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**Facies and porosity distribution of the  
Gays River Formation, southside Antigonish Harbour**

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The Gays River Formation consists of fossiliferous carbonate buildups found at the base of the Windsor Group. It is best developed in areas where the Windsor Group onlaps directly onto the pre-Carboniferous basement, which, in this case, is a granodiorite. This formation is of interest because of its potential as a reservoir rock for oil and gas. It is overlain by evaporites of the Windsor Group, creating a natural stratigraphic trap, and underlain by shales of the Horton Group, which are good source rocks. The rocks can be separated into four different lithofacies: a bafflestone, a wackestone, a mixed wackestone-bafflestone, and a mixed wackestone-grainstone. The bafflestone is a mound deposit that directly overlies the granodiorite. As distance from the inlier increases, wackestone becomes the dominant facies. The mixed lithologies are found between the bafflestone facies, and the wackestone. The highest porosities are found in the wackestone, and mixed wackestone-bafflestone facies.

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