

Vue des crêtes de quartzite ferrugineuse de la Chaîne de Sfariate



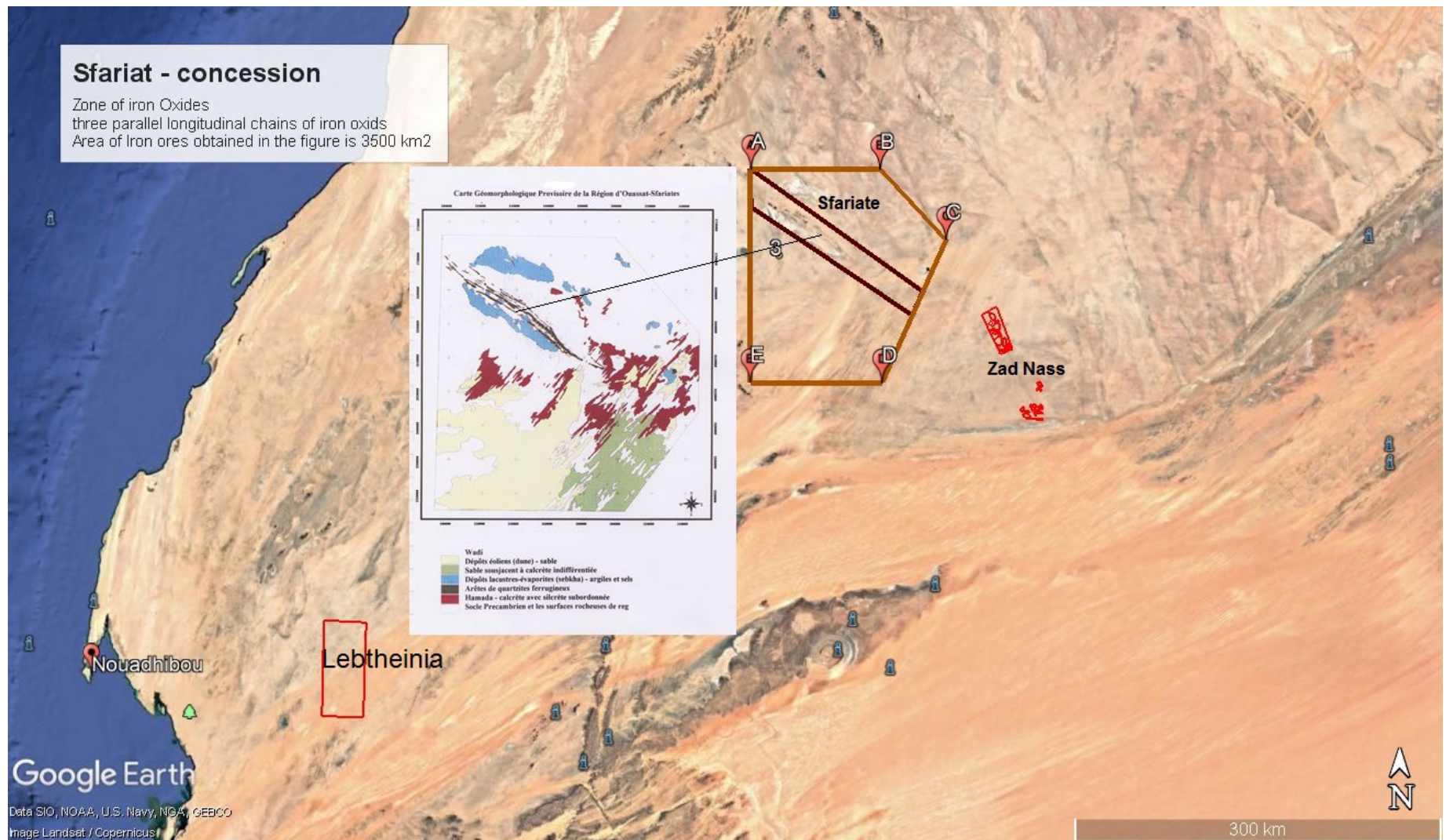
Iron Ores in the Safariat Area, Mauritania

