

Review 2 EGUSphere20255295

Thank you for providing an extensive revision, I have a few more issues mainly with Language edits and structure, so I recommend acceptance upon these small revisions:

Generally: Please review the manuscript again carefully for sentence structure, grammar, spelling, and wording. There are still several passages that are difficult to follow. I have highlighted some specific examples, but another thorough language revision of the entire manuscript would be beneficial.

Response:

We sincerely thank the reviewer for their positive evaluation and for recommending our manuscript for publication, subject to minor revisions. We also greatly appreciate the thorough review and the valuable suggestions and comments provided to improve the quality of our work.

We have carefully addressed each suggestion and conducted a comprehensive linguistic revision of the entire manuscript to ensure high quality in grammar, sentence structure, and overall English readability. We paid special attention to the points highlighted in the reviewer's comments, clarifying the wording and improving the overall flow to ensure the text is clear and easy for readers to follow.

For convenience, all modifications to the manuscript have been highlighted using the "Track Changes" feature in the revised version.

MM:

L137: “amass” à a mass

We thank the reviewer for identifying this typographical error. We have corrected it in the revised manuscript (L139), changing "amass" to "a mass".

Same line: what is a special syringe? Please clarify

We thank the reviewer for this helpful comment. The word "special" was unnecessary and potentially misleading, so it has been removed. We have clarified the description in the revised manuscript to state precisely how the components were connected: “connected to a syringe using a Luer adapter.”

L143: “(was prepared in five replicates)” seems to not belong here.

We thank the reviewer for pointing this out. We agree that this phrase disrupted the flow of the paragraph. Following your suggestion, we have removed the parenthetical text from this section. L143 and 145.

L144: maybe this wording would be clearer: “...inserting the syringe through the silicone septum into the bag.”

We thank the reviewer for this excellent suggestion, which significantly improves the clarity of the sentence. We have adopted the proposed wording exactly as suggested.

L145: “(was prepared in five replicates)”, I’m now thinking that you mean the number of bottles or bags, correct? If so, maybe start the sentence with that, i.e.

line 140: “Consequently, five 250 ml glass bottles...” and line 143: “Five 500 ml aluminum-zip bags ...”

We thank the reviewer for this insightful clarification. Your interpretation is correct; we were referring to the number of replicates for both the glass bottles and the aluminum bags. Following your suggestion, we have restructured both sentences to state the number of replicates at the beginning and have removed the redundant parenthetical phrases (L150-155).

L152/153: why were the bottles flushed 12 min and the bags 6 min? Also, is this not overpressurizing the bags if they are 500 ml containers and you fill them with 600ml?

We thank the reviewer for these important questions. First, regarding the flushing times, these periods were determined through preliminary optimization tests. We found that a 12-minute flushing time for the glass bottles was necessary to achieve optimal isotopic stability and minimize memory effects. For the aluminum bags, our preliminary trials indicated that a 6-minute flushing time was sufficient.

Second, regarding the volume and potential overpressurization of the 500 mL bags, our prior testing showed that introducing a 600 mL volume did not cause overpressurization or leakage. The aluminum-zip bags used have sufficient structural flexibility to safely accommodate this slight overfill, ensuring a stable and well-sealed sample for subsequent isotopic analysis (L160-168).

L 158/159: this sentence is somehow incomplete

We thank the reviewer for pointing this out. We have revised and completed the sentence in the manuscript to ensure clarity and correct grammar (L 161-162).

L161/162: I understand the “time to analysis” criterion now, however, I would suggest you name it what it is: “storage time”. It sounds much more intuitive.

We thank the reviewer for this excellent suggestion. We fully agree that "storage time" is a more intuitive and standard term for this criterion. Following your advice, we have updated the terminology throughout the manuscript to ensure consistency (L165).

Section 2.3.2: please re-read and re-phrase (some of) the section, there are some structural and wording inconsistencies in there.

We thank the reviewer for identifying these issues. We have carefully reread Section 2.3.2 and thoroughly revised its structure and wording. Inconsistencies have been resolved, and the overall flow has been improved to ensure the methodological details are precise and easy to follow.

L248: “or” à for

We thank the reviewer for identifying this typographical error. We have corrected "or" to "for" in the revised manuscript.

L259: If you discard the first two minutes and the last two, how many minutes remain? And then, please add this information to this sentence, like so maybe: “from the remaining x minutes we computed the average values per replicate...”

We agree that this detail adds important clarity to the methodology. We have updated the sentence in the revised manuscript to explicitly state that, after discarding the first 2 minutes and the last 2 minutes of each 6-minute measurement, the remaining 2 minutes in the middle were used to compute the average values (L297-301).

Results:

Section 3.2.2 Please add, that the H₂O concentration was measured during sampling on the CRDS.

Following the reviewer's constructive suggestion, we have updated Section 3.2.2 to provide this important technical context. We clarified that the H₂O concentration was continuously measured using the CRDS instrument during the sampling period to monitor stability.

Discussion:

Section 4.1 this section is much improved but still contains some redundancies from the results section and could be tightened further.

We appreciate the reviewer's feedback regarding this section. In response, we have thoroughly edited section 4.1 to eliminate redundant descriptions of the results. The text has been tightened and streamlined to provide a clearer, more precise discussion and interpretation of our findings.

L444: "... the largest ??? in H₂O." missing word

We appreciate the reviewer identifying this omission. We have revised the sentence to clarify that the 250 mL glass bottles had the highest H₂O concentration among the analyzed containers (L491-492).

L446: "are not completely diffusion-tight." Add "when punctured".

We appreciate this valuable clarification. Following your suggestion, we have added "when punctured" to specify that the reduced diffusion-tightness refers specifically to vial systems after they have been pierced (L494).

L447: delete "here"

We agree, and this word has been removed from the sentence in the revised manuscript (L495).

L457: check the sentence, some errors

In response to the reviewer's comment, we have carefully reviewed and revised this sentence. The grammar and wording of the entire paragraph have been improved to ensure clarity and precision.