

## CHENNA (Au, Cu) (SOUTHERN PROVINCES, MOROCCO)

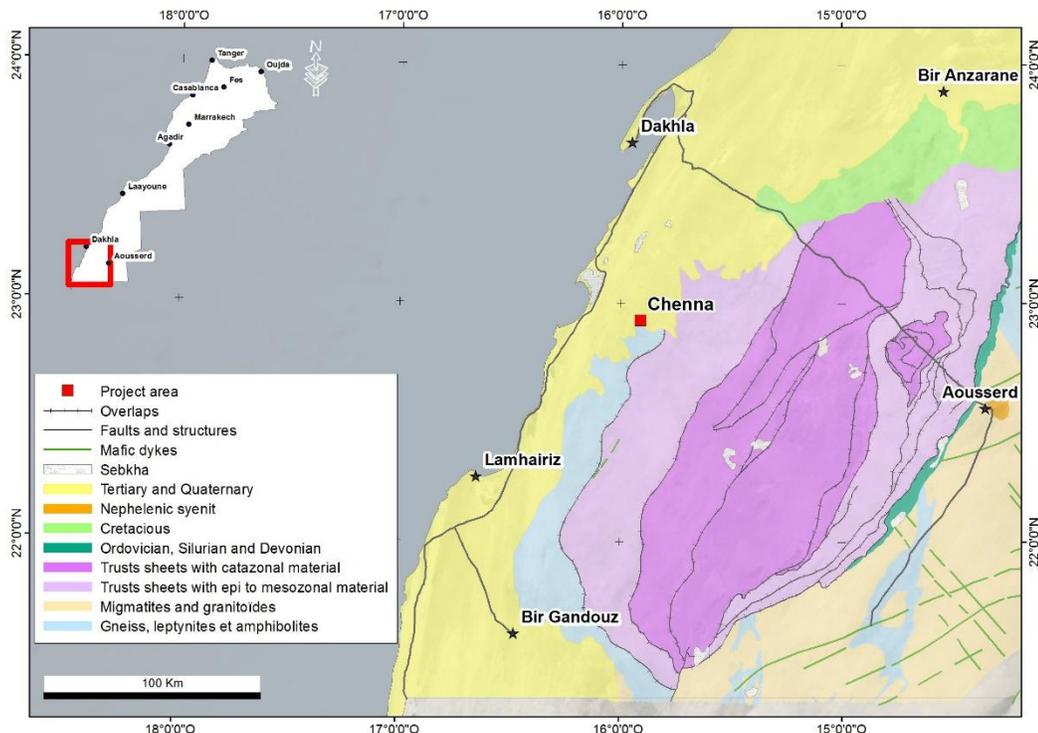
### Overview :

Chenna area is considered as one of the most important zone which are advantageous for gold exploration based on surficial copper-gold occurrences. Previous works attribute an Archean age to this unit, thus it constitutes one of the ancient basement in Morocco. It is one of the most important areas that encompass gold and copper occurrences, grades of gold can reach 6.4 ppm, copper is more abundant showing grades ranging from 1 to 6%.

