
Frequency and Distribution of Carbonate Gravity Flow Deposits in the Wolfcampian of the Southwestern Midland Basin

Wesley Turner

Department of Geology, Stephen F. Austin State University, P.O. Box 13011, SFA Station, Nacogdoches, Texas 75962

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ABSTRACT

Transitional sediments on carbonate ramp slopes act as a link to relatively well studied platform and basin depositional environments. In the southern Midland Basin, the key to understanding the relationship between these environments lies in the allochthonous gravity flow sediments found on the slope. Upper Wolfcampian to lower Leonardian sediments shed off from the Central Basin Platform create a complex pattern of interbedded shale and carbonate gravity flow deposits. Whole core examinations along with petrophysical data from logs of Northwestern Crockett County wells allow interpretation of flow events into rheologically classified packages that include cohesive debris flows, non-cohesive debris flows, and turbidity currents. An examination of the distribution and frequency of these flow events into the basin aid in the understanding of distance from and trajectory of the Central Basin Platform shelf in the early Permian.