

THE CONTROL OF THE FORCED - REGRESSION, TRANSGRESSION AND SEDIMENT SUPPLY ON THE SEDIMENTOLOGICAL AND SEQUENCE STRATIGRAPHICAL DEVELOPMENT OF THE BASIN MARGIN DEPOSITIONAL SYSTEMS; ERMENEK BASIN, MIDDLE TAURIDES

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ABSTRACT.- The Ermenek basin located on the Bozkır and Aladağ nappes in the central Taurides, is filled with Early Miocene lacustrine elastics (Yenimahalle fm.) and Middle Miocene reefal shelf carbonates. This study concentrates on the facies analysis and sequence stratigraphic framework of clastic basin fill sediments on southern margin of the Ermenek basin. Sediments deposited in alluvial fan, Gilbert-type delta, beach and shoreface environments are transitional laterally and vertically in the succession. These depositional systems are repeated in the vertical section. The control of the lake-level changes in relation with tectonics, climate and sediment supply are also considered besides sedimentary processes on the sedimentological and sequence stratigraphic development of the basin margin depositional systems. Sequence along fault-bounded southern margin of the basin consists of stream-dominated alluvial fan and delta plain deposits, mass-flow dominated-delta foreset deposits and high energy beach and shoreface deposits. Retrogradational or progradational stacking patterns of these facies associations indicate high frequency lake-level changes. Four unconformity-bounded sequences represented by forced regressive erosional surfaces have been identified within the Yenimahalle formation. Lowstand systems tracts of alluvial fan deposits overlie the sequence boundaries. Retrogradational stacking pattern of Gilbert-type delta, shoreface and beach deposits overlapping alluvial fan surface constitute transgressive systems tracts of 1. 2. and 3. sequences. Progradational Gilbert-type delta of sequence 4 represents highstand systems tract over lowstand systems tract. The sequences show paleogeographic changes that developed with lake-level changes during depositional evolution. The development of the facies, systems tract and sequences were controlled by tectonism, climate and sediment supply besides sedimentary processes. Tectonism resulted in the change of accommodation space (increasing or decreasing) by controlling basin subsidence or rise. The amount of water and sediment supply into basin was controlled by climate whereas the distribution and lateral variation of facies within the sequence is attributed to sediment supply and the source area.