

OIL AND GAS

October 27-28, 2016 Rome, Italy

Architecture and sequence stratigraphy of late triassic fluvial system, NW Libya

G Mayouf

Libyan Petroleum Institute, Libya

The Abu Shaybah Formation (ASF) ranges in age from Carnian to Norian (Late Triassic), and is exposed from the foothill slopes of the Tarhuna - Gharyan scarp stretching west wards to Ar Rabitah and Al Khums to the eastward along the Jabal Nafusah. The Lower boundary is sharp and unconformable with the Al Aziziyah Formation, (marine deposit) and the upper is locally unconformable with the Abu Ghaylan Formation (marine deposit). Seven sections have been measured in the study area and the maximum thickness of Abu Shaybah Fm. is about 254 m located in Wadi Ghan. It consists of gravely sandstone, coarse sandstone, silty clay and mainly mudstone facies in Abu Ghaylan Road section is about 21m thickness of this formation. Series of sandstone bodies, fining up ward cycles, from 8 to 12m thick of cycles in fluvial meandering and 20 to 25m thickness of fluvial braided cycles. Four main facies association can be characterized in ASF, Facies association 1) fluvial braided, channel deposit (CH). Extensive sandstone coarse to very coarse grained, pebbly scattered and character by graded trough cross stratification , up to 15m thick of channels with no clay content. Fcaies association 2) Fluvial meandering, Its sandstone, medium to coarse grained highly argillaceous, trough cross stratification point bar deposit overlain by 3 to 5 m thick of shale, (over bank and crevasse splay deposits), and isolated sand bodies lateral accretion. Fcaies association 3) Flood Plain and over bank consist of red to green silty shale commonly mottled and content rootlet, up to 30m thickness in Wadi Ghan section and Facies association 4) It is a marine transitional zone. This sediment of ASF deposited under two strongly controlled by climate and tectonic with large sub-aerial accommodation space rather than increase in subsidence rate in the study area. Sequence startigraphic theory can be applied to these continental deposits, by defining base level and accommodation space, within the context of genetically related, coherent depositional sequences. Amalgamated multi-storey sand bodies are typical of Low stand conditions, isolated ribbon sand bodies typify transgressive conditions (sub-divided into early and late stages) and isolated multi-lateral sand bodies characterize High-stand conditions.

Biography

G Mayouf has been working for the Libyan Petroleum Institute since 1989. He has completed his Msc in 2007 of Durham University, UK and his main specialty is clastic sedimentological. He issued a lot of technical reports for oil industrial. He is the Head of Geology department at the same institute until now.

gmayouf@yahoo.com

Notes: