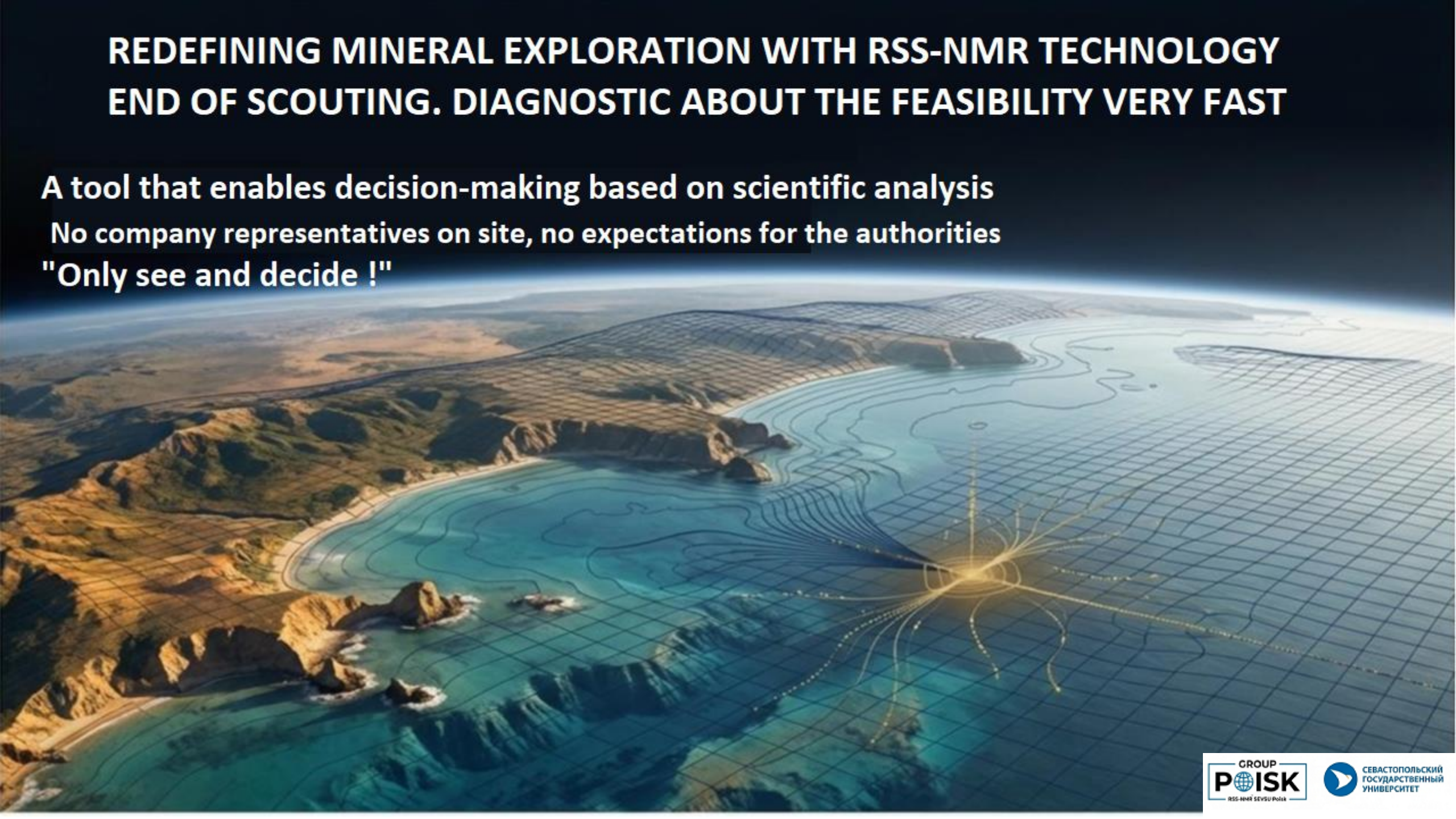
REDEFINING MINERAL EXPLORATION WITH RSS-NMR TECHNOLOGY
END OF SCOUTING. DIAGNOSTIC ABOUT THE FEASIBILITY VERY FAST

A tool that enables decision-making based on scientific analysis

No company representatives on site, no expectations for the authorities

"Only see and decide !"



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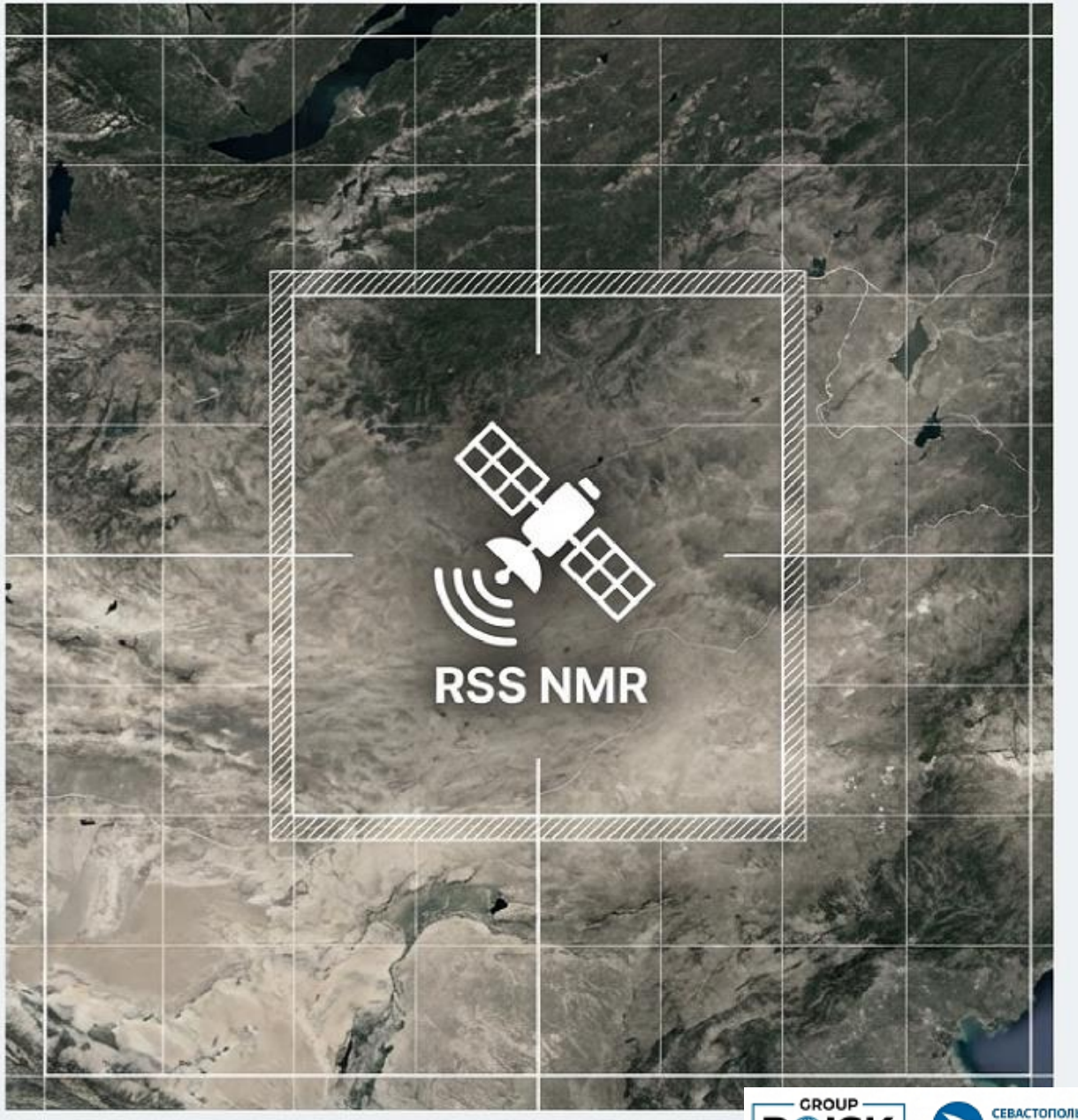
СЕВАСТОПОЛЬСКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ

Remote Geological Assessment: Licensed Area 0.9 km² (China)

Deep Sensing & Anomaly Detection Report | Contract № 1-05/2022



Location: PRC border region, SE Mongolia, Central Asian Orogenic Belt
Technology: RSS NMR (Remote Satellite Sensing)
Scientific Director: PhD Kovalyev N.
Date: 2022

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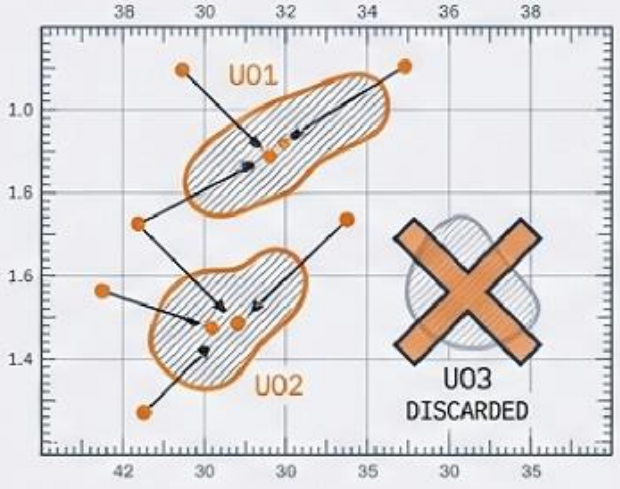
Executive Summary: Investigation Findings & Commercial Verdict

