A geophysical study of the Pre-Carboniferous basement in the southern Central Carboniferous Basin is presently being undertaken by the Mineral Resources Division. The purpose of the investigation is two-fold: (1) to determine the geothermal potential and (2) to aid in the recognition of buried Windsor salt masses.

Filtered gravity data shows a major low underlying the basin in this area. This major low has been interpreted to reflect an extension of the St. George Batholith beneath the Carboniferous cover. The filtered data also suggest that the Pokiok Batholith does not extend into the basin to any degree and is perhaps in faulted contact with the Silurian sedimentary rocks.

At the northwestern tip of the interpreted St. George Batholith extension is another major gravity low which trends northeasterly. It starts at Harvey Station and terminates as a globular low in the Minto-Meadow Brook area. This feature has also been interpreted to reflect a granite body, however, the shape of this granite body and its relationship to the St. George and Pokiok Batholiths are still not understood. It
is possible that this intrusive body is the source of the volcanic units exposed in this part of the basin.

The residual gravity map of the southern Central Carboniferous Basin also defines two additional gravity linears. One linear is coincident with the anomalously radioactive Mt. Pleasant volcanic sequence which appears buried under the Pennsylvanian cover and extends as far as French Lake where higher radioactivity in the soil and water has been confirmed. The other feature has been interpreted as a grabben which extends from South Oromocto Lake through to Fredericton.

Detailed gravity mapping of this part of the Central Basin has been completed in the summer and fall of 1982. This coverage has provided adequate data for three dimensional modelling of these structures.