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## OAQPS Measurement and Monitoring Projects – 2009/2010

Environmental Protection Agency  
Office of Air Quality Planning and Standards  
Air Quality Assessment Division, Measurement Technology Group  
Sector Policies and Programs Division, Measurement Policy Group  
(<http://www.epa.gov/ttn/>)

Below is a status report of projects and other current activities involving air emissions methods and monitoring and other emissions quantification tools, databases, and protocols.

### New and Revised 40 CFR Part 60, Appendix A, Test Methods

- **Test Methods Update Rulemaking** – EMC has been cataloging errors and needed corrections to test methods, performance specifications, and associated regulations in 40 CFR parts 60, 61, and 63. Many of these needed revisions have been brought to our attention by affected parties and end-users. The corrections and revisions consist primarily of technical errors in equations and diagrams, the addition of alternative equipment or methods the Agency has found acceptable to use, removal of requirements to use mercury-in-glass thermometers, and typographical errors. Revisions are being made to Methods 2, 2A, 2D, 2E, 4, 5, 5E, 5H, 6, 6C, 7, 7A, 7E, 8, 10, 10A, 10B, 11, 12, 14A, 16A, 18, 23, 24, 25, 25C, 25D, 26, 29, 30B, 101A, 104, 108A, 306, 306A, 308, 315, and 316; Performance Specifications 1, 3, 4, 7, 11, and 16; and Procedure 2 of Appendix F. Proposal of these method revisions is planned for May 2010. Contact: Foston Curtis, MTG, [curtis.foston@epa.gov](mailto:curtis.foston@epa.gov), 919-541-1063.
- **Method 2H Revisions** – Method 2H describes the procedures to determine the decay of stack gas velocity near the wall of circular stacks. On August 25, 2009 (74 FR 42819), we proposed revisions to Method 2H to incorporate the improvements from CTM-041 for assessment of wall effects for rectangular stacks which have been frequently requested for use through the petition process of the Acid Rain Program. These revisions would allow Method 2H to address wall effects in rectangular stacks, allow multiple runs at a single load, decouple the wall effects testing from the RATA, and provide a mathematic formula for determination of a stack specific default wall effect adjustment factor. Comments were received on the proposal and promulgation is currently slated for late 2010. Contact: Jason DeWees, MTG, [deweese.jason@epa.gov](mailto:deweese.jason@epa.gov), 919-541-9724.
- **Method 16C - Determination of Total Reduced Sulfur Emissions from Stationary Sources** - Method 16C uses the sampling procedures of Method 16A and the analytical procedures of Method 6C to measure total reduced sulfur (TRS). TRS is defined as hydrogen sulfide, methyl mercaptan, dimethyl sulfide, and dimethyl disulfide. The sample is collected from the source through a heated probe and immediately conditioned in a citrate buffer scrubber. The conditioned sample is oxidized in a tube furnace to convert TRS to sulfur dioxide (SO<sub>2</sub>). The oxidized sample is then analyzed for SO<sub>2</sub>. Any analyzer that measures SO<sub>2</sub> and can meet the performance requirements in Method 6C may be used. Method 16C will allow testers to use analyzers and procedures for measuring TRS that they already have available and use in measuring criteria pollutants. Proposal of this method is planned for summer of 2010. Contact: Foston Curtis, MTG, [curtis.foston@epa.gov](mailto:curtis.foston@epa.gov), 919-541-1063.
- **Method 18 Revisions** - Method 18 utilizes gas chromatography coupled with various sampling procedures to measure gaseous organic emissions from stationary sources. We have received substantive stakeholder comments regarding potential improvements to deal with real-life application of Method 18 including calibration specifications and addition of sampling options such as collection of water soluble organics in water. Resource limitations have slowed progress, but we still plan to propose revisions in early 2011. Contacts: Gary McAlister, MTG, [mcalister.gary@epa.gov](mailto:mcalister.gary@epa.gov), 919-541-1062 and Rima Howell, MTG,

howell.rima@epa.gov, 919-541-0443.

