G8 DualFidStar™

Utilizing high resolution gas chromatography to detect light hydrocarbons

G8 provides customers with unparalleled interpretation of light hydrocarbon species in water and oil based mud systems. By combining the most advanced FID technology with advanced mud extraction at constant volume and temperature, GEOLOG is able to provide detailed interpretations of hydrocarbons up to nC8.

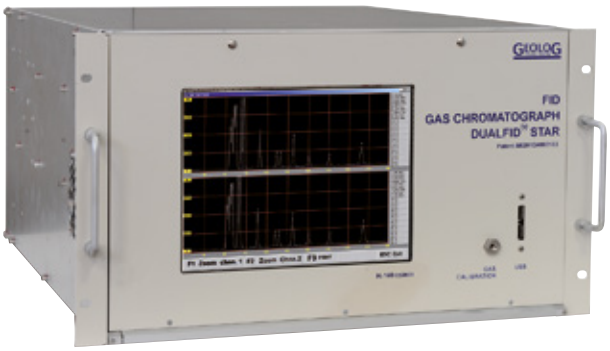
Benefits

- Near Real-Time reservoir characterization
- Determine reservoir heterogeneity
- Fluid contact identification (GOC, OWC, GWC)
- Identification of source rock type
- Quantitative gas analysis
- Optimize downhole sampling programs
- Optimize wireline and LWD logging programs
- Aid completion strategy

Challenges and Solutions

GEOLOG has been able to improve the extraction efficiency to overcome the issues with mud gas solubility and is able to provide an accurate, reliable, and efficient method for gas chromatographic resolution and interpretation. G8 extends the analysis to the hydrocarbon species which are more challenging to extract (aromatics, heptanes and octanes up to nC8)..

Data that are available only from down hole testing tools are now available in real-time while drilling at a very low cost.



Applications

G8 is suitable for exploration, appraisal, and development projects where Oil Based Muds (OBM) or Water Based Muds (WBM) are used during the drilling phase of the well.

Operating environments such as Managed Pressure Drilling or Underbalanced Drilling can be accommodated with an MPD manifold setup. HP/HT wells are not an issue with surface measurements such as G8 and provide data insurance when conventional downhole methods fail.

Using advanced techniques for gas ratio processing and formation fluid interpretation in real time, G8 technology has been successfully deployed onshore and offshore, across more than 500 wells for 45 clients in 32 countries.

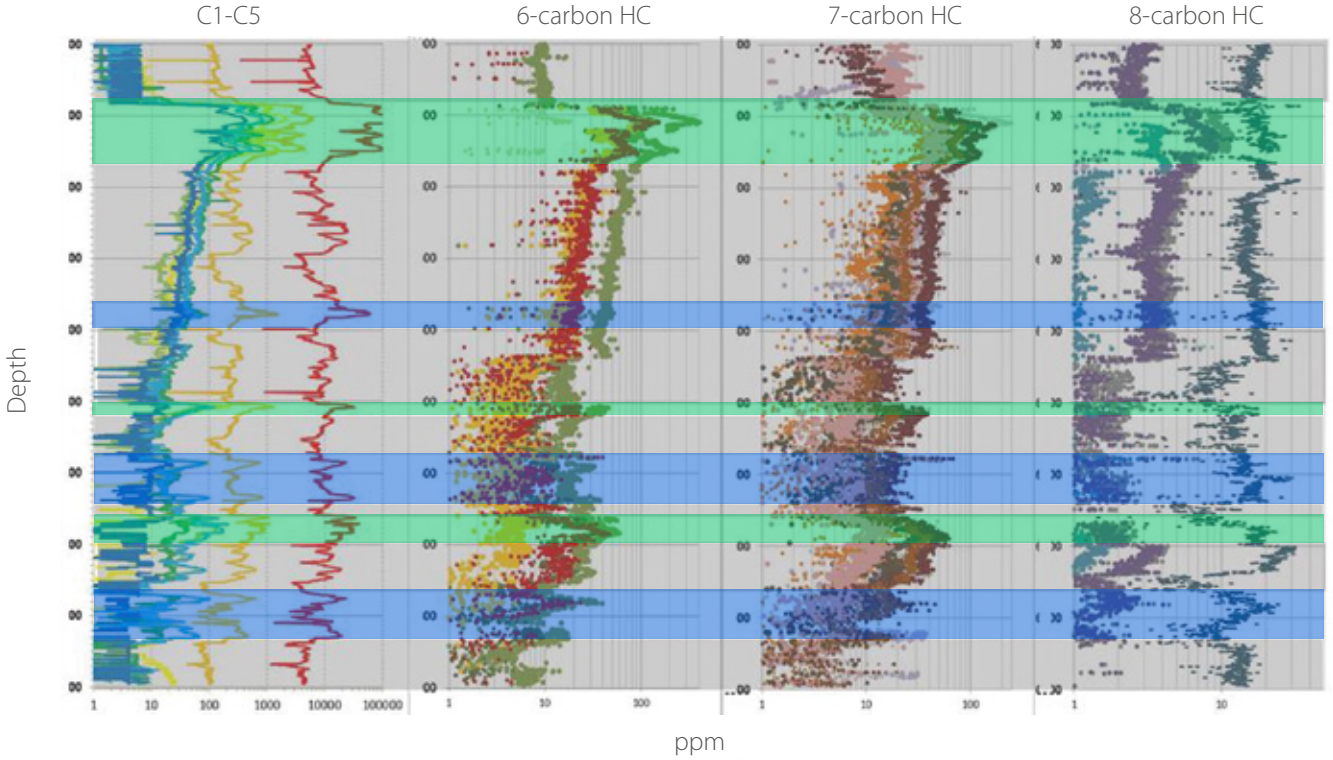
"The advanced gas system "G8 DualFidStar"...was able to give key information on the reservoir characteristics and fluid identification..." PTTEP

