

tensive and of high quality. This area is also characterized by large stromatoporoid-tabulate reefs of the Silurian West Point Formation and continental clastics of the Upper Devonian Saint-Jules Formation as potential reservoir rocks. The latter unit is fault-bound and postulated to be overlain by evaporites in the Chaleur Bay subsurface. Moreover, recent seismic data reveal that post-Acadian faults in southern Gaspé have a reverse fault geometry, opening the possibility for structural seals as well. Syn-depositional thrusting of potential reservoir rocks is inferred for the Upper Devonian Saint-Jules Formation of southern Gaspé and for the early Pennsylvanian Bathurst Formation of northern New Brunswick. In the Percé area and throughout the southern Gaspé area, large brittle Alleghanian fault corridors provide similar plays as the Troisième-Lac Fault. Finally, south of Percé, the possibility for a large lens of coarse clastics capped by evaporites at the base of a ≈ 900 m thick Carboniferous succession is inferred from seismic data paired with sedimentologic extrapolation from outcrop analyses.

Carboniferous plays in the eastern Gaspé and Chaleur Bay areas: a synopsis

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As of January 2006, the only productive oil well in the areas of eastern Quebec and northern New Brunswick is hosted by Alleghanian breccia of the Troisième-Lac Fault in eastern Gaspé (the Galt #3 Well). Age relationships for this fault is based on the 5 km lateral displacement of a Mississippian diabase dyke. Although productivity is quite low in this well, it has been instrumental in starting an unprecedented boom in petroleum exploration in the area by underlining its petroleum potential. In response to this, extensive vibroseis land surveys were effected in different sectors of the Gaspé Peninsula by JUNEX Inc. and Petrolia Inc. during the summer and autumn of 2005, largely targeted at Carboniferous plays. A synopsis of Carboniferous plays in the eastern Gaspé and Chaleur Bay areas is presented here based on recent research on its Carboniferous tectonostratigraphy and adapted to recent data presented by JUNEX. The main source rocks are shales of the Middle Ordovician Mictaw Group in the Chaleur Bay area, and shales of the Lower Ordovician Rivière-Ouelle Formation and Lower Devonian Indian Cove Formation in eastern Gaspé. The potential for large reservoirs is mainly in the southern Gaspé Peninsula, where source rocks are ex-