01. THE RESULT

3 Anomalies Identified.

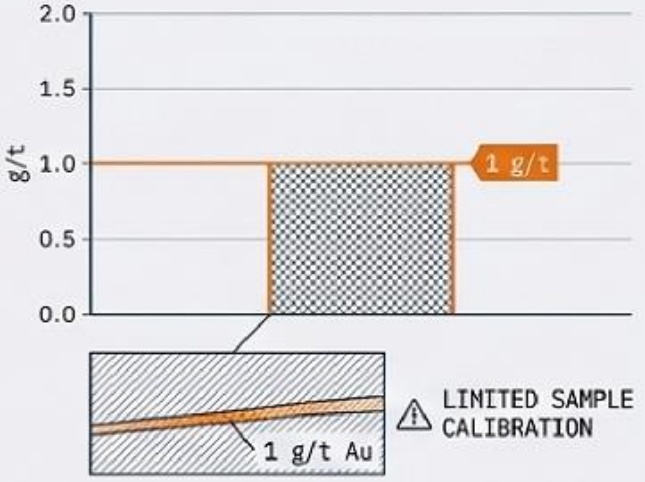
2 Potential (UO1, UO2),
1 Discarded (UO3).



02. THE GRADE

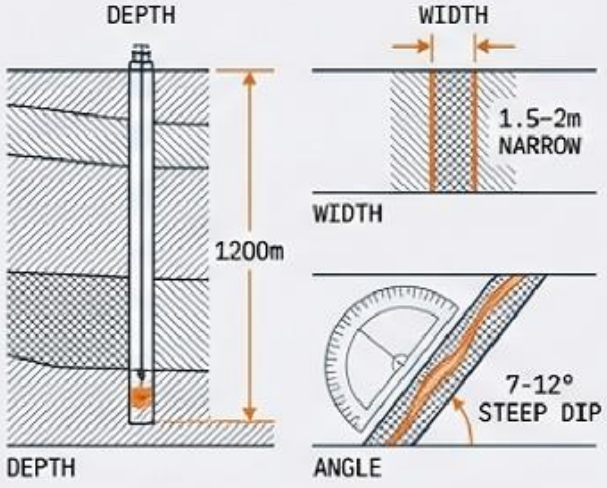
Estimated Gold Content: ~1 g/t

Note: Calibration limited by lack of commercial-grade core samples.



03. THE CONSTRAINT

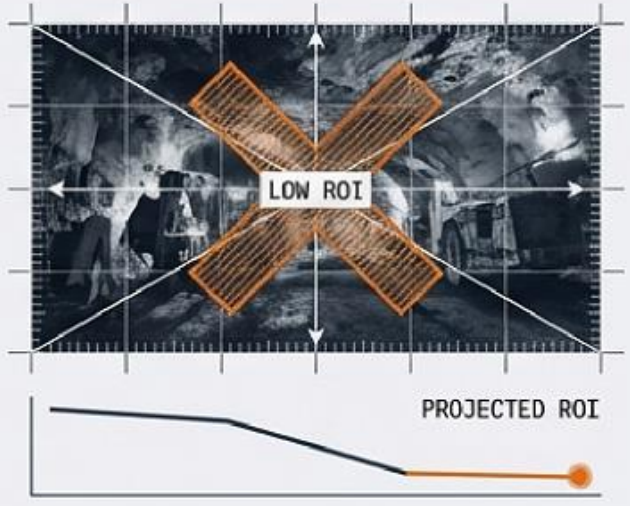
- Depth: Up to 1200m
- Width: Narrow (1.5–2m)
- Angle: Steep dip (7-12°)



04. THE VERDICT

Presumably not of commercial interest.

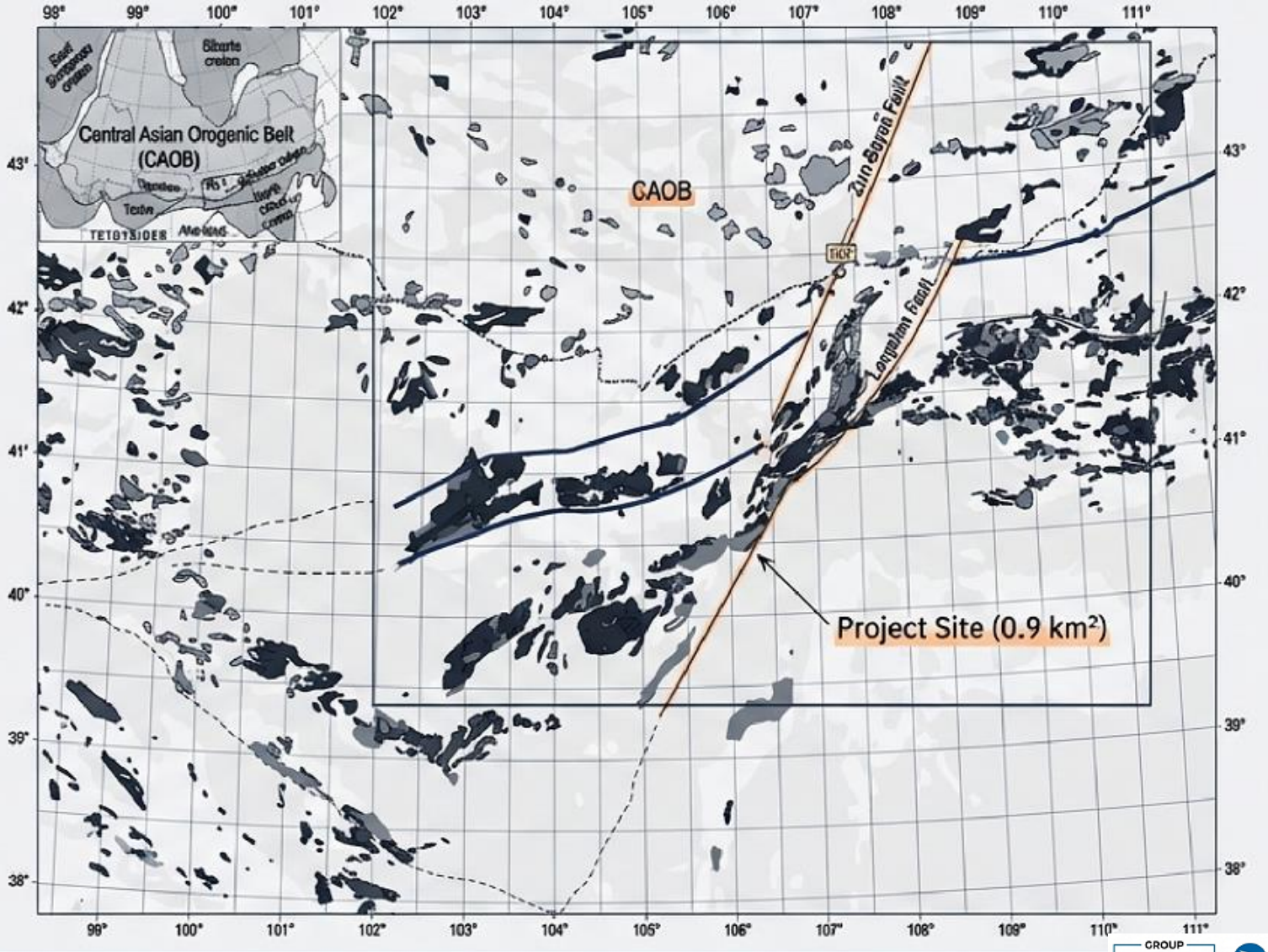
Low ROI anticipated due to extraction difficulty.



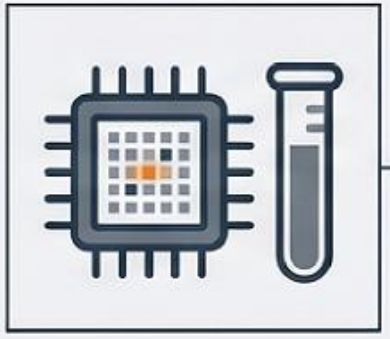
RECOMMENDATION: Drill 2-3 control wells to 700m to verify findings, or conclude operations immediately.

Regional Context: Proximity to the Zun-Bayan Tectonic Fault

- **Tectonic Setting:** Located in the Central Asian Orogenic Belt (CAOB) of the North China Craton.
- **Strategic Proximity:** The site lies directly within the boundaries of the Zun-Bayan tectonic fault.
- **Regional Analogues:** Nearest large deposit is Oyu-Tolgoi (Cu+Au), located tens of kilometers north.
- **Geological Logic:** Deposits usually confine to outer boundaries of faults; however, this site's geology is complex and deep-seated.



