

*Poster 8*

**Oil-generating potential of the Tanjung Formation coals,  
Barito Basin, South Kalimantan, Indonesia**

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The Barito Basin lies on the southeastern edge of the continental Sundaland plate. The Basin contains sediments of Tertiary age, the coal measures of which are found around the margins of the Meratus Range. The

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Tanjung Formation forms the basal Tertiary section and is widely accepted as Eocene in age. The formation is named from its occurrence within the Tanjung oilfield. The discovery of Tanjung-1 was made in 1938 within the Lower Tanjung Formation sandstones in the northeastern part of the Barito Basin.

In this study, fifteen coal samples were analysed by means of organic petrological and organic geochemical *methods with the aim of evaluating their oil-generating potential*. Ten of the coal samples are from the basal thick (C) seam while the remaining five samples are from the (B) seam above. The upper (B) seam splits incorporating about 60 cm of silty mudstones, several samples of which were also analysed.

The petrological analyses performed in this study include petrographic description and maceral analysis in reflected white light and under blue light excitation, and vitrinite reflectance (% R<sub>o</sub>) measurement in white light using oil immersion. The geochemical analyses carried out include determination of total organic carbon (TOC) content, bitumen extraction, Rock-Eval pyrolysis and gas chromatography-mass spectrometry (GC-MS). Both the petrographic and geochemical data indicate that the coals possess very good oil generating potential. This is a consequence of their being rich in liptinitic material of up to 40% by volume of whole rock. This good source rock potential is supported by moderate to high hydrogen indices (HI) of 242–436 mgHC/gTOC and high extractable organic matter and hydrocarbon yields exceeding 10,000 ppm. All of the coal samples analysed are early to mid mature based on vitrinite reflectance values of 0.52–0.66%. This is supported by T<sub>max</sub> values of between 424 and 436°C. Based on petrographic observation, the organic matter that is recognised to be the most oil-prone within these coals is the maceral suberinite. This maceral is seen to expel oil-like material and is associated with other common liquid hydrocarbon generative features often considered to be indicative of oil generation from coals, such as the occurrence of exsudatinite and oil haze.