Regional subsurface and outcrop correlations of the Albian Loon River Formation, Fort St. John Group, northwestern Alberta

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Summary

The Albian Loon River Formation of the Fort St. John Group, which consists mainly of marine mudstone with minor siltstone, is shown to extend across a large area of northwestern Alberta on the most recently published geological maps of the region (Hamilton et al., 1999; Okulitch, 2006). It remains the case, however, that as noted by Wickenden (1951), the unit 'is rather unsatisfactory to deal with because its limits have not been well defined.' No unit or boundary stratotype has been designated, and for this reason in part, it has been suggested that the Loon River Formation should be abandoned as a stratigraphic term (Glass, 1990, p. 362). Although the formation has clear value as a mappable lithostratigraphic unit distinct from adjacent formations and is in widespread use as a stratigraphic term, its boundaries and lateral relationships require better definition. The aims of this study are to delineate and map upper and lower contacts of the Loon River Formation using geophysical well logs, drill core and outcrop sections; to describe gradational lateral relationships with the Spirit River and Peace River formations to the south and southeast; and to define a composite type section including the top and bottom of the formation in accordance with the North American Stratigraphic Code (North American Commission on Stratigraphic Nomenclature, 2005). This stratigraphic clarification is timely as lithologically similar, time-equivalent Lower Cretaceous shale intervals in northeastern British Columbia (e.g. Chalmers and Bustin, 2008) and elsewhere in Alberta (Rokosh et al., 2008) begin to come under investigation as potential shale gas reservoirs.

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