

## **Characterization of Late Miocene Wonocolo Isolated Carbonate Platforms in the North Madura area, East Java Basin, Indonesia**

By

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The North Madura area in the East Java Sea is a tectonically complex part of the Indonesian back-arc region where isolated carbonate platforms of the Late Miocene Wononcolo Limestone are found. An extensive 2-D seismic grid and limited borehole data will be used to characterize the internal stratigraphic architecture and seismic facies within several Wononcolo platforms across the study area. As potential petroleum reservoirs, these platforms are relatively high-risk, but nonetheless, they are important analogs for similar age carbonate platforms in other Indonesian basins.

This study will determine the distribution of Wononcolo isolated platforms in the area and examine the internal stratigraphy of the platforms in an attempt to identify the underlying controls on their inception, growth, and termination. Special emphasis will be placed on the influence of eustatic changes, tectonic deformation across the Indonesian back-arc region, and the timing and dispersal patterns of siliciclastic sediment derived from the Indonesian volcanic arc on the evolution of individual platforms across the study area.

The proposed study will utilize ~200 lines of digital 2-D seismic data that intersect several well locations across the region and several regional 2-D paper seismic data sets. The available seismic data covers the entire North Madura offshore area have been obtained from industry sources and will be tied to seismic data for stratigraphic interpretation.

This study may help reduce exploration risk in these carbonate platforms and will provide important insight into factors that controlled the evolution of carbonate platforms across the study area. Preliminary seismic analysis suggest that there are significant regional differences between platform-margin facies, lowstand systems tracts, and basin-floor wedges on inferred windward and leeward sides of these platforms.