GEOPHYSICS PAPER 9

LOW RELIEF STRUCTURE, A FAVORABLE HC ACCUMULATION TRAP IN MALAY BASIN

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Malay Basin had undergone three major vertical structure movements: extension, thermal subsidence and basin inversion. The important result of the inversion is the compressional anticline, include the low relief structure. Exploration activities in recent years demonstrate that low relief structure is a favorable HC accumulation trap.

The discovered low relief structure HC accumulations have the following characters:

- 4 way dip structures (associated with deep seated faults)
- Low HC column (50 to 100 m)
- Large area (up to 60 km^2), and HC filled near to spill point
- Very thick total net pay (over 200 meters)
- Multi layers with different contact systems.
- Low CO2 content comparing to high relief trap.

Coastal plain and deltaic environment deposits match with the low relief structures make them excellent hydrocarbon accumulation traps in Malay Basin.

The possible low relief traps lies between high relief structures or beneath the major gas fields which may be overlooked because they are not obvious in time domain or affected by gas sagging. Hence the comprehensive seismic analysis is needed, especially the 3D seismic velocity model.

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