Methodology: The ‘Poisk’ Remote Sensing Process

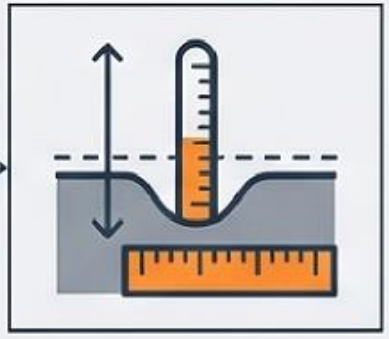


1. Preparation: NMR spectra recording of gold atoms.

2. Acquisition: Satellite imaging (UV, Visible, IR).

3. Processing: Chemical treatment & Radiation field exposure.

4. Analysis: Identification of ‘High Brightness Zones’ (mineral glow).



5. Depth Calculation: Parallax shift analysis.

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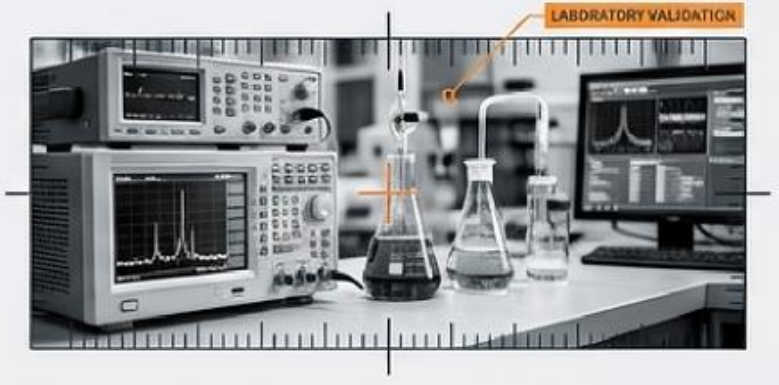
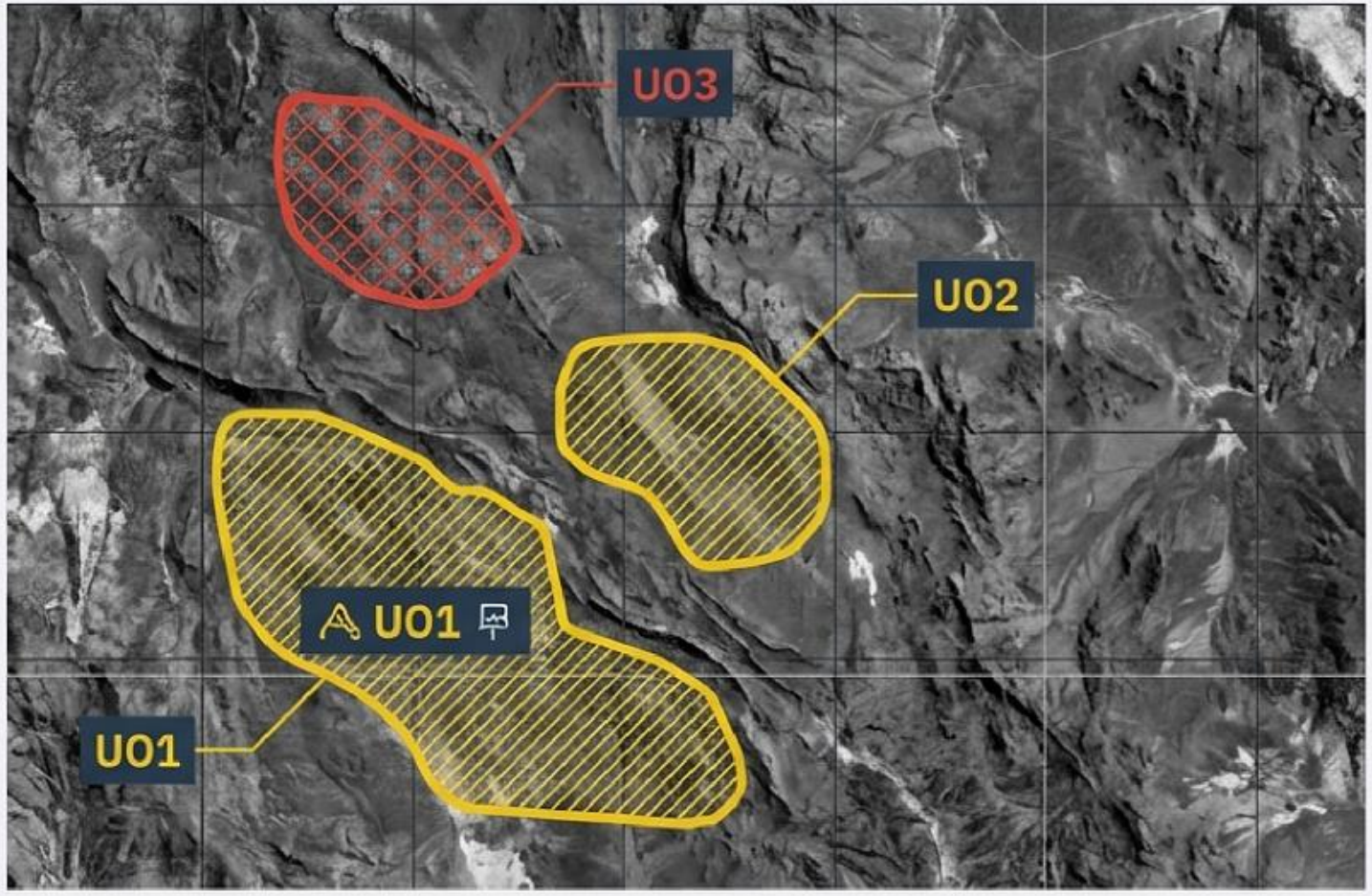


Identified Anomalies: Spatial Distribution & Classification



U01 **Anomaly No. 1 (U01):**

- Investigated.
- Southwest.
- Gold conc. ~1 g/t.

U02 **Anomaly No. 2 (U02):**

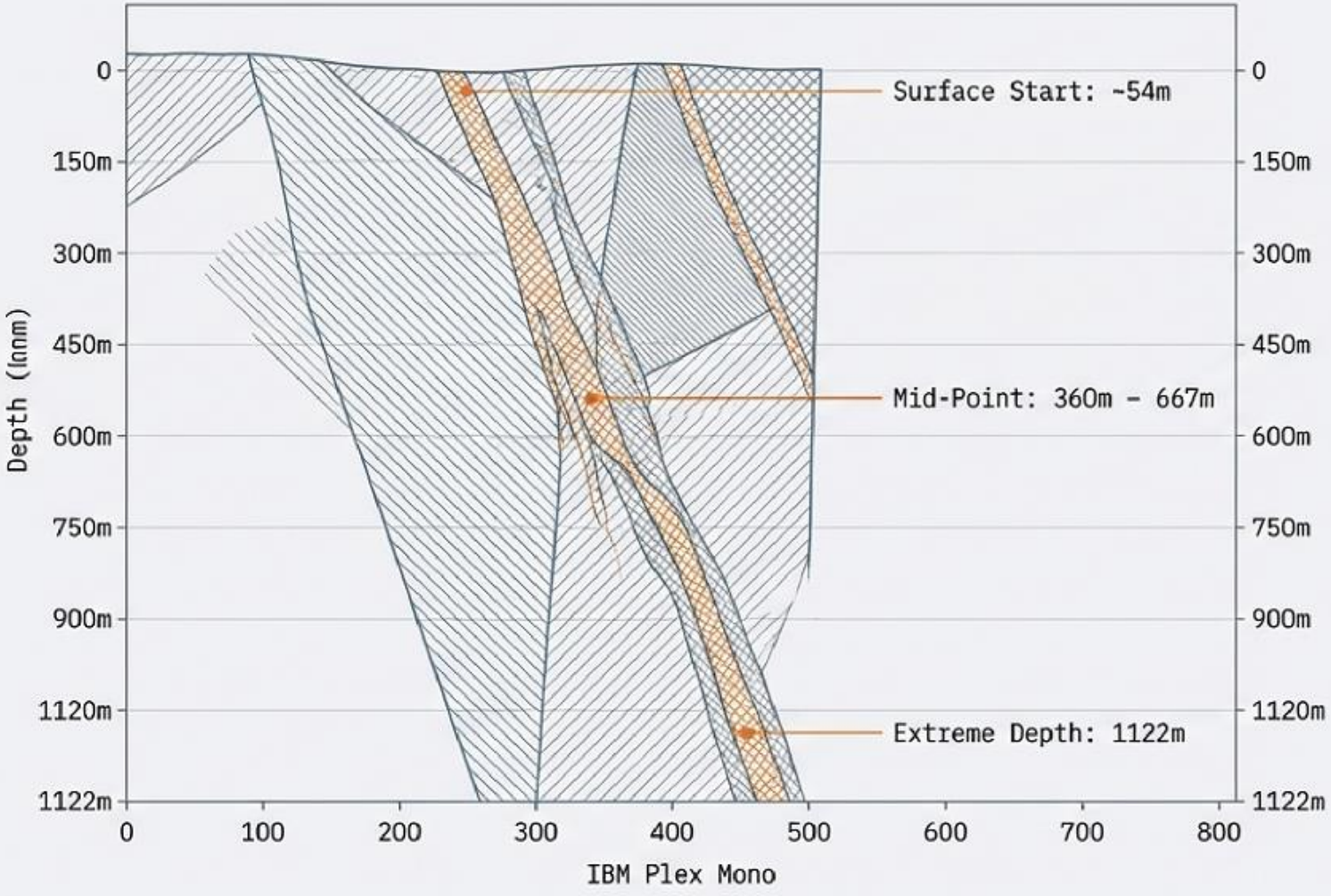
- Investigated.
- Central.
- Gold conc. ~1 g/t.

