Optimization of measurement speed for spectral gamma ray and clay mineral identification / Irawan Y. Tribuana, Ade Yogi, Prabowo, Andy S. Wibowo, Puteri Sudija, Yudhi Durahman

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Abstrak

ABSTRACT
Gamma ray log is a logging tool to capture the radioactive level of a rock or formation measured in API units. This logging tool generally has a capability to differentiate between permeable and impermeable layers. Usually the impermeable layer tends to have higher radioactivity compared to the permeable one except for the feldspar bearing formation. In addition, another capability of this logging tool is ti determine the kind of clay mineral by using ratio data between Thorium and Potassium. This laboratory experiment uses Spectral Gamma Ray Equipment at LEMIGAS Routine Core Laboratory. The Quality of gamma ray log measurement is significantly affected by the speed of the conveyor belt. During the experiment, the measurement speed of 30 m/hour is the optimum speed to achieve good quality data and time efficiency with the data amount of 169 points/meter. The result of SGR measurement gives the reading on the content of Uranium, Thorium, and Potassium. The Thorium and Potassium content are compared and plotted in a Quirein graphic which was modified by Schlumberger in 1985. Using this crossplot, we can identify the presence of the Chlorite, Montmorillonite, Kaolinite, Illite, mixed with layer Feldspar, Mica, Glauconite minerals and so on. A case study conducted on Wells A1, A2, A3, and A4 indicated that the result of this crossplot was similar to the measurement using XRD.