

MUD GAS COMPOSITION AND ISOTOPE ANALYSIS

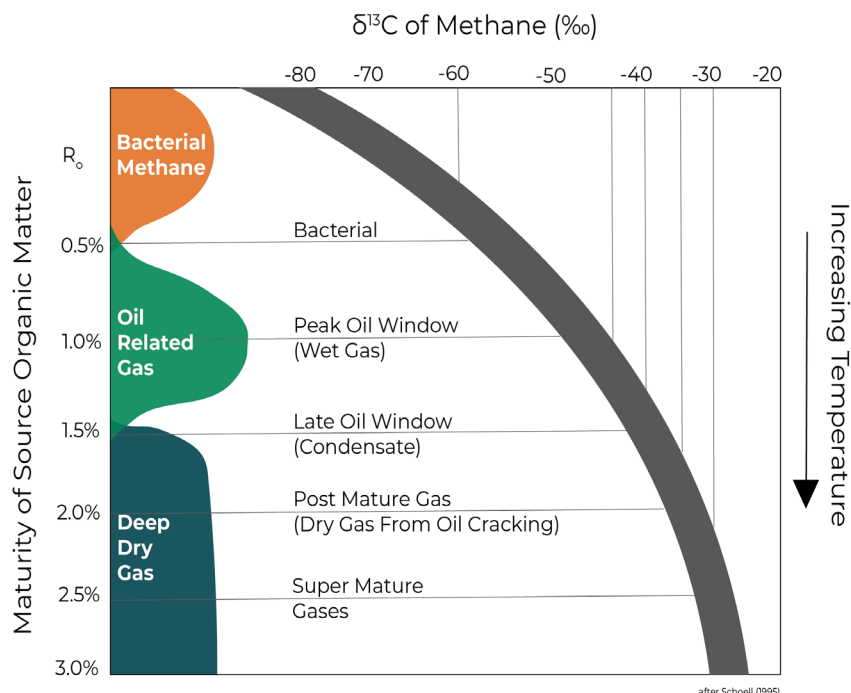
ISOTOPIC ANALYSIS OF MUD GAS

The gas brought to the surface with the drilling returns (mud gas) provides our first view of the fluids in the penetrated formations. Traditional mud gas logging was developed in the late 1930's to detect and validate pay horizons while drilling or coring. This "conventional" mud gas logging provides qualitative information on only the concentrations of the light hydrocarbons ($C_1 - C_5$). While useful, these concentrations are frequently distorted by operational factors such as rate of penetration, mud-weight balance, formation plugging, etc. and can therefore sometimes be misleading.

Since mud gas isotope logging (MGIL) was developed in the late 1990's, Isotech has been the industry leader in this step-change of understanding the fluids encountered. Isotopic analyses on mud gas samples are unaffected by drilling conditions. When collected at regular intervals, and around lithologies of interest, they reduce uncertainty and de-risk key factors in petroleum exploitation. The unique insights available only through isotope analysis enable exploration and production decisions to be made with greater confidence. Talk to our expert personnel at Stratum Reservoir about how mud gas isotope logging can de-risk your asset plans.

APPLICATIONS OF MUD GAS ISOTOPIC ANALYSIS

- Characterize petroleum fluids
- Identify reservoir compartments and correlate fluids between wells
- Distinguish between oil and gas
- Identify biodegraded fluids
- Predict and identify source rock
- Predict inert gas contents, such as CO_2
- Predict deep thermogenic petroleum systems in biogenic gas plays
- Reservoir seal identification
- Predict shallow, over-pressured gas



ISOTECH CAPABILITIES IN MUD GAS ANALYSIS

Working with most of the major oil companies, Isotech pioneered the development of what is now a standard tool for the oil and gas industry. Isotech has fully automated analysis systems to allow processing large numbers of samples. Furthermore, our iconic IsoTubes® are now used almost exclusively throughout the world for the collection of mud gas samples.

Our state-of-the-art and finely calibrated analytical systems provide the “always reliable data” essential to maximize the values of this powerful exploration tool.