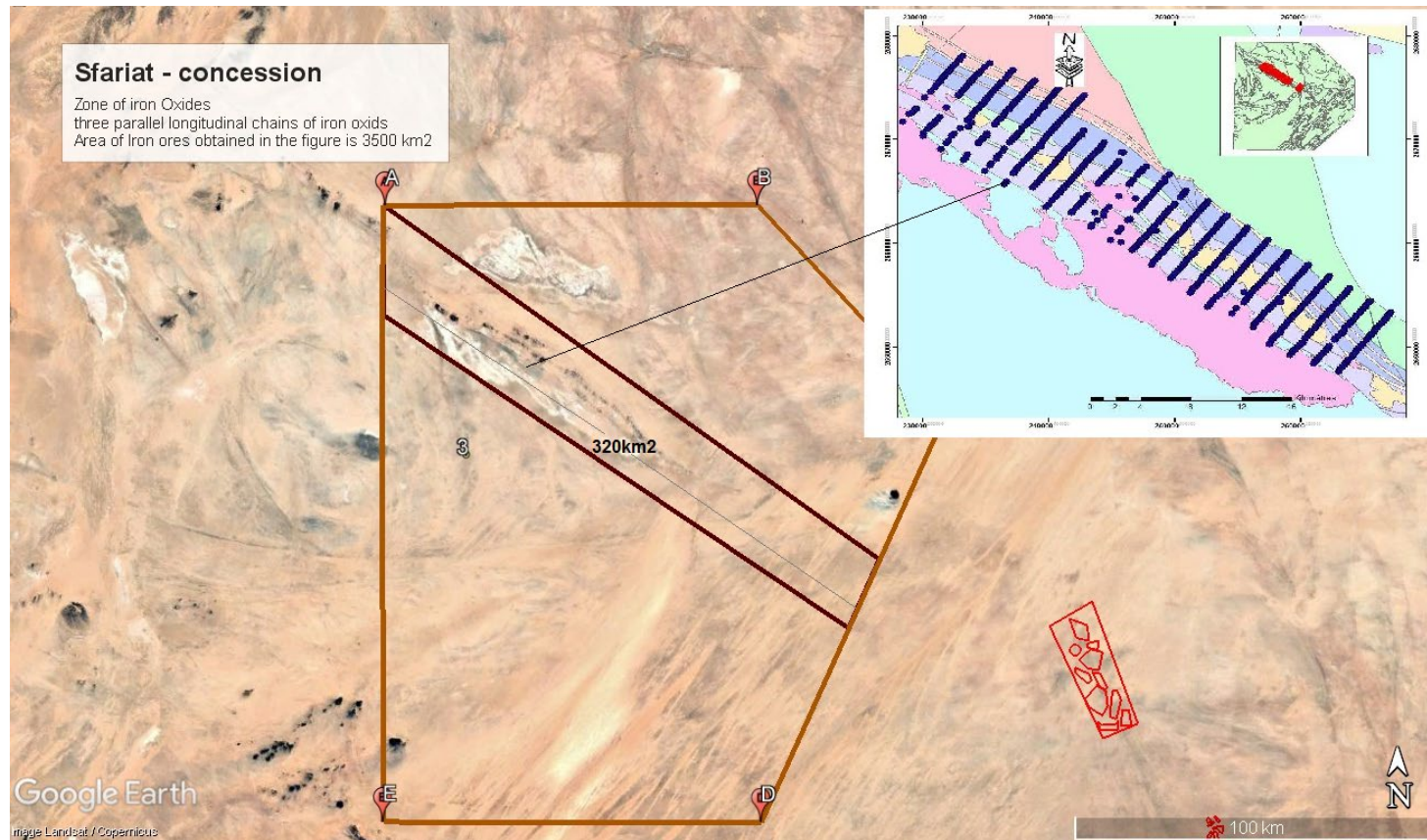
Ranges of mountains and underground mines extending over 320 km

The Saudi–Mauritanian Mining Company's concession in the Safariat area

Area Name:	Sfariate	
Boundary:	567.1	km
Area	21211.43	km2

Exploration License (Explored)						
point no.	W			N		
	x ^o	x'	x''	y ^o	y'	y''
A	11	59	59	24	18	42
B	11	00	16	24	17	11
C	10	30	05	24	17	07
D	11	00	05	24	16	43
E	12	00	08	24	16	18





Iron ore was found exposed along three nearly parallel mountain ranges extending up to the concession boundary and continuing southeast. The length of these mountains extends for a distance of 320 km, consisting of alternating Banded Iron Formation (BIF) layers and vertical iron quartzites forming a series of two to five jagged, semi-parallel peaks reaching heights of up to 40 meters.

