



June 26, 2007

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Dear Dr. Tennant:

The purpose of this letter is to inform you of an issue we recently discovered which relates to the absolute hydrocarbon emission values reported in project "CRC AVFL-13: Fuel Chemistry Impacts in Gasoline HCCI." The issue I will describe has no effect on consistency of results, trends and the reported final conclusions.

As background, before starting this project, AVL upgraded the emission bench in the single-cylinder research engine test cell in our Plymouth Technical Center to improve emission measurement accuracy and consistency. As part of that upgrade, an older model emission bench which reported hydrocarbon emissions as ppm C₃, was replaced with a state-of-the-art AVL CEB-II emission bench, which reports hydrocarbon emissions directly as ppm C₁. The issue recently discovered was that the C₃ to C₁ conversion required with the older bench was not switched off during the system upgrade, which resulted in the ppm C₁ hydrocarbon emission values used in subsequent statistical analyses and included in the project report being x3 the actual measurement value.

We have followed AVL's quality processes to identify the root cause, consequences, corrective actions, and preventative measures for the future relating to this issue. The consequences of this error, along with the relevant corrective actions to be taken are as follows:

1. In the final report of CRC AVFL-13, statistical results showing fuel chemistry impacts on hydrocarbon emissions in different HCCI combustion modes were reported. Since hydrocarbon emissions measured for all test fuels were consistently x3 the actual value, the trend of fuel chemistry impacts on hydrocarbon emissions is unchanged. The final conclusions on fuel chemistry impacts on hydrocarbon emissions mentioned in the final report are also not affected.
2. To correct the C₃/C₁ conversion issue, AVL will work with Battelle to re-process all hydrocarbon-related data and plots. By August 1, 2007, an updated final report will be sent to you with the re-processed data and plots included.

In closing, please accept my sincere apologies for this issue and allow me to assure you of AVL's continued commitment to provide you with the highest possible quality standards of engineering service in the industry. If you have any questions please don't hesitate to contact me directly.

Sincerely,

A handwritten signature in black ink that reads 'Ray Corbin'.

Ray Corbin
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cc: Paul Cassidy - AVL