

## ABSTRACT

In Western Cape Breton Island, on the eastern side of the Gulf of the St. Lawrence Carboniferous Basin, four coalfields extend 55 km along the coast from Port Hood northeast to Chimney Corner. They are the Port Hood, Mabou, Inverness and St. Rose-Chimney Corner coalfields. The coalfields developed in local depocenters within a wide intracontinental transform fault zone. Movement on the faults was dominantly right-lateral strike slip and led to the development of folds and faults within the coalfields.

Each coalfield has supported small intermittent mining operations but only the St. Rose-Chimney Corner field is producing now. Due to the small land area present at each locality (10 - 25 km<sup>2</sup>) most of the mining was submarine. The exception is at St. Rose where a small landlocked basin, 2.4 km<sup>2</sup> in area, is part of the St. Rose-Chimney Corner coalfield. The mined seams within the coalfields ranged from 1.5 to 3.7 m thick.

The Port Hood and St. Rose-Chimney Corner coalfields belong to the Westphalian A Riversdale Group whereas the Mabou and Inverness fields are in the younger Pictou Group and are Westphalian C and D age respectively. The latter coalfields form part of a large coal basin that underlies the Gulf of St. Lawrence and is delineated by the occurrence of coals of the same age in five offshore wells. The coal rank is high volatile B and C bituminous with average ash and sulphur contents of 10% and 5% respectively and a calorific value of 27.9 MJ/kg (12,000 Btu/lb).

Drilling programs in 1975, 1978, 1979 and 1984 and seismic surveys in 1966, 1977, 1978 and 1985 have delineated both onshore and offshore coal resources. The structure of the coalfields and the position of the coal seams have been determined using marker horizons identified by the seismic surveys.

Drilling programs have provided stratigraphic information and quality data on the coal seams as well as confirmation of seismic interpretations. Total demonstrated and inferred coal resources indicate *in situ* tonnages of 22.4 million tonnes at Port Hood and 214 million tonnes at Inverness. Speculative coal resources of 113 million tonnes have been outlined at Mabou while measured coal resources of 3.4 million tonnes are present at St. Rose.

