Author's Summary Response and Guide to Manuscript Changes - 23 October 2019

My thanks to the reviewers and editors for their efforts. The following is a summary of the changes I have made to the manuscript. The revisions required an extensive expansion and rewriting of the material and to correct several errors I made in the previous draft. Here I highlight the major changes to the most critical issues raised by the editors and the reviewers.

Lines 29-36: Explanation of the error made by Kowalski (2018) – editor's comment 07-10-2019.
The error made by Kowalski (2018) is now clearly articulated. Furthermore, Kowalski (2018) is cited in the present paper because it very germane to the subject, methods and intent of my paper. After reading Kowalski (2018) and the comments I thought that the issues being addressed by Kowalski (2018) and Paw U et al. (2004) needed some discussion and highlighting in the literature, so my paper cites and comments on Kowalski (2018). I did not articulate in detail why I cite Kowalski (2018) in the present manuscript; but I think this is largely obvious and I don't think these details benefit either the paper or the reader. But I no longer say that I am "examining the methods of Kowalski (2018)" in the present version of the manuscript.

Lines 44-54: Restating and clarifying the purpose of my paper. I eliminated the statement that I am "examining the methods of Kowalski (2018)" in the present version of my manuscript – in response to comments from Petty and the editor.

Paragraph, Lines 75-84: Quantification and explanation of du^*, $p^*\Delta v^*$ and the approximation to $p^*\Delta v^*$ in Figure 1 – suggested by the anonymous editor. Also further serves my purpose of highlighting $p\Delta v$ in this paper.

Lines 85-124: A more precise calculation of the change in enthalpy associated with evaporation. This revision corrects the error in the previous version of the manuscript that was pointed out by Kowalski.

Lines 129-140: Definition/discussion of the virial equation of state – as requested by Petty.

Lines 142-145: Assertion/clarification that the process of evaporation into the free atmosphere lies between a constant pressure process and constant volume process – in response to Petty.

Lines 167-182: Correction to the calculation for ΔC_p. My original expression equating C_p to dL_v/dT was in error. Revision in response to comment by Kowalski.

Lines 211-226: Explanation of the error(s) made by Paw U et al. (2004) – editor's comment 07-10-2019.
My original impression of the mistake Paw U et al's. (2004) made was that it was largely a simple sign error. But upon closer examination, I realized that the error was more subtle than I originally thought. Consequently, the present revision/clarification required an additionally paragraph, as well as, some speculation on my part about why/how Paw U et al. may have made the error in the first place.

Lines 302-304: Code and data availability The manuscript now provides a doi number for accessing the computer code along with a table of key numerical outputs produced with that code.

Appendix A, Lines 306-337: More precise calculation of the change in temperature of the system, δT, due to the evaporation of water from the water reservoir – in response to concerns expressed by the editor and Kowalski.

Figure 1. I have revised this figure. It now includes labeled axes on both the left and right sides of the figure – as requested by the anonymous editor.

Figure 3. I have revised this figure to include the correction to and recalculation of $\Delta C_p / C_p$ – in response to Kowalski.