Petroleum Potential of the Jurassic of Central Tunisia as Deduced from Outcrops and Boreholes

Mohamed Soussi
Universite de Tunis El Manar, Faculte des Sciences de Tunis, departement de Geologie, C.P. 2092, Tunis, Tunise

The Jurassic sequences of central Tunisia include all the necessary ingredients for the conception of a petroleum system. This is apparent through:
(1)- the evidence of source rocks within the Middle Nara Formation (outcrop and borehole sequences).
(2)- the evidence of several carbonate reservoirs mainly dolomitic or oolithic within the Lower, Middle, and Upper Nara Formation.
(3)- the evidence of shaly and tight pelagic limestone seals within the Middle Nara and the Lower Cretaceous.
(4)- the Jurassic faulted blocks and associated source and reservoir rocks are covered by a thick shaly Formation (Sidi Khalif).

Therefore the Jurassic rocks constitute a petroleum target and the chance for a good Jurassic play remain mainly related to the structures which were not intensively affected by the last major tectonic Atlasic phase. The most important traps are those located within the platform margins adjacent to the Jurassic troughs. Such prospects should exist either on the western or the eastern side of the NOSA. It is worth to mention that the oil kitchen is practically proven, especially on the eastern side. However, the western area also shows a good indication of natural migration corroborated by the presence of numerous oil-impregnated levels located: (1) at the top of the Lower Nara Formation within the NOSA area and (2) within the sands and limestones of the Sidi Khlif Formation at Jebel Melloussi.

The so far, lack of discovery, especially towards the East of the NOSA and probably also towards its West, is only due to the small number of drilled exploration wells within the platform domains, their raised rims, and at the platform-basin transition zones adjacent to the troughs.