

# **Regional Assessment of the Gas Shale Potential of Devonian-Mississippian Strata in Northeastern British Columbia**

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## **ABSTRACT**

Regional evaluation of organic rich mudrocks of the Devonian Duvernay Formation and Devonian-Mississippian Exshaw/Besa River Formations in north-eastern British Columbia indicates the potential for major non-conventional gas resources. Preliminary data indicate sorbed methane potentials of up to 1 cc/g (STP) for the Duvernay Formation with 5% total organic carbon and 1.5-2.0 cc/g for the Exshaw/Besa River Formations with up to 10% total organic carbon. There is a strong positive correlation between gas sorption capacity, organic carbon content and maturity. The strata are, for the most part, over mature with respect to the oil window, are variably organic rich, locally fractured, and commonly include interbeds of siltstone and sandstone. The coarser interbeds may provide permeable conduits in otherwise tight strata and may also provide additional free gas storage capacity. Regionally there is significant variation in reservoir and gas source quality and the presence of gas in the shales in many areas is evident from gas kicks and high gas readings on mud logs. The eastern B.C. shales are similar in lithology and facies to strata of approximately the same age in the Appalachian Basin which are productive gas shales.