

Interactive comment on “Development of an automated high temperature valveless injection system for on-line gas chromatography” by N. M. Kreisberg et al.

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Referee 1 makes a valid point about our “experimental design”. Since the two versions of the field deployed instrument reported in this work did not co-exist, any direct side-by-side comparison as suggested was not possible. Instead, using one instrument in the lab in which the only change made was in the method of sample introduction allowed the most controlled test of interface dependence on system response available to us. One advantage of this approach is that factors irrelevant to the evaluation such as differences in detector, GC or the unchanged sample paths were avoided. The field results are therefore merely realistic validations of expected performance obtained in

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this first set of lab tests. Future deployments can be used to continue testing the reliability of this sample introduction method.

The reviewer’s other specific points are well taken and we offer the following changes in response:

(i) P. 7532, line 13: describe the term “minimal trending”. Is it possible to be more quantitative about this?

Original sentence in abstract: "Field performance results for two versions of the valveless interface used in the in-situ instrument demonstrate minimal trending and a zero failure rate..." Has been changed to include a quantification of trending observed: "Field performance results for two versions of the valveless interface used in the in-situ instrument demonstrate typically less than 2%/week response trending and a zero failure rate ..."

(ii) P. 7532, line 15: before using the “VLI” acronym, please spell it out.

The VLI acronym was removed from the abstract so it no longer appears before its definition.

(iii) P. 7536, lines 20-30: This is confusing. It just isn’t clear which VLI system(s) is being discussed anymore.

To clarify the two field deployed configurations, the following explicit sentence was added at the end of the paragraph in question: "The secondary focusing trap is used on the vent line of the SVTAG instrument employing the filter-based sampler cell (Instrument 2 defined below) while the original impactor based instrument did not have this component (Instrument 1 defined below)."

(iv) P. 7551, line 20-23: The argument underlying the effect of the vapor phase/gas-phase contribution is not well supported. Where are the data that show use of the carbon denuder?

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To make explicit the two sub-sets of data in question, we have modified Figure 6 (uploaded separately) to include two types of symbols: open (denuded) and closed (non-denuded). The apparent dependence of response on sample size discussed in the text is now more easily seen in the plotted data. Explicit reference to the use of different symbols will be added to the text.

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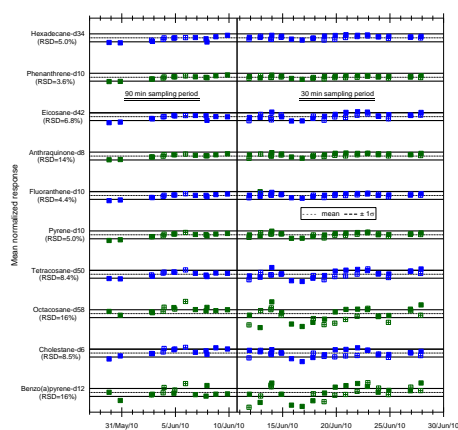


Fig. 1. Figure 6

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