

Petroleum Systems of the Sergipe-Alagoas Basin, with Comparison to Proximal Basins of Brazil and West Africa

Peter Mullin¹, **Ryan Mann**¹, **Robin Pilcher**¹, and **Paulo Otavio Gomes**². (1) Amerada Hess Corporation, Houston, TX 77002, phone: 7136095890, pmullin@hess.com, (2) Amerada Hess Ltda, Rio de Janeiro, Brazil

The Central Basins of offshore Brazil (from the Cumuruxitiba to Sergipe-Alagoas Basin) lie to the north of the prolific 'Grand Campos' hydrocarbon province. They are characterized by multiple working petroleum systems, often with evaporites which provide a mobile substrate and trapping potential.

In the Sergipe-Alagoas basin the best known and most prolific petroleum system is the Aptian Muribeca, which includes the giant Carmopolis field. However, in the offshore the focus has been on younger reservoirs (Tertiary and Upper Cretaceous turbidites). These have provided a number of discoveries in the southern Sergipe Basin, including the Guaricema Field on the shelf as well as a series of deeper water discoveries (eg SES-92 and more recent discoveries by Petrobras in SEAL-100). These fields are charged by source rocks of either the Muribeca or the Cenomanian-Turonian Cotinguiba Formations.

Despite being a proven light oil province, exploration activities in the deeper water geography of the basin have been modest, in part reflecting a lack of salt-related structuration in much of the area. The presence of a narrow shelf-slope system, reflecting the proximity of the ocean-continent boundary, is also a constraining factor.

This paper will focus on the efforts to develop a 3D seismic-based stratigraphic play in the Upper Cretaceous and Tertiary sequences in the Sergipe and Alagoas basins. It will compare and contrast the petroleum systems of the Sergipe- and Alagoas Basins with those of other Brazilian Central Basins, and with the conjugate basins on the West African margin.
