

*Geological Society of Malaysia — Petroleum Geology Seminar 1988*

---

## **GEOCHEMICAL ANALYSES AND INTERPRETATIONS OF SURFACE SEDIMENT SAMPLES FROM THE DEEPWATER AREAS OFFSHORE SABAH**

B. Mahendran & U. Berner

PETRONAS EXPLORATION DEPARTMENT &  
FEDERAL INSTITUTE FOR GEOSCIENCES AND NATIONAL RESOURCES  
OF FEDERAL REPUBLIC OF GERMANY (BGR)

During the SONNE-49 survey in the deepwater areas offshore Sabah in July 1987, a total of 23 piston and gravity cores were collected along profiles BGR 86-08, 86-22 and 86-24. Degassing and gas chromatographic analyses on the total gases from all cores were carried out onboard the SONNE except at location KL 139 where the poor recovery (about 70 cm) precluded any analyses.

In the Isotope Laboratory at BGR, the total gases were subjected to carbon isotope analyses. 15 samples from 13 coring stations were also degassed for sorbed gas studies which include gas chromatographic and isotope analyses. The sediment samples were also subjected to fluorescence and TOC analyses.

Total gas analyses indicate biogenic derivation. Sorbed gas analyses were not genetically indicative as only low background gas yields in the sorbed position were obtained. The study however conclusively proves that biogenic methane does not or only insignificantly get into the sorbed position. Fluorescence analyses indicate that migration of thermally-generated long-chained hydrocarbons to the surface sediments has not taken place.

The indeterminability of thermogenically-derived gases in the surface sediments does not however refute the possibility of thermogenically-derived hydrocarbons occurring in the deepwater areas offshore Sabah. The gas hydrates observed in the area act as effective impermeable seals and have thus probably prevented the upward migration to the surface of any or most of the thermogenic gases.