

**Sedimentary Characters and Reservoirs Aspects of the Aptian Carbonate Platform in the Enfidha Area, Northeastern Tunisia**

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Enfidha area is located in the junction of the Northern Atlasic domain and the Sahel Block. The tectonic framework of the area is influenced by two major accidents: Zaghouan fault and the North South Axis (N-S trending major fault). New sedimentological data collected from several key sections situated close to main structural lineament delimiting different paleogeographic domains in northeastern Tunisia allowed to define accurately the internal architecture of the Aptian stratigraphic record and associated major sedimentary events. From surface observations, structural deformations, lithostratigraphic sections and petrophysical analysis, on the stratigraphic side, we have been able to subdivide the Aptian section into 5 lithostratigraphic units. The correlation of the logged cross sections showed an important lateral variation in the overall thickness of the Aptian platform (Serdj formation equivalent). Such variations are controlled by tectonics and eustatism. The structural configuration of this domain within normal faulting, horsts and grabens led to the establishment of several distinct basins with different subsidence rates. The petrophysical analysis of some reservoir samples collected during fieldworks showed low to moderate porosity and permeability values. It has been also confirmed by a “direct” permeability values measured in the outcrops in Jebel Fadeloun and Jebel Garci, along the whole section by the mean of a portable permeameter (TinyPerm). In spite of its poor to moderate reservoir quality, the Aptian Serdj reservoir constitutes a major hydrocarbon target in Central Tunisia as demonstrated by several discoveries since the late sixties in the Douleb, Semmama and Tamesmida fields.

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