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Borehole Drying: A Review of the Situation in the Voltaian Hydrogeological System in Ghana

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ABSTRACT

Groundwater development for potable water supply for rural people in Africa especially in Ghana has increased significantly over the past decades. The area underlain by the Paleozoic sedimentary formation (Voltaian System) of the country in particular, has experienced this tremendous change. Groundwater in the study area is normally exploited through boreholes fitted mostly with hand pumps. Though the boreholes exhibit variable yields, most of them have yields greater than 13.5 l/min. Research carried out in the area suggests that there is modern and enough recharge, yet borehole drying is a problem especially those with low or marginal yields. A thorough review of the groundwater exploitation in the area, aimed at explaining the circumstances that might lead to these phenomena on the field, has been conducted. The review shows that boreholes with drill yields of usually <20 l/min, especially those drilled in the wet season, constitute the highest percentage of the dried boreholes. Other construction material such as the filter media may also influence the drying process.

KEYWORDS

Borehole Sustainability, Community Water Supply, Ghana, Groundwater Recharge and Depletion, Voltaian System

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