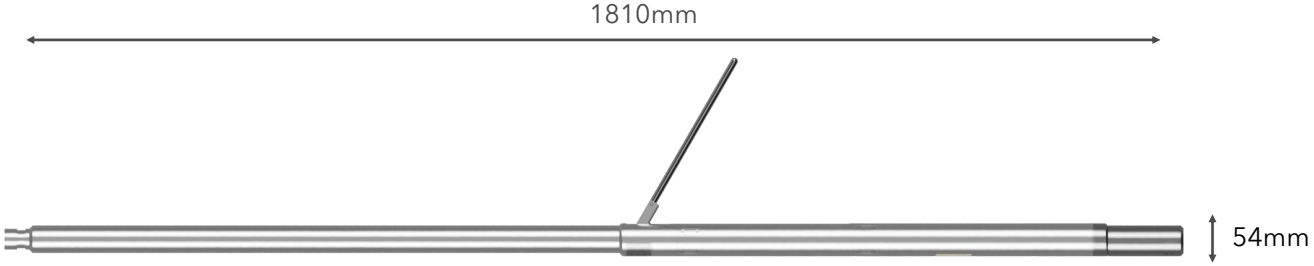
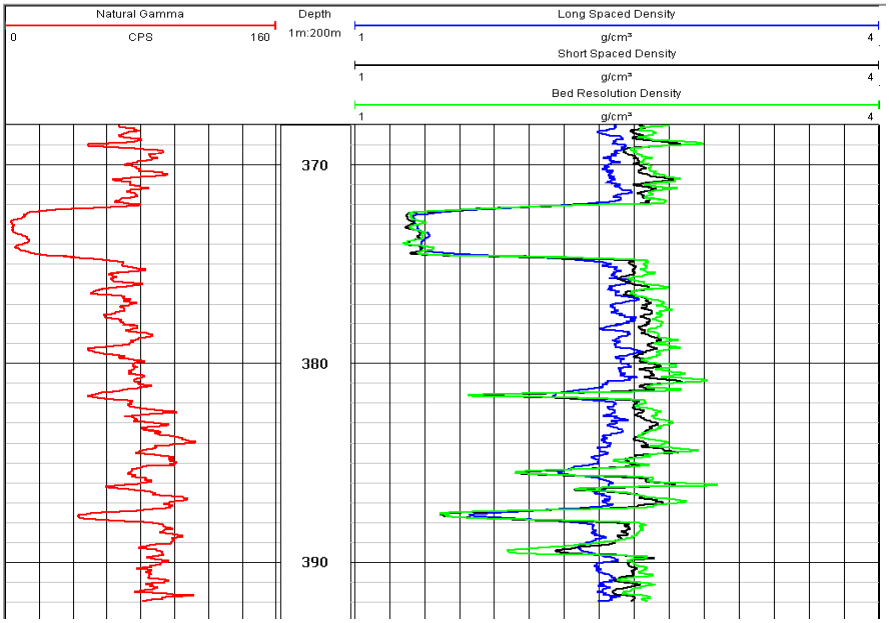
EUROPEAN GEOPHYSICAL SERVICES

FORMATION DENSITY TOOL

Tool overview

The Formation Density Tool has three collimated detectors at different spacings from a source of gamma radiation. The collimated tool and side-walled running minimise the effects of diameter variations and fluid type. The logs from each detector indicate the apparent density of the formation within a radius of investigation related to the spacings. The long spaced Density has a spacing of 48cm, the High Resolution Density has a spacing of 24cm and the Bed Resolution Density has a density of 14cm. The Bed Resolution Density (BRD) log has a high resolution but very shallow penetration (2–3cm) and is very responsive to formation changes, diameter variations and borehole construction. The High Resolution Density (HRD) has a greater penetration than the BRD, up to around 10cm in medium density formations.





Formation density log correlating with a natural gamma log over coal seams.

Note higher resolution in BRD log detecting thin beds.

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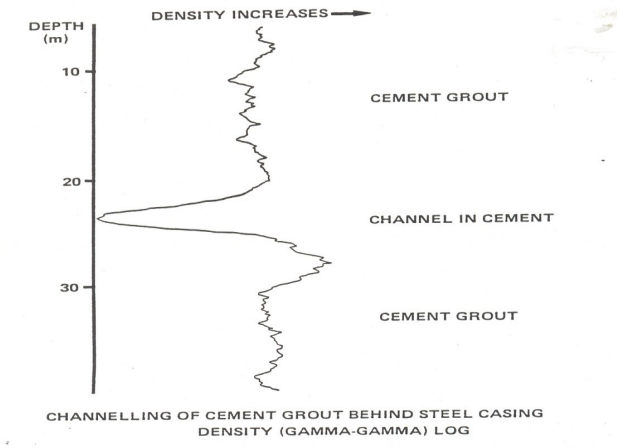
Features and benefits

- Density measurements provide information on formation bulk density which can give computed porosity and formation lithology characteristics



CHANNELLING OF CEMENT GROUT BEHIND STEEL CASING
DENSITY (GAMMA-GAMMA) LOG

Logging conditions	Borehole Conditions
2–5m/min side walled	80–300mm Fluid filled or dry* Unlined or lined*

Specifications	
Size	1810 x 54mm
Weight	28kg
Max. temperature	80°C
Max.pressure	20MPa

***In dry or lined sections of boreholes, these logs give qualitative information on the density of the material surrounding the tool, the logs are expressed in terms of apparent density in cm^3**

Why European Geophysical Services?

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