MSCL-S: MULTI-SENSOR CORE LOGGER

NON-DESTRUCTIVE CONTINUOUS CORE SCANNING FOR INDUSTRY & RESEARCH

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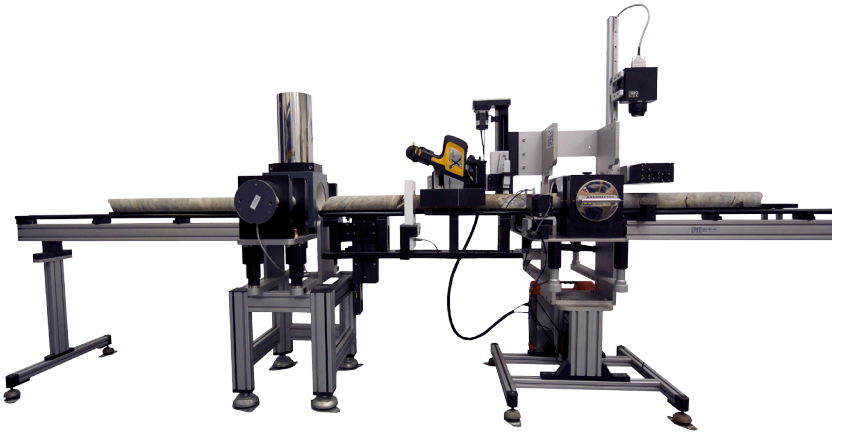
IF CORE'S WORTH TAKING, IT'S WORTH LOGGING

AUTOMATED & FLEXIBLE CORE LOGGING & SCANNING

The Geotek Standard Multi-Sensor Core Logger (MSCL-S) is the only commercially available tool for gathering both physical and chemical properties from core samples in an automated and quality-controlled way. The MSCL-S accepts lined sediment core, and unlined competent or fragmented rock core. The powerful ballscrew automatically and continuously pushes each core section past a series of geophysical and geochemical sensors to the nearest 0.01 mm. All of the sensors simultaneously acquire their data, which is displayed in real-time during logging making the whole process of core logging extremely efficient. The flexibility of MSCL-S is such that it can analyse cores between 50 and 150 mm in diameter cut into sections up to 1.5 m long, whilst acquiring up to 9 different datasets!

ROCK CORE LOGGING

- Whole or fractured unlined core
- Pushed through the system on stabilising core trays
- Low (>10 cm) or high resolution (<1 cm) logging for mining or oil and gas applications



SEDIMENT CORE LOGGING

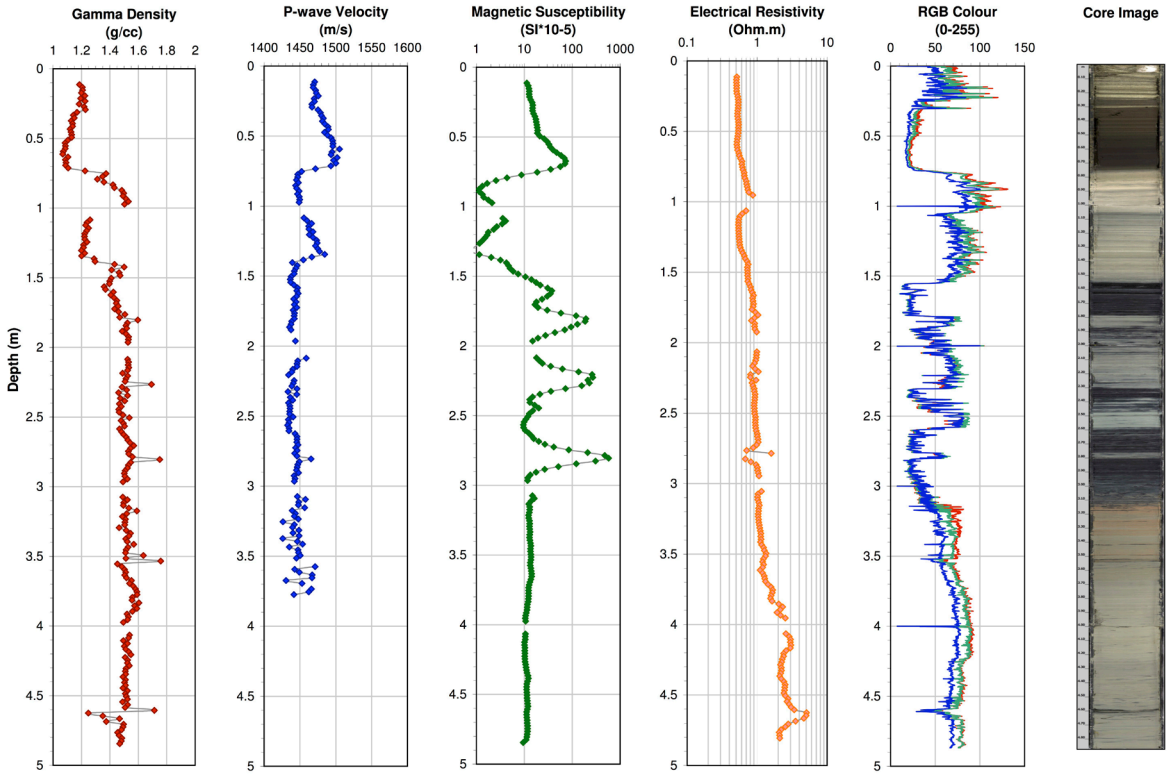
- Acquires data through whole plastic or metal-lined sediment cores
- Plastic-lined samples are placed one behind the other for continuous logging
- Near-real time data acquisition for field projects
- Perfect for high-resolution climate and marine hazard applications

