

The Buckingham Formation of Northeastern British Columbia: Distal Response to Albian Basin Processes

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During Early Cretaceous time the Western Interior Sea formed an embayment connected to the northern Boreal Sea. In the Albian, paleogeography and depositional processes were controlled by a global sea-level rise, active tectonism to the west and relative sea-level. Along the Sikanni Chief River, the Buckingham Formation is exposed as a 1000-m-thick mudstone package that was deposited in the western foredeep in a relative deep basin under high subsidence rates. Lithologically the formation appears undividable. Microfossils (foraminifera), integrated with regional log analysis, have proven to be a vital tool in stratigraphic correlations with existing frameworks from more southern regions. A new foraminiferal zonation is proposed including zonal markers described for the Peace River area and species dominating assemblages in the northern Territories and Alaska. Periods of coastal progradation in the south such as the Gates/Falher/Notikewin and Boulder Creek/Cardotte/Paddy strata are identified within the Buckingham Formation as subtle coarsening units. In this distal setting foraminiferal assemblages responded with gradual faunal changeover. Each marine transgression, recognized on logs as distinct flooding surfaces, brought new taxa to the basin. Horizons correlating with the Cardotte and Paddy markers are separated by continuous marine mudstone deposition of the Joli Fou Sea. The "Viking" marker, described and faunally distinguished in the Hudson Hope area within the Hasler shale is identified in the Sikanni Chief River as a distinct silt to fine sandstone interval with a gradual change from the *Haplophragmoides gigas* Zone to the *Miliammina manitobensis* Zone. On logs this horizon is a radioactive marker, correlated with the top of the Paddy Member.