EMISSION MEASUREMENT CENTER
APPROVED ALTERNATIVE METHOD (ALT-001)

SO_2 INTERFERENCE IN METHODS 7 AND 7A

INTRODUCTION

Some testers have increased the concentration of H_2O_2 in the absorbing solution of Methods 7 and 7A to counteract high concentrations of SO_2. It was believed that the SO_2 depletes the H_2O_2, which then causes incomplete absorption of NO_x.

SUMMARY

Laboratory tests have shown that high concentrations of SO_2 (about 2100 ppm) cause low results in Methods 7 and 7A. Increasing the H_2O_2 concentration to 5 times the original concentration eliminates this bias. However, when no SO_2 is present the results are biased low.

A strong possibility exists that NO is being converted to N_2O when in the presence of SO_2 and moisture. The N_2O is not absorbed by the sample reagent and, therefore, will not be determined as NO_x.

The relationship between SO_2/H_2O_2 and accurate NO_x results has not yet been determined.

CONCLUSION

Until further information is developed, the following should be used as interim guidelines:

(1) At or above 2100 ppm SO_2, use 5 times the H_2O_2 concentration of the Method 7 absorbing solution.

(2) Below 2100 ppm SO_2, use the normal Method 7 absorbing solution.

(3) Rather than using Method 7 or 7A, use Method 7E.

REFERENCE

1. Laboratory Report: Sulfur Dioxide Interference in Methods 7 and 7A, Lori Tussey, October 9, 1988. To see the entire document, see Guideline Document 37 (GD-037.WPF).