

ABSTRACT

Facies Analysis and Reservoir Distribution Using 3D Seismic and Well Data in the 'DDN' Field, Manggala Formation, Central Sumatra Basin, Riau Province

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This research was conducted in the “DDN” Field, located within the Manggala Formation of the Central Sumatra Basin, Riau Province. The objective of the study is to analyze facies and reservoir distribution using an integrated approach that combines 3D seismic data and well data. The methodology includes electrofacies analysis based on wireline logs (gamma ray, resistivity, density, and neutron), stratigraphic correlation, borehole image (FMI) interpretation, and seismic waveform classification. Results indicate that the depositional environment is dominated by an estuary system, which produces facies such as tidal channels, tidal flats, and estuary sand bars. Well-to-seismic correlation yields a reservoir distribution model that reveals the lateral extent of sandstone lithology with varying reservoir quality. The integration of log and seismic data allows for more accurate mapping of prospective zones. This study is expected to support field development strategies and contribute to the understanding of regional geology and sedimentary systems within the Manggala Formation

Keywords: 3D seismic, Central Sumatra Basin, Estuary, facies, Manggala Formation reservoir distribution, , ,