Sedimentary Characteristics and Geological History of the Cenozoic Red Bank Group, Northern Belize

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ABSTRACT

The informal Red Bank group is a poorly known Cenozoic formation in the northern coastal plain of Belize. The Red Bank was initially described by Giovanni Flores in 1952, and little research has been done on it since that time. Near the Maya Mountains, the Red Bank occupies a position in the stratigraphic sequence of northern Belize between a regional unconformity atop Upper Cretaceous dolostones and/or Lower Cenozoic carbonates, or a local conglomeratic fan deposit (Iguana Creek formation), and an overlying, conformable unit of widespread shallow marine facies (the Orange Walk group). The Red Bank ranges widely in thickness from a few tens of meters to perhaps as many as 500 meters (1640 ft). In outcrop, there are three main sedimentary facies: a red to reddish clay that is sandy and contains rare gravel layers; a tan to tannish silty clay and marl; and a black to grey organic-rich clay. Other relatively minor facies include gypsum-rich clays, silica-rich clays, and micritic limestones. In the subsurface, there are diverse, variously colored fine-grained facies, which have no readily discernable vertical patterns or laterally correlative sequences. All these Red Bank facies have characteristics that suggest very shallow and marginal marine environments, which are likely akin to those found on vast modern tidal flats and adjacent very shallow, low-energy subtidal areas of the Dutch-German-Danish North Sea coast. There are well-preserved siliceous fossil logs in some Red Bank deposits, and a variety of other fossils including terrestrial mammal bones, shark teeth, and various molluscan taxa. The age of the Red Bank group is not well constrained. Previously, the group was thought to be as old as Miocene and perhaps as young as Pliocene, based on megafossils. But, recovery

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of index nannofossil species, reported herein for the first time, suggests part of the group may be as old as late Paleocene to early Eocene.