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Late Triassic Abu Shaybah Formation of Northern Libya ; Stratigraphic Analysis of a Continental Series Including Braided Stream Rivers and Meandering Complexes

The Late Triassic (Carnian to Norian) Abu Shaybah Formation, which crops along the Djebel Nafusa in Northern Libya consists of fluvial deposits. It grades northward in sebkha to shallow marine carbonates of tethyan margin and is gradually onlapping to the south - south-east, however it tends first to thicken in the same direction to reach a maximum of 280m. The series is separated from the underlying Aziziah Limestones by a large scale incised valley and grades on top into lagoonal carbonates. Three majors architectural elements are identified :

- Extensive sheet sandbodies units, (km scale) defining blocky to gently fining upward cycles, 5 to 15m thick, made of superimposed dunes and interpreted as braided river system.

- Meandering channels. They range from 3 to 10m thick and 200 to 300m wide. They define fining upward cycles. Lateral accretion surfaces are very well exposed in quarries.

- Flood plain shales and overbank consist in red to green silty shales commonly mottled and grading into soil with roots or carbonates concretions. Thin sandy crevasse splays occur close to the feeder channels. The series is subdivided in three superimposed sequences ; each starting with a braided sheet sand deposited during the low stand phase overlain by stacked meandering channels and flood plain deposits aggrading the fluvial profile during the high stand. The marked erosional surface occurring on top of the braided sheet sand and commonly outline by an iron crust is interpreted as a by-pass surface developed during the transgression in relationships with the back flow curve.