

**A NEW APPROACH AND PROSPECTIVITY OF SAND INJECTITE IN MALAYSIA****Askury Abd Kadir & Tengku Amran Bin Tengku Mohd**

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In recent years, there has been increased interest in sandstone injectite features as a significant source for reserve calculation. Sand injectites are classified into 'intrusive' bodies, which result from the remobilization and injection of sand into fractures due to factors such as overpressure, hydrocarbon migration, diagenesis and seismicity. Their occurrences are in the form of sandstone dykes (discordant to bedding) and sills (concordant to bedding) structures. Typically, such fractures are in sedimentary strata. The development of technology and knowledge led the recognition of injectites as an attractive exploration targets with huge significance when planning and optimizing hydrocarbon recovery. They have long been considered mere geological oddities and often being misinterpreted (Figure 1) for insignificant features as their thickness is beyond the resolution of conventional seismic data. Outcrop observation and subsurface exploration including cores, wellbore image logs and seismic sections (Figure 2) are typically utilized to recognize their assemblages and features. The objective of the study is to gain better understanding on the features and characteristics of

injected sands as a new prospective fluid conduit in reservoirs as well as their mechanics, implications and challenges. This preliminary study has been conducted based on literature review of published papers, journals, books and other resources, which are gathered, analyzed and revised in accordance to the relevance of the project. Three case studies were analyzed on Gryphon, Volund and Alba Fields highlighting their successful explorations in terms of injectite styles and significance for exploration and production. The results provide better understanding on injectite features which contribute additional reserves, improve the connectivity between reservoir layers and are characterized by chaotically distributed, unconsolidated sands with high porosity and permeability, forming excellent pay zone. Injectite explorations in Gryphon, Volund and Alba fields showed their characteristics as good quality reservoirs which may not be simply ignored for future exploration targets. Do we have sand injectites in Malaysia? Perhaps, we need to re-examine an oil-prune formations in Malaysia which is more emphasis on sand injectite conceptual.

**REFERENCES**

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MCHUGO, S., COOKE, A. AND PICKERING, S. 2003. Description of a highly complex reservoir using single sensor seismic acquisition. Society of Petroleum Engineers, SPE 83965, Offshore Europe, Aberdeen, UK, 2-5 September.

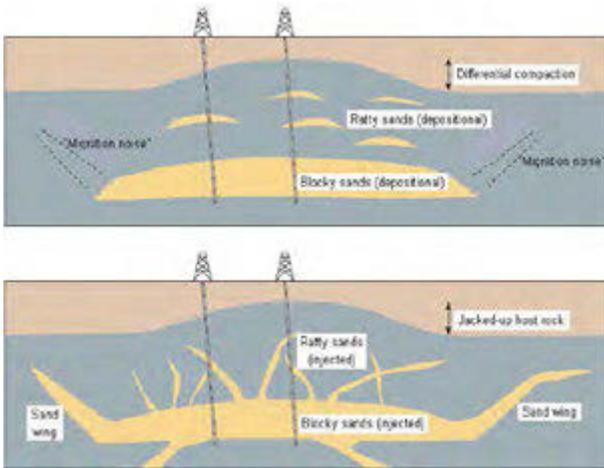


Figure 1: Two models of sandstone distribution interpreted from one set of well data (Source: Braccini et al., 2008)

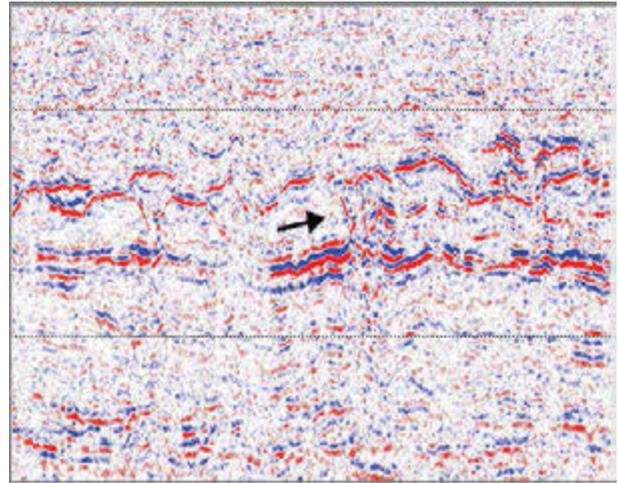


Figure 2: Cross section of seismic migrated stack trace data volume showing steeply dipping events, interpreted as sandstone injectites (arrow), (Source: McHugo et al., 2003)