

SARI

Lapangan “NDOF” berada di Sub-Cekungan Palembang Selatan, bagian dari Cekungan Sumatra Selatan yang dikenal sebagai salah satu penghasil hidrokarbon utama di Indonesia. Formasi Talang Akar, khususnya pada interval *lowstand system tract* bagian bawah, menjadi target penelitian karena berperan sebagai reservoir penting. Latar belakang penelitian ini didorong oleh kebutuhan memahami fasies dan distribusi fasies *tributary channel* untuk mendukung kegiatan eksplorasi dan pengembangan lapangan migas. Tujuan penelitian adalah untuk mengidentifikasi fasies, lingkungan pengendapan, serta distribusi fasies *tributary channel* pada interval penelitian. Data yang digunakan meliputi *well log*, *mudlog*, dan analisis biostratigrafi dari 12 sumur. Analisis dilakukan melalui interpretasi litofasies, elektrofases, asosiasi fasies, serta penentuan marker stratigrafi untuk membangun kerangka sekuens. Pemodelan fasies menggunakan perangkat lunak Petrel 2020 dengan metode Truncated Gaussian Simulation dan Object-Based Modeling sehingga diperoleh gambaran model fasies serta distribusi fasies. Hasil penelitian menunjukkan fasies yang berkembang meliputi *tributary channel*, *intertributary bay*, *crevasse splay*, dan *mouth bar* yang diendapkan pada lingkungan *upper delta plain* hingga *delta front*. Interval penelitian terbagi menjadi tiga interval utama dengan arah penebalan channel yang bervariasi: utara-timur pada interval X, selatan pada interval Y, serta timur–utara pada interval Z. Temuan ini menegaskan potensi Formasi Talang Akar sebagai reservoir hidrokarbon yang prospektif dan memberikan kontribusi bagi strategi eksplorasi di Cekungan Sumatra Selatan.

Kata kunci: Fasies, Formasi Talang Akar, Lowstand System Tract, Pemodelan Fasies, Cekungan Sumatra Selatan

ABSTRACT

The “NDOF” Field is located in the South Palembang Sub-basin, part of the South Sumatra Basin, one of Indonesia’s major hydrocarbon-producing regions. The Talang Akar Formation, particularly within the lower lowstand system tract, was selected as the research target due to its importance as a reservoir. This study is motivated by the need to understand facies and distributary channel facies distribution to support hydrocarbon exploration and field development. The aim of this research is to identify facies, depositional environments, and distributary channel distribution within the studied interval. The data consist of well logs, mudlogs, and biostratigraphic analyses from 12 wells. The methodology includes lithofacies, electrofacies, and facies association interpretations, combined with sequence stratigraphic framework construction. Facies modeling was carried out using Petrel 2020 software, applying Truncated Gaussian Simulation and Object-Based Modeling to produce a model distribution of facies. The results show that the developed facies include distributary channel, interdistributary bay, crevasse splay, and mouth bar, deposited in an upper delta plain to delta front environment. The studied interval is divided into three main sequences with variable channel thickening trends: eastward–northward in Z interval, southward in Y interval, and eastward–northward in X interval. These findings confirm the potential of the Talang Akar Formation as a promising hydrocarbon reservoir and provide practical insights for exploration strategies in the South Sumatra Basin.

Keywords: *Facies, Talang Akar Formation, Lowstand System Tract, Facies Modeling, South Sumatra Basin*