

INTISARI

Lapangan “IM” merupakan salah satu lapangan minyak dan gas bumi pada wilayah kerja PT Sele Raya Belida yang berada di Sub-Cekungan Palembang Selatan, Cekungan Sumatera Selatan. Salah satu reservoir utama pada Lapangan “IM” yaitu batupasir interval “X” yang berada pada Formasi Talangakar Atas. Batupasir interval “X” pada Talangakar Atas dijadikan fokus penelitian karena memiliki potensi keberadaan minyak yang belum dikembangkan secara optimal, sehingga analisis lanjutan secara detail sangat diperlukan sebagai upaya meningkatkan performa produksi minyak dan gas bumi. Analisis yang dilakukan meliputi analisis lingkungan pengendapan, fasies, dan studi sikuen stratigrafi agar mendapatkan distribusi reservoir secara akurat. Berdasarkan analisis data *log* sumur IM-4 yang di jadikan sumur kunci, didapatkan fasies yang berkembang berupa *tidal channel*, *mixed flat* yang berkembang di *sandy intertidal estuary*, *mud flat* berkembang di *muddy intertidal estuary*, *sand bar* untuk lingkungan *intertidal bars estuary* dan fasies *sand sheet* di *shallow subtidal estuary*, *sand ridges* di *subtidal bars estuary* dan *shelf mud* untuk lingkungan *shelf*. Formasi Talangakar Atas terdiri dari 13 parasekuen dan satu *system tract*, yaitu berupa *transgressive system tract* (TST). Struktur yang berkembang pada Lapangan “IM” berupa sesar normal dengan orientasi utara – selatan. Untuk memetakan persebaran reservoir, dilakukan korelasi antar sumur dengan pendekatan kesamaan umur berdasarkan sikuen stratigrafi agar tidak terjadi kesalahan penyambungan lapisan batuan, sehingga model reservoir akan menjadi lebih akurat. Korelasi meliputi korelasi stratigrafi dan korelasi struktur dengan dua jalur korelasi, yaitu jalur A – A’ dan jalur B – B’. Pengolahan sesimik dengan output peta *isopach* dilakukan untuk membantu dalam mengetahui persebaran reservoir batupasir interval “X”. Analisis dilakukan pada interval “X” yang berfokus pada batupasir A, B, dan C karena batupasir tersebut memiliki jejak indikasi minyak. Reservoir batupasir A, B, dan C berada pada asosiasi fasies *mixed flat* dan *tidal channel* yang memanjang dari tenggara menuju ke barat laut dan mengalami penebalan ke di area selatan yang menunjukkan ke arah proksimal dekat dengan hulu dan berada pada blok yang turun. Arah pengembangan eksplorasi direkomendasikan ke area tenggara, yang berada pada lingkungan *sandy intertidal estuary* yang menargetkan *channel sand* karena zona tersebut menunjukkan kualitas reservoir yang cukup baik.

Kata kunci: batupasir interval “X”, analisis asosiasi fasies, sikuen stratigrafi, Formasi Talangakar Atas, Sub-Cekungan Palembang Selatan.

ABSTRACT

The 'IM' field is one of the oil and gas fields located within the working area of PT Sele Raya Belida, situated in the South Palembang Sub-Basin, South Sumatra Basin. One of the main reservoirs in “IM” field is sandstone interval “X”, found within the Upper Talangakar Formation. Sandstone interval “X” in the Upper Talangakar Formation was selected as the focus of this study because it has hydrocarbon potential that has not yet been optimally developed, so further detailed analysis is required to improve oil and gas production performance. The analysis conducted include depositional environment analysis, facies analysis, and sequence stratigraphy studies in order to obtain an accurate reservoir distribution. Based on well log data analysis from well IM-4, which was used as the key well, the facies that developed consist of tidal channel, mixed flat (sandy intertidal estuary), mud flat (muddy intertidal estuary), sand bar (intertidal bars estuary), sand sheet (shallow subtidal estuary), sand ridge (subtidal bars estuary), and shelf mud (shelf environment). The Upper Talangakar Formation consists of 13 parasequences and one system tract, namely a transgressive system tract (TST). The structures developed in “IM” field consist of normal faults with a north–south orientation. To map reservoir distribution, well-to-well correlation is performed using an age-equivalence approach based on sequence stratigraphy, this prevents errors in correlating rock layers, thereby resulting in a more accurate reservoir model. The correlation process involved both stratigraphic and structural analysis along two lines, A–A’ and B–B’. Seismic data processing, resulting in isopach maps, was utilized to assist in delineating the distribution of the “X” interval sandstone reservoir. The analysis focused specifically on sandstones A, B, and C within the “X” interval, as these units exhibited indications of oil presence. Sandstone reservoirs A, B, and C are situated within a mixed flat and tidal channel facies association that trends southeast to northwest and thickens toward the south, indicating a proximal setting near the sediment source within a downthrown block. The recommended direction for exploration development is toward the southeastern area, characterized by a sandy intertidal estuary environment, specifically focusing on channel sands, as this zone exhibits favorable reservoir quality.

Keywords: sandstone interval “X”, facies association analysis, sequence stratigraphy, Upper Talangakar Formation, South Palembang Sub-Basin