SPLIT/SLABBED CORE LOGGING

- Accepts split sediment cores or slabbed rock cores
- Acquires both surface-based measurements (XRF and NIR) and physical measurements (e.g. gamma density)
- Perfect for logging/scanning of archived core material

APPLICATIONS

Any core collected for a science or engineering application can benefit from the high resolution, continuous, non-destructive core analysis offered by the MSCL. Measurements are used by scientists and engineers both intrinsically, for their actual values (e.g. gamma density, P-wave velocity), or as proxies for changes in lithology or depositional environment (e.g. magnetic susceptibility, XRF, or natural gamma). The multi-sensor arrangement of the MSCL uniquely allows users to confidently compare micro and macro scale changes in physical and chemical properties downcore.



OIL & GAS / UNCONVENTIONALS

- Core to log correlation and comparison
- Analysis and quantification of core heterogeneity
- XRF analysis to derive mineralogical models

MINING

- High resolution density and elemental concentrations for resource assessment
- Identify target horizons, and corroborate geophysical results
- Determination of lithological units and their physical properties

RESEARCH

- High resolution (<1 cm) geochemical and geophysical stratigraphy for paleoclimate studies
- Rapid assessment of density and P-wave velocity to improve correlation of core data to seismic profiles
- Meet research objectives through fast and detailed downcore geophysical logging

CORE REPOSITORY

- High resolution linescan photography for cataloging
- Reduce initial investment risk by improved characterisation of archived core material
- Acquisition of petrophysical data to depth correct archived core material to downhole data

GEOTECHNICAL & GEOHAZARDS

- Rapid assessment of core quality
- Non-destructive quantification of geotechnical properties (density, P-wave velocity, water content)
- Identification of geohazard features such as cemented horizons, gassy sediments or sand/clay-rich layers

MSCL-S: UNLOCKING THE VALUE OF CORE MATERIAL

The MSCL-S system is a unique automated core logging system that comprises of a suite of up to 9 different non-destructive geophysical and geochemical sensors. The MSCL-S is modular and highly versatile, capable of measuring a variety of core types at customisable resolutions. The added engineering and geological value of MSCL logging has quickly established the technique as best practice for many research and industrial applications.

RGB AND MUNSELL COLOUR SCANNING

Konica Minolta or ASD spectrometers are used to quantitatively determine colour variation downcore and correlate facies between core / well locations.

ULTRA HIGH DEFINITION CORE IMAGES

Geoscan V 5,000 pixel linescan camera with automatic aperture and focus, and dedicated visible and UV light box for consistent lighting.

MAGNETIC SUSCEPTIBILITY LOGGING

Loop or point sensors for whole or split/ slabbed core logging of magnetic properties.

SPECTRAL DENSITY AND POROSITY DETERMINATION

Small Cs-137 gamma source for precise measurement (2.5 mm to 5 mm) of gamma attenuation.

