

SARI

Lapangan “AMP” merupakan salah satu lapangan minyak dan gas bumi di Blok Jabung, Sub-Cekungan Jambi, Cekungan Sumatera Selatan yang dioperasikan oleh PetroChina International Jabung Ltd., dengan Formasi Talang Akar sebagai interval yang aktif memproduksi hidrokarbon. Untuk keperluan studi pengembangan pada interval Formasi Talang Akar berumur Miosen Awal, penentuan fasies dan distribusi reservoir batupasir masih diperlukan. Oleh karena itu, penelitian ini bertujuan untuk menentukan fasies, lingkungan pengendapan dan sikuen stratigrafi yang berkembang di interval penelitian serta mengetahui persebaran interval Batupasir X di daerah penelitian. Integrasi data *log* sumur, batuan inti (*core*), *mud log* dan petrografi digunakan untuk menentukan litofasies dan asosiasi fasies. Hasil penentuan litofasies, asosiasi fasies kemudian diintegrasikan dengan data biostratigrafi untuk menginterpretasikan lingkungan pengendapan. Selain itu data biostratigrafi juga digunakan untuk menentukan umur. Penentuan batas target pengembangan yang lebih detail dilakukan dengan pendekatan metode sikuen stratigrafi, yang menghasilkan bidang batas stratigrafi dan *system tract* yang berkembang di interval penelitian.

Berdasarkan data *log* sumur, batuan inti (*core*), *mud log*, petrografi dan biostratigrafi foraminifera bentonik daerah penelitian memiliki lingkungan pengendapan sungai sampai delta. Lingkungan sungai tersusun atas litofasies L1 yang membentuk asosiasi fasies *fluvial channel*. Lingkungan delta tersusun atas litofasies L11 yang membentuk asosiasi fasies *tributary channel*, litofasies L2, L3, L4 yang membentuk asosiasi fasies *tributary mouth bar* dan litofasies L5, L6, L7, L8, L9, L10 yang membentuk asosiasi fasies *subaqueous tributary channel* serta asosiasi fasies *delta plain claystone* dan prodelta dari analisis *well log* dan *mud log*. Data biostratigrafi sumur A-D8 dan A-6 dari *calcareous nannofossil* menunjukkan umur Miosen Awal (NN1-NN3), sementara data foraminifera bentonik menunjukkan lingkungan pengendapan di zona transisi. Analisis sikuen stratigrafi menunjukkan keterdapatan sikuen berupa (1) *lowstand system tract* yang dibatasi oleh *sequence boundary* (SB0) di bagian bawah dan *transgressive surface* (TS) di bagian atas; (2) *transgressive system tract 1* yang dibatasi oleh *transgressive surface* (TS) di bagian bawah dan *maximum flooding surface* (MFS0) di bagian atas; (3) *highstand system tract* yang dibatasi oleh *maximum flooding surface* (MFS0) di bagian bawah dan *sequence boundary* (SB1) di bagian atas; serta (4) *transgressive system tract 2* yang dibatasi oleh *sequence boundary* (SB1) di bagian bawah dan *maximum flooding surface* (MFS1) di bagian atas. Hasil korelasi menunjukkan arah sedimentasi berasal dari Timur Laut menuju ke Barat Daya. Interval Batupasir X dibatasi oleh SB1 di bagian bawah dan FS1 di bagian atas dan berkembang di lingkungan *subaqueous delta plain* yang terpengaruh oleh proses *tidal*. Persebaran interval Batupasir X meliputi seluruh daerah penelitian dengan ketebalan 20 ft–100 ft dan semakin menebal ke arah Barat Daya.

Kata Kunci: Sikuen stratigrafi, lingkungan pengendapan, interval Batupasir X Formasi Talang Akar, Blok Jabung.

ABSTRACT

The “AMP” field is one of the oil and gas fields in the Jabung Block, Jambi Sub-Basin, South Sumatera Basin, which is operated by Petrochina International Jabung Ltd., with the Talang Akar Formation as an active interval that producing hydrocarbons. For field development studies in the Early Miocene of Talang Akar Formation member, determination of facies and distribution of reservoir sandstone still needed. Therefore, this study’s objectives are to determine the facies, depositional environment, and sequence stratigraphy that develop in the research interval and the distribution of ‘Batupasir X’ in the study area. Subsurface data such as well logs, core, mud logs, and petrography used to determine lithofacies and facies associations. After that, the results of lithofacies and facies associations are then integrated with biostratigraphic data and will be able to find out the depositional environment. Moreover, biostratigraphic data also used for knowing the age. For more specific development targets, the determination of marker boundaries to knowing the distribution of “Batupasir X” is carried out with the sequence stratigraphic method’s approach, with the results being the sequence stratigraphic marker and system tract that develops at the research interval.

Based on well logs, core, mud logs, petrography, and benthic foraminifera biostratigraphic data, there are two depositional environments develop in the study area, namely river and deltaic environment. River depositional environment consists of lithofacies L1, which composed fluvial channel facies association. While the deltaic depositional environment consists of lithofacies L11, which composed distributary channel facies association, lithofacies L2, L3, L4 which composed distributary mouth bar and lithofacies L5, L6, L7, L8, L9, L10 which composed subaqueous distributary channel and delta plain claystone, prodelta facies association from well log integrated with mud log analysis. Calcareous nannofossil biostratigraphic data of wells A-D8 and A-6 indicate the “Batupasir X” interval has Early Miocene age (NN1–NN3) with benthic foraminifera biostratigraphic data showing a transition zone. Sequence stratigraphic analysis shows that in the study area has (1) lowstand system tract that has a sequence boundary (SB0) at the lower and a transgressive surface (TS) at the upper as a boundary; (2) transgressive system tract that has a transgressive surface (TS) at the lower and a maximum flooding surface (MFS0) at the upper as a boundary; (3) highstand system tract that has a maximum flooding surface (MFS0) at the lower and a sequence boundary (SB1) at the upper as a boundary; and (4) transgressive system tract with a sequence boundary (SB1) at the lower and a maximum flooding surface (MFS1) at the upper as a boundary. The result of the sequence stratigraphic correlation shows that the study area has sedimentation direction from the Northeast to Southwest. “Batupasir X” intervals bounded by SB1 at the bottom and FS1 at the top. Distribution of “Batupasir X” intervals in this study area thickening towards Southwest range from 20ft–100ft, which develops in the subaqueous delta plain depositional system that is affected by the tidal process.

Keywords: Sequence stratigraphy, depositional environment, Batupasir X interval of Talang Akar Formation, Jabung Block.