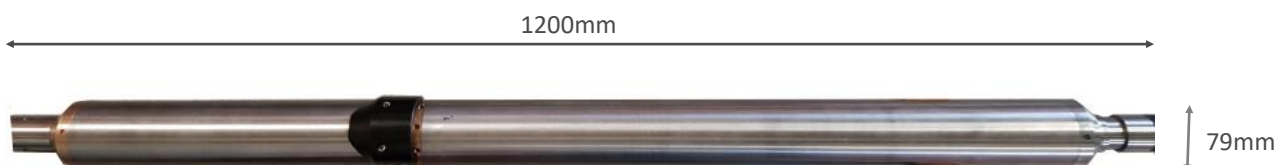




NITRATE TOOL

Tool overview

The Nitrate sonde allows for a continuous profile of the Nitrate levels in borehole fluids to be recorded. The Nitrate Tool uses a sealed system that measures the attenuation of Ultraviolet (UV) at specific wavelengths. It has been established that at certain wavelengths the Nitrate molecule highly attenuates the UV whereas other molecules generally present in borehole fluids do not. However, where there is a significant Dissolved Organic Carbon (DOC) content the signal at the "Nitrate" wavelength will be attenuated. Therefore, a second direct measurement of DOC (via a second optical band pass filter) is made. Measurements alternate between the two filters and data output includes the detectors' photomultiplier currents (related to light intensity) in nano-Amperes (Na). The relationship between the current and the molecular concentration is inversely logarithmic. In zones where the DOC detector current is greater than 1800nA, it is assumed that there are no DOCs present and therefore there is no effect on the nitrate sensor. Values less than 1800nA indicate the presence of DOCs within the fluid column and therefore the nitrate log should be viewed in relative terms only on a qualitative basis, in this case the nitrate log is only presented in terms of the detectors current (Na).



Features and benefits

- Useful for assessing water quality
- Can provide nitrate concentration results

Logging

Conditions

<3m/min

Borehole

Conditions

Minimum diameter >85mm
with cowl fitted (preferred)

Maximum diameter 500mm

Fluid filled

Unlined or lined

Specifications

Size	1200mm x 79mm (84mm with flow diverter cowl)
Weight	12kg
Output	mg/L NO ₃ (Quantitative measurement) or CPS (Qualitative measurement). Alternatively: mg/l NO ₃ -N * 4.42 = mg/L NO ₃
Max. temperature	80°C
Max.pressure	20MPa

Why European Geophysical Services?

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