

## ***Interactive comment on “Detection and quantification of gas-phase oxidized mercury compounds by GC/MS” by C. P. Jones et al.***

**C. P. Jones et al.**

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We have reproduced the recommendations of the anonymous referee, and have provided our responses after each comment

Anonymous Referee: In section 3.1 line 27 – 35: this is a very strange result and although the authors acknowledge it as such it really doesn't make much sense. Was the percent HgII recovery always increased from 83 and 98% or was this a one time test? If it represents multiple tests there should be some variability reported in the results.

Response: As indicated in section 2.6, each test was performed over 24 hours, so we collected many measurements for each experimental condition. Our Tekran speciation system collected one measurement every 1.5 hours, so we obtained 16 measurements

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per experimental condition. We have added wording to this effect to section 2.6. We included 95% confidence intervals in Figure 3, which are a measure of variability in the results. We neglected to include in the figure caption that the whiskers represent 95% confidence intervals, but we have corrected this omission in the revised manuscript.

Anonymous Referee: Page 7 line 12: change to “we constructed the plumbing for our GC/MS system. . .

Response: Reworded the sentence to clarify what was constructed. This is now on Page 7 Line 13.

Anonymous Referee: Page 7 line 20: Put the first two sentences in the Methods section (2.3) along with Table 2.

Response: We omitted the first sentence, and reworded the second sentence. Table 2 shows results of instrument tests and so was left in the Results and Discussion section.

Anonymous referee: Page 7 line 33: Already stated the three columns that were used. Suggest to re-write that first sentence: Of the three columns we tested for transmission of HgBr<sub>2</sub>, we only observed peaks with. . .

Response: Reworded this part of Section 3.3

Anonymous Referee: Page 11 line 6: “Further improvements to the MS. . .” - what improvements have already been made? – this suggests there were some – and by whom were the improvements made?

Response: We have reworded this sentence to make it more clear.

Anonymous Referee: Page 11 line 11: It strikes me that perhaps the authors should try this before publishing this paper.

Response: We currently do not have chemical ionization module to add to the MS and perform these tests. This will have to wait until we receive additional funding.

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