

**A High Resolution Sequence Stratigraphic Study of the Chimney Rock Member, Rock Springs Formation, Rock Springs, Wyoming**

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The Chimney Rock Member is the basal regressive sequence of the Lower Rock Springs Formation, the lowest member of the well known Mesaverde Group. The Chimney Rock represents a pronounced seaward step of the shoreline and incision of fluvial valleys into shelf-margin deposits consisting of distributary channel sand bodies and the standard suite of delta plain and delta front sand bodies. In addition, an inferred incised valley complex is contained within the Chimney Rock tongue. The internal architecture of this incised valley deposit will be documented and integrated into a sequence stratigraphic framework. Secondly, it will be determined whether or not the incision of the valley provided a mechanism for sediment bypass from the shelf to the lowstand deltas of the underlying Blair formation. Valley fill sedimentary packages will be identified in the subsurface and correlated to outcrop. It will then be determined through well log cross sections whether or not such a connection between the Blair and the Chimney Rock exists. The paleo-geography of the shoreline and the incised valley will be reconstructed in this process and ultimately our understanding of the Western Interior Cretaceous Seaway of Wyoming will be improved as well as our understanding of the internal architecture of incised valley and shelf-margin petroleum reservoirs.