

The Nature and Significance of Transgressive Surfaces of Erosion in the Viking Formation, Southeast Central Alberta

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Abstract

The transgressive surfaces of erosion (TSEs) in the Viking Formation of southeast central Alberta formed during periods of substantial marine flooding during Albian time (Cretaceous). These TSEs are a result of erosion during relative sea level rise and are commonly overlain by a pebble lag, conglomerate or coarse sandstone unit. Some wells contain several lags signifying multiple transgressive or erosional events that are usually laterally discontinuous between wells. A major transgression at the end of Viking time led to the deposition of a relatively continuous lag demarcating the top of the Viking Formation. This erosional surface is the most distinguishable due to its lateral continuity across the basin. Despite its continuous extent, this TSE varies in its erosional and ichnological character, as well as, in the nature of the overlying transgressive lag. In this presentation, a typical Viking core will be reviewed, and portions of several other cores will be presented displaying the variety of transgressive erosional features seen in the study area.