IDENTIFICATION AND GENESIS OF PALEO-FLUID FLOW FEATURES IN THE EXMOUTH PLATEAU OF THE NORTHERN CARNARVON BASIN

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ABSTRACT

The Northern Carnarvon Basin, offshore northwest Australia, is a Late Carboniferous rift basin that underwent episodic rifting through the Jurassic and Early Cretaceous before becoming a passive margin basin. The basin is one of Australia's premier hydrocarbon exploration regions though the outboard portion of the basin is less explored. Paleo-focussed fluid flow features had been previously identified in the Northern Carnarvon Basin however there is very little published documentation detailing them. This project aims to document and propose generation mechanisms for fluid flow events in the basin, along with assessing fluid migration pathways in relation to the fluid flow events. The project methodology will focus on seismic interpretation and data attribute analysis of 3D seismic data to identify active and/or paleo fluid flow features in the Northern Carnarvon Basin. A generation mechanism for the fluid flow features will then be proposed. This study has the potential to develop regional understanding for fluid flow generating mechanisms and fluid migration pathways in the Northern Carnarvon basin. Identification of fluid flow features could have either a positive or negative impact on the hydrocarbon prospectivity of an area. At the same time, better understanding of fluid migration pathways could open up new exploration plays that were previously untested.

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