

# Characterization of Groundwater in Bauxite Mining Areas by CBG. Case of the N' Dangara and Boundou Plateaus Wandé Sub-Prefecture of Sangarédi, Prefecture of Boké/Republic of Guinea

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## ABSTRACT

Sangarédi where our study area is located, is a sub-prefecture located 70 km northeast of Boké prefecture between 11°06'00"N and 13°46'00"W. The studies focused on the CBG sites because of the intensity of the operations that take place there and their impact on the environment and health. The uncontrolled exploitation of mining and industrial resources has a negative impact on the quality of groundwater. And it is the prospect of assessing the quality of groundwater that the present study falls under. It is carried out within the framework of the improvement of the quality of groundwater for the populations who live around the bauxite plateaus of N' Dangara and Boundou Wandé. Three campaigns of piezometric measurements and in situ physical parameters were carried out on seven wells which made it possible to draw up piezometric and pH maps. The thickness of the water in the wells varies from 1.09 m (well MW18) to 17.39 m (well MW15). The pH of the groundwater in all the wells in the study area was found to be acidic. The result of the chemical analyzes of the samples as well as dissolved heavy metals and BTEX are below WHO standards. The Piper diagram allowed us to classify the groundwater in the study area into two hydrogeochemical facies, namely: calcium and magnesium bicarbonate facies and sodium and potassium carbonate facies.

**Keywords:** Groundwater, Boundou Wandé, N'Dangara, Piper diagram, Bauxite, Hydrogeochemistry