The range extends from the border with Western Sahara to Kleib Zidnes, located about 125 km to the southeast. The southern edge of the belt is defined by the southern quartzite ridge, which approximately coincides with the northern edge of the Sebkhah Umm Edrous South, while the northern edge of the belt is bordered by paragneiss rocks rich in granite/biotite with iron quartzites.

The results of the analyses showed that the iron content in the ore ranges from 64% to 70%.

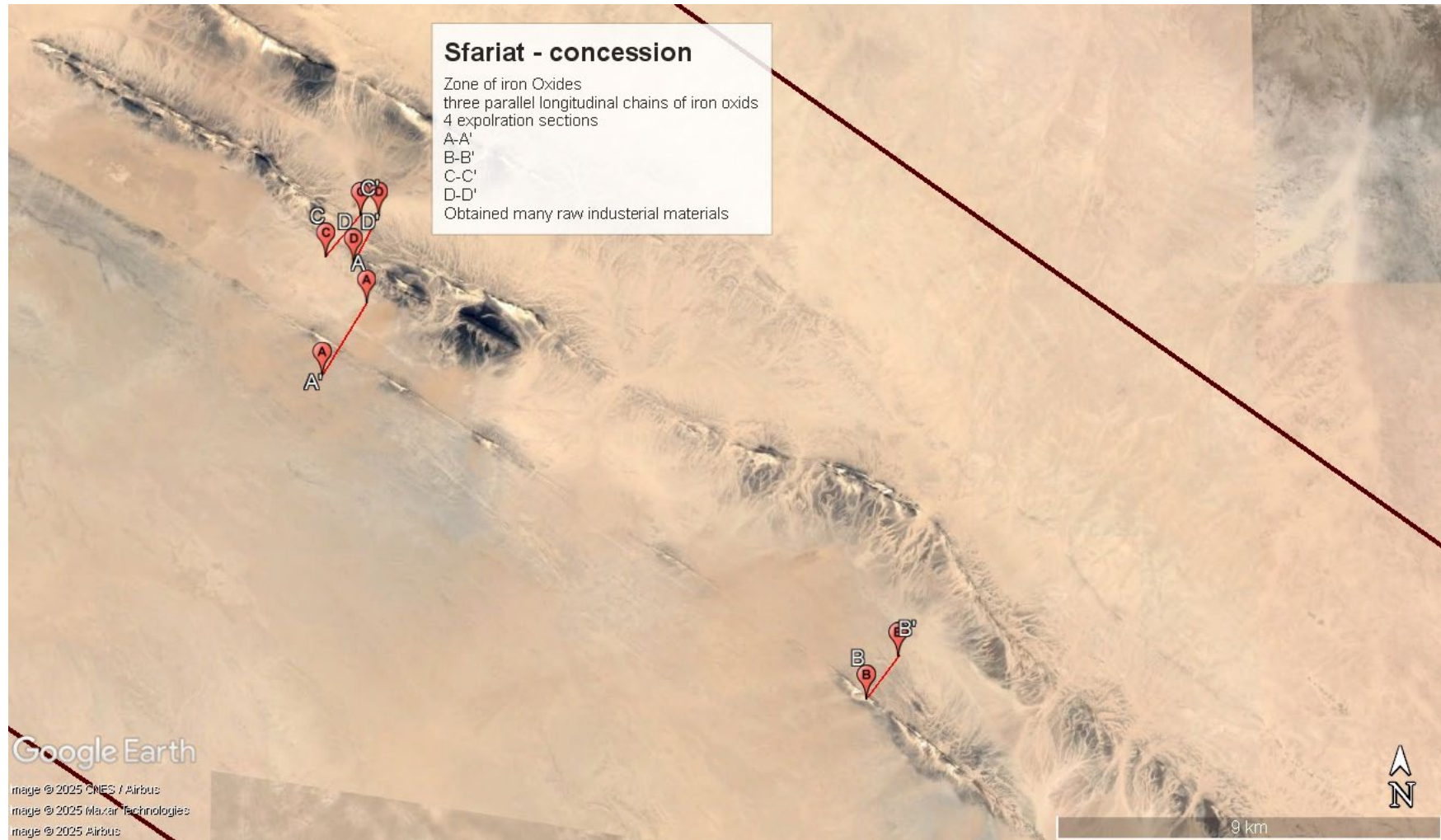
Work Areas

The areas containing iron ore in Sebkhah Umm Edrous have been divided into two major zones:

- The first major zone: the northern area
- The second major zone: the southern area

