

PETROLEUM SOURCE ROCK ANALYSIS OF UPPER EOCENE KOPILI FORMATION FROM THE BENGAL BASIN, BANGLADESH

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Abstract

The Upper Eocene Kopili Formation, exposed at the bank of the Dauki River, and Gwainghat, Sylhet Trough, northeastern Bangladesh, is predominantly composed of organically rich shale. This unit is also drilled in Bogra, northwest Bangladesh. The type area of the Kopili Formation is found in the Garo Hills of Assam, India, where the unit is about 600 m thick, and contains total organic carbon (TOC) ranging from 0.5% to 1.5% and the maximum TOC values exceed 1.8%, which was proved to be a good source rock for petroleum generation in India. In Bangladesh however, the exposed Kopili shale is about 40 m thick, which is composed of dark gray to black fissile shale with few marl beds. During a recent field investigation a fossil sample (trace fossil) was found in the exposed section during the fieldwork in Sylhet, northeastern Bangladesh. As the Kopili Formation in Bangladesh is considered as a continuation of the Kopili Formation of India, this also has the potential to be a significant source rock in Bangladesh. In an effort to build new interpretations, this study will focus on analyzing outcropped samples from northeastern part, and cuttings from three drilled wells in various localities in the northwestern part of Bangladesh. The study will include data on thermal maturity, XRD and XRF, TOC and Rock-Eval pyrolysis of kerogen, and burial history for understanding the organic maturity in order to evaluate its hydrocarbon resources.