

GasFact™ Isotope Analysis

REAL-TIME $\delta^{13}\text{C}$ ISOTOPIC GAS ANALYSIS FOR FLUID CHARACTERIZATION, FINGER PRINTING, AND ANALYSIS FOR RAPID, RELIABLE HYDROCARBON CHARACTERIZATION

OVERVIEW

Responding to the need for consistent and reliable real-time isotopic gas analysis, Sperry Drilling provides Compact Science Systems' Isologger mass spectrometer (MS) at the wellsite. This gas chromatography-combustion-isotope ratio mass spectrometry (GC-C-IRMS) can determine $\delta^{13}\text{C}$ for methane through propane, and carbon dioxide (CO_2). The Isologger MS can be utilized with the constant volume extractor (CVE) or the EAGLE™ constant volume/constant temperature gas extraction system to provide stable and accurate real-time data. This enables real-time analysis and interpretation of the isotopic data, utilizing industry-accepted methodologies.

FEATURES

- » Methane, ethane, propane, and CO_2 $\delta^{13}\text{C}$ determinations against the Pee Dee Belemnite (PDB) standard.
- » Selective range of component analysis
 - C1 (220 secs, 3.7 minutes)
 - C1-C3 (360 secs, 6 minutes)
 - C1-C3 and CO_2 (450 seconds, 8.0 minutes)
- » Calibrated using independently verified calibration gases of known PDB values
- » Automatic calibration every 10 samples to ensure consistent data quality
- » Utilizes industry-accepted analysis methodologies

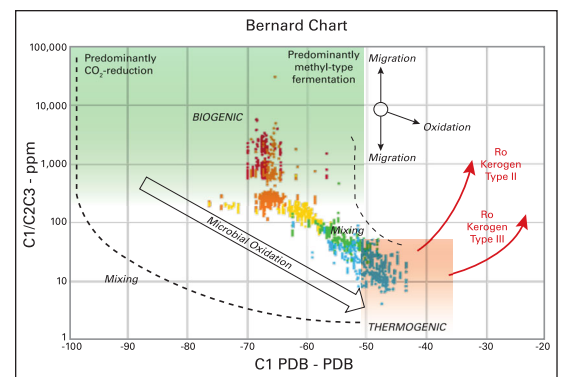
BENEFITS

Enhance Reservoir Understanding

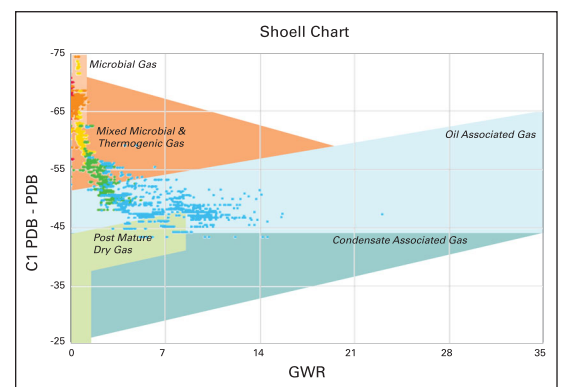
- » Analyzes isotopic concentration in order to determine gas origin, thermogenic or biogenic origin, maturity, thermals maturity, and migration
- » Provides real-time isotope determination with no cumbersome sample containers
- » Makes isotopic data available in real time to aid in the immediate analysis of the well
- » Offers greater data density when compared with sample containers collected at the rigsite
- » Provides a cost-effective method of acquiring the maximum amount of isotopic gas information
- » Delivers robust, highly reliable, and accurate system



The Isologger MS is suited for rigsite deployment.



Example of a Bernard plot



Example Shoell Chart