**GEOPHYSICS POSTER 7**

## INTEGRATING SEDIMENTOLOGICAL CORE STUDY AND SEISMIC ATTRIBUTES TO DEFINE FLUVIAL CHANNEL CHARACTERISTICS IN THE MALAY BASIN.

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The integration of sedimentological core study and seismic attributes to define the fluvial channel characteristics has been carried out within the 3D seismic megamerge, in the seismic Group I, Malay Basin. The main objective of the study is to characterise the geometries, heterogeneities, properties, and classification of fluvial channel reservoirs in Group I.

The study were carried out by utilizing the available cored intervals, biofacies analysis, wireline logs, seismic, and well data. The method used in this study is based on the core review program by evaluating the core-based results and integrating with the RMS seismic attributes results. The core review program utilizes both previous investigations as well as conducting new study on the cored sections. The cored interval included cores taken from the I-25, I-50, I-68, I-80, I-85, I-90, I-100, and I-110 reservoirs, which were discovered from year 1978 to 2002. The depositional environments of the cored intervals were then interpreted based on the core lithofacies associations integrated with biofacies characters from palynological and foraminiferal analyses.From the results of the core study, only cores from 3 wells have been identified as potential fluvial channel sandbody. The identified potential fluvial channels core data were later validated and verified with the available seismic data. The study has established new insights with implications on the understanding of the paleogeography of the Malay Basin for the I group.

Based on the core facies analysis there are five main sandstone lithofacies identified from the fluvial channel facies of I25, I80, and I100 in Group I, Malay Basin. These are trough cross-bedded sandstone, massive sandstone, cross laminated sandstone, parallel laminated sandstone, and ripple laminated sandstone lithofacies. The best reservoir characteristics for the fluvial channels are shown by trough cross-bedded sandstone lithofacies.

The core based characterization and classification of Group I have identified three key wells from reservoir I25, reservoir I80, and reservoir I100 as potential fluvial channel sand bodies.

Specifically, comparisons are made as to properly integrating the core-based and seismic-based information from horizon strata slice of RMS amplitude maps. The integrated study approach concludes that only two cored wells have been interpreted to penetrate fluvial channel sand bodies while other cores from Group I which were thought to be fluvial in nature based on previous work or their log profiles however indicate that they were deposited in more marine environments. The integration of sedimentological core study and seismic attributes has defined the fluvial channel classification in the Group I in the Malay Basin, capable of improving reservoir understanding.

## REFERENCES

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