

**AAPG Annual Convention
Salt Lake City, Utah
May 11-14, 2003**

Robert K Goldhammer¹, Katherine A Giles², (1) University of Texas (Austin), Austin, TX (2) New Mexico State University, Las Cruces, NM

Paleocene La Popa Platform—Complex Sequence Architecture and Facies Tracts of an Isolated Platform Driven by Syn depositional Salt Tectonics, La Popa Basin, Northeast Mexico

The Paleocene La Popa platform is an isolated carbonate platform exposed in the foot-wall of the La Popa salt weld structure within the Late Cretaceous-Paleocene La Popa Salt Basin (northeast Mexico). Its complexity of facies and the sequence hierarchy reflect the interaction of eustasy, local sediment supply, paleo-wind direction and co-eval salt tectonics. This spectacularly-preserved platform is over 500 meters thick and displays seismic-scale geometries of 'toplap', 'onlap', 'truncation' within undeformed strata that are laterally continuous and traceable for over 12 km. Facies tracts and composite sequence architecture reflect both eustatic sea-level changes with a strong local control dictated by co-eval (Paleocene-age) salt tectonics. The geometry and lateral/vertical thickness changes of higher-frequency sequences within the La Popa composite sequence are similar to those observed on seismic profiles in areas where local salt tectonics has influenced the stratigraphic architecture. The Paleocene reef-rimmed platform was forming syndepositionally with salt movement (withdrawal and inflation) as evidenced by complex stratal surfaces. The nucleus of the platform is composed of Paleocene reef facies (corals, red algae, blue-green algae) and fore-reef facies with a variety of early marine diagenetic features preserved within the reef facies (early marine botryoidal cements, red-algal encrusters, sheet cracks, neptunian fractures, etc). The interpretation of the sequence architecture similar conceptually to subsurface stratigraphy where salt movement has locally influenced stratigraphy. The La Popa platform is only one of several isolated platforms and lentils of carbonate that grew atop salt features in the largely clastic (fluvial-deltaic-shoreface) foreland basin of La Popa.