EFFECT OF SEDIMENT SUPPLY ON EMBAYED SHORELINE DEPOSITS, CRETACEOUS (CAMPANIAN), NORTHWESTERN COLORADO

R. STANCLIFFE and D.C. NOE
Dept. of Geology, The University of Texas
P.O. Box 7909, Austin, Texas 7078712

Studies of the Sego Sandstone (Campanian) in Rio Blanco County, Colorado, indicate variations of a progradational sequence in an embayed, mesotidal setting. Depositional styles of these shoreline sandstones differ significantly from deltaic headland sequences. The variations result

Continued on next page

from the interplay of longshore-derived sediment supply, subsidence, and storm processes.

The effects of sediment supply, decreasing with distance from deltaic axes, are observed at two locations. The Sego Sandstone along the northern flank of Rangely Dome (Area 1) shows stabilization of the shoreline after initial progradation. Stabilized shoreline position resulted in a stacked sequence (50 m) of shoreface, foreshore, spit, and tidal flat deposits. Fifty kilometres to the south (Area 2), the Sego Sandstone represents a thinned, storm-dominated coastline. This coastal segment received less sediment than Area 1. The shoreline was subject to storm-breaching and was transgressed as sedimentation did not keep pace with subsidence. Principal shoreline facies include: washover, spit, inlet and reworked shoreface deposits. Landward and overlying these shoreline sandstones is a thick (80 m) sequence of tidal flat deposits.

In both areas, influx of sediment, supplied by longshore currents, reinitiated shoreline progradation. Overlying fluvial meanderbelt and floodplain facies were deposited during this regressive phase.