U03 **Anomaly No. 3 (U03):**

- DISCARDED.
- Northwest. Unpromising signal intensity.

Safety Orange Key Insight: Anomalies are strictly confined to tectonic fault lines identified via IR satellite processing.

Deep Dive: Anomaly No. 1 (UO1) Profile



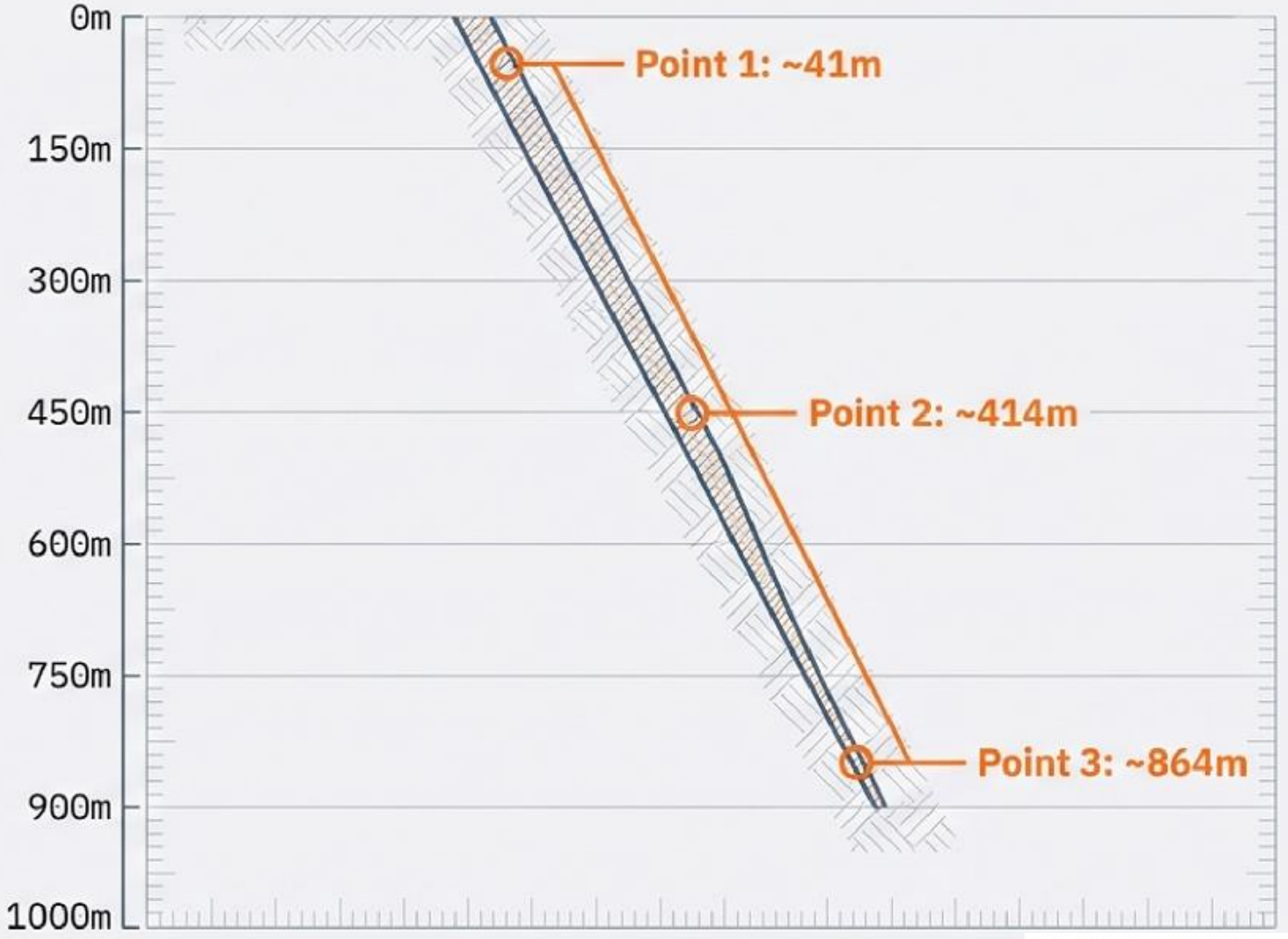
- **Dimensions:**
  Length 235m, Width 41.5m
- **Structure:**
  Two quartered veins (SW to NE)
- **Vertical Extent:**
  Plunges to >1100m

Deep Dive: Anomaly No. 2 (UO2) Profile

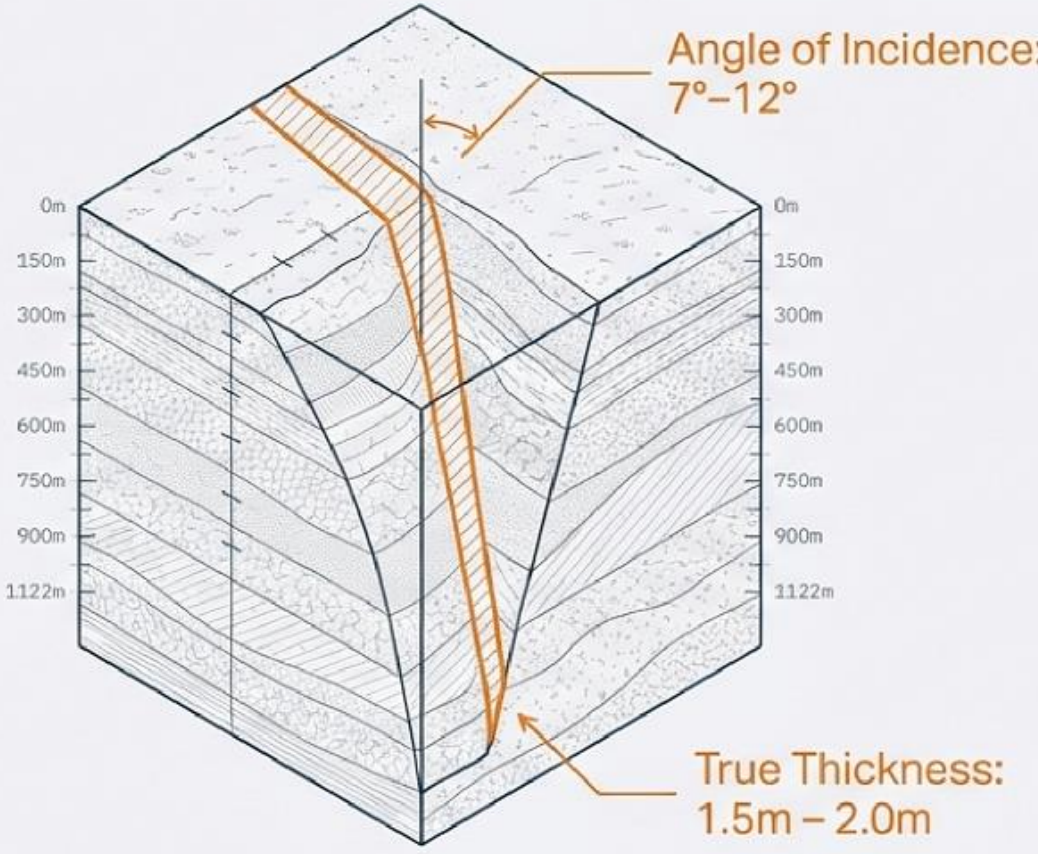
Dimensions:
Length 180m
Width 34m

Structure:
Single quarried vein

Geometry:
Similar steep plunge to UO1.