G8 DualFidStar™

G8 DualFidStar™

Case History

Differentiate between Hydrocarbon and Water Intervals

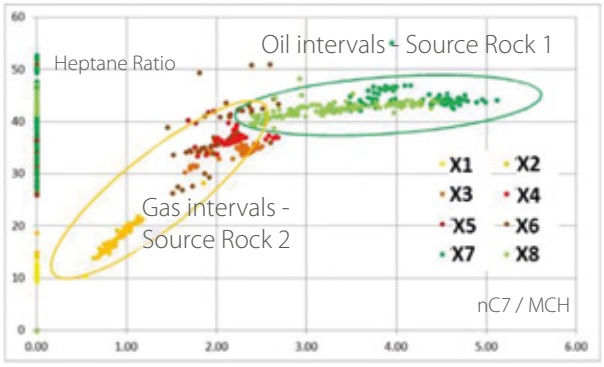


Presence of heavy gas components corresponds to hydrocarbon identification in some of the well targets, water confirmed in others.

Hydrocarbon zone

Identified water zone

The benefits of using advanced gas measurements allows operators to optimize down hole sampling and pressure testing programs. By identifying at an early stage the correct intervals to test while avoiding others, rig time can be reduced and overall project costs can be reduced.

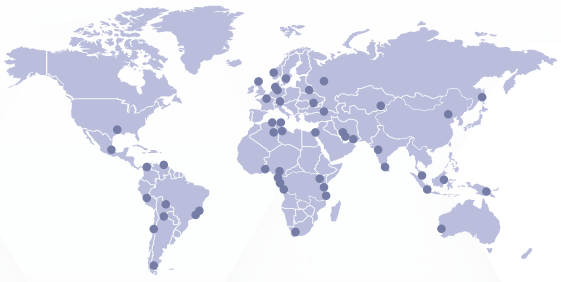


Hydrocarbon ratios confirm presence of different source rocks in this well section.

Specifications

Hydrocarbon Analysis Two Service Modes	Full Scan - G5 + nC6-nC8
	Standard - G5 + nC6-nC7, Benzene & Toluene
Limits of Detection	0.1 ppm – 1,000,000 ppm
Analysis Time	150 sec to nC8 (Full Scan)
	120 sec to Toluene (Standard)

GEOLOG around the World



Technical Paper References

Advances in Detection and Interpretation of Hydrocarbons, Non-Hydrocarbons and Noble Gases While Drilling. OMC-2015-323 (OMC, Ravenna, March 2015, Eni)

Evaluation of a Complex Carbonatic Reservoir via the Analysis of Mud Gas Data from an Advanced Gas Detection System. EAGE 026 (EAGE Conference, Kuala Lumpur, February 2014, Saudi Arabian Chevron)

GEOLOG SURFACE LOGGING