Hydrocarbon Reservoir Evaluation in Triassic-Jurrasic Strata in the Western Sverdrup Basin, Canadian Arctic Islands

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Abstract

The western Sverdrup basin is a petroliferous basin in the Canadian high Arctic, in which 17 oil and gas fields were discovered from 1969 to 1986 (Embry, 2011; Chen et al., 2000). In this study, the reservoir characteristics of Triassic-Jurassic sandstones are studied using core measurements (Hu & Dewing, 2010) and through petrophysical analyses of well logs. Cross sections are constructed by a combination of well logs, estimated petrophysical parameters, core analysis and well test results, illustrating the reservoir properties in tested hydrocarbon zones and identified potential intervals. Data analysis suggests that the Triassic-Jurassic strata contain large volumes of sandstone reservoirs that display a variety of porosity and permeability characteristics. This study will provide key petrophysical parameters for further hydrocarbon resources.