Lupane State University

Building Communities through Knowledge

Faculty of Agricultural Sciences

Department of Crop and Soil Sciences

AN ASSESSMENT OF BOREHOLE WATER QUALITY: A CASE STUDY OF MAGWEGWE RESIDENTIAL AREA, BULAWAYO.

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ABSTRACT

Water scarcity is an issue that has negative impacts globally. The World Health Organisation (WHO) outlines the guidelines for locating, constructing and operating ground water resources used for drinking. The water resources that follow these guidelines are considered safe for domestic purposes (WHO, 2015). Bulawayo has been experiencing recurring water scarcity due to droughty. Out of a population of eight boreholes, five boreholes were conveniently selected due to the fact that they were functional unlike the other three which were not working due to mechanical problems. The bacteria concentration for both *E.coli* and total coliforms was 0 c.fu/ ml. The standard acceptable limits for World Health Organisation (WHO) fourth edition and Standard Association of Zimbabwe (SAZ) for both bacteria is 0 c.fu/ ml. The mean for TDS, total hardness, turbidity and pH are 356.4mg/l, 591.70mg/l, 47.54mg/l and 6.74 respectively. PH value was found to be 6.74, which is within the range of WHO and SAZ (1997) guideline, however turbidity (47.54NTU) was found to be above WHO and SAZ (1997) standard. Iron, Zinc, Chloride and Nitrate concentrations are higher than that of WHO SAZ 560 (1997) guidelines and standards. Manganese and Copper are lower than that of both drinking water standards, Sodium however is higher than that of SAZ (1997), but cannot be compared with WHO standards due to the fact that there are no se guidelines for sodium.