

Queen Charlotte Basin Petroleum Systems - Status of Knowledge

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ABSTRACT

Exploration for fossil fuels in the Queen Charlotte Basin (QCB) has occurred off and on for about 130 years. This has included work onshore examining the petroleum seeps and potential source rocks while there has also been ten onshore (plus three shallow core holes) and eight offshore exploration wells drilled in the Hecate Strait, that encountered limited shows of oil and gas. Currently there are on-going discussions regarding the lifting of the moratorium on oil and gas exploration in the area which has led to renewed interest, especially because of recently published large in-place resource estimates (9.8 billion barrels oil, 25.9 TCF gas). However, from a petroleum system perspective there remain many unknowns. Preliminary chemical fingerprints of source rock extracts, surface oil seep samples and an oil show in the Sockeye B-10 well indicate at least two oil-source rock systems may be operating in the QCB. These source rocks are thought to be the Upper Triassic-Lower Jurassic Kunga Group marine intervals and Tertiary coaly sediments, although there other potential source rocks. The extension of these systems into the subsurface of Hecate Strait, however, remains problematical.