

## **Stratigraphic Analysis of the Tuluvak Formation, east-central Brooks Range Foothills and North Slope, Alaska**

Ronnie Tingook

Colorado School of Mines, Department of Geology and Geological Engineering,  
Golden, Colorado, United States of America

[rtingook@mines.edu](mailto:rtingook@mines.edu)

The Tuluvak Formation is a fluvial-deltaic and shallow-marine succession of Turonian to Coniacian age sediments deposited into the large, east-west trending foreland basin, the Colville basin, which spans all of Alaska north of the Brooks Range. These strata contain known reservoir facies. Oil stained outcrops of the Tuluvak have been documented, and recent outcrop studies have reported facies within the Tuluvak to have greater than 8,000 millidarcy permeability. Thus, world-class reservoir potential is high; however, the nature of the Tuluvak in the subsurface is poorly understood.

The region of Alaska's North Slope where these strata are located is receiving renewed interest as an exploration province. As with global exploration trends, local economics have become more favorable with an expanding infrastructure, new technologies, an evolving understanding of geology, and a burgeoning data set. Heightened interest in this region makes a study of these prospective rocks timely.

Previous investigations have focused on the outcrop. An analysis of those outcrop data, here synthesized and analyzed with available core, well-log, and 2D seismic data, will provide a description of the stratigraphy of the Tuluvak Formation from proximal to distal extent.

A detailed analysis of these strata, which includes structural and stratigraphic cross sections, inferred spatial distribution of paleodepositional environments and zones of permeability, and discussions of potential reservoir facies and trapping mechanisms, will assist with the ongoing exploration and future development in this region.