




ISOtopic

**"expertise in the application of
isotope geochemical techniques
in oil field exploration,
development and production"**

Rock Composition Stratigraphy • Mud Gas Isotope
Logging • Characterisation of test and production
oil and gas samples • Strontium Isotope Residual
Salt Analysis • Oxygen-Carbon Isotope Stratigraphy
Strontium Isotope Stratigraphy • Sr-O-C Diagenesis
Elemental Residual Salt Analysis • Characterisation
of test and production water samples • Rock Oil Gas



Isotopic Ltd
Craigiebukler House
Aberdeen

ISOtopic Ltd provides expertise in the application of isotope geochemical techniques in oil field exploration, development and production. We offer a complete project management and consultancy service from study conception to management of the analytical program, QC of data and presentation of results to clients and partners.

The company was founded in 2001 to continue the business of Isotopic Analytical Services (IAS Ltd). We outsource all data acquisition to laboratories which we consider to be the best equipped to provide us with reliable data at reasonable cost and on time. All our radiogenic isotope analyses are performed by Macaulay Enterprises Limited, a commercial arm of the Macaulay Institute, Craigiebukler, Aberdeen, where we are based.

Experienced staff at ISOtopic combine over 30 years track record in the acquisition and interpretation of isotope geochemistry data for the international oil industry. Core skills include expertise in analytical chemistry and the integration of specialist geochemical data with geological, engineering and petrophysical data in reservoir and basin studies.



Dr Euan Mearns

Dr John McBride



Experience

- >100 Field Studies Worldwide
- Integration of Geochemical, Geological, Engineering and Petrophysical data
- Auditing Geochemical Data Quality



For more information go to:
www.isotopic.co.uk

Rock Composition Stratigraphy (RCS)

- Neodymium isotope stratigraphy (NdStrat)
- Clay mineral stratigraphy
- Heavy mineral stratigraphy
- Chemical stratigraphy

Oxygen-Carbon Isotope Stratigraphy

- $\delta^{18}\text{O}$ and $\delta^{13}\text{C}$ isotope compositions of marine carbonates

Strontium Isotope Stratigraphy (SrStrat)

- $^{87}\text{Sr}/^{86}\text{Sr}$ isotope ratio of marine chemical and biogenic sediments
- Calculation of dates relative to the seawater Sr curve