- **Method 23 Revisions** – Method 23 is used to measure emissions of polychlorinated dibenzo-dioxins and dibenzofurans from stationary sources. EPA’s Office of Solid Waste and Emergency Response (OSWER) was originally working with Yves Tondeur on revisions to SW-846 Method 8290A (analysis of samples including emissions samples for dioxins and furans) to make the method performance-based; we, in turn, were planning to revise Method 23 to take advantage of these analytical method advances. Following publication of their Methods Innovation Rule (70 FR 34538, 6/14/05) OSWER decided not to take this step. We now plan to codify the performance-based approach to dioxin/furan analysis in 40 CFR Part 60. This will make it available for use with our Method 23 sampling procedures as well as for other sample analyses. We hope to propose this method in late 2010/early 2011. Contacts: Gary McAlister, MTG, mcalister.gary@epa.gov, 919-541-1062 and Robin Segall, segall.robin@epa.gov, 919-541-0893.
- **Method 30A - Determination of Total Vapor Phase Mercury Emissions from Stationary Sources (Instrumental Analyzer Procedure)** – Method 30A is an instrumental test method designed to measure vapor phase mercury and is performed based. It is applicable to emission testing and relative accuracy testing of mercury monitoring systems. Method 30A was published in the Federal Register in a direct final rulemaking on September 7, 2007 (72 FR 51494) and became effective November 6, 2007. Contacts: Robin Segall, MTG, segall.robin@epa.gov, 919-541-0893, Bill Grimley, MTG, grimley.william@epa.gov, 919-541-1065, and Jeff Ryan, ORD, NRMRL, ryan.jeff@epa.gov, 919-541-1437.
- **Method 30B - Determination of Mercury Emissions from Stationary Sources from Coal-Fired Combustion Sources Using Carbon Sorbent Traps** - Method 30B measures total vapor phase mercury and is applicable to mercury emissions measurement and relative accuracy testing of mercury monitoring systems. Method 30B relies integrated sampling using carbon sorbent traps and analysis using an extractive or thermal sample preparation technique coupled with instrumental analysis. Like Method 30A, Method 30B is performance-based relying on achievement of specified performance criteria to assure the quality of measured data. Method 30B was published in the Federal Register in a direct final rulemaking on September 7, 2007 (72 FR 51494) and became effective November 6, 2007. Contacts: Bill Grimley, MTG, grimley.william@epa.gov, 919-541-1065, Robin Segall, MTG, segall.robin@epa.gov, 919-541-0893, and Jeff Ryan, ORD, NRMRL, ryan.jeff@epa.gov, 919-541-1437.

#### **New and Revised 40 CFR Part 60, Appendix B, Performance Specifications for Continuous Monitoring Systems**

- **Performance Specification 11 Revisions and Guidance** – Specifications and Test Procedures for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources (PS-11) were promulgated on January 12, 2004 (69 FR 1786). Corrections and clarifications to the equations and confidence and tolerance interval calculations finalized on March 25, 2009 (74 FR 12575). The preamble to the 2009 revisions signaled forthcoming guidance on precision and bias, handling of paired train data, example calculations, spreadsheets, stratification, and auditing. The guidance will provide examples on evaluating correlation test data to demonstrate compliance with PS-11, a spreadsheet for evaluating correlation test data, the handling of precision and bias of paired sampling train data, the evaluation of response correlation audit (RCA) data, evaluation of particulate matter stratification in ducts and stacks, a spreadsheet for checking paired sampling train data, a summary of audit requirements and system bias checks required by Procedure 2 for PM CEMS. Contact: Dan Bivins, MTG, bivins.dan@epa.gov, 919-541-5244
- **Performance Specification 12A** - Specifications and Test Procedures for Total Vapor Phase Mercury Continuous Emission Monitoring Systems in Stationary Sources (PS-12A) were promulgated in conjunction with the Clean Air Mercury Rule (CAMR) on May 18, 2005 (70 FR 28606). When the court ordered vacatur of CAMR on March 14, 2008, most parties concluded that PS-12A was also vacated. We have, therefore, re-proposed PS-12A in conjunction with amendments to the Portland Cement NESHAP which

require mercury emissions monitoring (74 FR 21136, 5/6/2009). Comments have been received on the proposal and promulgation of PS-12A is expected in June of 2010. Contacts: Bill Grimley, MTG, grimley.william@epa.gov, 919-541-1065 and Robin Segall, MTG, segall.robin@epa.gov, 919-541-0893.

- **Performance Specification 12B** - Specifications and Test Procedures for Monitoring Total Vapor Phase Mercury from Stationary Sources Using a Sorbent Trap Monitoring System – Appendix K of 40 CFR Part 75 was promulgated as a sorbent trap monitoring alternative to continuous emissions monitoring in conjunction with the Clean Air Mercury Rule (CAMR) on May 18, 2005 (70 FR 28606). When the court ordered vacatur of CAMR on March 14, 2008, most parties concluded that Appendix K was also vacated. We have proposed a new Performance Specification 12B or PS-12B in conjunction with amendments to the Portland Cement NESHAP which require mercury emissions monitoring, again as a sorbent trap alternative to continuous emissions monitoring (74 FR 21136, 5/6/2009). Comments have been received on the proposal of PS-12B and promulgation is expected in June of 2010. Contacts: Bill Grimley, MTG, grimley.william@epa.gov, 919-541-1065 and Robin Segall, MTG, segall.robin@epa.gov, 919-541-0893.
- **Performance Specification for Predictive Emissions Monitoring Systems (PEMS) (PS-16)** - Performance Specification 16 provides performance criteria for evaluating and accepting PEMS. PEMS are typically used to predict emissions from combustion processes (e.g., NO<sub>x</sub> from gas boilers, turbines, and internal combustion engines) through the monitoring of process parameters. Predictive systems have been allowed for a number of years at the State level, and the EPA has allowed their use in recently-promulgated federal rules. We proposed PS-16 on August 8, 2005 (70 FR 45608) and received comments. The final version of PS-16 was promulgated on March 25, 2009 (74 FR 12575) with additions, in response to comments, of alternative relative accuracy specifications for low emitters and reduced frequency of relative accuracy audits for good performance. Contact: Foston Curtis, MTG, curtis.foston@epa.gov, 919-541-1063.
- **Performance Specifications and QA/QC for Continuous Parameter Monitoring Systems (CPMS) (PS-17)** – Performance Specification 17 and QA Procedure 4 provides a uniform set of requirements that inform users of parameter monitoring devices of the suitability of the devices for specific tasks or the ability of the devices to provide valid data to determine compliance. This rule would establish minimum acceptable requirements, both for initial installation and ongoing operation, for five common classes of parameter monitoring devices – temperature, pressure, flow rate (liquid, gas, and mass), pH, and conductivity. In addition, this rule would revise portions of other rules to ensure a consistent approach for parameter monitoring. The rule was proposed on October 9, 2008, and it can be found beginning on page 59,956 of Volume 73 of the Federal Register. Several commenters questioned the costs associated with the proposed rule and at least one commenter asked for a performance-based rule. The Agency is considering the comments received on the proposed rule and currently intends to issue a supplemental proposal to solicit additional public input. Contact: Barrett Parker, MPG, [parker.barrett@epa.gov](mailto:parker.barrett@epa.gov), 919-541-5635.

