

# Mega-dune Systems in the Upper Triassic Cecil Member, Charlie Lake Formation, N.E. British Columbia

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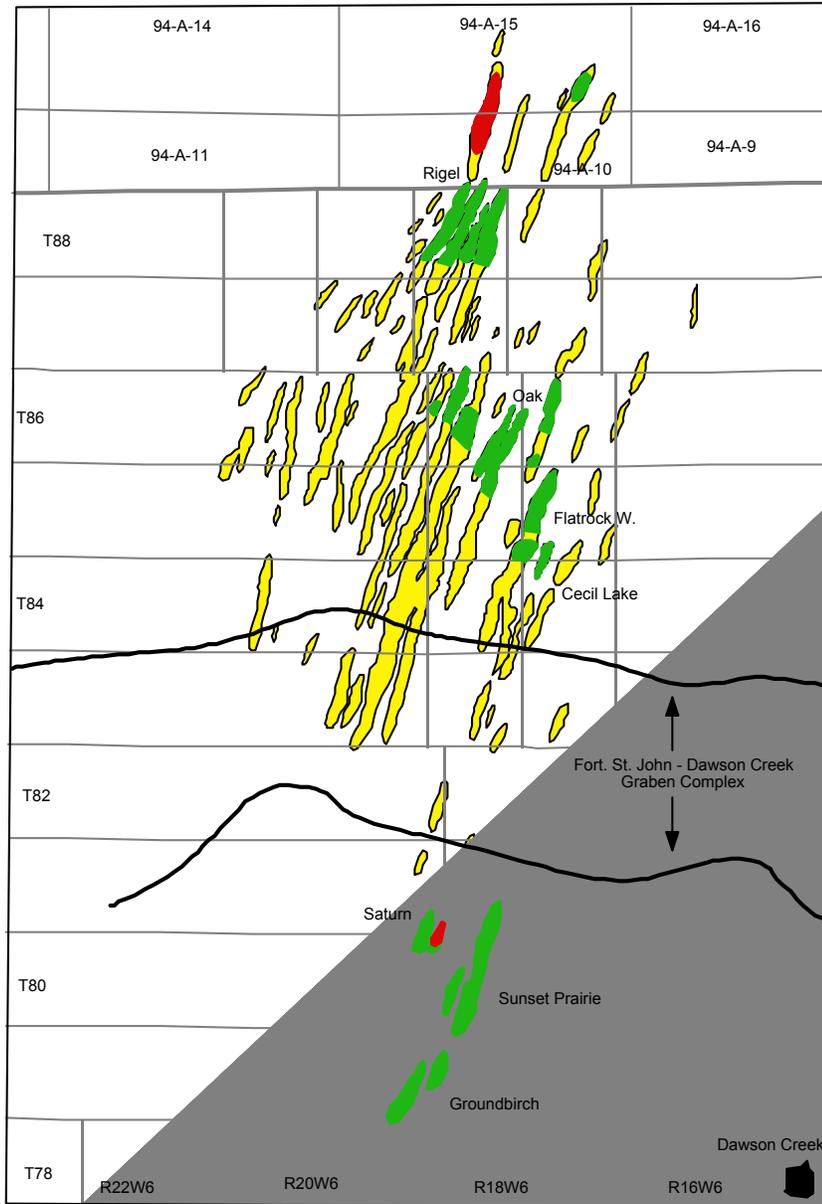
## ABSTRACT

Aeolian deposits indicative of the arid conditions present during the Triassic in N.E. British Columbia are well preserved within several members of the Charlie Lake Formation. The Artex, Inga, Coplin, Cecil and Siphon Members all have strong aeolian components. Of these, the Cecil is the most widely distributed and productive, and has been mapped out here in considerable detail.

