ing a smaller data set. Fe-chlorite is not only abundant in the Missisauga Formation, as previously recognized, but also in the Logan Canyon Formation. The new data also suggest that Mg-chlorite is characteristic of intervals with higher sediment supply from the Meguma terrane, such as in the Alma field and in the Logan Canyon Formation at Thebaud. No evidence was found for significant changes in crystallinity with depth in the Cretaceous interval.

The data have also been used to evaluate the hypothesis that more arid climates in the Barremian resulted in a lower kaolinite to illite ratio compared with the preceding and following time intervals. Seventy-two analyses from a total of 7 wells show a distinct lowering of kaolinite abundance in the Barremian. Overall the data are rather noisy, perhaps because of variable effects of early diagenetic kaolinite authigenesis in sediments deposited in the coastal zone.

Geographic and stratigraphic variation in shales of the Scotian Basin and their impact on basin evolution

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The Mesozoic shales of the Scotian Basin are a primary source of oil and gas. Compaction of these shales influenced the composition of the basinal fluids that affected diagenesis of sandstones. The composition of these shales and its impact on the evolution of basinal fluids are poorly understood. The composition of clays deposited in the basin depends on detrital supply, mostly through rivers, from reworking of older shales and from weathered products in soil. It is thus dependant on the drainage basins and on climate. Clays may also undergo diagenetic alteration during shallow burial beneath the sea floor, and during deeper burial and compaction.

Samples from conventional core and cuttings have been analyzed by X-ray diffraction (XRD) analysis. Previous analyses using side-pack mounts and a zincite standard have been re-picked and the consistency of the data has been analyzed and found to be generally acceptable. Previous XRD analyses that were run at different times have been compared to evaluate the consistency of the previous analytical data. This data were normalized to the zincite standard that was used and the sum of mineral peak area versus the zincite peak area and versus depth were plotted. This shows that variations in zincite peak area are a consequence of detector sensitivity and quality of packing that affect zincite and the clay minerals equally, but a decline in detector sensitivity over time led to overestimation of the peak areas of small peaks.

The newly picked data has been used to test the distribution of different clay minerals interpreted in a previous study us-

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