



SOURCE EVALUATION SOCIETY WEBINAR

Observation and Validation of Extractive FTIR Test Data; Regulatory, Industry, Tester, and Manufacturer Perspectives

Tuesday January 19th, 2021 from 11 am EST to 2 pm EST

Webinar Moderators

- Laura Kinner, Emission Monitoring Inc.
- Phil Kauppi, Montrose Air Quality Services

Speakers/Panelists

- Dave Nash, US EPA, Agency's Perspective on FTIR Data Validation
- Phil Kauppi, Montrose Air Quality Services, Tester's Perspective on FTIR Data Validation
- Sylvie Bosch-Charpenay, MKS Instruments, Vendor's Perspective on FTIR Data Validation
- John Nestor, Mostardi Platt, Tester's Perspective will present data comparing EPA Method 320 vs. Method 25A for VOC measurement on RICE Sources

About

This webinar builds on Session 8 from the postponed SSSAAP Conference in April 2020. The focus is how independent observers can verify that FTIR test data are valid, and to the extent possible, the accuracy of results while still in the field. The importance of field validation is stressed because that is the time that decisions are made. If problems are found with the instrumentation or sampling system, fixes can be affected while the tester is still on site. If process upsets are detected or more test conditions are needed, additional test runs can be performed. The benefits of on-site field-validated, known accuracy data are obvious to source operators making important decisions and to regulatory observers.

The FTIR is a powerful tool used in many applications and its use is best served when the data produced can be used in real time. Compliance demonstrations with emissions standards and relative accuracy tests are only a small part of how this technique is used in industry and research applications. Many capital expenditure decisions are made using FTIR engineering study test data. Performance guarantees are also evaluated using FTIR test data, with high-dollar amounts on the line.

The webinar presentations will begin with a regulatory perspective and flow to FTIR tester, FTIR manufacturer, and industry user. The final presenter will show a comparative data set with a real-world example of how the data were validated.

Agenda

The webinar is scheduled for three hours and will include four 25-minute presentations followed by a moderated panel discussion. The virtual format will allow for audience participation using the chat box.

Registration

To register for the webinar, please visit this link [Link to Registration](#)

Note that SES is offering this webinar **free of charge** for SES members

To check your membership status, please email the SES Secretary at SESSecretary@gmail.com

To join SES visit this link: [Link to SES Membership Info](#)

Questions

For more information, contact the webinar facilitators:

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Abstracts

Regulator's Perspective on FTIR Data Validation

Dave Nash, US EPA

Fourier transform infrared spectrometry (FTIR) is a powerful technology capable, in specific circumstances, of detecting multiple compounds in an industrial stack effluent. The universe of potential users of FTIR for stack emissions testing has expanded due to factors such as the development of software that will provide information indicative of instrument health, as well as quickly perform spectral calculations yielding pollutant concentrations while not requiring extensive knowledge or experience from the user. As a result, there is often confusion expressed by the user, compliance authority, or both as to what information would be helpful to report so that tests can be properly evaluated, and sound decisions based on the reported data can be made. In this presentation, EPA will discuss the technical advice that has been provided when approached by FTIR users or compliance authorities and our current thinking on FTIR operational and performance data being considered for future revisions to Method 320.

Tester's Perspective on FTIR Data Validation

Phil Kauppi, Montrose Air Quality Services

Multiple requests from regulatory agencies interested in checking FTIR compliance test results have been directed to testing firms. Montrose has received numerous requests from at least 4 State Agencies for FTIR raw test data in addition to proprietary software and reference spectra. These requests are not in any particularly standardized format and in many cases the client has not been informed of these requests. This presentation will address what agencies are requesting these data, what types of data are being requested, potential implications of these requests and how such requests are being handled. It is suggested that data properly validated on-site, with accuracy assessment should not garner such raw test data requests.

Vendor's Perspective on FTIR Validation

Sylvie-Bosch-Charpenay, MKS Instruments

Following multiple requests from regulatory agencies interested in checking FTIR compliance test results, MKS has created a standalone utility "Manual Analyzer" where the user can manually determine the concentration level of gases. The utility is delivered with a set of standard calibrations (excluding spectra and any span adjustment) of about 50 common gases found in combustion exhausts. The user can visualize the absorbance specific to each gas, and manually adjust gas concentrations to subtract all the components one by one. A goodness of fit (GOF) is provided, avoiding "guess work" over the best level of fit. Stack testers only need to provide test sample absorbance spectra to be used in this utility, and regulatory agencies can confirm that the manual reading is within a defined percentage of the reported concentrations in the stack testing report.

Tester's Perspective on FTIR Data Validation

EPA Method 320 vs. EPA Method 25A Volatile Organic Compound Comparison Data on RICE Sources

John Nestor, Mostardi Platt

US EPA has written rules allowing the use of Method 320 for determination of compliance limits for speciated volatile organic compounds (VOCs), however, there is not a standardized approach as to which compounds should be included in this determination or a standardized approach to summing up these compounds. State interpretation of how this data should be handled also varies widely. This presentation will demonstrate a best practices approach to determining which compounds to include in summing speciated VOCs when performing Method 320 tests on RICE sources by comparing data collected simultaneously from the same sample stream by Method 320 and by Method 25A. Also discussed will be how validation of these data is conducted in the field.