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A Review of the Lower Middle Triassic on the Inboard Northern Carnarvon Basin

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The Lower to Middle Triassic, mixed carbonate-clastic system in the Northern Carnarvon Basin is poorly understood relative to the stratigraphically younger Jurassic play systems. Few well penetrations and a lack of quality seismic data has deterred exploration of the Lower to Middle Triassic for many years. Recent oil discoveries, such as Phoenix South-1 and Roc-1 in the Roebuck Basin have breathed new life into a previously forgotten interval.

The Lower to Middle Triassic source potential has been comprehensively de-risked within the Roebuck Basin, with implications across the entire North West Shelf of Australia, opening up the possibility of an entirely new play fairway, regionally.

This paper will focus on the Candace Terrace, on the southern flank of the Carnarvon Basin, where seismic observations and interpretations of Lower to Middle Triassic submarine canyon systems have been made. The stratigraphic elements of this play interval can now be more clearly observed with the aid of 3D seismic data. The internal geometries of these erosive systems vary from sinuous, compensating flows, to more lobe-like deposits. The aim of this publication is to identify the sequence boundaries of the Lower to Middle Triassic on the Candace Terrace, highlight the tectonic cause of the canyon systems and discuss the prospectivity of such features.