

The deep gas potential of the Batu Raja Formation in South Sumatra. A case history: the Singa gas discovery

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Laporan (Report)

Dr. Jonathan Redfern of Oxford Brookes University, United Kingdom gave the above talk on the 4th December 1998 at the Geology Lecture Hall, Department of Geology, University of Malaya, 50603 Kuala Lumpur.

Abstrak (Abstract)

The Singa-1 well was completed as a gas discovery in July 1997, proving up the deep potential of the Batu Raja Formation in South Sumatra.

The lead had been identified over 10 years earlier and offered to the industry for farm-in on many occasions. Over the years there were a number of alternative interpretations of the data. The structure may have been just a seismic artefact, or possibly a volcanic feature, but it was also recognised that the feature could be a Batu Raja play. However, the potential for preserved porosity within a Batu Raja carbonate at that depth was generally thought to be low. Added to this, the structural setting, within the Lematang Trough depocenter, also suggested a high risk that the Batu Raja would not be within a reservoir facies.

Reprocessing of the 1990 seismic data showed a marked improvement in resolution and supported the interpretation of a Batu Raja build-up at depth. Although high risk, a wildcat well was eventually proposed to test the concept, with a depth to target of around 12,000 feet. High temperatures and pressures were anticipated, together with overpressured shales in the Gumai Formation, all of which made the well technically challenging.

The results confirmed the model, and the Singa-1 well encountered reservoir quality reefal facies within a Batu Raja limestone buildup, testing gas at 30.7 MMSCFD from a 258 feet gross interval.

Singa-1 tested gas some 3,000 feet deeper than any wells previously drilled in the area, extending the Batu Raja play to new depths within South Sumatra.