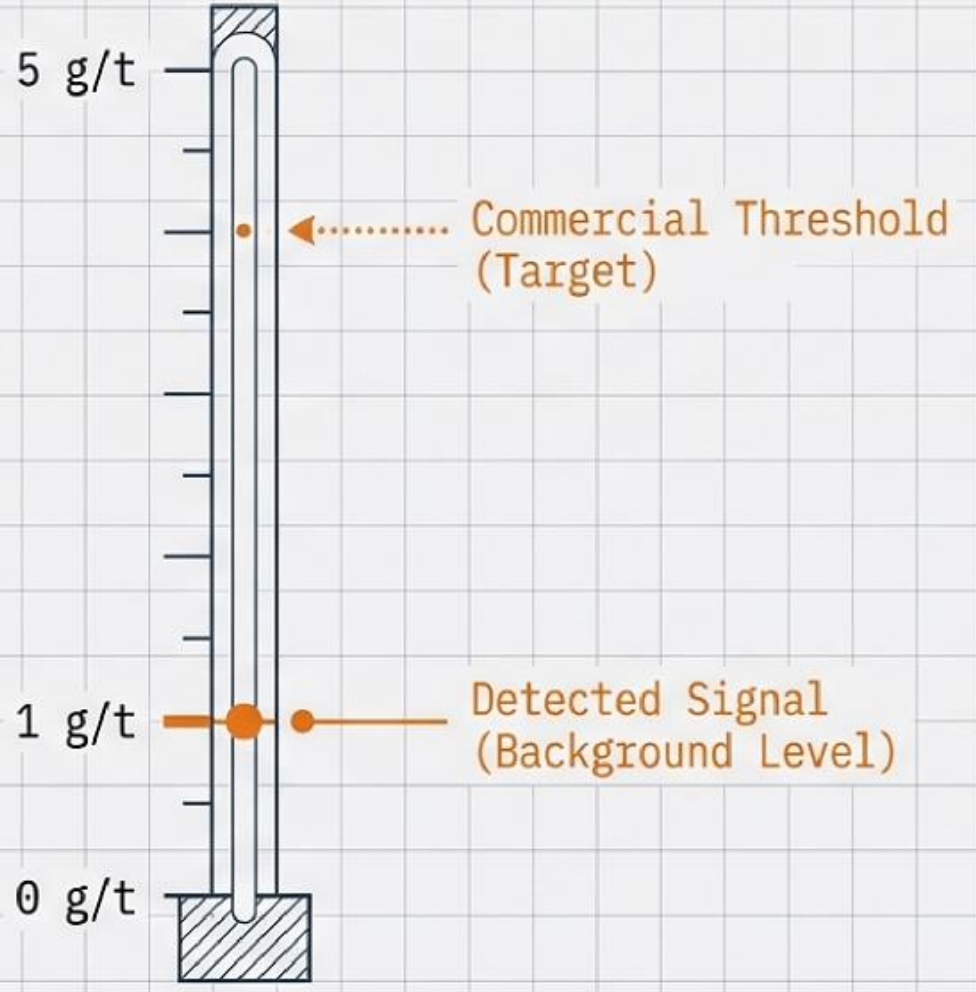


Structural Analysis: Vein Geometry & Extraction Challenges



The Excavation Problem: While the anomaly signal width appears to be 30-40m, the actual mineralized vein is extremely thin (approx 1.5m). Because it stands nearly vertically (like a sheet of paper), accessing it at 1000m depth requires moving massive volumes of non-mineralized overburden rock, destroying the economics of the mine.

Quantitative Analysis: Grade Estimation & Calibration Limits



The Data:

Detected gold concentrations are ~1 g/t.

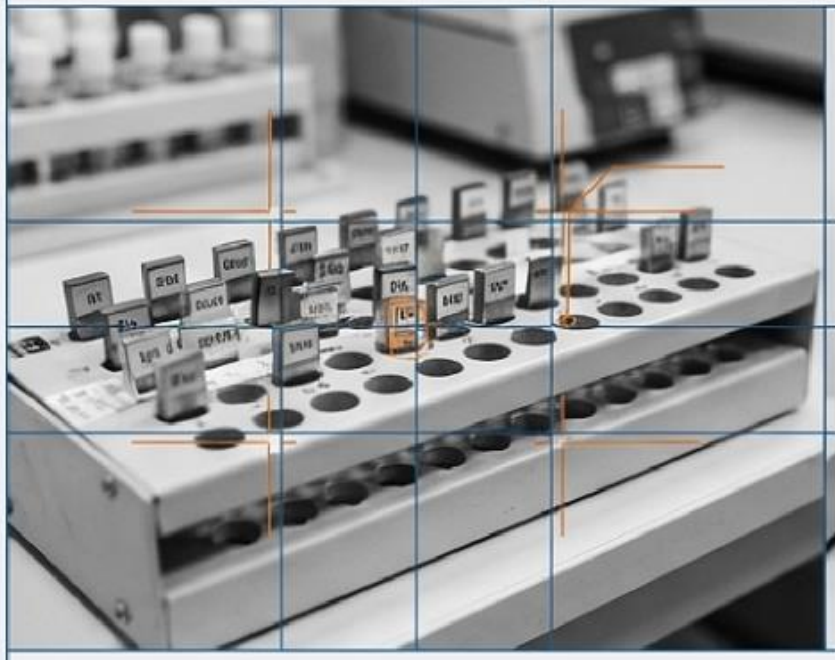
The Calibration Constraint:

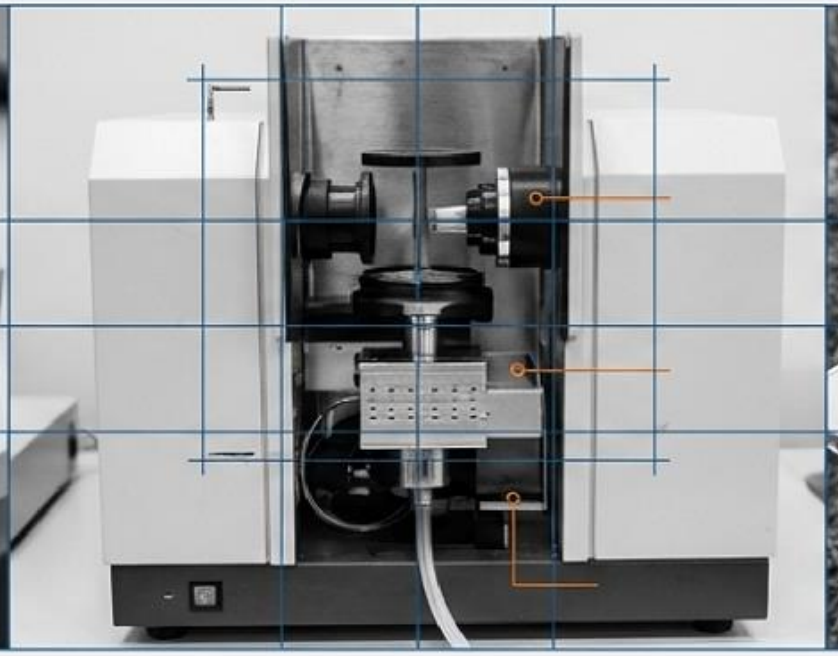
The Client did not provide commercial-grade core samples for the system's learning matrix. Calibration was performed using only low-grade (1 g/t) samples.

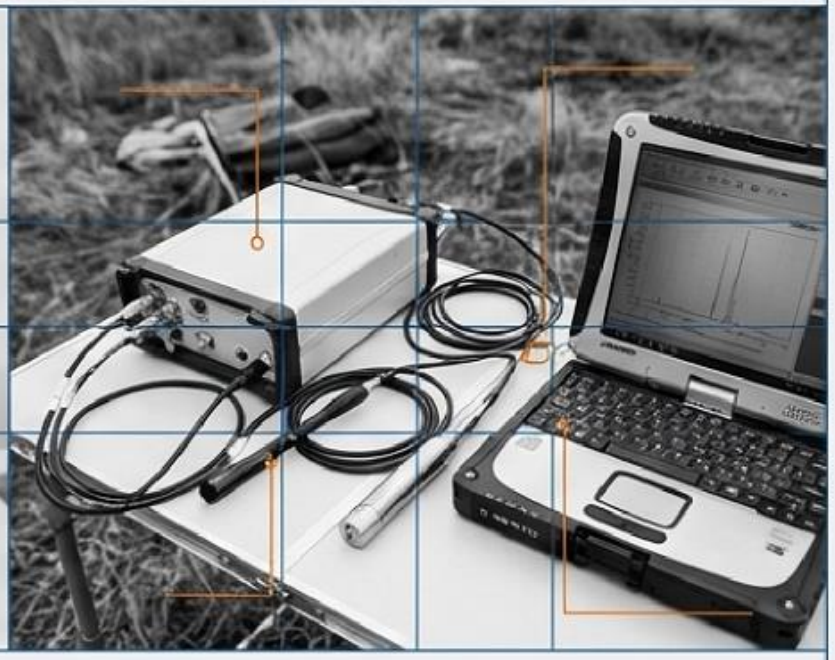
Conclusion:

The system searched for 'background' levels because that is what it was taught to see. Actual commercial grade *might* be higher, but current data only proves 1 g/t.

Technology Deep Dive: The ‘Poisk’ Geophysical Complex







Matrices

Use of test matrices with NMR spectra of reference metal atoms.

