### **Petroleum Geology Conference and Exhibition 2010**

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#### POSTER 12

### DIVERSITY EQUALS OPPORTUNITY: THE 'ROMANCE' OF NE SABAH'S SHELF

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Fluctuating oil prices, threshold economics and changing corporate strategies are all too familiar 'constraints' that drive companies into or out-of exploration areas. These factors are many times just as unpredictable as some of the elements of a given petroleum system. Regardless, it is a well known fact that the greatest asset of an exploration company is a diverse portfolio of drilling opportunities, with large upside potential. The geology of NE Sabah's Shelf offers just such potential.

The area is on trend with a prolific petroleum province exhibiting a 30% historical exploration success rate and delivering a 70% oil versus gas split. Recently acquired 2D and 3D seismic data, together with extensive palaegeographic reconstructions and 3D burial history modeling have helped illuminated a range of geologically independent targets in the area, from amplitude supported structures in proven play types, to the romance of previously undrilled basins.

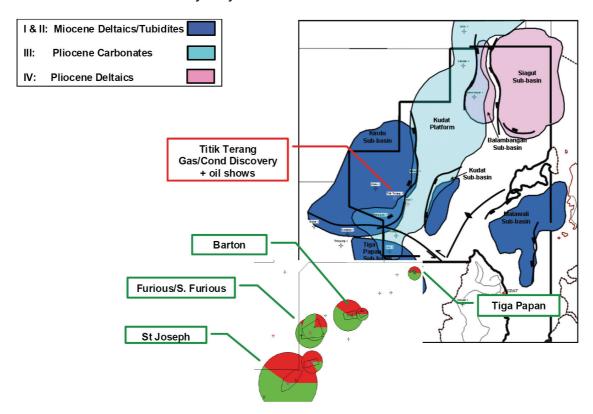
The prospective succession in this area can be broken into four largely independent plays:

- 1. *Mid to Late Miocene Deepwater Clastics* A slope canyon system trending WSW-ENE has been identified in the Kindu Sub-basin and several structural and combined structural-stratigraphic closures are mapped. The system is not intersected in any of the near offset exploration wells, but appears somewhat analogous to the South Furious 30 discovery.
- 2. Late Miocene Shallow Marine Clastics A proven play on the Sabah Shelf, included stacked gas pay in Titik Terang-1 and stacked oil pay in the South Furious and Barton discoveries. The late Miocene play is DHI supported and several amplitude anomalies showing flat spots and fit to structure have been identified.
- 3. Pliocene Carbonate Reefs An extensive carbonate reef system extends south from the Philippines on to the Sabah shelf. The reef system has been targeted by several exploration wells in the far north, with no success, probably due to an absence of local mature source kitchens. Further south however, several prominent un-drilled reefs have been identified. The reefs exhibit possible flat-spots and lie immediately adjacent to the proven Kindu Sub-basin kitchen.
- 4. Pliocene Shallow Marine Clastics A thick succession of Pliocene deltaics has been identified in the undrilled Siagut Sub-basin at the very northern edge of the Sabah Shelf. The Pliocene deltaics remain largely uncalibrated by drilling, but based on seismic facies analysis appear somewhat analogous to the proven Miocene play further south. 3D burial history modeling also highlights the potential for oil generation from the Siagut Sub-basin.

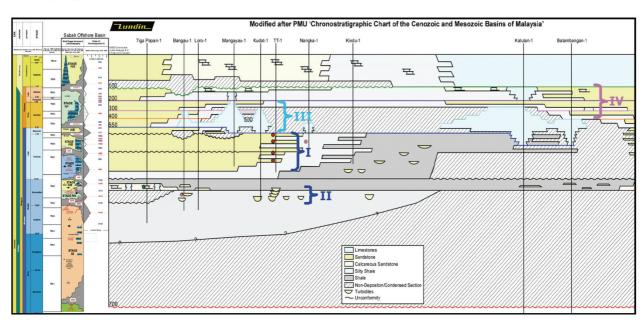
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### Structural Elements and Key Plays



## Stratigraphic reference Chart and Plays



I] Miocene Deltaics – top sets

II] Miocene Deltaics - turbidites

**III] Pliocene Carbonates** 

IV] Pliocene Deltaics - top sets

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