

**“GEOLOGI DAN KARAKTERISASI RESERVOIR BERDASARKAN DATA
SUMUR BOR PADA LAPANGAN “ALZHAM” FORMASI BATURAJA
CEKUNGAN JAWA BARAT UTARA”**

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Cekungan Jawa Barat Utara telah dibuktikan sebagai cekungan produktif hidrokarbon dengan adanya kegiatan pengeboran yang dilakukan dalam rangka eksplorasi hidrokarbon yang masih aktif dalam dunia bisnis perminyakan. Keterdapatannya daerah produktif menjadikan Cekungan Jawa Barat Utara menarik untuk dilakukan penelitian. Penelitian dilakukan di lapangan “ALZHAM” yang masih termasuk ke dalam daerah produktif “S”, pada interval kedalaman Formasi Baturaja yang diidentifikasi sebagai salah satu formasi reservoir yang potensial berdasarkan literatur yang ada. Penelitian yang dilakukan meliputi analisis kualitatif dan kuantitatif. Penelitian secara analisis kualitatif meliputi analisis data log menggunakan kaidah elektrofasies, dan secara analisis kuantitatif meliputi analisis petrofisika. Penelitian ini dimulai dengan memberi batas atau *marker top* dan *bottom* Formasi untuk menentukan batas dan stratigrafi dengan melihat pola log *gamma ray* secara elektrofasies untuk mengetahui fasies dari zona reservoir yang diinterpretasikan melalui marker tersebut, lalu analisis petrofisika untuk mendapatkan nilai *vshale*, porositas, saturasi air, dan permeabilitas sebagai karakteristik *reservoir*. Hasil penelitian ini menyimpulkan bahwa lokasi penelitian berada di interval Formasi Baturaja yang terdiri dari litologi satuan Batugamping. Berdasarkan data biostratigrafi, Formasi Baturaja terendapkan di lingkungan pengendapan *Forereef shelf–backreef shelf* pada kala Miosen awal. Terdapat 4 sumur yang diteliti pada daerah penelitian yaitu ALZ-03, ALZ-04, ALZ-05, ALZ-06 berdasarkan nilai *cut off* parameter petrofisika dari data *Well Test* sumur produksi sebelumnya, didapatkan zona hidrokarbon produktif sebagai reservoir, yaitu Zona Reservoir terbaik terdapat pada sumur ALZ-05. Analisis petrofisika menunjukkan reservoir memiliki nilai *vshale* 10,5%; porositas 5,89%; saturasi air 17,5%; dan permeabilitas 187,5mD.

Kata kunci: Geologi, formasi Baturaja, Cekungan Jawa Barat Utara, litofasies, petrofisika, zona hidrokarbon.

**“GEOLOGY AND CHARACTERIZATION OF ALZHAM FIELD RESERVOIR
ZONE BASED ON THE WELLCORE DATA OF BATURAJA FORMATION IN
THE NORTH WEST JAVA BASIN”**

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The North West Java Basin has been proven as a productive hydrocarbon basin with drilling activities carried out in the context of hydrocarbon exploration which are still active in the petroleum business world. The density of productive areas makes the North West Java Basin attractive for research. The research was carried out in the "ALZHAM" field which is still included in the productive area "S", at the depth interval of the Baturaja Formation which was identified as one of the potential reservoir formations based on the existing literature. Research conducted includes qualitative and quantitative analysis. Research in qualitative analysis includes analysis of log data using the rules of electrofacies, and in quantitative analysis includes petrophysical analysis. This study begins by giving a top or bottom marker formation to determine the boundaries and stratigraphy by looking at the gamma ray log pattern by electrophyte to determine the facies of the reservoir zone interpreted through the marker, then petrophysical analysis to obtain vshale values, porosity, water saturation, and permeability as reservoir characteristics. The results of this study conclude that the research location is in the depth interval of the Baturaja Formation which consists of limestone lithology units. Based on biostratigraphic data, the Baturaja Formation was deposited in the Foreslope-Deepslope Marine depositional environment at the time of the early Miocene. There were 4 wells studied in the study area, namely ALZ-03, ALZ-04, ALZ-05, ALZ-06 based on cutoff values of petrophysical parameters. from the Well Test data from the previous production well, it was found that the productive hydrocarbon zone as a reservoir, the best Reservoir Zone was found in the ALZ-05 well. Petrophysical analysis shows the reservoir has a vshale value of 10.5%; porosity 5.89%; water saturation 17.5%; and 187.5mD permeability.

Keywords: Geology, Baturaja Formation, North West Java Basin, Litofasies, Petrophysics, Hydrocarbon Zone.