

## **Hydrocarbon Characterisation of the Channel Level Deposits of the Bema Field, Niger Delta, Nigeria**

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The channel levee deposits are described for the Bema field using sequence stratigraphic concept. The integration of the results of sequence stratigraphy with 3D seismic interpretation of horizons located within the Lowstand Systems Tract (LST) and the 3D static reservoir model has helped depict the general structural configuration and internal reservoir architecture of the field. The structural and facies constrained petrophysical models provide a better understanding of the geometry and properties distributions affecting fluid flow. The result of the model constituted a major input into reserves estimations. The remaining hydrocarbon reserve volume of about 30MMstb of oil and 408bscf of gas is to be developed by six wells. This represents a 42% of oil and 96% of gas of the field Ultimate Recovery (UR).

The hydrocarbons that were previously regarded as unrecoverable are now accessible through the application of sequence stratigraphy. This has helped to evaluate the hydrocarbons deliverability of the highly prolific variable amplitude irregular facies units of the Slope Fan Complex (SFC). The relatively parallel to sub-parallel facies of the Basin Floor Fan (BFF) deposits characterize by high amplitude also contain appreciable amount of oil and gas.