ORIGIN AND CHARACTERISTICS OF COPPER DEPOSITS IN AKIRI, NASARAWA, NIGERIA

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Introduction

The Akiri copper deposit is the first independent large scale copper bearing vein deposit discovered in Nigeria.

Table1.Table of trace element concentration in ppm for Akiri ore samples

NAME	Ba	Cu	Pb	Fe2O3	Zn
Gossan ore	1900	20	<5	65.9	8
Iron Gossan	104	108	12	82	11
Ore rock	8.5	>10000	6	43.7	58
Ore rock	4.4	>10000	5	47.8	46
Ore rock	23.4	>10000	<5	38.6	58
Mineralize sandstone	106	1945	9	54.7	5

Discussion and results

Chemistry of the ores showed dominantly copper and iron with barium in places and the ores contain insignificant Pb and Zn as indicating of no associated galena and sphalerite very much unlike the situation in the other parts of the Benue Trough (Akande, et al., 1989 and Olade & Morton (1985). The REE pattern, fluid inclusion microthermometry and oxygen isotope suggest differential temperature, fluids and formational trends for the Akiri ores compared to the host sediments and other mineralization in the Benue trough.

The Akiri copper iron sulphide deposits are only comparable to the lead-zinc mineralization of the Benue trough in their mode of occurrence but differ in their mineralogy and fluid characteristics.

[1] Akande, *et* al (1989) *Mineraliun Deposita* **24**, 183-191. [2] Olade & Morton (1985) *Mineralium Deposita* **20**, 76-80.