

DISSERTATION INFORMATION

Dissertation: *Study on formation process, distribution characteristics and petroleum potential of stratigraphic traps in Upper Oligocene sediments in Southeastern region of Cuu Long basin.*

Major: *Petroleum Engineering*

Major Code: *62.52.06.04*

PhD. Student: *Nguyen Dinh Chuc*

Scientific Advisors: *1. Prof. Dr.Sc. Mai Thanh Tan*

2. Assoc. Prof. Dr. Tran Van Xuan

Institution: *University of Technology, Vietnam National University Ho Chi Minh City*

The research results of this dissertation have shown the existence, forming processes and mechanisms, patterns of distribution and trap-seal characteristics of stratigraphic traps within Upper Oligocene section at Southeastern Cuu Long basin, and have contributed considerably to evaluating petroleum potential of these traps.

The main results of this dissertation include:

- Within Southeastern area of Cuu Long basin, Upper Oligocene sediments include two sequences: C sequence above and D sequence below. Each sequence is divided into three distinctive systems tracts. Among these, lowstand systems tract in C sequence and highstand systems tract in D sequence are closely related to stratigraphic traps.
- In the research area, stratigraphic traps of facies change type (slope fan and basin-floor fan) and pinch-outs are identified within lowstand systems tract (C sequence), and channel-filled and truncation types are identified within highstand systems tract (D sequence).
- Facies change traps were formed due to change in lithology between reservoir and caprock, deposited in various environments from channel, deltas, shallow to deep lacustrines. Truncation trap was deposited in alluvial plain to shallow lacustrine

environment, formed due to the process of truncation and burial of underlying strata. The sediments for these traps were supplied from Con Son Swell.

- In the research area, stratigraphic traps develop mostly along Western slope of Con Son Swell, with less and less distribution toward basin's centre. Chronologically, they were formed during early Late Oligocene (D sequence) in highstand systems tract and late Late Oligocene (C sequence) in lowstand systems tract.
- These stratigraphic traps have moderate to good storage capacities (except for basin-floor fan that has poor to moderate capabilities). Their top sealing capabilities are moderate to good (except for pinchouts with poor to moderate capabilities), and bottom sealing capabilities are poor to moderate. Being located in or close to the structural traps with proven hydrocarbon discoveries and having high total hydrocarbon potential makes these stratigraphic traps hold considerable importance in marginal petroleum exploration.

Recommendation:

Based on the research results, it is recommended to continue applying new technologies (seismic sequence stratigraphy, seismic attributes and artificial neural network..) in order to efficiently explore these trap types, supporting for evaluation of their hydrocarbon potential.