#### **New and Revised 40 CFR Part 60, Appendix F, Quality Assurance Procedures for Continuous Monitoring Systems**

- **Procedure 2 - Quality Assurance Requirements for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources** - Procedure 2 (69 FR 1786, 1/12/04) was promulgated as a QA accompaniment to PS-11. In a Federal Register Notice published on March 25, 2009 (74 FR 12575), a needed equation for calculating an absolute correlation audit based on the applicable standard was added to Procedure 2. The guidance being developed for PS-11 will also address Procedure 2. Contact: Dan Bivins, MTG, bivins.dan@epa.gov, 919-541-5244.
- **Procedure 5 - Quality Assurance Requirements for Vapor Phase Mercury Continuous Emission Monitoring Systems Used for Compliance Determination at Stationary Sources** - Procedure 5 (69 FR 1786, 1/12/04) was proposed as a QA accompaniment to PS-12A in conjunction with amendments to the Portland Cement NESHAP which require mercury emissions monitoring. Comments have been received on

the proposal and promulgation of Procedure 5 is expected in June of 2010. Contacts: Bill Grimley, MTG, grimley.william@epa.gov, 919-541-1065 and Robin Segall, MTG, segall.robin@epa.gov, 919-541-0893.

### **New and Revised 40 CFR Part 63, Appendix A, Test Methods**

- **Method 301 Revisions** - Method 301 is the field data validation protocol promulgated on December 29, 1992. The method provides a framework and performance criteria for validating emissions test data (and methods) when no EPA method is available or when proposing an alternative to an existing test method. Comments and questions from the user community have prompted preparation of technical revisions and clarification to the method. Proposed amendments to Method 301 appeared in the Federal Register on December 22, 2004 (69 FR 76642). We received comments from about fifteen parties, several of which were extensive. The final rule package is complete, is moving through agency approval process, and we expect to promulgate the amendments later in 2010. Contact: Gary McAlister, MTG, mcalister.gary@epa.gov, 919-541-1062.

### **New and Revised 40 CFR Part 51, Appendix M, Test Methods**

- **Method 201A Revisions** - Method 201A is used to determine in-stack  $PM_{10}$  emissions using a cyclone or cascade impactor. On March 25, 2009 (74 FR 12970), we proposed revisions to Method 201A specifying use of a  $PM_{2.5}$  cyclone from a conventional five-stage cascade cyclone train to allow measurement of  $PM_{2.5}$ . The  $PM_{2.5}$  cyclone would be inserted between the  $PM_{10}$  cyclone and the filter of the Method 201A train and stack gas would be sampled at a predetermined constant flow rate through the in-stack cyclones and filter. Comments received have been considered and promulgation of the Method 201A revisions (which will ultimately replace CTM-040 and OTM-27) is planned for the summer of 2010. Contacts: Jason DeWees, MTG, dewees.jason@epa.gov, 919-541-9724 and Ron Myers, MPG, myers.ron@epa.gov, 919-541-5407.
- **Method 202 Revisions** – Method 202 is used to determine condensable particulate matter (CPM) emissions using the material collected in the impinger portion of the typical stack sampling train. The existing Method 202 describes a variety of required and optional sampling and analysis procedures to determine the organic and inorganic components of CPM. On March 25, 2009 (74 FR 12970), we proposed revisions to Method 202 intended to specify one prescriptive sampling and analysis procedure. The revised procedures are derived extensively from procedures in the existing Method 202, but also include a few new sampling and analysis techniques. We have demonstrated that use of the revised test method procedures results in a reduction of sulfate artifact formation and an increase in the data precision. Comments received have been considered and promulgation of the Method 202 revisions (which will replace OTM-028) is planned for the summer of 2010. Contacts: Jason DeWees, MTG, dewees.jason@epa.gov, 919-541-9724 and Ron Myers, MPG, myers.ron@epa.gov, 919-541-5407.
- **Method 207** - Pre-Survey Procedure for Corn Wet-Milling Facility Emission Sources - This pre-survey procedure was developed by the corn wet-milling industry specifically to measure VOC mass emissions from processes within their facilities. It provides a systematic approach to develop a specific list of target organic compounds and the appropriate sampling approach to collect those target compounds during subsequent VOC emissions testing. After using the new pre-survey procedure, the tester will have sufficient information to design a comprehensive testing program using Method 18 and other appropriate methods to measure the mass of VOC emissions during the actual emissions testing. For the purposes of measuring VOC emissions from corn wet-milling facilities, all of the sampling procedures in Method 18 may be used as well as an additional sampling procedure using water filled impingers to collect water soluble VOC. This sampling procedure is described in detail in Method 308 (40 CFR Part 63) and NCASI Method CI/SG/PULP-94.03. The resulting water samples should also be analyzed using the procedures in Method 308 or NCASI Method CI/SG/PULP-94.03. If formaldehyde is a target compound, it may be collected with the water filled impinger collection system, but the sample must be analyzed by procedures other than those in EPA Method 18. Examples of acceptable analytical procedures are those in Method 316 (40 CFR Part

