

ASSESSMENT OF SAFETY OF WATER FROM DRILLED WELLS

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Introduction

Over thousands of residents of Kigamboni receive their drinking water from private water supplies, predominantly from groundwater wells. In Tanzania, the legal responsibility for the condition of private water supplies, such as private wells, lies with their owners. There are reports, however, that owners of private water supplies do not test their water frequently, if not at all, and that water treatment within their homes is uncommon. Kigamboni private water supplies may pose a risk to public health due to numerous reasons such as water supplies in excess of the minimal acceptable standards for microbial and chemical contamination. Despite comprehensive efforts of the government to increase water supply coverage in both urban and rural settings, water supply utilities do not provide consistent and adequate management of monitoring drinking water as a result the quality of drinking water quality is sometimes not compliant with national standards. This situation can be attributed to factors such as lack of clear guidance mechanism for monitoring the quality of drinking water being supplied, as well as lack of awareness that drinking water quality issues can be identified through a well-designed monitoring program.

The government set a National guideline on drinking water safety and monitoring, some of the parameters which are to be taken into consideration are indicated in the figures below

The following are the project objectives

1. To survey houses with drilled wells in three wards of Kigamboni districts to assess their perception of water safety from drilled wells.

2. To assess if the drilled water follows the National guideline on drinking water quality monitoring.

3. To assess different reasons for non-adherence on the existing guidelines on water quality.

2.20 Projects questions

1. Do water from private drilled wells tested as per guidelines?

2. Do drilled wells follow the guidelines set by authorities?

3. What are the reasons for non-adherence to the guidelines set by authorities?

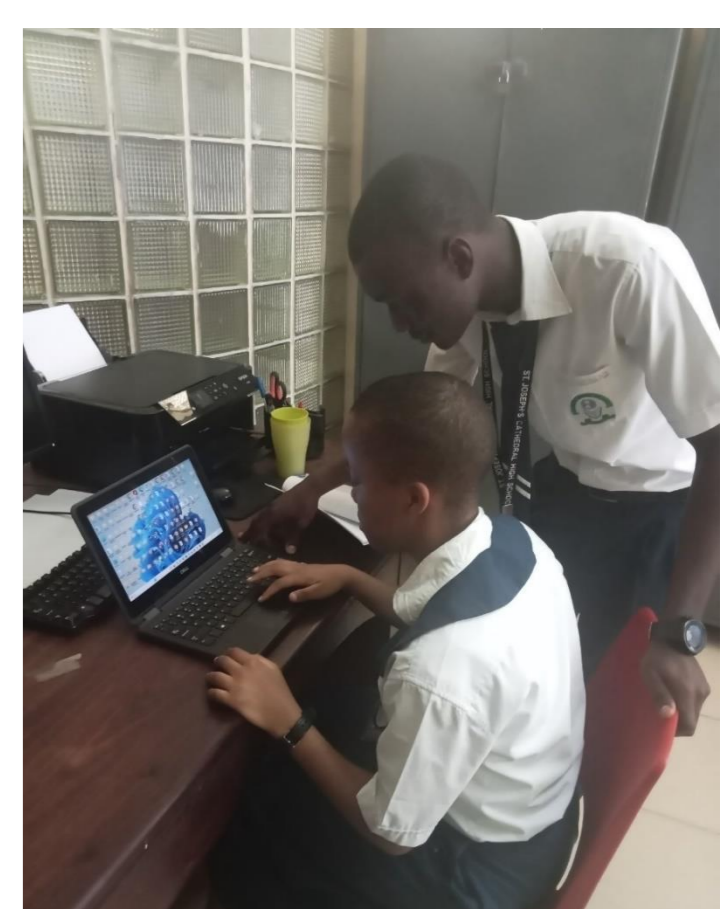
S/N	parameter	S/N	Parameter	S/N	Parameter
1	Temperature	14	Sulphate	27	Arsenic
2	Sodium	15	Potassium	28	Chloride
3	Hydrocarbon	16	Pesticides	29	Barium
4	pH	17	Orthophosphate	30	Boron
5	Alkalinity	18	Bacteriological-total coliform, fecal and/or E.coli	31	Aluminium
6	Total dissolved solids	19	Nitrate	32	Cadmium
7	Hardness	20	Nitrite	33	Chromium
8	Turbidity	21	Odour and taste	34	Lead
9	Colour	22	Iron	35	Selenium
10	Suspended solids	23	Manganese	36	Uranium
11	Calcium	24	Fluoride	37	Cyanide

Method

Kigamboni District, officially known as The Kigamboni Municipal Council is one of five districts of the Dar es Salaam Region of Tanzania. The district is bordered to the north by Ilala District, to the east by the Indian Ocean, the west by Tembeke District, and to the south by the Mkuranga District of Pwani Region. It covers an area of 578.3 km² (223.3 sq mi), making it the largest district the region by area. The study was conducted in three wards of Kigamboni region namely Somangila, Kibada and Mjimwema. The population of Kigamboni as per 2022 census is 317902 with 91135 households.

Council/ward	Population	Both sexes	Male	Female	Sex ratio	Number of households	Average household size
Kigamboni municipal council	317,902	156,400	161,502	97	91,135	3.5	
1 Kigamboni	24,810	12,940	11,870	109	7,949	3.1	
2 Tungi	30,785	15,342	15,443	99	9,349	3.3	
3 Mjimwema	54,859	26,522	28,337	94	15,173	3.6	
4 Kibada	28,188	13,565	14,623	93	7,270	3.9	
5 Vijibweni	71,861	34,627	37,234	93	22,120	3.2	
6 Kimbiji	10,729	5,580	5,149	108	3,051	3.5	
7 Pembamazi	13,323	6,927	6,396	108	3,624	3.7	
8 Somangila	52,187	25,435	26,752	95	14,291	3.7	
9 Kisarawe II	31,160	15,462	15,698	98	8,308	3.8	

A cross-sectional survey of 86 residences classified as having private water supplies in the three wards of Kigamboni, Dar es salaam, Tanzania was conducted in May to June 2023. The residences were randomly selected with more consideration on those who supplies water to the nearby residences. The questionnaire was designed using information from the National guideline on water quality and monitoring. The data generated from the focus groups which was done as pilot using teachers and students at St. Joseph's Cathedral High School informed the content and vocabulary of the questionnaire, as well as question categories and answer choices. The questionnaire used both open ended and closed-ended questions.



Results

About 82% of the respondents were not aware on the regulations on private wells drilling and if they are obliged to test water from private drilled wells. Eleven percent (11%) of the respondents were aware on the regulations but did not comply due to the expenses of testing water in authorized water laboratories. Seven percent of respondents were not aware as they believe their drilling contractors do test water before they handle the wells to the owners.

None of the surveyed drilled wells were tested nor follow the National guideline. And there was no any follow-up from the government authority to the owners of these drilled wells

Conclusion

During the survey, most of the respondents (82%) were not aware of the existence of regulations, therefore ignorance led for them not to test their water. Eleven (11%) of the respondents were aware of the regulations but did not tests their water. The reasons they have pointed out is the expenses of testing. The cost of testing one sample of water is 190,000Tsh in government water laboratories. Other group did not test water out of negligence.

References

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