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## Diagenetic level of miocene mid main carbonate cibulakan formation based on secondary porosity using SPI (secondary porosity index) method

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Orange field is a producing oil field lies in North West Java Basin. This basin is dominated by North - South trend normal fault Which is very active during basin development in Oligo-Miocene, formed plateau and graben with North-South trend. Stratigraphy comprises of Jatibarang, Talang Akar, Cibulakan (Massive, Mid Main, Main Carbonate), Pre Parigi, Parigi and Cisubuh Formation. The focus of this paper is located on Miocene Mid Main Carbonate Cibulakan Formation that deposited in Post-rifting stage. 3 wells, core log and petrographic thin section are used in this research. The focus of this research is Miocene Mid Main Carbonate Limestone Diagenesis by using Secondary Porosity Index (SPI) method. From Gamma Ray pattern, core and petrographic thin section we can conclude that MMC interval is dominated by mudstone-wackestone. MMC Limestone may have affected by dissolution so it has secondary porosity that reflect its diagenetic processes. This research can prove that 2 similar facies in different interval could have the different porosity. It proved in well-01, wackestone in 1220 m depth has better porosity compared to wackestone in 1210 m depth. Conventional method in porosity equation is by using Neutron log and Density log. Diagenesis study with Secondary Porosity Index (SPI) equation =  $\mathcal{O}_{density}$ - $\mathcal{O}_{sonic}$  was a new interesting method.  $\mathcal{O}_{density}$  will define the whole rock density while  $\mathcal{O}_{sonic}$  can define the primary porosity, so the difference value among them will reflect the Secondary Porosity. Diagenetic level and diversity of MMC carbonate will be known and very helpful for the field development.

## **Biography**

M Irwan Pernando Napitupulu is a geological engineering student of Padjadjaran University, Indonesia. He is a member of SM-IAGI and was a leader of several organizations. He was a delegation of Padjadjaran University for several competitions organized in national and international level. He has several publications and currently pursuing his degree from Padjadjaran University.

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