63) or NCASI Method CI/SG/PULP-94.02. Method 207 was published as a direct final rule for addition to Appendix M on May 29, 2008 (73 FR 30775). No adverse comments were received and the rule became effective on June 30, 2008. Using new procedures such as Method 207 to measure VOC emissions will create issues for the EPA programs that require that sources report these emissions. EPA has written a letter (available on the EMC website) to the Corn Refiner's Association, who represent the corn wet-millers, explaining how EPA believes these issues might be resolved. Contact: Gary McAlister, MTG, mcalister.gary@epa.gov, 919-541-1062.

- **Method 208** - Method for Measuring VOC Mass Emissions from Hot Mix Asphalt (HMA) Plant Dryers - This method is a protocol for collecting, analyzing, and reporting of VOC emissions from HMA plant dryers. It is designed specifically to measure VOC mass emissions from hot mix asphalt plant dryers and was developed by the asphalt paving industry. The method is applicable for the determination of total gaseous concentrations of VOC that consist primarily of alkanes, alkenes, and/or arenes (aromatic hydrocarbons) which comprise the organic emissions from hot mix asphalt dryers. The mass emission rate of VOC from the HMA plant dryers is expressed in terms of pounds per hour of propane, which is appropriate for these kinds of VOC. This method is now scheduled for proposal to be added to Appendix M of 40 CFR Part 51 in the summer of 2010 and is currently posted on the EMC website as OTM-12. Contact: Gary McAlister, MTG, mcalister.gary@epa.gov, 919-541-1062.

### Source Category Approved Alternative Test Methods

These methods, published on the EPA/EMC website at [www.epa.gov/ttn/emc/tmethods.html](http://www.epa.gov/ttn/emc/tmethods.html), are approved alternatives to the methods required by 40 CFR Parts 60, 61 and 63 as described by the General Provisions of the corresponding Parts. As such, they may be used by sources for determining compliance with the requirements of these Parts per their specified applicability provisions without further EPA approval. The Administrator's delegated authority (currently Conniesue Oldham, Leader of the Measurement Technology Group), has approved these methods for the specified applications; this approval has been documented through an official EPA letter. These methods include quality control and quality assurance procedures that must be met. Note that EPA staff may not necessarily be the technical experts on these methods.

- **Federal Register Notice on Broadly Applicable Alternative Test Method Approvals** -The first of these notices, published January 30, 2007 (72 FR 4257), announced broadly applicable alternative test method approval decisions that EPA had made prior to 2007 under and in support of the New Source Performance Standards and the National Emission Standards for Hazardous Air Pollutants. Although we had made both site-specific and broadly applicable alternative test method approvals in the past, in the early 2000's we issued only site- or facility-specific approvals. This notice announced our plans to issue broadly applicable alternative test method approvals in the future and to post these broadly applicable approvals on the EMC website as well as announce them in the Federal Register. The publication of these broadly applicable alternative test method approvals on our website provides information about options and flexibility for the regulated community that may reduce the burden on source owners and operators in making site-specific alternative test method requests and the permitting authorities and the EPA Administrator in processing those requests. Update announcements of the broadly applicable approval decisions for 2007, 2008, and 2009 were published in the Federal Register on April 7, 2008 (73 FR 18794), February 26, 2009 (74 FR 8791), and February 22, 2010 (75 FR 7593). Contact: Robin Segall, MTG, segall.robin@epa.gov, 919-541-0893 and Jason DeWees, MTG, dewees.jason@epa.gov, 919-541-9724.

