

From Core to Clarity: A Smarter Approach to Geological Insight

Industry Challenge

Core logging is central to mineral exploration, providing critical geochemical data for geosteering, interpretation of ore bodies, and mineral ID. Traditionally, achieving high-resolution, multi-parameter core data has required either:

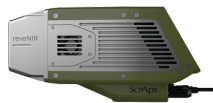
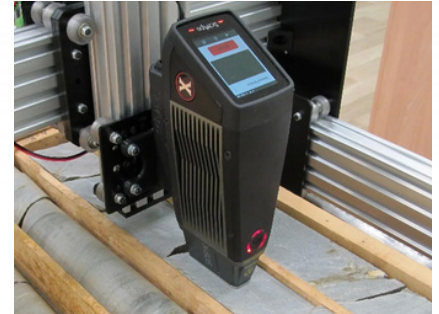
- Large, capital-intensive scanning systems (often exceeding \$500K–\$1M+), or
- Outsourced or leased services with ongoing costs and limited flexibility

SciAps Solution

SciAps introduces a different approach: modular, multi-sensor core logging powered by portable analyzers, automation platforms, and cloud-based intelligence.

By combining SciAps in-line analyzers with automated platforms like GERDA (and similar systems such as ROKBOT™), users can build a transportable, scalable core scanning solution at a fraction of the cost.

SciAps is uniquely positioned as the only portable instrumentation provider offering all three critical analytical technologies:



Vis-NIR (reveNIR)

- Mineral identification (350–2500 nm range)
- Next-generation Halo Vis-NIR with on-board Machine-Learning interpretations



XRF (X-ray Fluorescence)

- Elemental analysis with flexible tube anodes and voltage configurations
- Rapid geochemical screening across entire core sections



LIBS (Laser-Induced Breakdown Spectroscopy)

- Complete element analysis (Li, Be, B, Na, F, Mg), including REEs
- High resolution (~100 μm spot) with spatial heat mapping

Key Advantages:

- **Lower capital investment:** ~\$100K scale vs. \$500K+ systems
- **Portable and modular design:** transportable in crates, not containers
- **Ownership vs. rental:** no recurring service dependency
- **Flexible deployment:** field, core shack, or mobile skid

This enables exploration teams to bring advanced core logging capabilities directly to the field, without sacrificing performance.

Operational Benefits

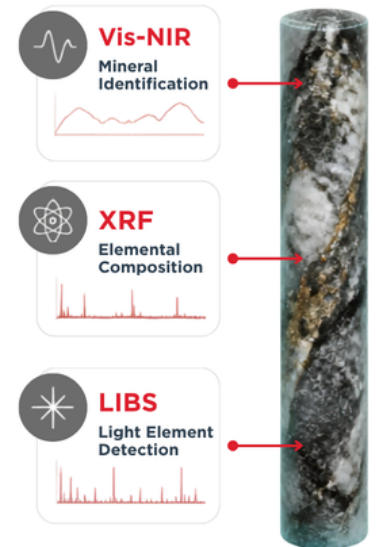
Individually, each technique provides valuable, but incomplete, information:

Together, they unlock deeper geological understanding.

- **Classify lithology** using combined mineralogical and elemental signatures
- **Map heterogeneity** across core and identify subtle geological changes
- **Recognize mineral fingerprints** associated with alteration and mineralization
- **Track geochemical and mineralogical trends** through the deposit
- **Support geosteering and ore vectoring** by identifying changes that may point toward mineralization
- **Build machine-learning models** that uncover relationships between mineralogy and geochemistry

This multi-dimensional view helps geologists understand not just what is present, but how the system evolved, which is a critical factor in targeting ore bodies.

From Drill Core to Decision



From Field Reconnaissance to Automated Core Logging

SciAps analyzers can support exploration teams throughout the geological workflow—from initial field reconnaissance to automated core analysis and data interpretation. Portable XRF, LIBS, and Vis-NIR analyzers can be used to characterize rocks and samples in the field, then integrated into automated platforms for high-throughput core logging once drilling begins.

1. Field Reconnaissance

- Analyze outcrops and surface rocks
- Identify early geochemical and mineral indicators
- Characterize geology and guide exploration targets

2. Core Extraction & Characterization

Once core is drilled and retrieved, SciAps analyzers can provide rapid elemental and mineralogical information directly at the core facility. XRF, LIBS, and Vis-NIR can be used individually or together to characterize core and identify trends in geochemistry, mineralogy, and alteration.

3. Automated Core Logging

For higher-throughput workflows, SciAps in-line analyzers can be integrated with automated core logging platforms such as GERDA and ROKBOT™.

These systems can:

- Automatically scan drill core directly in core boxes
- Process large numbers of samples with consistent, repeatable measurements
- Analyze other sample types, including soils, sediments, and drill chips
- Integrate multiple analytical technologies through SciAps' in-line analyzers and APIs
- Capture visual documentation alongside analytical data

Compact, modular designs such as ROKBOT™ provide a transportable alternative to large, capital-intensive core scanning systems, making automated analysis practical for more field and exploration environments.

4. Data Integration & Geological Interpretation

Multi-sensor data can then be brought together through **SciAps Cloud+**, enabling teams to:

- Link elemental chemistry with mineralogy
- Identify geochemical, mineralogical, and alteration trends
- Support lithological interpretation and ore vectoring
- Develop machine-learning models that leverage complementary sensor data
- Make higher-confidence exploration decisions earlier in the drilling cycle

From the first rock sample to thousands of meters of drill core, SciAps provides a flexible path to faster, more comprehensive geological characterization—without requiring the scale and capital investment of traditional core scanning systems.

Expand What's Possible with Cloud+ Data Fusion & Machine Learning:

Key Benefits:

- Centralized data storage and access
- Real-time data merging across sensors
- Machine learning model development

Why It Matters:

Combining datasets (e.g., XRF + Vis-NIR) allows for:

- Enhanced mineral identification
- Improved classification models
- Detection of patterns not visible in single-sensor data

This data fusion approach significantly increases confidence in interpretation and accelerates decision-making.

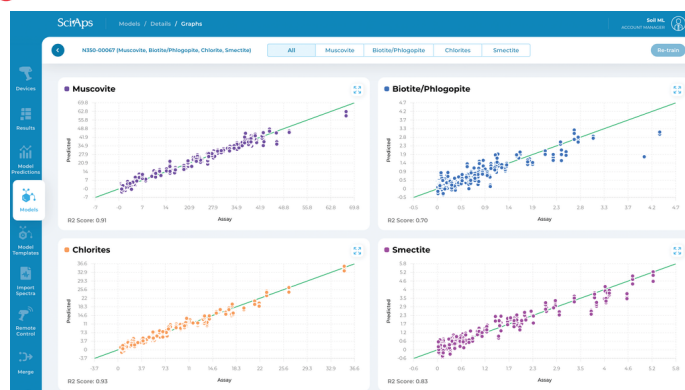


“The GERDA [paired with XRF] can assay about 130 m of core in an 8-hour shift - [the] average daily drilling productivity rate.” ~ GERDA Mobile Service - MEFFA



SciAps Cloud+

Connect Your Data. Empower Your Team.



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