

# Karakteristik geokimia minyak mentah dan rembesan minyak dari beberapa cekungan Indonesia bagian timur = Geochemistry characteristics of crude oil and oil seep from several eastern Indonesia basins

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## Abstrak

Pada penelitian ini dilakukan karakterisasi sampel minyak mentah dan rembesan minyak dari sepuluh cekungan sedimen yang berada di wilayah Indonesia bagian timur, mencakup Cekungan Banggai, Buton, Timor, Vulcan, Seram, Bintuni, Salawati, Aru, Cendrawasih, dan Papuan. Dalam melakukan karakterisasi digunakan parameter bulk mencakup API Gravity, kandungan sulfur, persen fraksi saturate-aromatic-resin-asphaltene (SARA), dan parameter molecular mencakup parameter biomarker dan isotope profile. Dengan mengacu pada literatur terdahulu dan dari hasil plotting dan interpretasi setiap parameter yang tersedia, sampel minyak mentah dan rembesan minyak dari kesepuluh cekungan dapat dibedakan menjadi lima grup berbeda, yaitu: 1) Kondensat dengan kandungan sulfur rendah, terendapkan pada lingkungan suboxic paralic-shallow marine, mature, berasal dari litologi non-karbonatan. 2) Medium oil, kandungan sulfur rendah, mature, terendapkan pada lingkungan suboxic paralic-shallow marine, berasal dari litologi non-karbonatan. 3) Biodegraded oil, kandungan sulfur tinggi, API rendah, kandungan resin tinggi, berasal dari litologi non-karbonatan. 4) Medium-light normal crudes, berasal dari material organik darat pada litologi non-karbonat, terendapkan pada lingkungan suboxic-oxic di darat-deltaic, dan 5) Medium-light normal crudes, berasal dari material organik didominasi alga dan bakteri, terendapkan pada lingkungan suboxic paralic-anoxic open marine dengan litologi karbonatan, mature.

.....Characteristics of crude oils and oil seeps from ten sedimentary basins were analyzed on this study, which include Banggai, Buton, Timor, Vulcan, Sera, Bintuni, Salawati, Aru, Cendrawasih, and Papuan Basin. To do the characterization, the bulk parameter such as API Gravity, sulfur content, SARA fraction percentage, and molecular parameters including biomarkers and isotope profile were used. By referring to previous study on each basin and the interpretation and plotting that have been made, the crudes and seeps were categorized into five different group: 1) Condensate with low sulfur content, deposited on suboxic paralic-shallow marine environment, comes from non-carbonate source rock. 2) Medium oil with low sulfur content, mature, deposited on suboxic paralic-shallow marine environment, having low hopane which indicates originated from non-carbonate source rock. 3) Biodegraded oil with high sulfur content, low API, high resin percentage, indicated to originate from non-carbonate source rock based on low hopane value on some samples that are available. 4) Medium-light crude oil, originated from organic materials coming from oxic terrigenous (land plant) to suboxic deltaic environment, originated from non-carbonate source rock, and 5) medium-light crudes originated from algae and bacteria organic materials, suboxic paralic-anoxic open marine, non-carbonate lithology, mature.