### Other Test Methods

These methods, published on the EPA/EMC website at [www.epa.gov/ttn/emc/tmethods.html](http://www.epa.gov/ttn/emc/tmethods.html), are those methods which have not yet been subject to the Federal rulemaking process. Each of these methods, as well as the available technical documentation supporting them, have been reviewed by the EMC staff and have been found to be potentially useful to the emission measurement community. The types of technical information reviewed include field and laboratory validation studies; results of collaborative testing; articles from peer-reviewed journals; peer-

review comments; and quality assurance (QA) and quality control (QC) procedures in the method itself. These methods may be considered for use in federally enforceable State and local programs (e.g., Title V permits, State Implementation Plans (SIP)) provided they are subject to an EPA Regional SIP approval process or permit veto opportunity and public notice with the opportunity for comment. The methods may also be considered as candidates to be alternative methods to meet Federal requirements in 40 CFR Parts 60, 61, and 63; however, they must be approved as alternatives under 60.8, 61.13, or 63.7(f) before a source may use them for this purpose. The methods are available for application without EPA oversight for other non-EPA program uses including state permitting programs and scientific and engineering applications. The EPA strongly encourages the submission of additional supporting field and laboratory data as well as comments in regard to these methods. *We have now augmented our posting of Other Test Methods by including a table summarizing the supporting information available for each new method posted.*

- **OTM-10 - Optical Remote Sensing for Emission Characterization from Non-Point Sources** – This path-integrated optical remote sensing (PI-ORS)-based approach utilizes multiple beam paths and optimizing algorithms to calculate a concentration field across a contaminant plume and determine the plume location or, with use of wind data, the emission rate of fugitive emissions. The Department of Defense sponsored validation of this approach using controlled releases of various gases and in 2006, the validated, peer-reviewed OTM-10 protocol was posted on the EMC website. This approach has been used in EPA projects to measure emissions from the landfills, agricultural sources, refineries, and a chlor-alkali plant. EPA's Office of Research and Development recently completed a study to optimize OTM-10 for application to large area sources such as landfills and we are in the process of drafting a new appendix to OTM-10 to describe these procedures; this appendix should be completed and posted to the EMC website later in 2010. Contact: Robin Segall, MTG, segall.robin@epa.gov, 919-541-0893, Jason DeWees, MTG, dewees.jason@epa.gov, 919-541-9724 and Eben Thoma, ORD NRMRL, 919-541-7969.
- **OTM-12** – This method will be proposed as Method 208 (see prior discussion concerning Method 208 on page 5).
- **OTM-15 - Measurement of Particulate Emissions and Heating Efficiency of Outdoor Wood-Fired Hydronic Heating (OWHH) Appliances** – This voluntary method was developed at the request of manufacturers, regulators, and laboratories for a consistent way to compare particulate matter results for those manufacturers who choose to have their units undergo testing. The method is based on Method 28, which is the Agency required procedure for wood heaters. The method has been revised from its original January 2007 format to specify dry wood use, to correct an equation, and to clarify stack requirements. Contact: Mike Toney, MTD, toney.mike@epa.gov, 919-541-5247.
- **CTM-039 - Measurement of PM<sub>2.5</sub> and PM<sub>10</sub> Emissions by Dilution Sampling (Constant Sampling Rate Procedures)** – This method uses the in stack cyclone separation described in OTM-027, however, procedures for characterizing the condensable particulate matter are improved and expanded with the removal of the in-stack 47-mm filter, the addition of a system to dilute and cool the sample gas, and the addition of a 142-mm filter to collect the filterable PM<sub>2.5</sub> and the particulate matter condensed through the dilution and cooling of the sample gas. Because the sample gas is cooled and diluted to near ambient conditions, aliquots of the diluted sample gas can be extracted prior to the 142-mm filter for collection and analysis by ambient air methodologies. Working with stakeholders, we have collaborated the use of paired train testing at a combined cycle turbine for precision testing using the method. Also, we have conducted paired train sampling for the purpose of assessing the precision of this method. We are analyzing test results, and we will prepare a report with our findings. After promulgation of Methods 201A and 202, we will request funding to begin the proposal and promulgation process for this method. Contact: Ron Myers, MPG, myers.ron@epa.gov, 919-541-5407 and Jason DeWees, MTG, dewees.jason@epa.gov, 919-541-9724.
- **PRE-008 - Determination of Visible Emission Opacity from Stationary Sources Using Computer-Based Photographic Analysis Systems** - This method describes a preliminary approach for determining the opacity of visible emissions through the use of digital photographs taken of the emission source plume.

The photographs are processed using computer software that determines percent opacity using information available from the digital or digitized images. The positioning of the camera is similar to the observer requirements of Method 9 (40 CFR 60, Appendix A), as are the reporting requirements. A descendant of this preliminary method has just been approved through the ASTM voluntary consensus standard process and is referred to as: **ASTM D7520 - 09 Standard Test Method for Determining the Opacity of a Plume in the Outdoor Ambient Atmosphere (DCOT) Digital Camera Opacity Technique**. It can be accessed at: [www.astm.org/Standards/](http://www.astm.org/Standards/). MTG will be considering this method for future regulations and as an alternative to other opacity measurement approaches in existing rules. Contact: Jason DeWees, MTG, [dewees.jason@epa.gov](mailto:dewees.jason@epa.gov), 919-541-9724.

