# n Journal of Emerging Trends in Engineering and Applied Sciences - Petrophysical analysis and sequence stratigraphy appraisal from well logs of 'Bobo' field, South-Eastern, Niger Delta

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This work highlights the importance of Petrophysics to hydrocarbon exploration and the relationship between petrophysical variables and the associated depositional environment as they are sought to be established from correlation of petrophysical properties with sequence stratigraphy. Petrophysical analysis began with lithology identification where it was established from well logs assessments that the study area is characterized by sandshale interbedding having brief serrated wiggles and multiple parasequences stacked within the main sequences. The reservoirs formations were interpreted for their fluid content using appropriate logs. In all, three hydrocarbon bearing sands were discovered, and porosity estimates in the reservoirs were very high varying between 0.19 and 0.39 suggesting good economic opportunities. Sequence stratigraphic interpretation was carried out to interpret the depositional environments around the area using well log motifs. The interpretation shows three main categories of depositional environments that are dominant in the area and these include: coastal deposits and pro-delta sands, shoreface sands and reworked sandstones, slope fan and the basin floor fan environment. It is predicted that the shoreface sands and reworked sands are the best region of hydrocarbon accumulation. The interpretation model is that the fluvial system flushes abundant clay to fine sand onto the delta front. These fine sediments in all probability are reworked by marine processes of moderate wave energy. This in the region has been predicted to be one of the contributing factors for the hydrocarbon accumulation observed in the area.

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