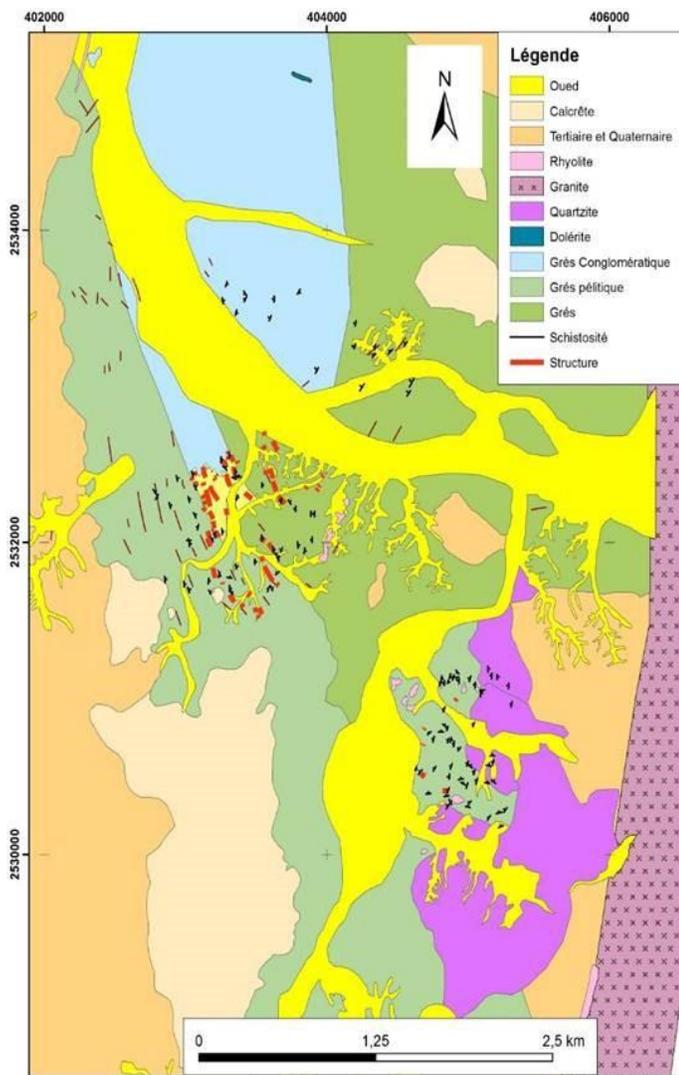
Target name	Chenna
Type of mineralization	Au, Cu
Licence coverage	10 Licences
Available data	Geological data/ Rock samples/ Geochemical data
Grades	6.4 ppm Au, 1 to 6% Cu
Dimensions	Extension : metric - Thickness : centimetric
Infrastructures	Road and Dakhla seaport to 150 km

### Geological setting and location :

Chenna's outcrops are located at the western boundary of Souttufides massif, more precisely near to Togba unit at about 90 km south of Dakhla. This area is situated at the external western part of Souttoufide massif, exactly between Cenozoic cover and western thrust sheet of the Adrar Souttouf. Chenna's outcrops include mainly bioclastic limestone constituting cover. Basement is formed by : granite-gneissic complex located in the eastern part of the studied area. It mainly composed of quartz, muscovite and potassic feldspar. Several quartz veins cross cut granite-gneissic complex, following a northern trend. Rhyolitic dikes showing brecciated texture with ferruginous and silicic composition.



Location and general geological setting of chenna



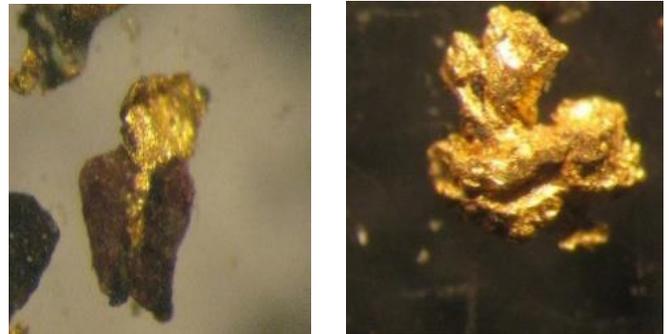
Detailed geological map of Chenna

A set of altered rocks cover the entire central and western parts of Chenna. Alteration is strongly developed in these rocks, which provide a green altered aspect detected through satellite imagery. The altered rocks are a metasedimentary succession constituted mainly by sand pelitic sediments, sandstone and quartzite. A central part of Chenna display the following succession : pelites, grauwacks, microconglomerates, conglomerates and sandstones.

## Mineralization:

Chenna's mineralization is essentially composed by: magnetite, oligiste, hematite, covellite, chalcopryrite, bornite and native gold. Deposition mechanism of this paragenetic succession was performed by three consecutive phases. The intermediate one was holder of copper-gold mineralization. It is intensively related to potassic alteration zones, proved by thin sections study and chemical analysis. Mineralogic and metallographic data show that the mineralization is deposited in three consecutive stages :

- A dominant phase with iron oxides which includes magnetite, oligist and hematite.
- Second stage, include copper minerals and native gold grains deposited in association with magnetite, which replaces the preexistent hematite crystals.
- Pyrite sub-automorphic to automorphic crystals trigger the end of the paragenetic succession, and constituting a tardive stage.



## Outlook :

The main aims of the current study is to identify ore indicators that may clarify ore occurrences distribution. Revealed indicators are divided in two categories :

- structural control: hinge of folded zone.
- lithological control: sandstone and microconglomerate lithological contacts.

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