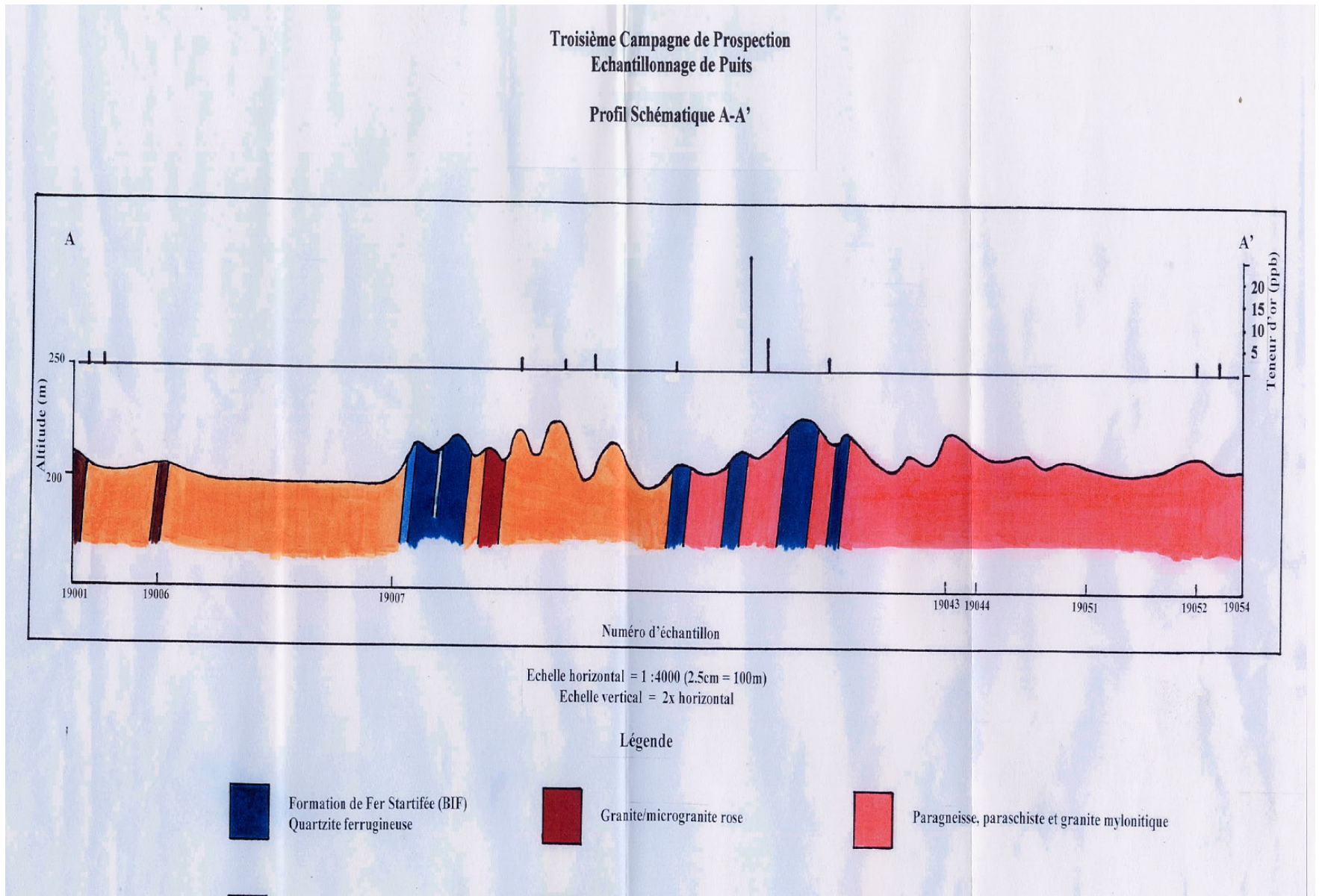


Exploration Annex Summary



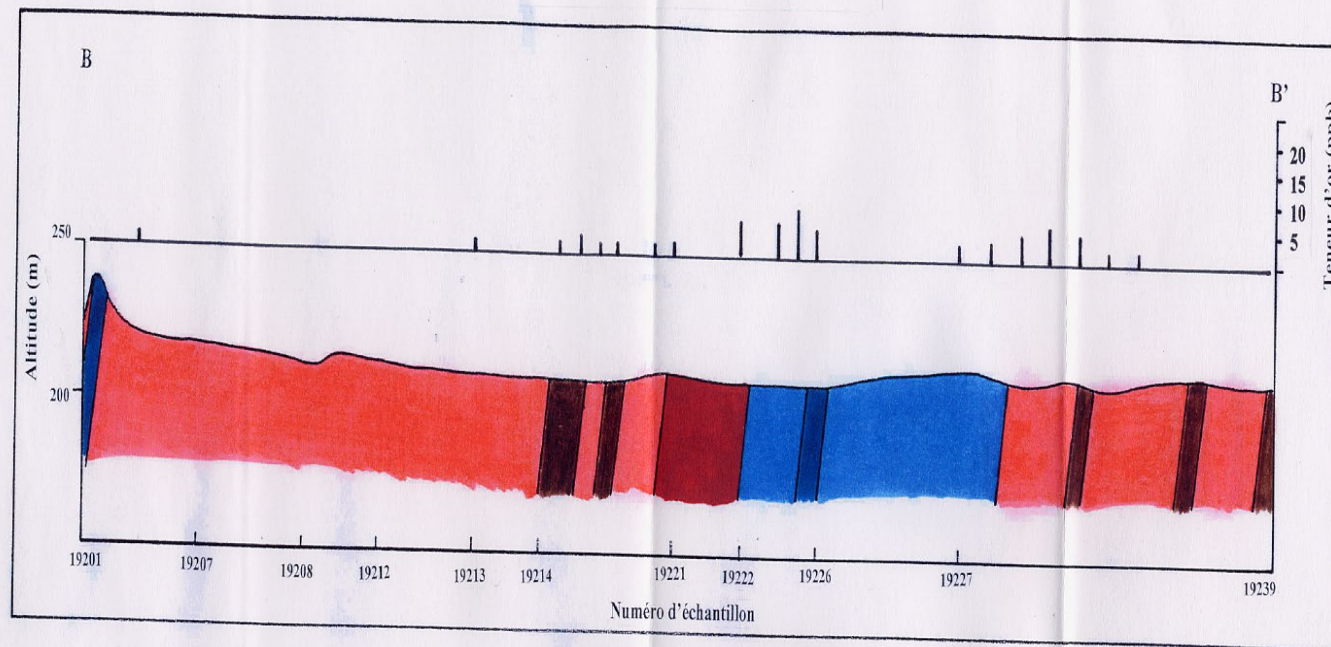
Four cross-sections were carried out to explore the interbedded ores within the iron ore mountains.

A variety of industrial minerals were discovered, which are currently undergoing technical and economic studies.



Troisième Campagne de Prospection
Echantillonnage de Puits

Profil Schématique B-B'



Echelle horizontale = 1 : 4000 (2.5cm = 100m)

