

**Tectonic Characterization of the Santa Elena Peninsula (On-Shore and Off-Shore of Ecuador): an Cenozoic Accreted Oceanic Terrane with Contemporaneous Oil-Producing Fore-Arc Basins.**

<sup>1</sup>FANTIN, F.A., <sup>1</sup>MALONE, P.A. & <sup>2</sup>ROSSELLO, E.A. <sup>1</sup>Compañía General de Combustibles S.A. Argentina. <sup>2</sup>CONICET-Universidad de Buenos Aires, Argentina.

The Peninsula of Santa Elena (South-western coast of Ecuador) is an oceanic terrain accreted to the South America Plate margin by Late Cretaceous to Early Tertiary times. The Aptian to Albian oceanic rocks are the basement of Upper Cretaceous-Paleogene sedimentary record that represents the development of successive oil-producing fore-arc basins (Ancón and Pacoa oil fields) related with the syntectonic deformation generated by this subduction. The stratigraphic sequence of these basins is composed entirely by deep marine deposits, ranging from the Upper Cretaceous to the Upper Eocene.

A composite SW-NE trending seismic section across the Santa Elena Peninsula (from southern off-shore to northern Pacoa Basin) exhibits compressional structures associated with synchronous deposits with typical positive asymmetric flower structure. Contraction in a NE-SW direction is evidenced by these subordinate structures. In plan view, it is possible to determine several syntectonic and antitectonic faults and folds, as well as, releasing and restraint steps and bendings of the main transpressional zone involving basement. The external and internal branches of the flower are steep and associated with reverse faults and thrusts that uplift slices of the oceanic basement and sediments.

The entire deformation and sedimentation of the Santa Elena Peninsula is the consequence of the oblique subduction of the Farallón-Nazca plates behind the Southamerican plate.