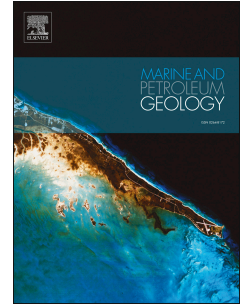


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Mariana I. Olariu, Hongliu Zeng



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Prograding muddy shelves in the Paleogene Wilcox Deltas, South Texas Gulf Coast

Mariana I. Olariu* and Hongliu Zeng

Bureau of Economic Geology, the University of Texas at Austin, Austin, TX 78713, USA

*Corresponding author. Tel.: +1 512 475 7566; fax: +1 512 471 0140.

E-mail address: mariana.olariu@beg.utexas.edu

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Abstract

Core facies analysis integrated with subsurface well-log correlations and seismic horizon mapping document two thick mudstone-dominated deltaic successions in the Wilcox Group along the south Texas Gulf Coast. Meters to tens of meter-thick upper slope to outer shelf mudstones form units that lie at the base of upward-coarsening successions which are interpreted as fluvial or storm/wave dominated shelf deltas. The muddy character of the deposits is observed in cores and inferred from well logs, whereas the larger depositional architecture is interpreted from well log correlations and seismic data.

Physical sedimentary structures described from a lower Wilcox core reflect deposition on a mud dominated prodelta controlled by hyperpycnal processes. Normally and inversely graded beds are present indicating sustained flows that waxed and waned. Upward-coarsening facies successions contain current ripples, organic matter, and siderite cemented bands, low trace fossil abundance and low diversity, which suggest deposition in a fluvial prodelta to shelf environment. Centimeter-thick interbeds of normal and inversely graded mudstones, siltstones and very fine-grained sandstones with low intensities of bioturbation, reflect the high physical and chemical

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