Stratigraphic and structural relationships of the Elgin area, southeastern New Brunswick: preliminary results from 2010 field mapping

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The Early Carboniferous rocks of southern New Brunswick have been subjected to many phases of extension and inversion, approximately 320 to 353 million years ago. These events have resulted in multiple overlapping fault structures that pose a challenge to the subsurface correlation of the Albert Formation, and to determining the kinematics of each tectonic event. Further, the lacustrine facies of the Albert Formation change over short lateral distances. For example, the Irving/Chevron Lee Brook and the Corridor/Columbia Will DeMille boreholes near Elgin have Albert aged facies that vary significantly despite being only a kilometre apart.

Recent field mapping in the Elgin area and a new generalized measured section of the Mapleton area have refined stratigraphic correlations and the location of fault structures within Tournaisian aged rocks along the southern margin of the Moncton Subbasin. As a result, the stratigraphy at surface can be successfully correlated to the Lee Brook well. From seismic and field interpretations, a steeply dipping fault structure has been identified between the two wells and provides the reason for the stratigraphic differences observed. This fault can be laterally traced to the surface south of Goshen and further work will be done to determine the fault movement style and the timing of the different tectonic events.

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