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REVIEWER'S REPORT

Manuscript No.: **IJAR-53105** Date: 04-08-2025

Title: Risks assessment of heavy metals (Cd, Pb, Cu, Fe and Al) linked to the consumption of drilling water by local populations: case of the city of Bouaké (Cote d' Ivoire)

Recommendation:
Accept as it is .....
Accept after minor revision.....
Accept after major revision .....
Do not accept (*Reasons below*) .....

Rating	Excel.	Good	Fair	Poor
Originality			✓	
Techn. Quality		✓		
Clarity			✓	
Significance			✓	

Reviewer Name: Tahir Ahmad

Reviewer's Comment for Publication.

Abstract Evaluation:
The abstract clearly presents the research problem—potential health risks from heavy metal contamination in drilling water consumed in Bouaké—and specifies the metals under investigation (Cd, Pb, Cu, Fe, Al). The methodology is succinctly described, including the use of graphite furnace atomic absorption spectroscopy (GFAAS) for analysis of 16 drilling water samples collected during both dry and rainy seasons. The health risk assessment approach is well-defined through the use of the Hazard Quotient (HQ) and Incremental Lifetime Cancer Risk (ILCR) methods. The findings are explicitly stated, with aluminum-related HQ values above 1 indicating significant long-term neurological risks, and ILCR results showing low carcinogenic risks for cadmium but high risks for lead. The abstract provides a balanced presentation of context, methods, and key results, and the keywords accurately reflect the study's focus.

Introduction Evaluation:
The introduction provides a strong contextual foundation by linking the study to rapid urbanization and demographic growth in Côte d'Ivoire, with specific reference to Bouaké's expansion. It effectively frames access to potable water as a pressing issue, describing the limitations of the municipal supply system managed by SODECI and the increasing reliance on alternative sources such as wells and boreholes. The narrative integrates demographic, infrastructural, and socio-economic factors contributing to the reliance on borehole water, highlighting the disparity between population growth and infrastructure development. The mention of specific neighborhoods where water scarcity is prevalent adds local specificity and relevance. The introduction closes with a direct and pertinent research question regarding the quality of borehole water, thus logically leading into the need for contamination and risk assessment.

Overall Assessment:
The abstract and introduction present a well-structured and coherent account of the study's rationale,

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scope, and objectives. The research is firmly situated in both a scientific and socio-environmental context, with clear links to public health implications. The writing maintains an academic tone, while effectively connecting local realities to broader environmental health concerns. The transition from contextual background to research focus is smooth, ensuring clarity of purpose for the reader.