



Regional Geoscience Studies and Petroleum Potential, Peel Plateau and Plain, Northwest Territories and Yukon: Highlights from the Final Project Volume

Leanne J. Pyle

Geological Survey of Canada – Pacific, Sidney, BC

lpyle@nrcan.gc.ca

and

Adrienne L. Jones, Len P. Gal, Thomas Hadlari

Northwest Territories Geoscience Office, Yellowknife, NT

and

Tammy L. Allen, Tiffani A. Fraser

Yukon Geological Survey, Whitehorse, YT

and

Yvon Lemieux

Talisman Energy Inc.

and

Willem Zantvoort

Husky Energy

Peel Plateau and Plain, a prospective area in the northwestern NWT/northeastern Yukon, has had some encouraging hydrocarbon shows, yet no major discoveries. The primary objective of the Peel Petroleum Project was to improve knowledge of the regional geology of Peel Plateau and Plain including: stratigraphy, sedimentology, correlation, depositional and tectonic histories, basin evolution, as well as petroleum geology and potential. The multidisciplinary project was a successful Northwest Territories Geoscience Office (NTGO) partnership with the Geological Survey of Canada (GSC) and Yukon Geological Survey (YGS), with input from students at the universities of Alberta and Calgary, and Carleton University. The project area includes the Peel Plateau and Plain of the Interior Plains and proximal mountain ranges (northern Mackenzie Mountains, Richardson Mountains, and Franklin Mountains) which expose stratigraphy contiguous with the Peel area.

The multi-author final project volume consists of ten chapters including structural and seismic interpretation, description of key stratigraphic intervals that constitute conceptual petroleum plays in Peel Plateau and Plain (Basal Cambrian clastics; Cambro-Ordovician platform; Upper Devonian clastics; Arnica/Landry platform; Kee Scarp; Tuttle Formation; and Cretaceous clastics), and a review of petroleum systems elements for the area. Stratigraphic chapters describe new measured outcrop sections and sedimentology that improve surface to subsurface correlation. New data on potential reservoir rocks and source rocks were collected from both the surface and subsurface. A digital geodatabase (or atlas) accompanies the volume and contains all of the

spatial data associated with the research (a field “geo-tour”, section and core photographs, seismic profiles, core and measured section descriptions, cross-sections, geochemical analyses, and isopach and structural maps).

This poster provides more information on the project’s deliverables and highlights the respective findings and new insights of each member of the research team. The project website is www.nwtgeoscience.ca/petroleum/PeelPlateau.html.