

## WA BRANCH

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### **"REAPPRAISAL OF SOURCE ROCK APPRAISAL."**

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Over the fifteen years since geochemistry has become a separate field in exploration geology, the early ideas and rules of thumb have been refined by the crucible of application. Source rock appraisal still is defined in terms of quantity and quality, but our ideas of measurement of those parameters has changed with experience.

Quantity has generally been measured by analysing for Total Organic Carbon (TOC) and a threshold of 0.5% TOC applied for effective source rock. It is now understood that the minimum TOC required for source potential is dependent on the quality of the TOC. No matter what the TOC content, it is the absolute amount of generative TOC that counts.

Source quality or source richness has been equated with the maceral content of the rock. The maceral content can be measured visually (Organic Petrology) or chemically (Elemental Analysis) using the van Krevelen diagram. Kerogen quality can be estimated by the use of extracted organic material using solvents (Extracts) or by extracting with heat and measuring the effluent (Rock-Eval). Gas chromatograms resulting from pyrolysis of whole rock samples and/or extracts provides valuable information on the potential of a sample to produce oil or gas. In practice, all of these techniques have their pit-falls and the results may not answer the questions we want answered, especially in the presence of inertinite.