I thank the authors for a thorough and thoughtful response to my comments. The authors largely addressed my comments with responses that I support (particularly shifting the paper's focus to the overall gas budgets). I have two additional comments (mostly minor) left to address, still regarding the treatment of 1) the metabolism results and 2) a discussion on reservoir morphometry. Line numbers refer to the most recent version of the manuscript.

1) Thank you for clarifying and amending the text and title to reflect the uncertainty in the net metabolism results (namely Figure 3 and discussion pertaining to that). The % relative contributions added to Figure 3 are very helpful. However, I still struggle with the '% of mean total flux' for M and T (i.e. the percents in Figure 3 for net metabolism and the sum of estimated sources). Given the uncertainty of metabolism (often greater than its mean in Table S2), I still disagree with presenting only results that include the mean of these density curves. I suggest presenting two values for M (and thus T): one including net metabolism and one that calculates metabolism by closing the mass-balance. Put another way, I would like to see the 75% value at line 509 presented for all Figure 3 subpanels and subsequently discussed in the manuscript in addition to the discussion at 501-510. I also encourage a brief discussion on how this high uncertainty implicates your argument at line 378-380: "In many studies, some components are only inferred by difference. While convenient from a mass-balance perspective, we argue that assessing all components together is necessary to clearly identify knowledge gaps as well as sources of uncertainty." I agree with this statement in principal but the authors then never explicitly discuss how the very high uncertainties in their metabolism values force them to also present mass-balance results (i.e. line 509). I think you do a good job of noting this discrepancy, but you should add a few sentences explicitly engaging with this argument considering your results.

2) I think your expansion on the spatiotemporal variability in gas concentrations at line 413 is great, however it is still not explicitly addressing the hydromorphology/morphometry of the reservoir. I think a study so squarely focused on relative changes from reservoir inflows to the main basin needs to comment on changes of reservoir morphometry, i.e. possible implications of changing reservoir volume, depth, shape, distance from horizontal inputs, etc. I understand you do not have the data to robustly analyze this, but some sort of literature-informed speculation is suggested. I think an expanded Figure 6 (as a separate Figure) could help parse out some influences here, though I understand that is not the focus of the Figure and do not think it is necessary (thank you for the clarification).