

Timing of Source Rock Deposition in the Georgina Basin, Australia

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Abstract

This paper presents preliminary results and relevant background information from an ongoing study of the geochemistry and geochronology of source rocks in the Neoproterozoic to Devonian Georgina Basin, Australia. The objectives of this study include: determination of the depositional age of the Arthur Creek and Hay River Formations in the southern Georgina Basin; determination of the timing of hydrocarbon generation from these two source rocks; comparison of rhenium and osmium isotope signature in hydrocarbons to delineate migration; comparison of organic richness (TOC) and source rock quality to rhenium and osmium concentrations; and basin-wide correlation of these source rock units. Initial Re-Os geochronologically derived ages indicate that the two source rocks for the region are significantly younger than trilobite zonation has previously suggested.

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