

SARI

Interval “X” merupakan salah satu reservoir batupasir penghasil hidrokarbon berupa *dry gas* yang berlokasi di Formasi Arang, Cekungan Natuna Barat. Namun, pemahaman tentang fasies seismik dan lingkungan pengendapan reservoir belum pernah dilakukan. Penelitian ini bertujuan untuk identifikasi karakter fasies seismik, menentukan litofasies serta asosiasi fasies, dan menentukan persebaran lingkungan pengendapannya. Metode yang dilakukan berupa analisis fasies seismik ditambah dengan deskripsi sampel batuan inti untuk menentukan litofasies dan asosiasi fasiesnya ditambahkan dengan interpretasi litologi menggunakan *log gamma ray* untuk mengetahui lebih detail terkait lingkungan pengendapan daerah penelitian. Data pendukung berupa data biostratigrafi digunakan untuk penentuan umur dan paleobatimetri area penelitian serta data petrografi digunakan pula untuk mendukung asosiasi fasies dari area penelitian. Hasil interpretasi fasies seismik dijumpai berupa fasies *channel* memiliki karakteristik refleksi paralel-subparalel, geometri *concave (fill)*, amplitudo sedang – tinggi, fasies dataran teras memiliki karakteristik refleksi paralel-subparalel geometri *sheet* amplitudo sedang, dan fasies *mire* dengan refleksi paralel-subparalel, geometri *sheet* dan amplitudo tinggi – sangat tinggi. Hasil analisis data sumur menunjukkan litofasies pada area penelitian terdiri dari batupasir sangat halus, batulanau dengan material karbonan, serta perselingan batulempung batupasir mengandung glaukonit dengan asosiasi fasies berupa *tributary channel* dan *intertributary bay* dengan paleobatimetri berada pada zona neritik dalam yang diendapkan pada Miosen Tengah. Lingkungan pengendapan interval “X” diidentifikasi berupa lingkungan *tide-influenced delta* dengan pengaruh pasang surut pada zona transisi darat – laut.

Kata kunci: Formasi Arang, Cekungan Natuna Barat, fasies seismik, asosiasi fasies, *tide-influenced delta*.

ABSTRACT

Interval "X" is one of the sandstone reservoirs that produce hydrocarbons in the form of dry gas located in the Arang Formation, West Natuna Basin. However, an understanding of seismic facies on the distribution of reservoir depositional environments has never been carried out. This study aims to identify the character of seismic facies, determine lithofacies along with facies associations, and determine the deposition environment. The method was carried out in the form of a description of core samples to determine lithofacies and their facies associations supported with lithological interpretation using gamma ray logs, as well as seismic facies interpretation using the Root Mean Square (RMS) seismic attribute. Supporting data in the form of biostratigraphic data was used to determine the age and paleobathymetry of the research area and petrographic data was also used to support the facies association from the research area. The results showed that lithofacies in the study area consisted of very fine sandstone, carbonaceous siltstone, and claystone with facies associations in the form of distributary channels and interdistributary bays with paleobathymetry in the upper neritic zone deposited in the Middle Miocene. Seismic facies are found in the form of channel facies that have the characteristics of parallel-subparallel reflection, concave (fill) geometry, medium – high amplitude, floodplain facies have the characteristics of parallel-subparallel reflection of medium amplitude sheet geometry and mire facies with strong continuous parallel - subparallel reflection, sheet geometry, and high amplitude. The "X" interval deposition environment was identified as a tide-influenced delta environment with a tidal influence on the land-sea transition zone.

Keywords: Arang Formation, West Natuna Basin, seismic facies, facies associations, *tide-influenced delta*.