Applying the Sequence Stratigraphy Concept to Delineate the Irregular Internal Facies Configurations of the Bema Field, Western Niger Delta, Nigeria

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The Bema field situated in the western part of the Niger Delta comprises of cyclically deposited stratigraphic sequences ranging from coastal to marine environment. These stratigraphic sequences are characterized by disrupted to chaotic facies pattern that has been a major challenge to reservoir characterization necessary for proper field evaluation. These irregular internal facies units has been the major reasons for several 3-D seismic re-interpretations and re-processing filters applications, without logical improvements in the seismic data. This inadequate understanding of the facies pattern has been a major show stopper to the full field development and potential evaluation, hence low recoverable volumes.

The sequence stratigarphic concept employed has helped in characterizing the reservoir architecture in order to properly understand the nature and distribution of the facies and its effect on the produce-ability of the estimated hydrocarbons, thereby enabling optimum field development.