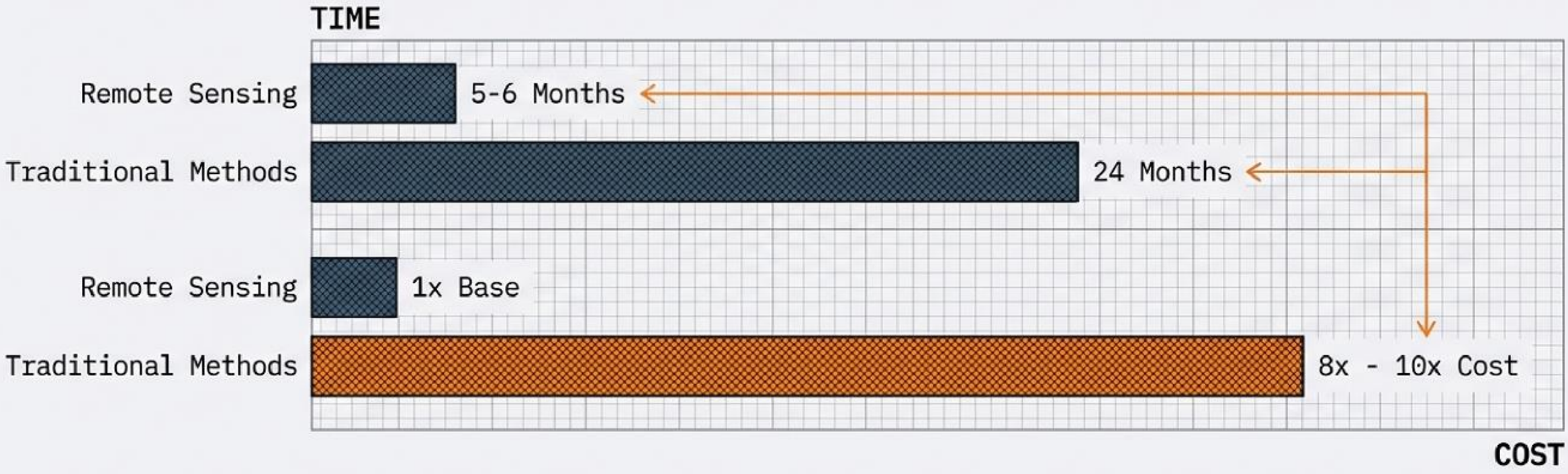
Spectroscopy

Atomic absorption spectrophotometer ‘Saturn-4EPM’.

Patents

Technology patented in Russia, Switzerland, Ukraine, and Germany.

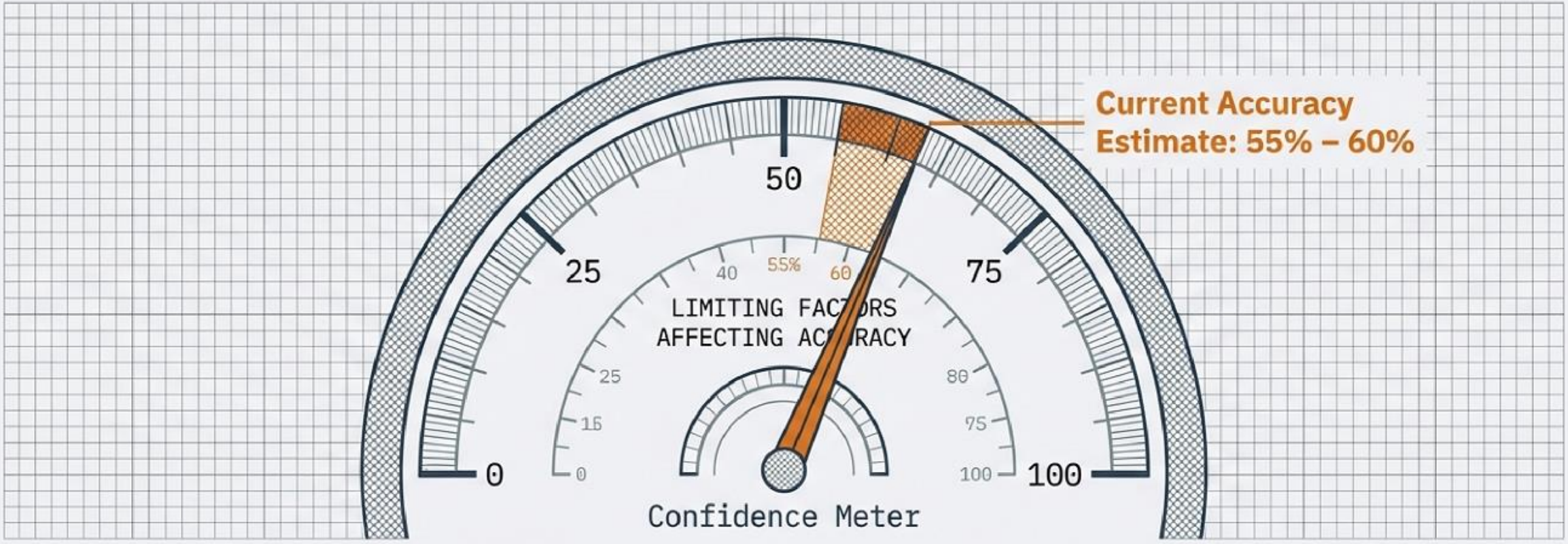
Operational Efficiency: Remote Sensing vs. Traditional Exploration



STRATEGIC VALUE:

This report eliminated the financial risk of “blind drilling” into unpromising sectors, saving significant capital expenditure despite the negative geological result.

Data Reliability & Confidence Intervals



Missing Reference Data:
Accuracy is capped because high-grade commercial reference samples were not available for calibration.

Stage II Pending:
Field work with Mobile NMR was not commissioned.

Depth Error Margins:
Estimates at 1000m depth have a margin of ± 5-110m.

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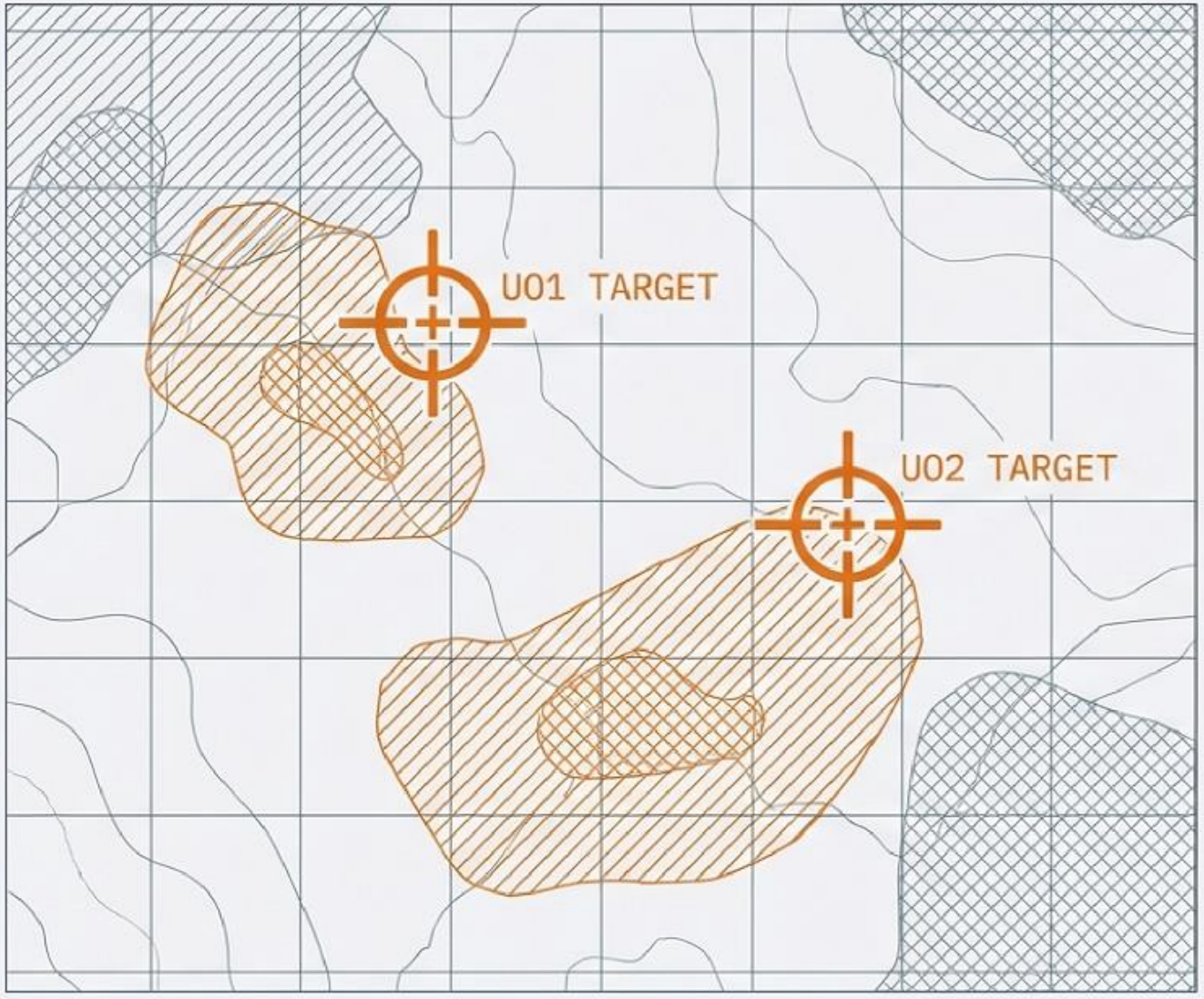
Recommendations: Verification Protocol



Step 1: Validation Drilling. Drill 2-3 control exploratory wells at coordinates U01 and U02.

