

INTISARI

Penelitian ini berada di interval Batuan karbonat *Pre-Parigi*, Lapangan 'X' yang terletak pada Formasi Cibulakan Atas, Subcekungan Ardjuna, Cekungan Jawa Barat Utara. Penelitian ini ditulis berdasarkan penelitian yang berkembang mengenai fasies pengendapan dan pertumbuhan karbonat melalui pendekatan stratigrafi seismik pada sekuen karbonat Anggota *Pre-Parigi*, Formasi Cibulakan Atas. Formasi Cibulakan Atas terendapkan selaras di atas Formasi Baturaja yang terendapkan pada umur Miosen pada fase tektonik *sagging*. Penelitian ini berfokus pada penyempurnaan model pengendapan Batuan Karbonat *Pre-Parigi*, Formasi Cibulakan Atas, dengan mempertimbangkan berbagai tahapan kenaikan permukaan air laut dan dampaknya terhadap distribusi fasies. Dengan mengintegrasikan antara data seismik 3D dan 9 log sumur, penelitian ini mengembangkan pemahaman tentang penyebaran fasies seismik karbonat Batuan Karbonat *Pre-Parigi*, Formasi Cibulakan Atas pada setiap sekuen pengendapannya. Analisis fasies seismik didasarkan pada karakteristik refleksi seperti geometri refleksi, kontinuitas, amplitudo, frekuensi, dan terminasi refleksi. Hasil penelitian ini mampu mengembangkan fasies seismik teridentifikasi dan menyempurnakan model pertumbuhan karbonat ke dalam bentuk peta penyebaran fasies pengendapan. Terdapat 4 fasies seismik yang berkembang pada daerah penelitian yaitu *patch reef* (SF-1), *barrier reef* (SF-2), *shoal* (SF-3), dan *lagoonal* (SF-4). Dari temuan tersebut dapat dikembangkan menjadi proses pertumbuhan karbonat pada daerah penelitian. Dapat disimpulkan daerah penelitian mengalami 4 fase kenaikan permukaan laut yang didominasi oleh lingkungan pengendapan *lagoonal*. Temuan penelitian ini berkontribusi untuk mengembangkan eksplorasi di masa depan pada Cekungan Jawa Barat Utara, khususnya dalam Formasi *Pre-Parigi* dapat mengidentifikasi wilayah potensial hidrokarbon untuk diselidiki lebih lanjut.

Kata kunci: fasies seismik, sejarah pertumbuhan, stratigrafi seismik, Formasi *Pre-Parigi*, Cekungan Jawa Barat Utara

ABSTRACT

This study is located in the Pre-Parigi carbonate rock interval, Field 'X' which is located specifically in the Upper Cibulakan Formation, Ardjuna Subbasin, Northwest Java Basin. This study was written based on developing research regarding depositional facies and carbonate growth using a seismic stratigraphic approach in the carbonate sequence of the Pre-Parigi, Upper Cibulakan Formation. The Upper Cibulakan Formation was deposited in harmony on top of the Baturaja Formation which was deposited in the Miocene age during the sagging tectonic phase. This research focuses on improving the depositional model of Pre-Parigi Carbonate Rocks, the Upper Cibulakan Formation, by considering various stages of sea level rise and their impact on facies distribution. By integrating 3D seismic data and 9 well logs, this study develops an understanding of the distribution of the carbonate seismic facies of the Pre-Parigi Carbonate Rock, Upper Cibulakan Formation in each depositional sequence. Seismic facies analysis is based on reflection characteristics such as reflection geometry, continuity, amplitude, frequency and reflection termination. The results of this research are able to develop identified seismic facies and refine the carbonate growth model into a map of the distribution of depositional facies. There are 4 seismic facies that develop in the research area, namely patch reef (SF-1), barrier reef (SF-2), shoal (SF-3), and lagoonal (SF-4). From these findings it can be developed into a carbonate growth process in the research area. It can be concluded that the research area experienced 4 phases of sea level rise which were dominated by lagoonal depositional environments. The findings of this research contribute to developing future exploration in the North West Java Basin, especially in the Pre-Parigi Formation and can identify potential hydrocarbon areas for further investigation.

Keywords: *seismic facies, carbonate history, seismic stratigraphy, Pre-Parigi Formation, Northwest Java Basin*