
Episodic Growth History of Onshore Kuwait

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A comprehensive study was undertaken to determine and document the structural history of Kuwait. This effort attempts to apply the regional tectonic setting of the Arabian Plate to the petroleum system of Kuwait and is intended to mitigate specific risk factors involved in the Cretaceous, Jurassic, and Paleozoic exploration drilling portfolios.

This work incorporated all regional 2D and field specific 3D seismic data, well control, and gravity/magnetic data. The effort is meant to address the entirety of the stratigraphic section from Precambrian to recent. Some 20 isopach maps and reconstructed sections were generated, extending from the Late Permian Khuff Formation to the Neogene Lower Fars Formation. Specific structural timing episodes were interpreted using the isopach maps and reconstructed sections. The gravity and magnetic data was most beneficial in the interpretation of the pre Khuff section.

There are nine (9) documented periods of structural adjustments to have affected onshore Kuwait. These many episodes of adjustment have resulted in a very complex present day structural architecture. The complex structural history of onshore Kuwait reflects the more regional structural movements to have affected the Arabian Plate. The purpose of this study is to: 1) Establish a linkage between specific episodes of movement experienced by the Arabian Plate and resultant structural fabrics, through time, as observed in onshore Kuwait and 2) Determine the effects of structural development on deposition, reservoir development, fracture density/orientation, and hydrocarbon maturation and migration.
