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**A Mixed Siliciclastic and Carbonate Lacustrine System in the Central Andes: Cretaceous-Paleocene El Molino Formation, Bolivia**

The Cretaceous-Paleocene El Molino Formation consists of a 45-700m thick assemblage of mudrock, carbonate, and sandstone deposited in a dominantly closed lacustrine environment within a distal foreland basin system. Five facies associations were identified from 17 measured sections in the Bolivian Altiplano and Eastern Cordillera: FA1) an open-water facies consisting of shale and laminated carbonate; FA2) a nearshore facies containing massive carbonate mudstone, fossiliferous wackestone, and stromatolitic boundstone as well as massive, horizontally- or ripple cross-laminated siliciclastic mudstone; FA3) a beach, bar and shoal facies that includes peloidal, oolitic, fossiliferous, and quartzose packstone, grainstone and sandstone; FA4) a floodplain facies dominated by massive mudstone and siltstone; and FA5) a fluvial facies containing, trough cross-stratified, horizontally-laminated, ripple cross-laminated, and massive sandstone.

The regional geographic extent and stratigraphic distribution of El Molino facies associations show significant lateral and vertical variability. Lower El Molino strata typically include mixed carbonate and siliciclastic strata dominated by FA2 rocks with thin, frequent FA1 and FA3 intercalations. These strata represent deposition within a dominantly closed lacustrine system. Middle El Molino strata consist of siliciclastic FA2 and FA4 rocks, suggesting lake contraction and/or alluvial sedimentation. Within the central Altiplano and Eastern Cordillera, siliciclastic middle El Molino rocks grade into the carbonate and siliciclastic FA1, FA2 and FA3 strata of the upper El Molino Formation, indicating reestablishment of lacustrine conditions. Alternatively, upper El Molino strata in the northern Altiplano and southeastern Eastern Cordillera contain a coarsening upward sequence of FA4 and FA5 strata representing fluvial progradation into the lacustrine basin.