

**LATERAL EXTENSIONAL FAULTING IN TERTIARY PIGGY-BACK  
BASINS AND FOREDEEPS ALONG THE SOUTHERN  
TRINIDAD FOLD-THRUST BELT**

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**ABSTRACT**

During the Cretaceous through Eocene periods, southern onshore Trinidad was part of a north-facing passive margin along the northern South American plate. Compressional and transpressional tectonic deformation began in the Middle Miocene associated with the right lateral collision of the Caribbean and South American plates. This resulted in the formation of a south-directed fold and thrust belt and south-migrating Tertiary foredeep sedimentation, as seen on high fold seismic data and well control in southern onshore Trinidad. Uplift in the southern range continued through the Pliocene. Sedimentary sections were deposited in a piggyback basin (Pilote syncline) and foredeep (Columbus Channel) from local sources and from the Orinoco Delta to the southwest. During latest Pliocene to Pleistocene, east-directed listric normal faults formed in the sediments deposited in the piggyback basin and in the foredeep. The extension is nearly perpendicular to the direction of shortening and formed in response to greater uplift in the west, and to the proximity to the deep Atlantic Ocean basin to the east. In effect, the young sediments of the piggyback basins are sliding laterally eastward off of the south-directed thrust belt. The sediments in the foredeep are sliding to the east because of a combination of two factors: 1) Greater uplift in the west. 2) Sediment loading in the delta.

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