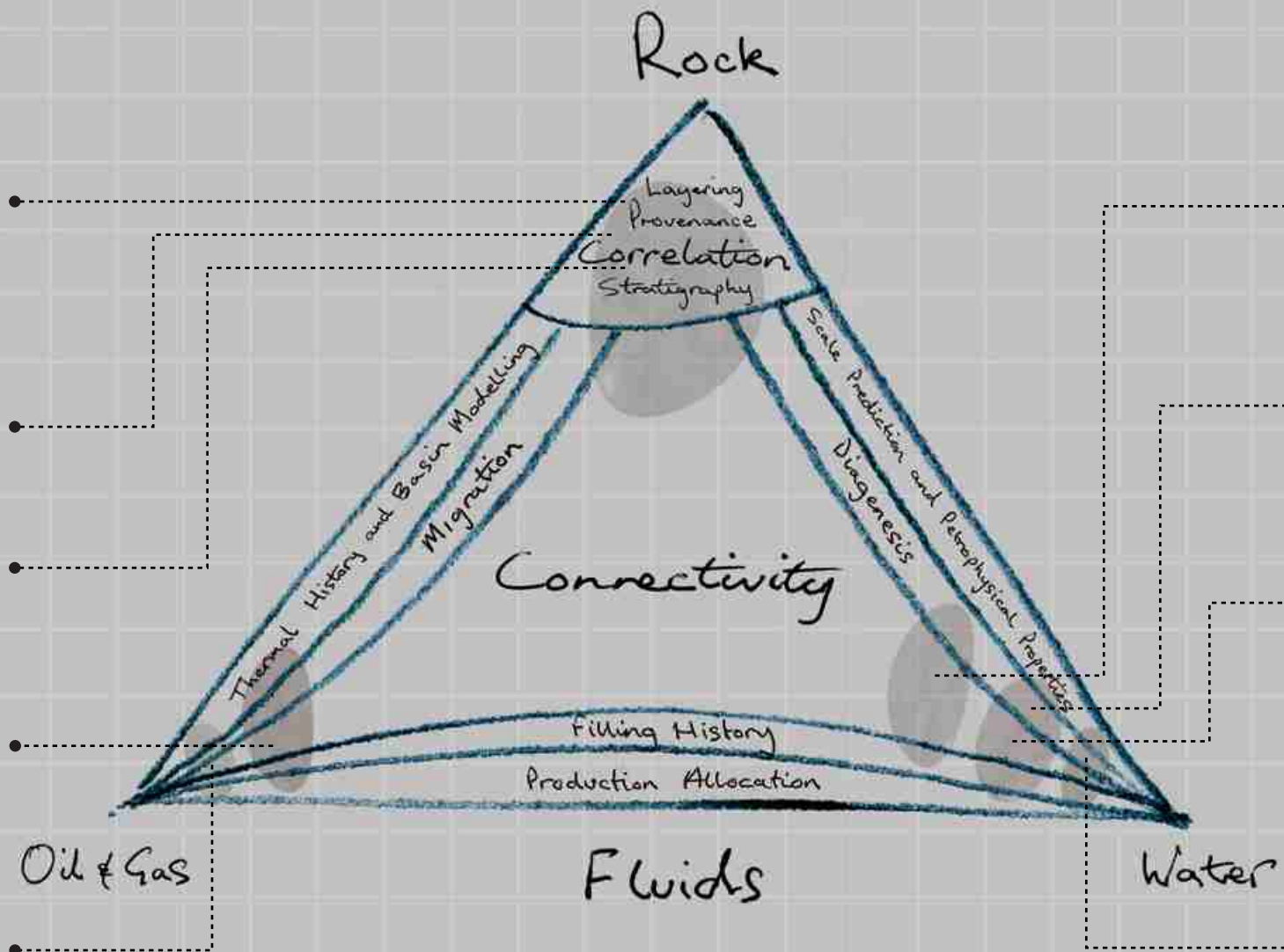
Mud Gas Isotope Logging (MGIL)

- Compound Specific Isotope Analysis (CSIA) of $\delta^{13}\text{C}$ in methane to pentane in mud gas
- Composition of mud gas by Gas Chromatography (GC)

Characterisation of test and production oil and gas samples

- Compound Specific Isotope Analysis (CSIA) of $\delta^{13}\text{C}$ and δD in gas and liquids
- Characterisation of gases and liquids by GC and GC-MS

Triangular map illustrating how ISOTOPIC analyses of rocks, oil & gas and water are used in basin and reservoir characterisation.



Sr-O-C Diagenesis

- $^{87}\text{Sr}/^{86}\text{Sr}$ - $\delta^{18}\text{O}$ - $\delta^{13}\text{C}$ of authigenic carbonate and sulphate minerals

Elemental Residual Salt Analysis (ERSA)

- Ion analyses of residual water and salt extracts from core

Strontium Isotope Residual Salt Analysis (SrRSA)

- $^{87}\text{Sr}/^{86}\text{Sr}$ isotope ratio of core extracts
- K/Na ratio contamination monitor with KCl muds
- δD contamination monitor with D_2O doped muds

Characterisation of test and production water samples

- $^{87}\text{Sr}/^{86}\text{Sr}$ isotope ratio
- δD and $\delta^{18}\text{O}$ isotope compositions
- Analysis of cations by ICP-MS & ICP-AES
- Analysis of anions by Ion Chromatography
- Characterisation of dissolved organic compounds by GC & GC-MS

Applications

- Reservoir Connectivity
- Basin Connectivity
- Correlation and Layering
- Geochronology
- Allocation of Water and Gas

