

RINGKASAN

REINTERPRETASI LOG UNTUK PENENTUAN ZONA PRODUKTIF SERTA JENIS HIDROKARBON PADA SUMUR “RAQ” LAPANGAN “BURSKY”

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Sumur RAQ adalah sumur prospek hidrokarbon yang berada di Lapangan BURSKY, yang terletak pada Blok Rokan di wilayah Riau yang berjarak +80 km kearah Baratlaut Lapangan Minyak Duri, Sumatera Tengah. Sumur RAQ adalah sumur berstatus sumur eksplorasi dengan *total depth* 1926 ft yang menembus Cekungan Sumatera Tengah tepatnya pada Formasi Duri dan Telisa sebagai target zona *reservoir*. Sumur tersebut telah dilakukan analisa *logging* dan kegiatan *coring*. Sumur RAQ telah dilakukan kegiatan DST/tes produksi dan sumur tersebut dinyatakan prospek berdasarkan analisa log yang dilakukan sebelumnya.

Model analisa petrofisik digunakan untuk melakukan evaluasi kembali hasil interpretasi pada Sumur RAQ. Dengan melakukan reinterpretasi log pada Sumur “RAQ” Lapangan “BURSKY” dalam upaya penentuan zona prospek hidrokarbon hingga pendeskripsian jenis hidrokarbon. Proses analisa petrofisik dimulai dengan tahap analisa kualitatif pada *chart log* untuk menentukan kedalaman yang terdapat *crossover* antara *density log* dan *neutron log* dan menginterpretasikan jenis fluida yang terakumulasi pada *interest zone*. Penentuan porositas pada tahap ini menggunakan metode *Neutron-Density Porosity* karena selaras dalam berbagai kondisi formasi terutama pada *shaly sand* dan penentuan S_w menggunakan Metode *Simandoux* karena sifat salinitas air formasi yang tinggi. Setelah dilakukan analisis petrofisik selanjutnya adalah melakukan *cut off* terhadap *Vshale*, porositas, dan S_w pada setiap kedalaman agar dapat ditentukan *net sand* dan *net pay* pada Sumur RAQ yang selanjutnya ditabulasikan pada *reservoir lumping*.

Berdasarkan hasil *reservoir lumping* didapatkan hasil bahwa terdapat 7 *layer* prospek dari 9 lapisan total pada Sumur RAQ. Diketahui bahwa Zona R memiliki *net pay* sebesar 98 ft dan Zona S memiliki *net pay* sebesar 38,5 ft. Hasil analisa petrofisik adalah *Vshale* sebesar 22%, porositas sebesar 25%, dan saturasi air sebesar 41%. Sedangkan jenis fluida hidrokarbon Sumur RAQ didominasi oleh minyak dan terdapat sisipan gas setebal 12,5 ft pada Zona S.

Kata kunci: reinterpretasi log, hidrokarbon

ABSTRACT

LOG REINTERPRETATION FOR DETERMINING PRODUCTIVE ZONES AND HYDROCARBON TYPES IN “RAQ” WELL OF THE “BURSKY” FIELD

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The RAQ well is a prospect well for hydrocarbons located in the BURSKY Field, which is located in the Rokan Block in the Riau region, which is +80 km to the Northwest of the Duri Oil Field, Central Sumatra. The RAQ well is an exploratory well with a total depth of 1926 ft which penetrates the Central Sumatra Basin to be precise in the Duri and Telisa Formations as the target reservoir zone. The well has been analyzed for logging and coring activities. The RAQ well has been subject to DST/production tests and the well is declared a prospect based on the log analysis previously performed.

The petrophysical analysis model is used to re-evaluate the results of the interpretation of the RAQ Well. By reinterpreting the logs on the "RAQ" Well of the "BURSKY" Field in an effort to determine the hydrocarbon prospect zone to describe the type of hydrocarbon. The petrophysical analysis process begins with the qualitative analysis stage on the log chart to determine the depth at which there is a crossover between the density log and the neutron log and interpret the type of fluid that has accumulated in the interest zone. The determination of porosity at this stage uses the Neutron-Density Porosity method because it is aligned in various formation conditions, especially in shaly sand and the determination of Sw uses the Simandoux method due to the high salinity of the formation water. After petrophysical analysis, the next step is to cut off the Vshale, porosity, and Sw at each depth so that net sand and net pay can be determined in the RAQ Well, which will then be tabulated in the lumping reservoir.

Based on the results of the lumping reservoir, it was found that there are 7 prospect layers out of 9 total layers in the RAQ Well. It is known that Zone R has a net pay of 98 ft and Zone S has a net pay of 38.5 ft. The results of the petrophysical analysis were 22% Vshale, 25% porosity, and 41% water saturation. While the type of hydrocarbon fluid in the RAQ Well is dominated by oil and there is a gas insert about 12,5 ft thick in Zone S.

Keywords: log reinterpretation, hydrocarbons