Salt Geometry and Subsalt Trapping in the Enchilada Area, Northeastern Garden Banks, Offshore Louisiana

By

Robert D. Garner, Brad A. Robinson, Rocco Detomo, Jr., David Garner, Arie Speksnijder, and Michael J. Styzen, Shell Offshore Inc.

Significant discoveries have been made in the Flex Trend, northeastern Garden Banks, at Prospects Enchilada (GB 128 #1), Salsa (GB 172 #1) and Chimichanga (GB 127 #1). Hydrocarbons in Pliocene age, upper slope channelized turbidite sands are located adjacent to and below a major tabular salt mass. Increased confidence in subsalt trap definition relies heavily on integrating fundamental geologic observations into interpretation of a proprietary 3-D prestack depth migrated seismic data set. Key observations include: suprasalt faults that strike parallel to a base salt "keel", morphological differentiation of the salt body from updip tabular salt, approximately 50m of inverted and repeated condensed section below tabular salt defined by biostratigraphic evaluation, a "faceted" base salt surface characterized by abrupt changes in dip direction, and a more deeply buried regionally extensive salt evacuation surface.

Integration of data yields interpretations far more complex than initially proposed. Traps are primarily fault controlled with significant stratigraphic overprint. These controlling faults are related to deeper salt evacuation and not strongly expressed above the tabular salt level. The overlying salt body appears to be comprised of several independent and separately rooted salts. One of the salt roots and the associated base salt provide part of the updip trap for subsalt reserves.