

*Paper 3*

## **Review of the hydrocarbon potential in Eastern Sabah offshore**

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Sandakan basin is the main sedimentary basin for hydrocarbon exploration in the open block SB305, Eastern Sabah offshore. The total aerial extent of this basin is about 40,000 sq km, with a major portion of it extending beyond Malaysian territory. A total of 12 wells have been drilled in this basin (on the Malaysian side) by various operators since 1970. Many related geological and geophysical studies have been carried out by these operators and a total of about 4,065 line km of seismic have been acquired since then.

Field study of the Dent Peninsula was carried out recently in an effort to further understand the geology of the Sandakan basin. The study emphasize more on the structural trend and reservoir rocks exposed in the Dent Peninsula to compliment the previous studies based on offshore data.

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Studies on the seismic lines were carried out focusing on the structure of the prospects in this basin and their associated amplitude anomalies (Fig. 1). Several hydrocarbon indicators were observed and these indicators are correlatable to many of the oil and gas reservoirs identified in the wells. Some flat spots were found in several established structures such as Benrinnes, Dent South, while bright spots were also observed along some of the deep seated faults associated with the structures. Some of the lines with these hydrocarbon indicators were further processed for AVO.

Seismic events at the reservoir intervals from wells with hydrocarbon shows were correlated across the basin to study the distribution of the potential hydrocarbon accumulation. Anomaly distribution maps were generated and the anomaly distribution were compared with the identified reservoir of the prospects. Most of the prospects analysed seem to indicate high potential of hydrocarbon accumulation which were not fully tested by the previous drilling.

Review and integration of the old geological and geophysical data with the findings from the current seismic studies and some new information from the field study indicates encouraging hydrocarbon potential for the Eastern Sabah offshore (Fig. 2). This paper present and discuss these findings which is part of the study to evaluate the hydrocarbon potential of Eastern Sabah.