Alluvial fans can be a good reservoir inside seal rock,

Melut Basin, Sudan

Huzaifa Mohamed Albushra Baseeiry

Exploration Department, Petrodar Operating Company, Sudan

Email: hbaseeiry@petrodar.com

huzaifa_ss@yahoo.com

Melut basin is an extensional basin affected by three rift cycles as in most of the Sudanese basins. The first rifting occurred in the Early Cretaceous, the second one in the Late Cretaceous and the last cycle in the Tertiary (Tertiary extinction). The first two rift cycles (Cretaceous extensions) are associated with the opening of the Atlantic Ocean, while the last is associated with the Red Sea opening.

During the first two rift cycles main source rocks and reservoir rocks were deposited, and the main caprock was deposited during the third rift cycle.

Adar caprock was deposited in a lacustrine environment and it is made up of massive claystone and shale. The shale is widespread all over the Melut basin and it represents the rifting stage of the third cycle.

The drilling result of recent wells showed us the good and fine sands with shows inside the Adar claystone. All wells containing this phenomenon of sand are close to the boundary fault which controls the central and northern Melut half graben. As one moves away from the boundary fault, the proportion of clay increases and the sands pinch out.