Target Depth: Wells must reach 700m to intersect the deep vein structure.

Objective: Obtain physical cores to determine actual gold concentration vs. background noise.

Decision Point: If cores show >1 g/t, proceed to Stage II (Field Survey). If not, cease operations.

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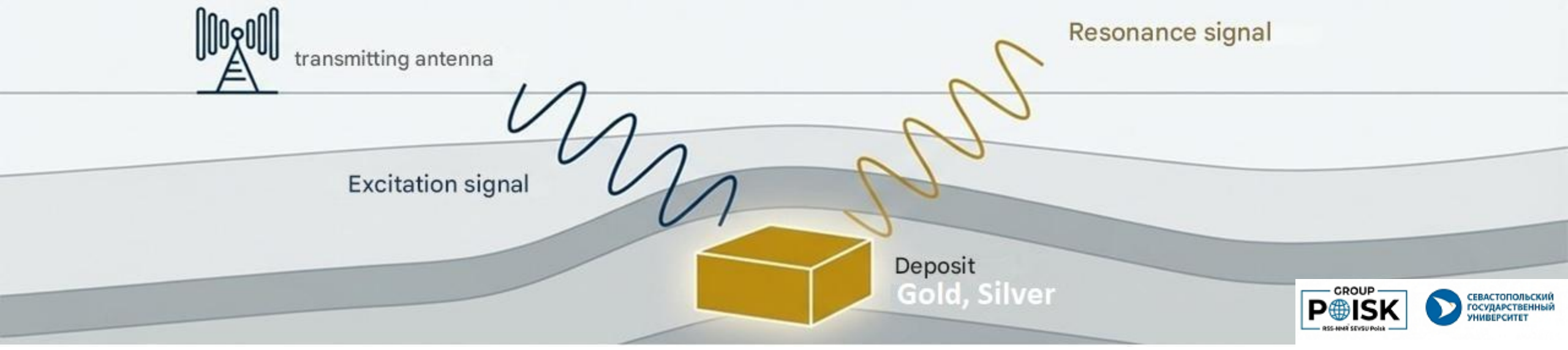
СЕВАСТОПОЛЬСКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ

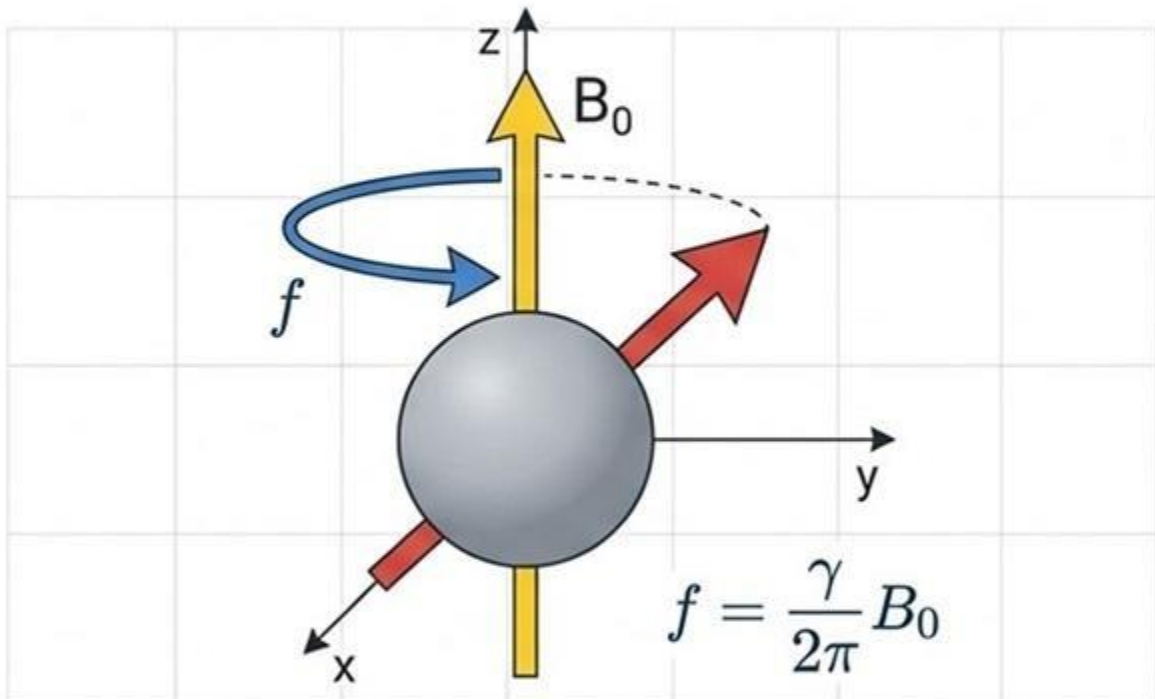
Our solution: RSS-NMR technology, a direct detection method.

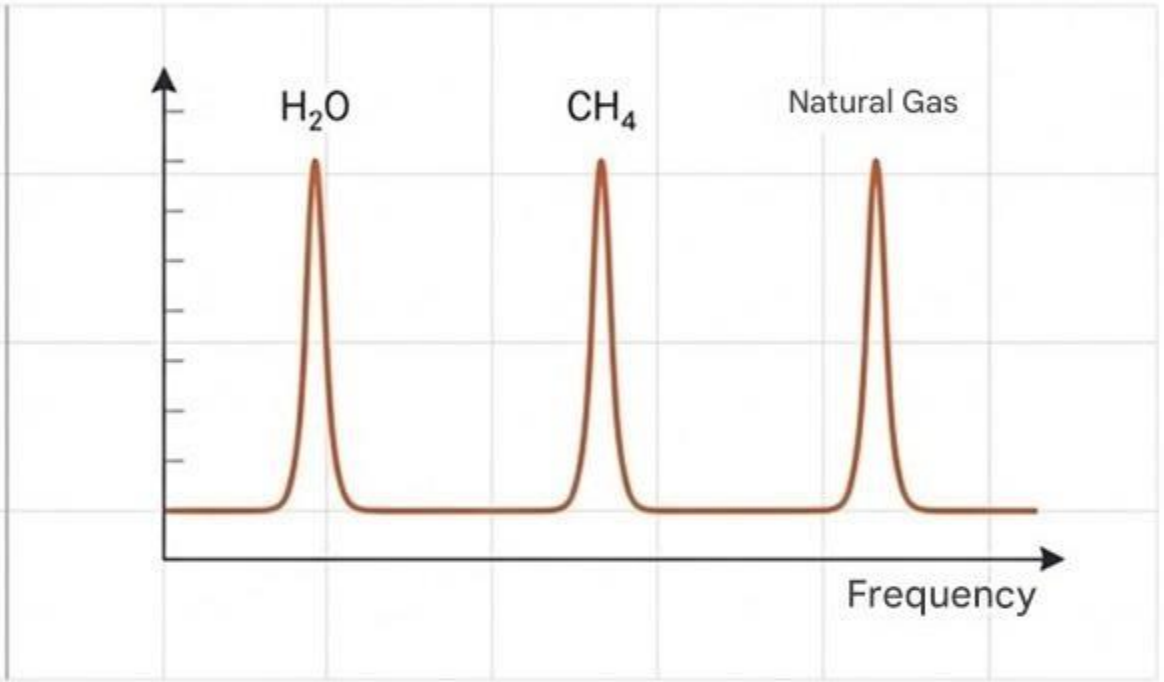
RSS-NMR (Remote Sensing Survey by Nuclear Magnetic Resonance) technology is a direct exploration method that identifies the unique spectral signature of each mineral. By exciting the atomic nuclei of the substance being sought, we obtain a resonance response that confirms its presence and allows us to characterize the deposit with unparalleled precision.

We don't look for geological anomalies. We detect the ore directly.



Each substance has a spectral "fingerprint" that we can read remotely.





The technology is based on the effect of Nuclear Magnetic Resonance (NMR). By exciting atomic nuclei, we measure their resonance frequency. This "chemical shift" is unique to each molecule (water H_2O, methane CH4, etc.), allowing for unambiguous identification of the substance being sought, separating its signal from background noise.