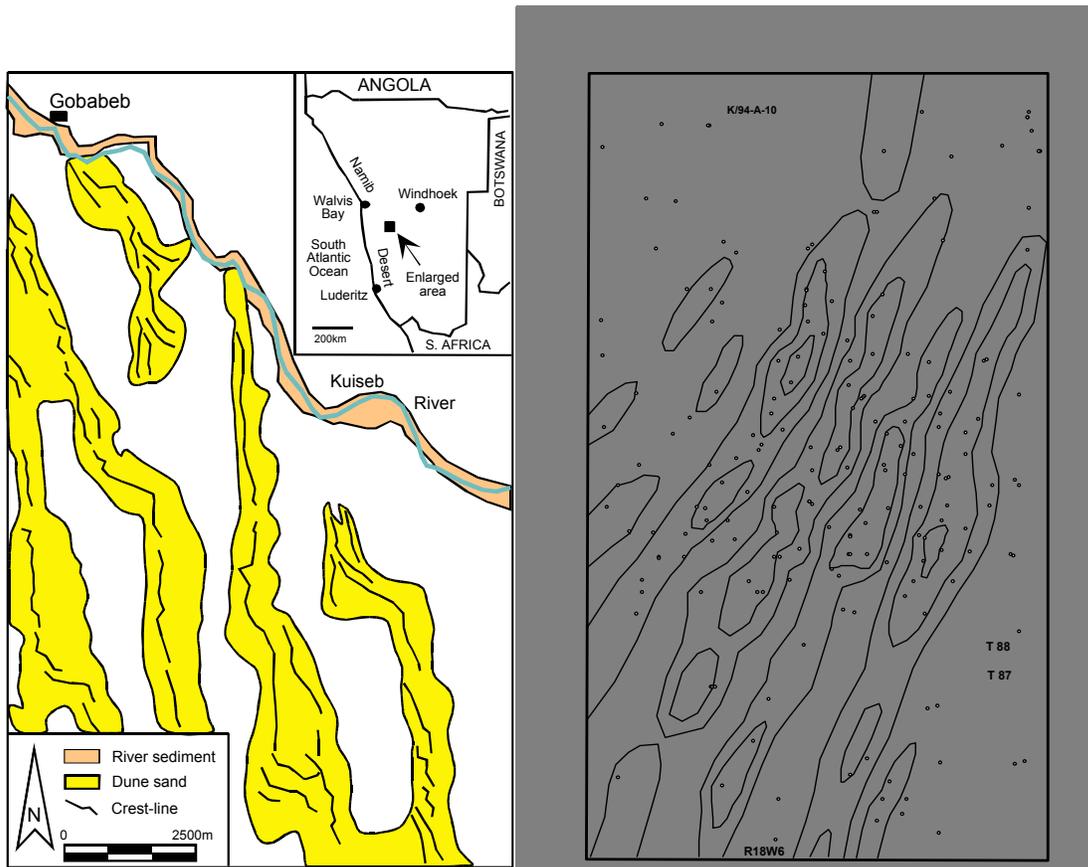
Some of the main fields producing from the zone include Rigel, Oak, Cecil Lake, Groundbirch and Sunset Prairie (*Fig. 1*). Sandstones are up to 5 metres in thickness, and retain excellent primary porosities of up to 20%. Sand bodies follow distinct SW-NE linear trends, sometimes exceeding tens of kilometers in length, but rarely more than one or two kilometers in width. Stratigraphic hydrocarbon traps are created at the northeast updip end where the linear sand bodies thin out.

Dune sand deposition was terminated by a flooding event at the close of Cecil times, reworking dune sands in the fining-up zone immediately overlying the Cecil. The highstand position of this flooding event is marked by a Siphon-aged shoreline/dune complex which trends in a north-south direction along Township 16W6. Siphon Member sandstones were deposited during the subsequent regression.

The present day dune fields in Namib-Naukluft Park, Namibia show remarkable similarities in dune trend and scale to the Cecil Member (*Fig. 2*). These are some of the largest dunes in the world reaching heights of over 300 meters, following distinct north-south linear trends and having widths of one or two kilometers. Although the preserved section of the Cecil dune sands is only 4 or 5 metres thick, the similarity in scale of the footprints of the modern and ancient examples leads one to believe that the Cecil dunes were of the scale of the present-day dune fields in Namibia. The analogue is useful in visualizing depositional conditions during the Triassic in N.E. British Columbia.



*Fig.1: Distribution of Cecil aeolian sandstones and major hydrocarbon fields, northeast British Columbia.*



*Fig. 2: Comparison of present-day mega-dune complex in Namib-Nakluft, Namibia (at left, modified from Bristow et al) with detail of Cecil sandstone in Rigel area, N.E. British Columbia (at right). Both figures at same scale, note similarity in scale of footprint of dune sand bodies.*

## References

Bristow, C.S. et al; The sedimentary structure of linear sand dunes; Nature, vol 406, July 6, 2000, pp56-59.