

## **STRATIGRAPHIC CYCLES IN THE APTIAN CARMÓPOLIS MB, SERGIPE-ALAGOAS BASIN, NE BRAZIL**

1CRUZ, F. E.G. ; 1HAMSI JR., G. P. & 1FERREIRA, J.V. 1PETROBRAS, Aracaju, Brazil.

The Upper Aptian Carmópolis Member (ca. 150m thick) is the most important reservoir unit onshore Sergipe-Alagoas Basin, producing oils in the Carmópolis, Siririzinho and Riachuelo fields. The conglomerates are composed of clast to matrix-supported conglomerates, coarse to fine-grained sandstones interbedded with very fine sandstones to silts and shales beds. They are arranged in four main cycles separated by flooding surfaces regionally correlated. Within the two lowermost cycles, cyclothemes with abrupt lateral facies and thickness changes point to a tectonic control. Large boulders and very coarse-grained sediments, associated with cut and fill features, were deposited by gravity flows. Their silty and shaly related facies are discontinuous. At the two uppermost cycles, sand bodies are laterally continuous as well as the interbedded silty and shaly beds. The succession was interpreted to be deposited in a lacustrine environment which changes gradually to a transitional marine setting, with wave influence towards its upper portion. It exhibits a fining-upward trend, recording a progressive decrease in the coarse-grained components and an increase in deltaic to fluviatile sandstones of estuarine settings. The lowermost main cycles were probably caused by tectonism associated with the rift phase while the uppermost cycles are more likely controlled by climatic or tectonic eustatic changes. The overall fining-upward and transgressive sequence of the Carmópolis Member reflects a third order cycle, punctuated by high order cycles attributed to tectonism and climate.