

# **FLUVIAL SEQUENCE STRATIGRAPHY, ARCHITECTURAL-ELEMENT SPATIAL STATISTICS, AND SIGNIFICANCE OF MULTISCALE FLUVIAL HETEROGENEITY, BURRO CANYON FORMATION, SOUTHERN PICEANCE BASIN, COLORADO**

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## **ABSTRACT**

This study addresses the multiscale characterization from the definition of a sequence stratigraphic framework, the spatial analysis distribution to the implications of the heterogeneity for braided fluvial deposits of the Burro Canyon Formation, Piceance Basin, Colorado. The Burro Canyon Formation was deposited in a braided fluvial system composed of different architectural elements (transversal bar-sets, longitudinal bar-sets, and flood plain) the exposure of this elements is shown in an excellent tree-dimensional exposure along the Gunnison river close to Grand Junction Colorado. Field descriptions, petrography, and a combination of UAV- based digital photogrammetry, ground control points, and three dimensional models will be used to define the sequence stratigraphic framework, to map the abundance, stratigraphic position and dimensions of the architectural elements and to analyze the heterogeneity of the reservoir and its implications at field scale of this braided fluvial system. The resulting statistics extracted from outcrop characterization (dimension and spatial distribution), will be used as input data for constraining the generation of tree-dimensional models using subsurface information from log-data from 473 wells drilled northern direction from the study area. The characterization of this system can be used as analog for braided fluvial reservoirs where the success in the development plan for oil and gas fields is certainly associated to the understanding of the reservoir distribution and properties. Therefore, the use of analogues for understanding of the stratigraphy and elements that control the deposition of this fluvial systems is crucial for effective and efficient development plans in oil and gas fields.