Question 3.8

Topic: Moisture Content Determination

Question: My pollutant concentration is measured on a dry basis and the flow rate is measured on a wet basis. Can I use the wet bulb-dry bulb technique to determine the moisture content of the stack gases?

Answer: It depends upon the use of the moisture data. The wet bulb-dry bulb technique may not be used when converting dry pollutant concentration to a wet basis for the calculation of pollutant emission rate. Either Reference Method 4 in Appendix A-3 of 40 CFR Part 60 or the approximation method described in Section 6.2 of Method 4 (midget impinger technique) must be used to convert gas concentrations from a dry to wet basis. A 1978 EPA field study has demonstrated that the midget impinger technique is capable of giving results within one percent H_2O of the reference method (see Reference 1 in the Bibliography of Reference Method 6A).

Method 4 allows the use of other approximation methods, such as the wet bulb-dry bulb technique to provide estimates of percent moisture to aid in setting isokinetic sampling rates prior to a pollutant emission measurement run. For the Part 75 Program, you may use the wet bulb-dry bulb technique when determining the molecular weight of the stack gas for the purpose of calculating the stack gas volumetric flow rate.

References: 40 CFR Part 60, Appendix A-3 (RM 4)

History: First published in March 1996, Update #8; revised in October 2003 Revised Manual