

ABSTRAK

ANALISIS KUALITAS *SOURCE ROCK* BERDASARKAN *TOTAL ORGANIC CARBON (TOC) CORE* DAN LOG PADA LAPANGAN 'K' BERDASARKAN INTEGRASI DATA SUMUR DAN GEOKIMIA DI DAERAH BLOK KANGEAN

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Identifikasi lapisan yang mengandung minyak dan gas dapat menggunakan metode *well logging*. Metode *well logging* adalah teknik untuk mendapatkan data pada lubang bor yang digunakan untuk mendapatkan litologi dan prospek minyak dan gas. Penelitian ini dilakukan untuk mengetahui kualitas *source rock* berdasarkan nilai *total organic carbon (TOC)*. Pada penelitian ini terdapat 5 sumur yaitu sumur A1, A2, A3, A4 dan A5 dengan hasil perhitungan TOC sumur A1 terdapat 35 lapisan *source rock* memperoleh nilai TOC antara 0.56%-1.38%, sumur A2 terdapat 6 lapisan *source rock* memperoleh nilai TOC antara 0.67%-0.81%, sumur A3 terdapat 21 lapisan *source rock* memperoleh nilai TOC antara 0.56%-1.83%, sumur A4 terdapat 4 lapisan *source rock* yang memperoleh nilai TOC antara 0.70%-0.82%, sumur A5 terdapat 4 lapisan *source rock* dengan nilai TOC antara 0.81%-0.90%. Dari hasil perhitunga TOC dapat diketahui kualitas batuan induk pada Blok Kangean Cekungan Jawa Timur Utara berpotensi dominan sedang (*fair*) hingga baik(*good*). Hasil tingkat kematangan batuan induk berada pada tingkat kematangan *immature* hingga *mature* yang dapat diindikasikan akan menghasilkan hidrokarbon berupa minyak ataupun gas bumi.

Kata kunci : Batuan Induk, Hidrokarbon, *Total Organic Carbon (TOC)*

ABSTRACT

ANALYSIS OF SOURCE ROCK QUALITY BASED ON TOTAL ORGANIC CARBON (TOC) CORE AND LOG ON 'K' FIELD BASED ON INTEGRATION OF WELL AND GEOCHEMICAL DATA IN THE KANGEAN BLOCK AREA

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Identification of layers containing oil and gas can use the well logging method. The well logging method is a technique for obtaining data on drill holes which is used to obtain lithology and oil and gas prospects. This research was conducted to determine the quality of source rock based on the total organic carbon (TOC) value. In this study there were 5 wells, namely wells A1, A2, A3, A4 and A5 with TOC calculation results. Well A1 contained 35 layers of source rock, obtaining TOC values between 0.56% - 1.38%, well A2 contained 6 layers of source rock, obtaining TOC values between 0.67% - 0.81%, well A3 has 21 layers of source rock with TOC values between 0.56% - 1.83%, well A4 has 4 layers of source rock which has TOC values between 0.70% - 0.82%, well A5 has 4 layers of source rock with TOC values between 0.81% - 0.90%. From the TOC calculation results, it can be seen that the quality of the source rock in the Kangean Block of the North East Java Basin has the potential to be predominantly fair to good. The results of the maturity level of the source rock are at the immature to mature maturity level which can be indicated that it will produce hydrocarbons in the form of oil or natural gas.

Keywords: Source Rock, Hydrocarbons, Total Organic Carbon (TOC)