Drinking Water Engineering and Science Discussions

Drink. Water Eng. Sci. Discuss., referee comment RC1
https://doi.org/10.5194/dwes-2020-31-RC1, 2021

Comment on dwes-2020-31

Anonymous Referee #1

Referee comment on "Investigation and assessment of supplied water quality in Rajshahi City Corporation of Bangladesh" by Saleha Akhter Poly et al., Drink. Water Eng. Sci. Discuss., https://doi.org/10.5194/dwes-2020-31-RC1, 2021

General comments:

This manuscript investigated the source and supplied water quality in Rajshahi City Corporation area in Bangladesh. The topic of this study is important to know or identify the problems, and accordingly, the supplier can improve the O&M for achieving better water quality, supply, and consumer satisfaction. The concept and study of the paper are highly fit this journal. However, the overall scientific values, innovation, results presentation, and English are not up to the journal standard. Therefore, the current version of this manuscript is not recommended for publication but can be considered for resubmission after major revisions. Some other specific comments are:

Specific comments:

- The manuscript needs through English check.
- The literature review is too poor. Please improve it. For example, what is known so far, what is the research gap and what is intended to answer through this research?
- After reading the introduction, I did not find the research hypothesis or concrete scientific objective of the study (not clear), please state it clearly. Need major revision with intensive literature review…
- The introduction part is not well organized- seems results are already discussed in the introduction section (lines 36-39, 64-73,)
- Line 34: Developing countries are moving from the point-based (e.g. tubewell) supply to pipe-supply not yet fully covered (maybe 2% covered) with pipe-line. The current sentence seems already they have the pipeline all over the countries! The pipe water supply is not a water source (primary) but a way of distribution to make water accessible to the consumers.
- Line 44: Do not use the word vehicle here (it does not match with the concept), better to use '…exposure pathways for both ….'
- Line 57-60: divide this sentence into at least 2 sentences (too big to follow).
- Line 68-69: please clarify the sentence clearly (now, lost and do not understand the author's ideas)
- Line 71-74: This part seems, the author explaining the results in the introduction sections.

- Method sections missing the details of methods and materials. The field parameter measurements and laboratory equipment details (model, company, standards, and also the chemical composition of used reagents) are not mentioned clearly. For example, the DO meter is sensitive to many factors, calibration of pH meter, acidification of the collected samples for further analysis in the lab (e.g. As, Fe, Mn, etc.) are not mentioned specifically.
- Line 106: Authors mentioned that the water quality parameter was measured within 4 hours of sampling. However, many parameters can be changed within a minute –DO, pH, turbidity, Fe, etc. Fe can precipitate with Mn and As within few minutes depending on DO, pH EC, etc. So sampling and measurement methods seem not followed standard procedure.
- From the results, it is not clear which sample was from the source and which one from the sink (consumer tap).
- Results are presented as technical report writing but not as the scientific paper. It seems results are summarized only (overall)! But, it needs explanation in scientific writing, like a detailed explanation, reasons, with proper references...
- Line 117: Sentence is not clear-what did the author wanted to say?
- Turbidity (Line 117-123) How? it could be better to explain the reason clearly, like any operational problems?-if so what type of operational problems the system(s) have?
- Temperature and others (similar comments to other parameters): Could be explained by the source water and sink water temperature variation and the reason of variations-like pipe-line exposed to high temperature, pipe quality, or what?
- DO: Accuracy of DO measurement is tough. Better to explicitly mention the source DO and sink DO! Why this was changed and how can improve/control DO according to WHO/BDWS (recommendations).
- Odor (line 140): was the supplied water came from LAKE (I believe not) if so, were these bacteria not removed during treatment? if treatment conducted before supply, how these bacteria come again? need clear explanation and the possible pathways...
- Figure 2-3: some bar represents high contamination/safe compared to others. why these have a high number? are these samples from the same network/ areas/ pipeline/ sources? If so, what are the possible reasons for them? Example: source water/ distributions/maintenance or household storage practice problems?
- Mn (Line-170-174): vague claim and not clear. what are the sources of these supplied water? Groundwater? if so, after extraction, was there any treatment and if not why supplied. if treatment was there, what is/are the secondary sources of recontamination. need clear explanation.
- Arsenic (Line177-179): Arsenic is not heavy metal, it is a trace element that only comes from source (groundwater) or secondary sources, like chemicals used, etc. The explanation needs to write in a Scientific manner (similar comments for other result sections too).
- Line 255-256: not clear what does author wanted to explain here!!
- Line 259: What is SEM? A new term suddenly popped up-without introduction.
- Table 2 and 3 contains too much data; better to explain in the graph as error bar instead of presenting data's in the table (table does not say much!!).
- Line 292-309: the presented results are not in scientific ways. Lost the track and intention to read them all to understand the results and synthesis.
- Pearson correlation for *Coli* and Chlorine seems not correct; need further check and explanation. This is because, if chlorination is applied, the *E.coli* level should be minimum (depending on residual chlorine).
- Figure 5: Legend should use in gradient color (like contour) instead of random color. What was the indicator parameter to determine the condition of water quality? The results are not explained according to areas, sources, and household level, but this plot is!!
- Line 243-345: which indicator(s)/ indexes were used to determine the water quality in different wards?? Seems a general statement!!
- Line 248: What is 'motor functions'

- Line 248-249: Need proper references. I far as I know, high Mn in drinking water hamper intellectual development, mostly for children!!
- Conclusions: Missing the recommendation for further research or O&M system for the RCC authority after this study. The conclusion is rather general. Need major revision based on the objective, finding, and further recommendation.
- References: Although Journal generally does not have any specific reference system that it follows, it is better to have a standard practice, this manuscript seems did not follow any standard referencing. Suggestions: Preferable referencing standard could be the 'Science of the Total Environment.'

Please also note the supplement to this comment:
https://dwes.copernicus.org/preprints/dwes-2020-31/dwes-2020-31-RC1-supplement.pdf