Echelle verticale = 2x horizontal

Légende

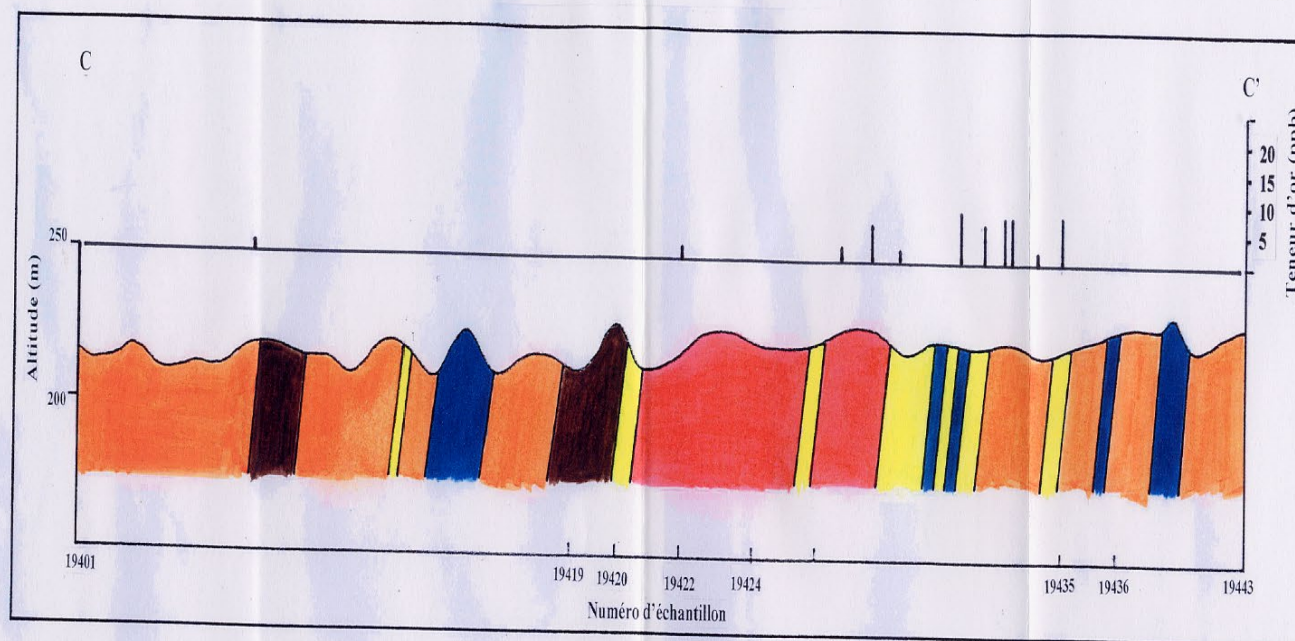
Formation de Fer Stratifée (BIF)
Quartzite ferroinense

Granite/microgranite rose

Damag...

Troisième Campagne de Prospection
Echantillonnage de Puits

Profil Schématique C-C'



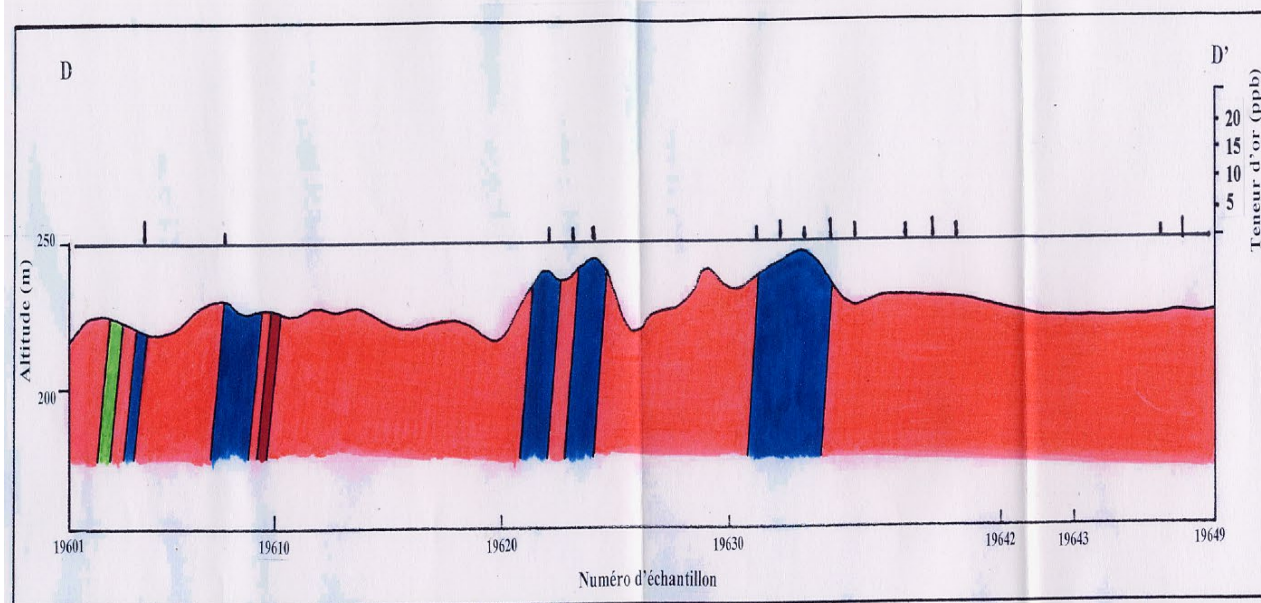
Echelle horizontale = 1 : 4000 (2.5cm = 100m)

