

## **Reservoir Potential of Lower Nari Sandstones (Early Oligocene) In Southern Indus Basin and Indus Offshore**

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As the need and hunt for new energy resources continues, petroleum geologists keep searching for unexplored hydrocarbon reservoirs. Areas which were supposed not to be economical in the past are being re-evaluated. In this connection studies are under way through out the world.

In this study sandstones of Lower Nari Formation (Early Oligocene) were analysed. Several outcrop samples were collected from onshore areas and analyzed for environmental assessment and resulting potential reservoir characters. The analyses included detailed petrography, measurement of porosity and permeability and Scanning Electron Microscopy (SEM) with EDS application.

The sandstones of Lower Nari are classified as Quartz Arenites. The studies revealed that these horizons were deposited in a shallow marine environment within the domain of the upper shelf, associated with a passive margin (trailing edge). These sandstones contain fair to good porosity and poor to fair permeability, thus depicting a potential reservoir rock. The facies distribution of Nari Formation suggests that the most prospective target for hydrocarbon exploration may exist in the offshore and adjoining onshore areas, which have sufficient overburden for the generation of hydrocarbon within the probable source, which might be interbedded horizons of Nari shales and underlying Eocene shales of Kirthar Formation. Hydrocarbon shows have also been observed in several onshore and off shore wells (Dabbo Creek 1, Karachi Well 1, etc.) More intense studies in this regard should be done and the off-shore Indus area should be re-evaluated with emphasis on Lower Nari as a potential reservoir for hydrocarbons.