

HIGH-RESOLUTION SEQUENCE STRATIGRAHY OF NEARSHORE SYSTEMS: LATE-CAMPANIAN COZZETTE SANDSTONE, WESTERN COLORADO

Andrew S. Madof, The University of Kansas, Department of Geology, Lawrence, Kansas, U.S.A., amadof@ku.edu

The Mount Garfield Formation of western Colorado, which is composed (in ascending order) of the Corcoran Sandstone, Cozzette Sandstone, and Rollins Sandstone consists of approximately 150-200 m of siliciclastic and interbedded coal bearing strata. Strata located above subaerial exposure surfaces found within the Mount Garfield Formation represents tidally influenced valley-fill deposits, while strata below such surfaces represents wave-dominated shoreface and offshore deposits.

The focus of this study centers around high-resolution sequence stratigraphy of the Cozzette Sandstone; namely determining significant changes along depositional dip within incised-valleys, system tracts, and parasequences. Eight sections, 60-75 m in thickness and spaced approximately 40 km apart, were measured oblique to depositional dip, and were constrained by outcrop exposure and accessibility. Bed-by-bed analyses of stratal units enabled a high-resolution sequence stratigraphic analysis to be conducted.

Proximal measured sections are composed (in ascending order) of a highstand wave-dominated shoreface parasequence truncated by an overlying sequence boundary and subsequent transgressive channelized incised-valley complex. As strata is followed downdip, the sequence boundary rises stratigraphically, revealing two underlying highstand wave-dominated shoreface parasequences.

Above the transgressive valley-fill deposits within proximal measured sections, apparently three highstand nonmarine to marginal marine parasequences are overlain by a second sequence boundary and subsequent transgressive incised-valley complex. As these stratal units are traced downdip, nonmarine to marginal marine parasequences are located under talus, while the second sequence boundary apparently rises stratigraphically.