

tems. The medial interval is almost entirely of mudstone and interpreted as offshore lacustrine.

A log of the total gamma ray (GR) shows a typical response; low readings are most frequent in the upper interval where coarser-grained sandstone is more prevalent. Higher readings occur in the muddier parts of the lower interval, and the medial intervals that lack a diagenetic carbonate overprint. The response is mirrored in the spectral readings for potassium (K) and thorium (Th). However, several peak uranium (U) readings anomalously correspond to low spectral K and Th values and thus, also, to total GR readings since U is of an order of magnitude less abundant than K in the rock. The anomalies correlate well with beds observed to be darker and more dolomitic. Such beds also record highest total organic carbon (TOC) – ongoing XRD analysis will also determine if there is covariance with any mineralogical changes.

It is generally accepted that U values vary in a positive relationship with organic-rich strata, since dissolved U compounds are scavenged by anoxic-decaying organic matter. However, because Albert Formation (and other) lacustrine strata contain abundant K- and Th-bearing minerals, organic-rich shale frequently does not correspond to peak total GR and may be misinterpreted in standard petroleum well logs where only total GR is recorded.

**Spectral gamma-ray, XRD, and organic geochemistry
of an offshore lacustrine succession, Albert Formation,
Moncton Basin, southern New Brunswick**

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Four roadcuts southwest of Sussex, New Brunswick, expose a nearly 70 m-thick stratal package from the Hiram Brook Member of the Albert Formation (Horton Group, Tournaisian). Detailed sedimentological logging and analytical work has been undertaken on the southernmost of the roadcuts. Interbedded sandstone and mudstone in the lower and upper intervals of the succession have been interpreted as the deposits of lacustrine deltas, shorelines, and fluvial sys-