satu sesar utama yang membagi blok utara dan blok selatan. Berdasarkan analisis petrofisika didapatkan bahwa zona prospek hidrokarbon dari lapangan ini terletak di formasi Plover dan Zona A. Penelitian ini bertujuan untuk menganalisis distribusi parameter petrofisika seperti porositas, volume shale, dan saturasi air yang penting dalam karakterisasi reservoir. Penelitian ini menggunakan analisis seismik multiatribut dan probabilistic neural network untuk memprediksi parameter petrofisika berdasarkan atribut dari data seismik. Hasil menunjukkan bahwa pada penelitian ini probabilistic neural network memiliki keunggulan dalam memprediksi parameter petrofisika untuk karakterisasi reservoir dibanding multiatribut konvensional. Berdasarkan hasil dari pemetaannya ditemukan variasi yang menarik dalam persebaran parameter petrofisika pada formasi Plover dan Zona A. Hasil dari penelitian ini dapat digunakan untuk menyediakan pemahaman baru dalam karakterisasi daerah berpotensi hidrokarbon di Lapangan "DEWI".

.....The "DEWI" field, which is located in the Bonaparte Basin, Southeast Maluku, is a gas field with the main reservoir located in the Plover Formation, which is dominated by sandstone. Based on structural analysis, it was found that this field has one main fault that divides the northern block and the southern block. Based on petrophysical analysis, it was found that the hydrocarbon prospect zone of this field is located in The Plover Formation and Zone A. This research aims to analyze the distribution of petrophysical parameters such as porosity, shale volume, and water saturation which are important in reservoir characterization. This research uses multi-attribute seismic analysis and probabilistic neural networks to predict petrophysical parameters based on attributes from seismic data. The results show that in this study the probabilistic neural network has advantages in predicting petrophysical parameters for reservoir characterization compared to conventional multi-attributes. Based on the results of the mapping, enticing variations were found in the distribution of petrophysical parameters in The Plover Formation and Zone A. The results of this research can be used to provide new insights into the characterization of potential hydrocarbon areas in the "DEWI" Field.