

**Gold and Base Metal Exploration on the Tialkam Exploration Licence, Liptako Region, Niger, West Africa**

Summary of Hampel, W. (1999): 'Tialkam Permit, Liptako/Niger - Final Report'.- 20 pp, 14 maps and 19 annexes

**Clients:** GeoServices/Barrick/Anglo-American    **Position held:** Technical Director, Consultant

**Scope of project:** The initial minimum target of Barrick Gold was 3 Mio ounces. Later Anglo formed a JV with Barrick and the minimum target was reduced to 1 Mio ounces. In late 1998, Anglo decided to redirect the exploration almost entirely to base metals. The target was given as a mine with a minimum operating time of 10-15 years.

**Responsibilities:** This included the setting-up, realisation and supervision of the exploration programme, including the organisation and running of a fully equipped field laboratory and dealing with local authorities. The staff under my supervision included 1 permanent expat geologist, 2 expat geological technicians, several consultant geologists, 1 local geologist and a local staff of 150 persons.

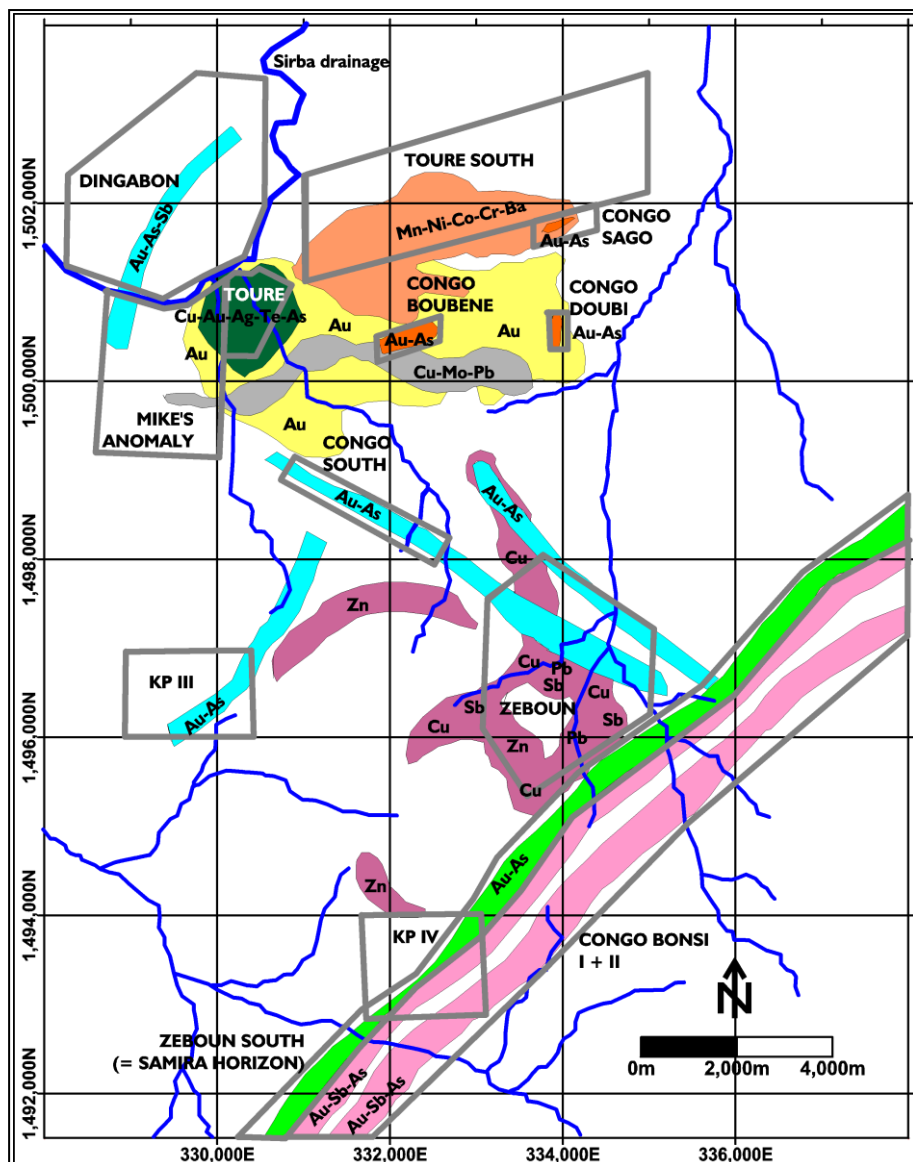
**Work carried out:**

- Re-interpretation of all available data
- interpretation of Landsat images and aerial photographs
- regional mapping 1: 50,000: 780 sqkm
- regional mapping 1: 20,000: 130 sqkm
- detailed mapping 1: 5,000: 22 sqkm
- RAB-drilling: 18,500 m
- trenching: 4,800 m
- Soil/lag/termite mound samples: 4,300 samples
- stream sediments: 260 samples
- outcrop/channel sampling: 1,000 samples
- statistical interpretation of data
- evaluation of all known orpailleur sites
- generation of more than 20 new targets
- Structural interpretation
- development of metallogenetic models
- Comprehensive description of all 47 targets

**Approach:**

The project area of 780 sqkm was well known to me through earlier work in 1992/93. Orpailleur sites were evaluated by channel sampling, trenching and partly by RAB-drilling. New Au targets were generated by a combination of geochemical surveys (Au + 33), structural and geological interpretation. Geochemical anomalies with favourable element associations (i.e. Au-As-Sb, indexes like NUMCHI, CHI, etc.) were given the preference to pure Au-anomalies. The base metal targets were generated by the interpretation of the geological setting, airborne geophysical data and the soil geochemistry data base

**Results:** In total 47 targets were identified, including 40 for Au, 5 for Au and base metals combined and 2 exclusively for base metals. One of the most important discoveries was the delineation of the so-called Samira Horizon for more than 10 km on the concession area. The Samira Deposit (ca. 2 Mio oz) is currently being developed by the JV of Etruscan-Semafo-Management on the neighbouring Tiawa Concession. Due to the re-direction of the programme towards base metals, this discovery could not be followed up.



**Tialkam Permit, Liptako, Niger**  
 Classification of mineralisation and anomalies  
 Congo Touré - Zeboun Subarea  
 WH, May '01; modified after HAMPEL  
 (1999) Zeboun\_compilation.srf

<b>L E G E N D</b>	<b>Supergene mineralisation anomalies</b>	<b>mineralisation + anomalies related to stratigraphic horizons</b>	<b>ZEBOUN SOUTH</b>  <b>Original prospect outline and name</b>
	alluvial/eluvial	disseminated, tectonically controlled	
	supergene enrichment	narrow quartz-stibnite veins	
	<b>shear-/fault zone hosted mineralisation + anomalies</b>	purely lithological anomaly	
	disseminated, often silicified	<b>mineralisation + anomalies related to mafic intrusions</b>	
	narrow quartz veins	polymetallic quartz veins	
remobilisation products			