Kualitas reservoar dari hasil pengukuran penampang stratigrafi formasi Jatiluhur berdasarkan Data Singkapan dengan analisis batuan inti rutin dan SEM = Reservoir quality of the outcrop of Jatiluhur Formation based on measuring section data, routine core analysis, and SEM

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Abstrak

Porositas dan permeabilitas merupakan parameter penting kualitas batu pasir. Kualitas batupasir sangat dipengaruhi oleh proses pasca pengendapan yaitu prosesnya diagenesis batupasir seperti kompaksi, sementasi, dan disolusi. Area penelitian merupakan singkapan dari Formasi Jatiluhur yang berumur Miosen Tengah dan disimpan di lingkungan batial (lereng-rak). Tujuan dari penelitian ini adalah untuk mengetahui porositas dan permeabilitas serta perilaku mineral lempung terjadi dari singkapan analog formasi Jatiluhur berdasarkan data Pengukuran penampang stratigrafi menggunakan metode analisis data batuan inti rutinitas dan SEM. Hasil porositas batupasir formasi Jatiluhur berada dalam kisaran 9% - 16% sedangkan hasil permeabilitas berada pada range 0.1 mD - 0.7 mD. Hubungan porositas dan permeabilitas batupasir formasi Jatiluhur cenderung berbanding lurus. Mineral tanah liat ditemukan di batupasir Formasi Jatiluhur termasuk kaolinit yang berperan sebagai pengisi pori, smektit dengan sifat sebagai pengisi pori dan pelapis pori, serta illite dengan perilaku sebagai pelapis pori. Dari usia muda hingga tua, kandungan mineral illite semakin parah melimpah karena suhu yang lebih tinggi di lingkungan pengendapan lebih dalam. Hasil porositas dan permeabilitas batupasir formasi Jatiluhur sangat heterogen karena adanya mineral autigenik seperti mineral mineral kaolinit, smektit, ilit, dan detritus seperti kalsit dan kuarsa, serta mineral albite. Hubungan porositas dengan kelimpahan mineral sekunder dari usia muda hingga tua semakin membesar karena semakin banyaknya mineral tidak sehat dapat membentuk mikropori.

.....Porosity and permeability are important parameters of sandstone quality. The quality of the sandstones is greatly influenced by the post-deposition process, namely the diagenesis of the sandstones such as compaction, cementation, and dissolution. The research area is an outcrop of the Jatiluhur Formation which is Middle Miocene and stored in a batial environment (slopes). The purpose of this study is to know the porosity and permeability as well as the behavior of clay minerals occurs from the analog outcropping of the Jatiluhur formation based on the data Measurement of stratigraphic sections using routine core rock data analysis methods and SEM. The porosity results of the Jatiluhur formation sandstones are in the range of 9% - 16% while the permeability results are in the range 0.1 mD - 0.7 mD. The porosity and permeability relationship of the Jatiluhur formation tends to be directly proportional. Clay minerals found in the sandstones of the Jatiluhur Formation include kaolinite which acts as a pore filler, smectite with properties as a pore filler and pore coating, and illite which acts as a pore coating. From young to old age, the mineral content of illite is increasingly abundant due to higher temperatures in the deeper depositional environment. The porosity and permeability of the Jatiluhur formation sandstones are very heterogeneous due to the presence of autigenic minerals such as kaolinite, smectite, illite, and detritus such as calcite and quartz, and albite minerals. The relationship between porosity and secondary mineral abundance from young to old is getting bigger because more and more unhealthy minerals can form micropores.