### Improving Emissions Monitoring through Rulemaking

- **Rule Review** – As part of the risk and technology review (RTR), area source rule development, ongoing new source performance standard (NSPS) rule review, regulation litigation, and other regulation development, MPG staff conduct an emissions quantification review, seeking to clarify existing monitoring and testing requirements, as well as to propose new, updated approaches. Examples of improved monitoring in recent rulemakings include mercury and hydrochloric acid CEMS in the Portland Cement NSPS and NESHAP, CEMS as an alternative monitoring approach for Gasoline Dispensing NESHAP, and particulate matter CEMS for Coal Preparation Plants' NSPS. Contact: Tom Driscoll, MPG, [driscoll.tom@epa.gov](mailto:driscoll.tom@epa.gov), 919-541-5135.
- **Information Collection Requests (ICRs)** – ICRs are a means by which the Agency uses its authority under section 114 of the Clean Air Act to have sources sample emissions and collect operational data in order to assist rule development. Since the Agency lost a number of court cases due, in part, to a lack of data, last year OAQPS issued four ICRs that include emissions testing for ICI boilers, CISWI units, PVC plants, and electric utility generators. Up to eighty more ICRs are expected. In support of rulewriters and their ICRs, MPG and MTG staff maintain FAQ and responses websites, hold webinars, expedite alternative monitoring requests, respond to telephone and email questions, and update the electronic reporting tool (ERT). Contact: Peter Westlin, MPG, [westlin.peter@epa.gov](mailto:westlin.peter@epa.gov), 919-541-1058.
- **Implementing Periodic Monitoring in Federal and State Operating Permit Programs (Revisions to Part 64, Compliance Assurance Monitoring (CAM))** - This rule would revise the existing CAM rule to be implemented through the operating permits rules (40 CFR Parts 70 and 71). The revisions would specify criteria and procedures that source owners must address in creating effective periodic monitoring. The revisions will build on the success of the 1997 rule by expanding applicability to include emissions units that do not use add-on control devices but minimize pollutant emissions using other types of control measures. This federal rule will provide for greater consistency in monitoring requirements than can be achieved through processes applied state-by-state and permit-by-permit. The result will also further satisfy the Clean Air Act requirement that EPA require enhanced monitoring sufficient to assure compliance for all major sources. The rule is undergoing internal review. Contact: Peter Westlin, MPG, [westlin.peter@epa.gov](mailto:westlin.peter@epa.gov), 919-541-1058.

### Emissions Factors Improvement

- **Emissions Factors Improvement Project** - EPA is implementing a multi-part process to improve the air pollutant emissions factors program and to make the program self-sustaining. First, we will continue developing the electronic reporting tool (ERT) to make it easier for State, Local, and Tribal air pollution control agencies, industry, and other stakeholders to access, assess the quality of, and submit emissions test data. Second, we will upgrade the AP-42 factors information compilation and retrieval system, making it an interactive, current, and easy to expand and enhance foundation for the internet application renamed WebFIRE. Third, we will rewrite the existing emissions factors development procedures document so that the process is transparent. Finally, in order to acquire adequate data for the development or improvement of

the emissions factors, we sought comment on requiring the submission (via electronic reporting) of certain performance testing information already collected by industry via an advance notice of proposed rulemaking published on October 14, 2009 (74 FR 52723). The comment period was extended, and we are reviewing the comments and preparing responses in anticipation of a proposed rulemaking in the summer. Contact: Tom Driscoll, MPG, [driscoll.tom@epa.gov](mailto:driscoll.tom@epa.gov), 919-541-5135.

- **Source Classification Code Improvement Project** - EPA is beginning the process to improve the Source Classification Code (SCC) system. During the emissions factors program improvement (and with input from state air pollution control agencies), we found many duplicate emissions factors for the same emissions points. We also found that many of the emissions factors have no basis in testing or have been extrapolated from tests of similar-type facilities. Another issue that we want to address is the continued use of 999 (“other”) category for the fourth level of the code. We found that many tests and data are placed into this category when one cannot find an appropriate SCC, rendering this category not as useful as other categories with specific descriptions. Other issues to be addressed include inconsistencies in the way SCCs are developed, inconsistencies in the categories at all levels, and incorporation of other information, such as pollutant, into the SCC. Contact: Rachel Agnew, [agnew.rachel@epa.gov](mailto:agnew.rachel@epa.gov), 919-541-0328.
- **Emissions Factors Updates** – New and updated materials include:
  - Finalized Steel Minimills (section 12.5.1) – Contact: Mike Ciolek, MPG, [ciolek.michael@epa.gov](mailto:ciolek.michael@epa.gov), 919-541-1039.
  - Drafted Manufacture of Rubber Products (section 4.12) – Contact: Barrett Parker, MPG, [parker.barrett@epa.gov](mailto:parker.barrett@epa.gov), 919-541-5635.
  - Drafted Municipal Solid Waste Landfills (section 2.4) – Contact: Tom Driscoll, MPG, [driscoll.tom@epa.gov](mailto:driscoll.tom@epa.gov), 919-541-5135
  - Drafted Ordnance Detonation (chapter 15) – Contact: Mike Ciolek, MPG, [ciolek.michael@epa.gov](mailto:ciolek.michael@epa.gov), 919-541-1039.
  - Posted Corrections to and a VISTA workaround for TANKS 4.09D (VOC estimation software) occurred in November. Contact: Michael Ciolek, MPG, [ciolek.michael@epa.gov](mailto:ciolek.michael@epa.gov), 919-541-1039.
  - Posted a Protocol for Estimating Emissions from Petroleum Refineries (Comment period closes March 31, 2010) – Contact: Brenda Shine, CCG, [shine.brenda@epa.gov](mailto:shine.brenda@epa.gov), 919-541-3608.

