

I. INTRODUCTION

Network Environmental, Inc. was retained by the Michigan Sugar Company of Caro, Michigan to perform a Cylinder Gas Audit (CGA), for the first quarter of 2021, on the CEMS servicing gas fired Boiler#4. The CEMS is comprised of an Oxides of Nitrogen (NO_x) Monitor and an Oxygen (O₂) Monitor.

The CGA was performed on February 9, 2021. Stephan K. Byrd of Network Environmental, Inc. performed the testing.

II. PRESENTATION OF RESULTS

II.1. TABLE 1 CGA RESULTS MICHIGAN SUGAR COMPANY CARO, MICHIGAN OXIDES OF NITROGEN MONITOR - BOILER #4 FEBRUARY 9, 2021			
CEM	Run Number	CEM (HI)	CEM (LOW)
NO _x	1	126.4 PPM	53.2 PPM
	2	126.3 PPM	53.1 PPM
	3	126.3 PPM	53.1 PPM
	Average	126.3 PPM	53.1 PPM
	Accuracy	-0.55 %	-2.75 %
Average accuracy = -1.65 %			
Calibration Gas Concentrations: HI - NO _x = 127 ppm LOW - NO _x = 54.6 ppm			

II.2. TABLE 2 CGA RESULTS MICHIGAN SUGAR COMPANY CARO, MICHIGAN OXYGEN MONITOR - BOILER #4 FEBRUARY 9, 2021			
CEM	Run Number	CEM (HI)	CEM (LOW)
O ₂	1	11.9 %	5.8%
	2	11.9 %	5.8%
	3	11.9 %	5.8%
	Average	11.9 %	5.8%
	Accuracy	-0.83 %	-2.85 %
Average accuracy = -1.84 %			
Calibration Gas Concentrations: HI - O ₂ = 12.0% LOW - O ₂ = 5.97%			

III. DISCUSSION OF RESULTS

The results of the CGA performed on the CEMS servicing Boiler 4 can be found in Section II., Tables 1 and 2. The control limit for CGA accuracy is plus or minus 15% of the average audit value or plus or minus 5 ppm, whichever is greater.

III.1. Boiler #4 -

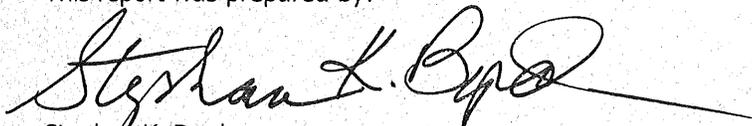
III.1.1. NO_x - The CGA results for the NO_x CEMS were -0.55% accuracy for the high NO_x gas and -2.75% for the low gas. The average accuracy for the NO_x monitor was -1.65%.

III.1.2. O₂ - The CGA results, for the O₂ analyzer, were -0.83% accuracy for the high O₂ gas and -2.85% for the low gas. The average accuracy for the O₂ monitor was -1.84%.

IV. AUDIT PROTOCOL

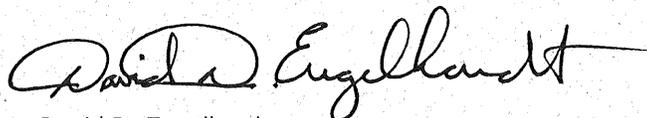
CGA - The CGA was performed in accordance with 40 CFR Part 60, Appendix F. Each monitor was challenged three times each with a high and low protocol gas. Once a stable reading was obtained, it was recorded. The three high and the three low readings for each monitor were averaged and compared to the protocol gas concentrations. The calculations were performed using Equation 1-1 from Appendix F. Audit gas certification sheets can be found in Appendix A.

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