Echelle verticale = 2x horizontale

Légende

Troisième Campagne de Prospection
Echantillonnage de Puits

Profil Schématique D-D'



Echelle horizontale = 1 : 4000 (2.5cm = 100m)

Types of Interbedded Ores Their Properties and Uses

1. Ferruginous Quartzite Rock

A quartzite rock containing iron impurities.

Color: Red, purple.

Uses:

- As a material for building walls and floors.
- In the production of **ferrosilicon**.
- **Industrial silica sand**.

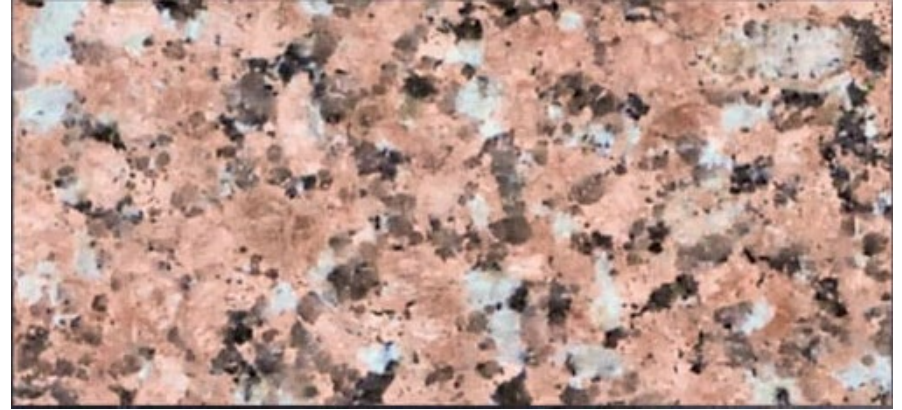


- **Silicon** production.
- **Silicon carbide** manufacturing.

2. Granite and Pink Granite

Applications:

- Kitchens
- Bathrooms
- Floors
- Exterior façades



3. Paragneiss Granite

Use:

- Commonly used in kitchens.



Paraschist Granite (Schist Types):

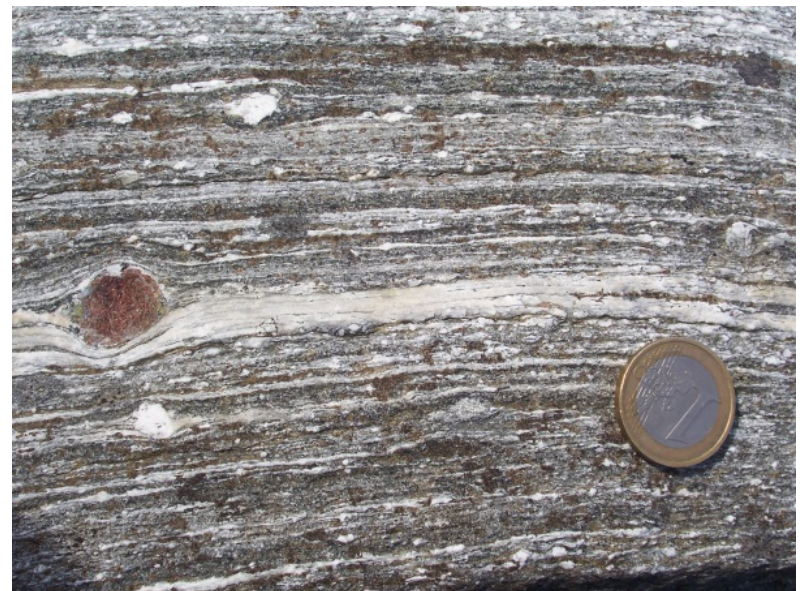
- **Mica Schist:** Rich in mica minerals and very common.
- **Talc Schist:** Characterized by a greasy texture and grayish-green color.
- **Quartz–Feldspar Schist:** Formed when the rock contains abundant quartz and feldspar along with platy minerals.



