

# **Assessing the Quality of Drinking Water and Sanitation at Amasaman in the Ga West District**

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## **ABSTRACT**

Amasaman, the capital of Ga West District of the Greater Accra Region has a population of 12,767. The inhabitants are mostly engaged in trading. Amasaman is among the communities without access to potable water supply by Ghana Water Company Limited and therefore depend on other sources that may be unsafe. The people largely depended on tanker water services and hand dug wells. This study was conducted to investigate the quality of these water sources. Water samples were collected and analysed for physico-chemical parameters including turbidity, sodium, phosphate, nitrate, etc and also total and faecal coliforms for bacteriological analysis. A social survey was conducted through questionnaire administration, observation and interviews on the access to, distribution and adequacy of these water sources and sanitation facilities. This was used to analyze the inhabitants' perception of water quality, sanitation and their relationship to public health. The study revealed water supplies by the Tanker services had values of physico- chemical parameters comparatively within the WHO guidelines and Ghana standards. The hand-dug wells showed variations in these parameters during both the dry and wet seasons, including turbidity, total suspended solids (TSS), total dissolved solids (TDS), sodium and magnesium. Turbidity ranged from 1.5 to 53.5 NTU during the dry season, mean TSS values varied between 3.5mg/l and 77mg/l during the dry season and from 0.5 to 11 mg/l during the wet season. Mean TDS values ranged from 191.5 to 2418 mg/l in the dry season and from 267 to 960.85 mg/l during the wet season. Mean sodium values varied between 47.75 and 472 mg/l for the dry season and 50.2 and 152.2 mg/l during the wet season. Magnesium mean values ranged from 6.05 to 194.6 mg/l during the dry season and from 6.5 to 49.75 mg/l during the wet season for some of the hand dug wells. Generally, the dry season had comparatively higher values which exceeded recommended limits than in the wet seasons. Bacteriologically both the hand-dug wells and tanker water showed presence of both total and faecal coliforms which were above recommended limits. For tanker water, faecal coliform ranged from 0 to 744 cfu/100ml and for hand dug wells, it ranged 24 to 763 cfu/100ml and 43 to 2040 cfu/100ml for dry and wet seasons respectively. This suggests that the genral sanitary qualities of the water sources are not safe, therefore, posing serious health risks to

consumers who use the water directly or indirectly, because of possible presence of pathogenic organisms, as data sourced from OPD attendance, indicated that prevalent diseases such as diarrhoea. Intestinal worms, and skin diseases were common in the community. It also became evident that the amount paid to access water and toilet facility was expensive for the larger household sizes but affordable for the solid waste disposal. In terms of distance to access water, toilet and solid waste facilities, they were within reach. On liquid waste, majority disposed outside on the ground, since there were few or no properly designed drainage systems within the township. Generally, majority of the people in the community were knowledgeable in terms of water and sanitation and their related diseases, but less knowledgeable in the indicators and parameters of qualities of drinking water. The people, irrespective of age, gender and educational background knew quality of drinking water only by its aesthetic properties such as colour, taste and odour but nothing about the chemical and biological (microbiological) parameters of water. From the study, it was recommended that there should be regular monitoring of the water quality of the available water sources and educational campaigns must be organized to raise the awareness in relation to indicators of good drinking water and environmental sanitation.

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