### Tools for Improved Monitoring and Testing

- **Electronic Reporting Tool (ERT)** – In early 2006, we made available a Microsoft Access desktop application, called the ERT that is an electronic alternative for paper reports documenting EPA's emissions measurement Methods 1 through 5 and Method 202 for stationary sources. The ERT replaces the time-intensive manual preparation and transcription of stationary source emissions test plans and reports currently performed by contractors for emissions sources. The ERT also replaces the time-intensive manual quality assurance evaluations and documentation performed by State and Local Air Pollution Control Agencies. We have expanded the capabilities of the tool to address EPA emissions testing methods for SO<sub>2</sub>, NO<sub>x</sub>, THC (Method 25A), metals, halides, and dioxins and furans – including PCBs and PAHs - (Method 23). The ERT has been placed into operation via several ICRs, is required to be used by the Coal Preparation NSPS, and has been proposed for optional use in other rules. We have provided training on the ERT via webinar, and we have updated the ERT based on requests to clarify or revise certain portions. Among the ERT improvements for next year, we plan on including Methods 18, 30B, 320, and 321. The ERT can be found at [http://www.epa.gov/ttn/chief/ert/ert\\_tool.html](http://www.epa.gov/ttn/chief/ert/ert_tool.html). Contact: Ron Myers, MPG, [myers.ron@epa.gov](mailto:myers.ron@epa.gov), 919-541-5407.
- **Smart Leak Detection and Repair (Smart LDAR)** - For the past 25 years, the work practice standard for assessing process equipment leaks under 40 CFR Parts 60, 61, and 63 required the use of an instrument meeting the performance specifications of EPA Method 21. Over the past five years or so, infra-red (IR) camera and other technologies have advanced to the point where we believe they can provide at least equal, if not better, environmental protection than that provided by the current work practice. API provided field



tests and laboratory data to assist in demonstrating the performance of IR camera technology to image leaks from valves, flanges, compressors, and other similar equipment. A final rule was published and became effective on December 22, 2008 (73 FR 78199) allowing use of this kind of technology in LDAR programs. Most recently, the Environmental Technology Verification (ETV) Program sponsored by EPA's Office of Research and Development has been evaluating some of the commercially available camera technologies. When the report becomes available, it can be found at <http://www.epa.gov/etv/este.html>. Contact: Bill Grimley, MTG, [grimley.william@epa.gov](mailto:grimley.william@epa.gov), 919-541-2580.

- **Stationary Source Audit Program (SSAP) and EMC QA Conference Call** – Audit samples have historically been used as one quality assurance element in evaluating the validity of compliance test data. In the past, there were no private entities who supplied stationary source emissions test audit samples, so EPA provided them free of charge to the regulatory agencies responsible for overseeing compliance testing (state and local agencies and EPA Regional Offices). Over the past few years with the emergence of accreditation programs, there has been an increasing need for such samples, and a number of private providers have emerged. EPA believes it is no longer necessary for it to supply audit samples and, therefore, has decided to restructure the audit program to allow private accredited suppliers to provide audit samples to industries for use in compliance testing at stationary source facilities. To accomplish this shift in the stationary source audit program, we have proposed amendments (74 FR 28451; 6/16/2009) to the general provisions of 40 CFR Parts 60, 61, 63, and 51 that will (1) allow accredited providers to supply stationary source audit samples and (2) require affected sources to obtain these samples from the accredited providers and use them in their compliance testing programs. This program restructuring will likely increase the number, types, and concentration ranges of audit samples available and will clarify how the samples are to be obtained and used.

The EMC QA team also conducts teleconference calls on the first Monday of every month from 1:30-3:30 pm (EST) to discuss auditing and other emission testing issues. Agendas for these conference calls can be obtained by contacting Candace Sorrell. Contact: Candace Sorrell, MTG, [sorrell.candace@epa.gov](mailto:sorrell.candace@epa.gov), 919-541-1064 and Gary McAlister, MTG, [mcalister.gary@epa.gov](mailto:mcalister.gary@epa.gov).