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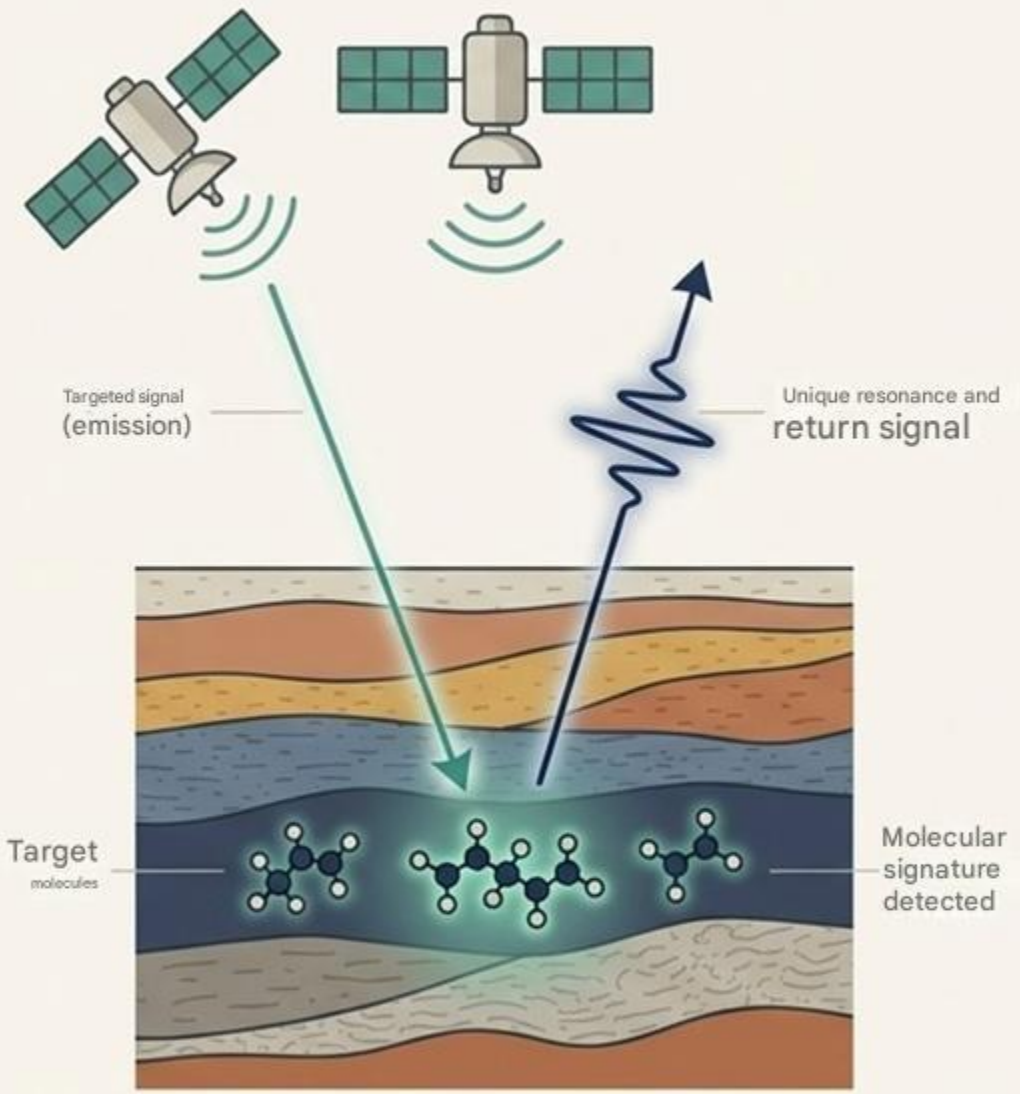
СЕВАСТОПОЛЬСКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ

The solution: RSS-NMR technology for direct detection.

Instead of searching for geological structures, we directly detect the molecular signature of minerals.

The technology is based on Nuclear Magnetic Resonance (NMR), a physical phenomenon that allows the identification of specific substances. We excite the atomic nuclei of the mineral being sought (oil, gas, water) and measure their unique resonance signal, the Larmor frequency.

- Direct detection: Unambiguous identification of the mineral.
- Drilling depth: 0 to 7 km.
- Applicability: Onshore and offshore, with no terrain restrictions.
- Safety: Completely harmless to humans and the environment.



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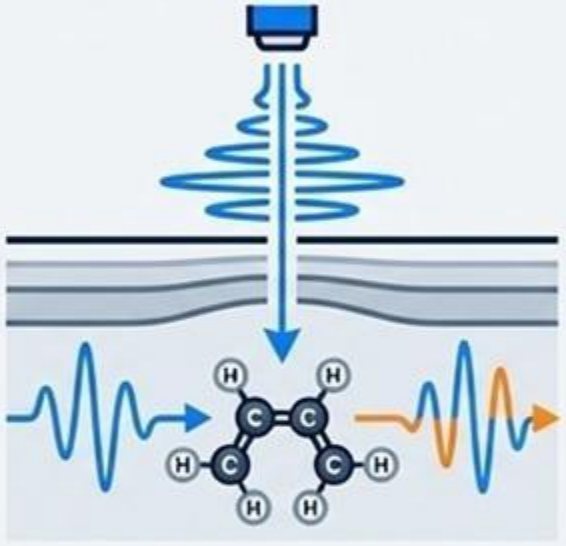
Our 3-step process for direct hydrocarbon mapping.

Step 1: Satellite Image Processing

Analysis of satellite images (NASA, Roscosmos) with proprietary processes to amplify spectral anomalies associated with hydrocarbons.



Step 2: Far Resonance Analysis

Induction of high-frequency electromagnetic fields to excite target atoms. Sequential recording of their characteristic resonance signal for unambiguous identification.

Step 3: Modeling and Reporting

Compilation of data to create accurate 4D maps delineating potential accumulations and estimating volumes ("oil in place").

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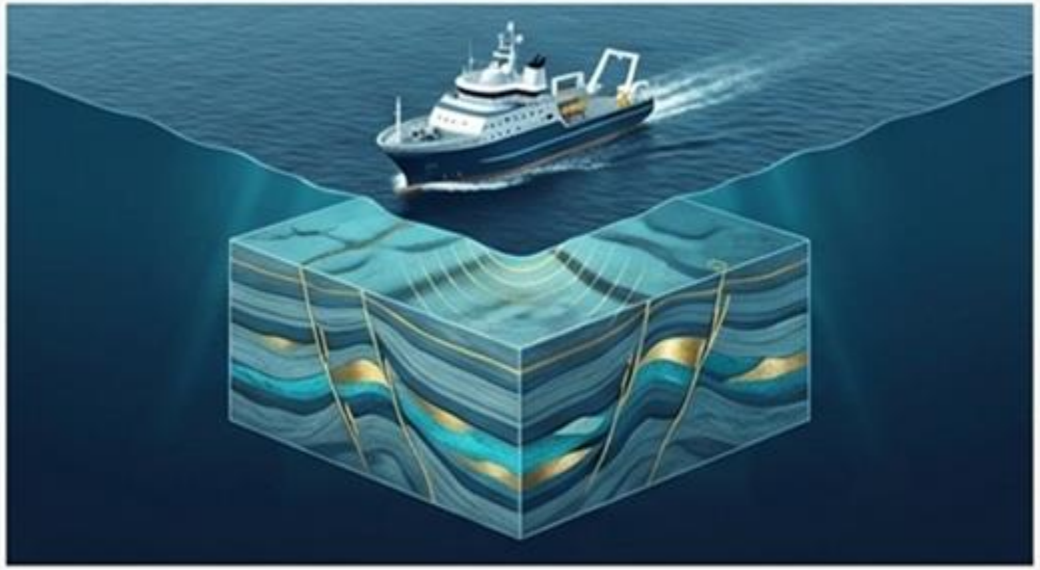
Know-How: Radiochemical Processing of Satellite Images

This patented process allows the satellite image to be 'filtered' to reveal only the areas where the target mineral is present, based on the resonance between the control plate and the deposit itself.

"We map the container, hoping to guess the contents."

The Seismic Paradox: More Data, Persistent Uncertainty

The Fundamental Contribution of Seismics



Seismic methods (2D, 3D, 4D) have revolutionized our understanding of the subsurface, enabling structural imaging and the identification of traps.

An Indirect Method by Nature

However, seismics remains based on the interpretation of anomalies. It does not directly detect hydrocarbons.

- Efficiency does not exceed 30-35%; 6 to 7 out of 10 wells are dry.
- Divergent interpretations of the same object lead to high-risk investment decisions.

We are the only exploration methodology for polymetallic nodules on the seabed.
We have made some interesting discoveries in the Black Sea!

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Versión personalizada

1. Para consultar los costes de traducción, contáctenos.
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3. Para una opción editable, contáctenos.
4. Consultas disponibles en Michel.friedman@fands-llc.com o mlf10357@yahoo.com.

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- In Charge: World

Video

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English https://youtu.be/QVrneQGK-7o
Castellano https://youtu.be/g0HMRcAElyw
Русский язык https://youtu.be/Bp4EndumKc4

https://youtu.be/JCJKWJfTzL0

https://youtu.be/c6VZwmN8aDE

Русский язык
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