

## SARI

Struktur “Lazuardi” merupakan salah satu lapangan minyak dan gas bumi milik PT. Pertamina EP yang terdapat pada Sub-Cekungan Ardjuna, Cekungan Jawa Barat Utara. Pada hasil tes sumur, terdapat indikasi *oil show* dan *gas show* pada interval Formasi Talang Akar. Sehingga diperlukannya perhitungan petrofisika dan pemetaan bawah permukaan pada interval Formasi tersebut.

Penelitian ini menggunakan beberapa data, antara lain data 1 sumur yaitu sumur HL-001 yang diikat pada data seismik 2 dimensi serta data seismik 3 dimensi yang berdekatan dengan sumur HL-001. Analisis litofasies dan perhitungan petrofisika yang dilakukan pada sumur HL-001 di interval Formasi Talang Akar digunakan untuk mengetahui jenis dan kualitas reservoir hidrokarbon. Persebaran reservoir pada interval Formasi Talang Akar diketahui melalui pengolahan seismik 2 dimensi dengan metode seismik inversi *model based*. Pengolahan data seismik 3 dimensi dilakukan untuk menentukan lingkungan pengendapan dengan metode stratigrafi seismik dan atribut seismik.

Berdasarkan hasil pengolahan data sumur HL-001 didapatkan bahwa reservoir kedalaman 2342-2358 m memiliki litologi batupasir dengan nilai porositas sebesar 0,255 (sangat baik), saturasi air sebesar 0,410, dan *net to gross* sebesar 0,476. Hasil pengolahan metode seismik inversi impedansi akustik menunjukkan nilai *P-impedance* yaitu 2000 - 7000 g/cc\*m/. Lingkungan pengendapan hasil analisis pada seismik 3 dimensi dan sumur menunjukkan hubungan yang sama yakni interval Formasi Talang Akar terendapkan pada *delta plain* hingga *delta front*.

Kata Kunci : Petrofisika, inversi *model based*, stratigrafi seismik, Atribut Seismik, Formasi Talang Akar, Sub-Cekungan Ardjuna, Cekungan Jawa Barat Utara.

## **ABSTRACT**

*The “Lazuardi” structure is one of the oil and gas fields owned by PT. Pertamina EP which located in Ardjuna Sub-Basin, North West Java Basin. In the well test results, there are indications of oil show and gas show at the Talang Akar Formation interval. In order to determine reservoir characterization and distribution, petrophysical calculations and subsurface mapping were analyzed at the formation interval.*

*This research was conducted using several data, such as 1 well data, namely the HL-001 well which was tied to 2-dimensional seismic data and 3-dimensional seismic data which located near HL-001. Lithofacies analysis and petrophysical calculations were performed at the Talang Akar Formation interval of HL-001 well to determine the type and quality of hydrocarbon reservoirs. To determine the distribution of the reservoir at the Talang Akar Formation interval, processing was carried out using the inversion seismic method based on 2-dimensional seismic data. Meanwhile, for the 3-dimensional seismic data, processing was carried out using seismic stratigraphy and seismic attributes method to determine the depositional environment.*

*Based on the results of the HL-001 well data processing, it was found that depth of 2342-2358 m has sandstone lithology with a porosity value of 0.255 (very good), water saturation of 0.410, and net to gross value of 0.476, and deposited in delta plain environment. The results of the acoustic impedance seismic processing have a p-impedance value of 2000 - 7000 g / cc \* m. The depositional environment which was analyzed by 3-dimensional seismic data and well data shows parallel result that The Talang Akar Formation interval is deposited on delta plain to delta front.*

*Keywords: Petrophysical, model based inversion, seismic stratigraphy, seismic attribute, Talang Akar Formation, Ardjuna Sub-Basin, North West Java Basin.*