CHEMOSTRATIGRAPHIC AND TEPHROCHRONOLOGIC RECORD OF CENOMANIAN-TURONIAN EAGLE FORD, SOUTH TEXAS, USA

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Abstract

The Eagle Ford Shale is an organic-rich mudrock that was deposited on the South Texas Shelf during the earliest late Cretaceous. Current Eagle Ford studies utilize lithologic and chemical observation to provide a better understanding of rock fabric, facies architecture and paleoceanographic conditions inherent in this succession. Most studies often overlook the numerous ash beds present in this formation and little work has been done to accurately date these beds, which serve as regional chronostratigraphic markers. It is hypothesized that these bentonite beds represent instantaneous depositional events that can be correlated across South Texas. This study will develop tephrochronology U-Pb ages of zircon populations from the bentonite-rich ash beds of three proprietary cores located in Atascosa County, Texas. Age dates and the resulting chronostratigraphic framework, combined with lithologic and geochemical data, will serve as a subsurface correlation tool that will help constrain the occurrence of anoxia across South Texas.

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