

A Substitute Reference Section for the Wilcox Group (Paleocene-Eocene) from Northwestern Louisiana

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ABSTRACT

As a result of construction of the dam on the Sabine River to form Toledo Bend Lake, the historic outcrops of the Wilcox Group at Pendleton and Sabinetown bluffs (Texas) are inundated. Consequently, a combination of the cored Wilcox sequence and electric logs from the Carter #2 core hole in Sabine Parish, Louisiana, is proposed herein as a Substitute Stratigraphic Reference Section for the northern Louisiana–eastern Texas Wilcox Group. The log thickness of the Wilcox Group (including Carrizo) at the Carter #2 well is 2700 ft (900 m), and the cored interval is 2158 ft (719 m) with nearly continuous recovery of vertical cores. The Wilcox represents a deltaic, poorly-sorted, siliciclastic sequence containing predominantly quartz, mica, glauconite, and carbonaceous material; the grain size ranges from silt to fine sand.

One green-sand bed rich in glauconite and eight thin beds of paralic lignite are encountered within the cored Wilcox. Lignite occurs commonly at the top of bay-fill units such as the subsurface Minter, Campbell, and Yakey. Carbonate in the Wilcox is limited to thin zones of either calcareous fossils, small limestone concretions, or calcite cement.

The proposed Wilcox Reference Section at the Carter #2 well is supported by studies that include: (1) lithologic descriptions and the recognition of worldwide planktic foraminiferal zonation, benthic foraminiferal paleoenvironments, chronostratigraphic position, and Middle Wilcox regional marine transgressive sequences at the Carter #2 core hole; and (2) stratigraphic correlation to the Carter #2 Reference Section of Upper Wilcox surface formations from northern Louisiana–eastern Texas as well as Middle and Lower Wilcox subsurface units from east-central Louisiana–southwestern Mississippi.