STABLE AND REPEATABLE GEOMETRY

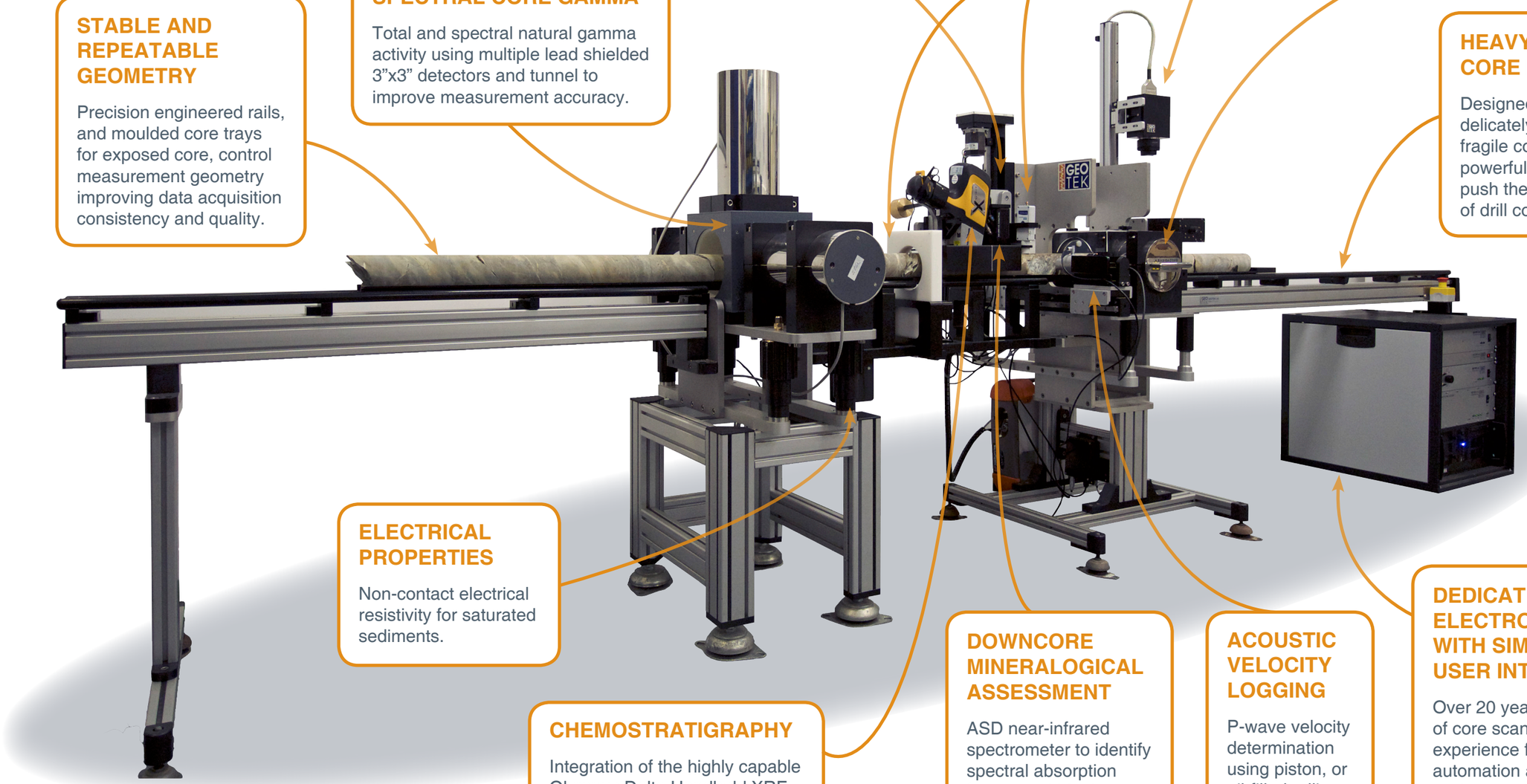
Precision engineered rails, and moulded core trays for exposed core, control measurement geometry improving data acquisition consistency and quality.

SPECTRAL CORE GAMMA

Total and spectral natural gamma activity using multiple lead shielded 3”x3” detectors and tunnel to improve measurement accuracy.

HEAVY DUTY CORE PUSHER

Designed for delicately moving fragile cores, whilst powerful enough to push the heaviest of drill core.



ELECTRICAL PROPERTIES

Non-contact electrical resistivity for saturated sediments.

CHEMOSTRATIGRAPHY

Integration of the highly capable Olympus Delta Handheld XRF for chemical analysis.

DOWNCORE MINERALOGICAL ASSESSMENT

ASD near-infrared spectrometer to identify spectral absorption features within the VNIR and SWIR spectrum.

ACOUSTIC VELOCITY LOGGING

P-wave velocity determination using piston, or oil-filled rolling transducers.

DEDICATED ELECTRONICS WITH SIMPLE USER INTERFACE

Over 20 years of core scanning experience for reliable automation and logging performance.

GLOBAL PRESENCE & EXPERIENCE

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OVER 190 INSTALLATIONS

GLOBALLY BASED DIRECT SUPPORT

- Over 20 years experience in MSCL technology and core logging requirements for research and industry
- Geotek comprises of a talented team of employees specialising in engineering, design, electronics, software and geoscience
- Worldwide installation, diagnostics, and application support with internet-based access to the MSCL for faster solutions
- Our customers range from universities, government geoscience organisations, oil and gas service labs and majors, geotechnical contractors, and mineral exploration companies
- Training seminars, workshops and tailored core logging courses offered
- Global research and industry community, and publications using MSCL data

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