TECTONIC CONTROL ON THE DEPOSITION OF RESERVOIR IN THE CENTRAL AND SOUTH CASPIAN BASINS DURING THE TERTIARY

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The Caspian basins were surrounded by active mountain belts throughout the Tertiary. Evidence suggests that these basins became isolated from marine influence repeatedly during this time. The only possible marine connection was via the Black Sea to the Mediterranean and this link could only be made via the foreland basins associated with the development of the uplifting Caucasus Mountain system. Repeated compressional events in the Caucasus resulted in phases of deepening of the foreland basins and formation of a through going sea-way. During phases of tectonic quiescence these sea-ways infilled and fluvial sediments were deposited, thus isolating the Caspian basins. Three flooding and isolation cycles occurred during the Miocene.

The Late Miocene (Messinian) major sea-level drop that affected the Black Sea-Mediterranean area, resulted in total isolation of the Caspian basins; isolation persisted from the Late Miocene through to the Late Pliocene. This sea-level drop was of the order of 1500 m as suggested by erosional channels in the Central Caspian and Amu Darya basins. The major Caspian clastic reservoirs were deposited during this time. Flooding via the Caucasus foreland basins eventually occurred during the late Pliocene (Akchagyl) as a result of further tectonic activity in the Caucasus. This flooding event was followed by a further lowstand and flooding due to a resumption of structuring in the Caucasus. The present isolation of the Caspian basin is due to infilling of the Caucasus foreland basins and therefore is a key perhaps to the historical isolation of the basin.