

PROCEEDINGS, INDONESIAN PETROLEUM ASSOCIATION  
Twenty-Sixth Annual Convention, May 1998

COMPOSITION, STRUCTURE AND OIL-BEARING CAPACITY OF  
THE BASEMENT IN THE WHITE TIGER FIELD

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**ABSTRACT**

The White Tiger oil field exploited by joint venture Vietsovpetro is located in the central part of the Mekong basin on the continental shelf of South Vietnam. In the structural-tectonic relation the field is confined to a horst-shaped Pre-Tertiary crystalline basement, formed during Paleogene time as a result of block movement of the continental lithosphere. The reservoir rocks are of fractured and altered granitoids under impact of tectonic and hydrothermal activities. They are heterogeneous by petrographic composition and by its permeability.

The basement rocks are divided into three intrusive complexes of various ages, which are analogous to those that are encountered onshore in South Vietnam:

- Complex Honkhoai, Late Pre-Trias, consists mainly of quartzitic monzodiorite and diorite.
- Complex Dinhquan, Late Jura, is composed mainly of granodiorite.

- Complex Cana is presented by granite.

Formation of the complexes is related to the periodically activated subduction along the continental margin.

The reservoir rocks are of varying oil productivity. Highly productive are the wells located within the zone of complex Cana, which is characterized as highly permeable.

The reservoir bounded by the overlying shale section on top, and non-reservoir rocks below. Formation water has not been encountered in any of the wells, therefore the oil-water contact has not been established yet.

Different fault and fracture sets have been identified in the granite massif. They formed as a result of the local and regional tension.

Possible hydrocarbon sources, mechanism of their accumulation in the basement and recommendations for successful exploration on the continental shelf of South Vietnam are outlined in this paper.

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