## Review Form 1.6

| | |
|---|---|
| Journal Name: | **Journal of Engineering Research and Reports** |
| Manuscript Number: | **Ms_JERR_88716** |
| Title of the Manuscript: | **Benchtop Septic System for Effluent Treatment - A Laboratory Development** |
| Type of the Article | **Original Research Article** |

**General guideline for Peer Review process:**

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty'**, provided the manuscript is scientifically robust and technically sound.
To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(https://www.journaljerr.com/index.php/JERR/editorial-policy )

## Review Form 1.6

**PART 1: Review Comments**

| | **Reviewer's comment** | **Author's comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
|---|---|---|
| **Compulsory** REVISION comments | **Abstract**<br>1. Write all abbreviations in full first before abbreviating.<br><br>**Introduction**<br>1. Give atleast one real life scenarios on such effects on the environment, public health and the economy of the decentralized septic system.<br>**Section 2.2 Laboratory Benchtop septic system**<br>This is a good design and well explained. However, I will suggest if the author will explain the basis for some criteria in the design. For example;<br>1. The LBS main tank is 19.9 L, and 15 L was utilizes leaving a free board of 4.9 L, if i may ask, what is the guiding principle for that?<br>2. Again, the author used a plywood for the separation between the settling chamber and the effluent chamber, other materials can fit into, like acrylic material that do not decompose. Even though, plywood is known to be water resistant (too strong term) but prolonged exposure to moisture can be disastrous, and hence will add up to the wastewater constituents, thereby changung the original characteristic of the wastewater used. This will further affect the effluent results.<br>Having mentioned the few above (as in 1 & 2), the basis for the selection and the used of the materials to build up the LBS system as well as their sizes is paramount. If the whole design was adopted from elsewhere it should be mentoned. Please refer to "wastewater treatment and reuse" by Metcalf and Eddy<br><br>**3.1. Start-Up and Operation of the Laboratory Benchtop Septic System**<br>1. Without agitating the stored wastewater prior to use in the LBS system does not represent Wastewater obtained from the Cleanwater Educational Research Facility (CERF) located at the Village of Minoa Wastewater Treatment plant in Minoa, NY.<br><br>2. Was the LBS operated as batch or continous system?<br><br>3. Why the 3 weeks start up phase? This is to allow for what? Please explain.<br><br>**3.2. Operation of the Laboratory Benchtop Septic System**<br><br>1. The bar chart presentation of results can only withstand if the LBS system was operated in a batch system, otherwise it should be a continous line graph that display the trend of the contribution of each value over time.<br><br>2. "The difference in COD, TS influent values might have been caused by the storage of the entire WW in a cold room at 5.0°C (41.0°F) until it was transferred to the laboratory for use in the LBS". **For liquid samples, a chart is available for the collection, preservation, transportation and storage for most liquid samples. So, reason mentioned is vague.**<br><br>**3.** "The difference in COD, TS influent values might have been caused by the storage of the entire WW in a cold room at 5.0°C (41.0°F) until it was transferred to the laboratory for use in the LBS". **In section 3.1, the author mentioned that "It was decided to not mix the WW prior to usage in the LBS system due to the caused inconsistency of the influent". These are contradictory statements.**<br><br>**Conclusion**<br>This is more to methodology and results presentation. Please conclude based on the | |

| | | |
|---|---|---|
| | intended objectives that were set out to achieve. If possible give some recommendations for future research.<br>**References**<br>About 70% of the cited documents are very old, with onlt about 30% being recent (5 yrs old). Please try to reference recent articles. | |
| **Minor** REVISION comments | 1. The author should provide a section for acknowledgement.<br>2. Why BOD5 not measured? Present the wastewater characteristics in a Tabular form.<br>3. There is no section 2.5 in this document as mentioned by the author under section 3.<br>4. The author should take punctuation marks seriously when writing research paper. | |
| **Optional/General** comments | A good research and can further be enhanced.<br><br>The author mentioned “The inlet assembly (2), located 1.0-inch (25.4 mm) below the liquid level to prevent odor to escape the LBS”, this can be made to be a recommendation for further research, to investigate the kind of gas and what can it be useful for. | |

**PART 2:**

| | **Reviewer’s comment** | **Author’s comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
|---|---|---|
| **Are there ethical issues in this manuscript?** | *(If yes, Kindly please write down the ethical issues here in details)* | |

**Reviewer Details:**

| | |
|---|---|
| Name: | **I. U Salihi** |
| Department, University & Country | **Bayero University, Nigeria** |