

The Offshore Part of the Anticosti Basin: A Major Gap in the Understanding of Early to Middle Paleozoic Basins of Eastern Canada in a Promising Hydrocarbon Setting

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Abstract/Excerpt

The current knowledge of the offshore part of the Anticosti basin is fragmentary and the age and lithology of its sedimentary infill as well as its geometrical relationship with coeval deeper marine sediments preserved in the Appalachian tectonic wedge are hypothetical. However, geological and geophysical evidences found both on land and offshore support the hydrocarbon potential of this Paleozoic platform and are key elements for increase efforts in this area.

The Anticosti basin covers the onshore and offshore area between Anticosti/Mingan islands and Newfoundland/Labrador to the east, the Gaspé Peninsula to the southwest and an imprecise location in the Gulf of St. Lawrence to the south. In the Anticosti/Mingan islands, the base of the sedimentary succession corresponds to a passive margin, peritidal-dominated, limestone and dolostone assemblage (Lower Ordovician Romaine Formation). This assemblage is unconformably overlain by a Taconian shallow marine foreland-basin succession in which unconformity-overlying basal siliciclastics were succeeded by predominantly open marine carbonates (Middle Ordovician Mingan Formation). The overlying Upper Ordovician to Lower Silurian units include: 1) a relatively thin (< 175 m) dark marine mudstone and shale (Macasty Formation); 2) a siltstone-dominated interval overlain by outer ramp shallowing-upward foreland carbonate (Vauréal Formation); 3) subtidal carbonate with local bioherms (Ellis Bay Formation); 4) various carbonate facies with minor siliciclastics deposited on a storm-dominated carbonate ramp (Anticosti Group).