Question: I am having trouble passing the spike recovery requirements in Section 13 of Method 308. What can be done within the method to improve my prospects for meeting this requirement?

Answer: Water breakthrough management is key to the success of the Method 308. The spike recovery step was added to Method 308 to assess whether the method had appropriately collected methanol and that its use was appropriate for the source type. If the spike recovery is not passed, you may wish to consider implementing the following additional best practices or getting approval for an alternative method to use for compliance purposes.

Best practices include the use of a sample train that manages the moisture present in the sample gas effectively prior to the silica gel sorbent tubes to meet the methanol spike recovery requirements. If excess water vapor is allowed to reach these tubes, it will reduce the sorbent's ability to retain any methanol present in the gas stream that may pass through the impingers.

Method 308 allows the use of an optional empty impinger to improve moisture capture prior to the spiked impinger. We recommend using the optional impinger for most combustion sources and where condensed moisture could overwhelm a single impinger. A best practice for this method would include using this optional empty impinger.

An additional practice to avoid breakthrough and loss of the methanol spike involves reducing the sampling rate to <500 ml/min and shielding the train from heating due to sunlight. You will want to aggressively manage the impinger temperature with ice water as required in the method to manage the water.

These best practices should improve moisture management and improve the collection efficiency of native methanol as well as the retention of methanol spiking in the impingers and the sorbent tube. If these best practices still do not demonstrate sufficient spike recovery, then you may consider using an additional spiked impinger and a back-up silica tube to the train to add capacity to the sampling train for dealing with sources of higher moisture.