Isotech is the “standard” to which other laboratories are compared.

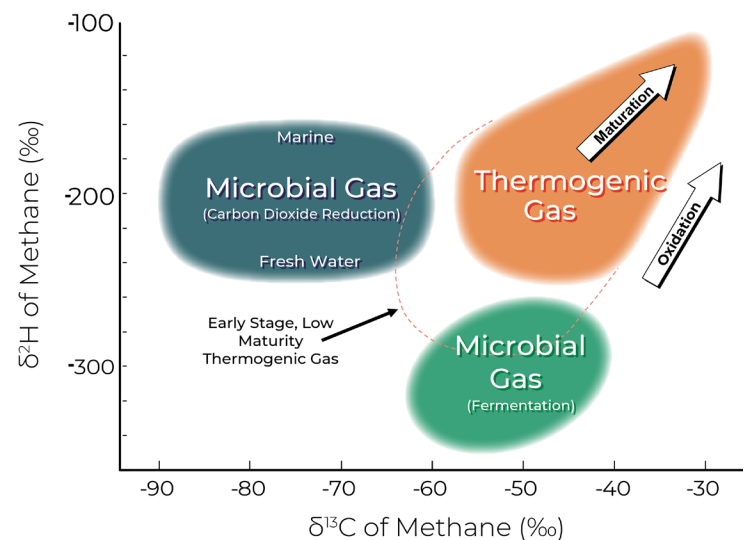


MUD GAS SAMPLING PRODUCTS

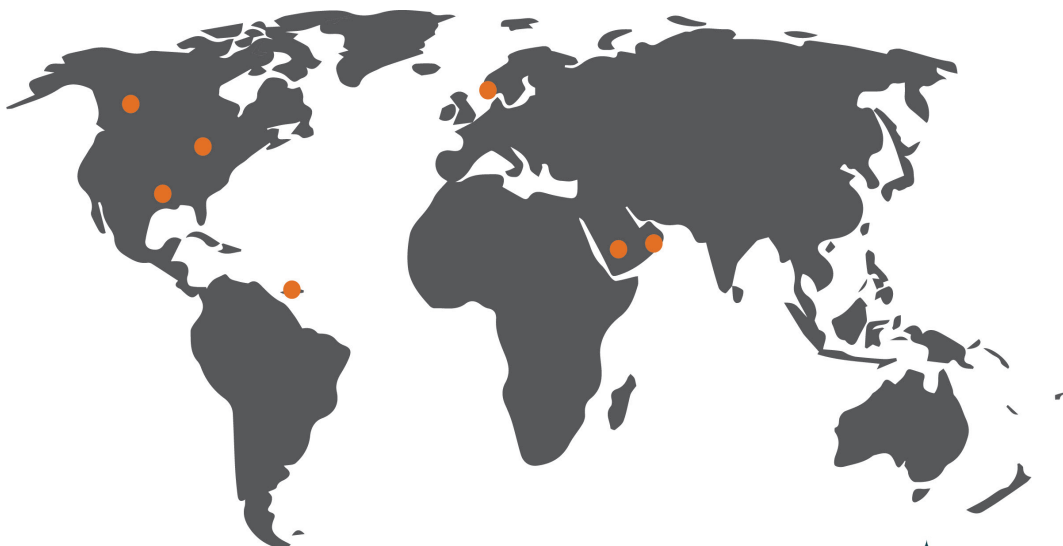
- IsoTubes (25/box; HAZMAT shipper included)
- IsoTube Gas Sampling Manifold
- IsoJars (20/box)

WHAT'S INCLUDED?

- Detailed compositional analysis of C_1 - C_5 hydrocarbons, N_2 , O_2+Ar , and CO_2
- C_1 - C_3 on mud and headspace gas
- Carbon isotopes ($\delta^{13}C$) of C_1 - C_5 compounds
- Hydrogen isotopes (δ^2H)
- $\delta^{13}C$ of low concentration C_1 - C_5 using enrichment procedures



TESTING LOCATIONS



Contact the Stratum Reservoir Sales Team at Sales@StratumReservoir.com.

