

## **Sequence Stratigraphic Controls of Reservoir “Sweet Spots” in Coastal and Shelf Deposits – Cretaceous Guadalupe Formation, Colombia**

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Guando oil field, Colombia Upper Magdalena Valley, has estimated OIP of 350 mmbbls, producing more than 27000 bopd from coastal and shelf sediments of the Cretaceous Guadalupe Group. The Guadalupe Group is ~1500 ft thick, with high net-to-gross sand ratio. The reservoir is a complex interfingering of transgressive and regressive shallow-marine deposits including proximal and distal shelf, tidal inlets, incised valleys, marine shale, and deltaic distributaries deposited within a shallow epeiric seaway. Reservoirs vary from very fine sand to conglomerate. Field-wide bounding surfaces include wave-ravinement surfaces, tidal-ravinement surfaces, sequence boundaries; firm grounds revealed by the *Glossifungites* ichnofacies, and flooding surfaces. Highstand progradational environments include proximal and distal shelf deposits as well as distal offshore marine shales. Highstand deposits are pervasively cemented with syndepositional phosphate. Transgressive environments include tidal-inlet deposits and an estuary-complex facies association; one tidal inlet complex is dominated by micritic carbonate and oyster deposits with minor siliciclastic sandstone facies association. No nonmarine strata are preserved. Optimal quality reservoirs are interspersed throughout the section and occur in tidal inlet and incised valley facies of the transgressive systems tract, with porosity exceeding 25 % and permeability up to 8 Darcies. PSDM processing of 3-D seismic allowed recognition of a basal incised valley deposit.