Mylonite Granite

Use:

- Building material.



4. Microgabbro Stone

Uses:

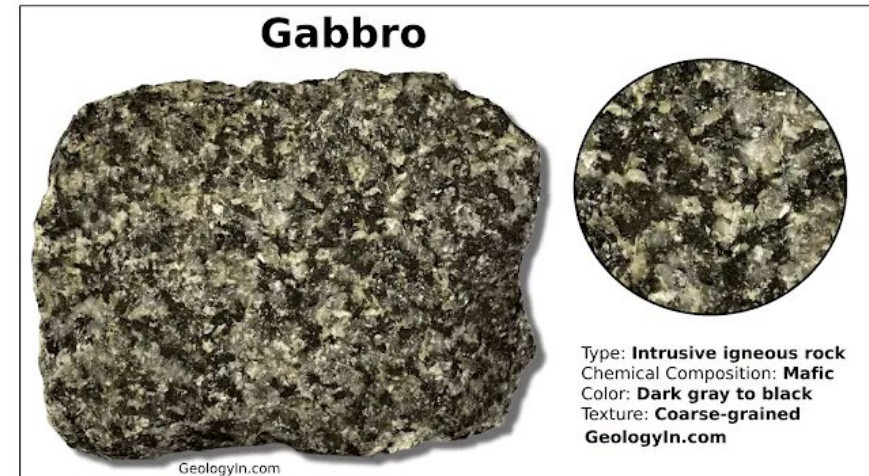
- As a building material and in road paving.
- In the cement industry.

Source of Valuable Minerals:

It is a rich source of important minerals such as **nickel, chromium, and platinum.**

Semi-Precious Stones:

Certain varieties, such as **blue gabbro**, are used as **semi-precious stones** in jewelry and decorative art pieces due to their distinctive colors.



5. Migmatite

Use:

- As a building material.



6. Amphibole

- **Amphibolite** is used as aggregate in highway construction.
- It is used as **ballast stone**, a heavy rock for lining railway tracks.
- Large slabs are cut and polished to be used as **architectural stone**.



7. Pegmatite

Pegmatite is an igneous rock with large crystals and serves as a major source of valuable minerals such as **lithium, cesium, beryllium**, and **rare earth elements**. It is also used in the production of **gemstones**,



building materials, countertops, and industrial components in electronics, glass, ceramics, and aircraft alloys.

Main Uses of Pegmatite:

- **Extraction of Rare Minerals:**

Pegmatite is the primary source of **lithium and cesium**, in addition to **tantalum, niobium, beryllium**, and **rare earth elements**. These minerals are used in:

- **Electric vehicles and smartphones:** in lithium batteries.
- **Electronics industry:** for capacitors and laser devices in wind turbines.
- **Aerospace and nuclear applications:** in beryllium alloys.

- **Gemstones:**

Pegmatite yields precious stones such as **emerald, aquamarine, topaz, tourmaline**, and **amethyst**, which are used in jewelry and decorative items.

- **Building Materials and Decorative Products:**

Pegmatite can be cut and polished to produce **architectural stones** for building façades, countertops, and tiles.

- **Glass and Ceramics Industry:**

Feldspar, one of the main components of pegmatite, is used in the production of glass and ceramics.

- **Advanced Electronics Industry:**

Mica extracted from pegmatite is used in manufacturing electronic components and optical filters.

Economic Importance of Pegmatite:

Pegmatite holds great economic value due to its high concentrations of rare elements and industrial minerals that support advanced industries such as **technology and clean energy**.