
CHARACTERIZATION OF DIAPIR ASSOCIATED COMPLEX STRUCTURAL GEOMETRIES IN NEOGENE SEQUENCE, INDUS OFFSHORE DELTA, PAKISTAN

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ABSTRACT

Seismic Interpretation in the Neogene sequence of Indus Offshore delta has revealed that this sequence represents complex structural geometries owing to the active shale diapirism in the area. This diapir named as “Kuchwa Diapir”, exhibit a peculiar orientation and position in the space i.e. striking perpendicular and very close to present day shelf-slope break. It has also been observed that, in the vicinity of the diapir, the interplay of two distinct genetically independent fault-sets, (1) originating from the peripheral sink associated with the diapirc rise and (2) conventional listric faults that are typically related to gravity sliding in delta systems, has segmented the rock volume into several upthrown and downthrown blocks / compartments, which may also provide a mechanism for the hydrocarbon entrapment.

An attempt has been made to review and understand the possible triggering mechanism for this diapir and to define the genetic relationship for the resulting structural geometries.

Since the subject area exhibits complex fault geometries, fault correlation has been an intricate procedure. In this regard, in order to avoid any miss-interpretation, a cross check of “Seismic Variance Attribute” was also utilized as an effective tool.