- **ASTM Activities** - EMC contacts participate as committee members on ASTM Subcommittees (e.g., D22-03 and E56-04) primarily to encourage development of new stack test methods where we anticipate a future need that is not met by a current EPA method. In addition, EPA considers all available voluntary consensus methods in the process of rulemaking and offers appropriate methods as regulatory alternatives. We have recently been participating in ASTM standard development efforts for: (1) methods for low mass fireplaces, masonry heaters, hydronic heaters, and pellet stoves; (2) a dilution sampling guideline for measurement of PM fine including condensable PM; (3) an opacity measurement method based on digital camera technology which is now been published (see discussion under PRE-008 project); and (4) a bag leak detector protocol for application to cement plants. Contacts: Mike Toney, MTG, 919-541-5247, Dan Bivins, MTG, [bivins.dan@epa.gov](mailto:bivins.dan@epa.gov), 919-541-5244, and Jason DeWees, MTG, [deweese.jason@epa.gov](mailto:deweese.jason@epa.gov), 919-541-9724.
- **Fenceline Monitoring of Metals** – EMC has a project underway to evaluate X-Ray fluorescence technology as a fence line and mobile “hot spot” ambient monitor. The use of X-Ray fluorescence technology has been proven at the source level as a continuous emissions monitoring system (CEMS). These X-Ray fluorescence CEMS have been redesigned with a PM<sub>10</sub> inlet and will be tested in several scenarios for various point and area sources. These scenarios include source apportionment using modeling, use of the monitor in a mobile platform to determine ruggedness, and evaluate its use as a “hot spot” monitor, and combined with a MET station as a fence line monitor. We tested this source apportionment scenario in 2008 near an electric melting source in Portland, OR and ran another project in the St. Louis and Herculaneum, MO areas during 2009 to assess accuracy and precision, comparing the instrument to two Federal Reference Method ambient monitors. Contact: Dan Bivins, MTG, [bivins.dan@epa.gov](mailto:bivins.dan@epa.gov), 919-541-5244.
- **PM 2.5 Method/CEMS Development for Wet Stacks** - The goal of this project is development of an

instrumental test method and a PM 2.5 CEMS that will perform under wet stack conditions. The development of this method and technology is important for the SIP PM fine implementation program and for emission factor development. The PM 2.5 CEMS utilizes an in-stack droplet separator, followed by a dilution chamber with an ambient air Federal Reference Method or FRM at the end for PM 2.5. The prototype CEMS has been successfully evaluated under dry stack conditions and is now being tested under wet stack conditions. If the wet stack testing proves successful, then test and monitoring protocols will be developed. Contact: Dan Bivins, MTG, bivins.dan@epa.gov, 919-541-5244 and Jason DeWees, dewees.jason@epa.gov, 919-541-9724.

- **Upstream Oil and Gas Emissions Measurement Project** – Both VOC and GHG emissions from upstream oil and gas production have become of interest due to ozone NAAQS exceedences in areas with significant increases in oil and gas production, the possible risk implications, and future GHG regulations. MTG and Office of Research and Development staff have been working together to quantify VOC and GHG emissions from upstream oil and gas production operations to better characterize emissions from this sector. In 2008, the first phase of this project was conducted to measure emissions from two produced water treatment facilities. The report of that work is available on the EPA website at: [http://cfpub.epa.gov/si/si\\_public\\_record\\_Report.cfm?dirEntryId=213869](http://cfpub.epa.gov/si/si_public_record_Report.cfm?dirEntryId=213869) We are currently working on an approach to measure emissions from oil and gas wells and associated production pads. In August of 2009, we conducted preliminary drive-by measurements of multiple production pads in EPA Region 8 using a very fast and sensitive methane point monitor coupled with wind and GPS measurements on a mobile platform. We found this combination to be extremely effective in detecting emissions from these sources. The next phase of the project is underway and will focus on quantifying the emissions. Contact: Jason DeWees, dewees.jason@epa.gov, (919) 541-9724, Robin Segall, segall.robin@epa.gov, (919) 541-0893, and Eben Thoma, ORD NRMRL, 919-541-7969.
- **Large Area Source Remote Emissions Measurement** – In work with EPA's ORD, we have found that large area sources present challenges to our remote measurement approaches. This project is focused on development of methodology for testing large area sources such as landfills that are generally larger than the optical path lengths provided by current remote sensing technology such as open path Fourier transform infrared or tunable diode laser instruments. We are working on two different approaches for measurement of these sources. The first approach is an addendum to Other Test Method 010 (OTM-010) for large area sources. This approach uses an estimated "fetch" of the vertical radial plume mapping plane located inside a large area source. The estimated fetch is used to determine how much area would contribute to the flux measured by the OTM-010 measurement plane. This technique works best with an area source with a homogenous emission profile. The addendum is being drafted and should be available on the EMC website by the end of 2010. The second approach uses quantified releases of tracer gas within the large area source. The tracer and component of concern are then measured down wind using a point monitor installed in a mobile platform such as an SUV; measurements are made as transects or at a stationary point within the plume. The total mass emission of the component of concern can then be calculated using the ratio between the tracer and component. We are planning to analyze additional tracer gas data and will likely publish a protocol later this calendar year. Contacts: Jason DeWees, dewees.jason@epa.gov, (919) 541-9724, Eben Thoma, ORD NRMRL, 919-541-7969, and Robin Segall, segall.robin@epa.gov, (919) 541-0893.
- **QA Handbook for Remote Measurement and Monitoring of Stationary Sources of Emissions** – We have started work on a compendium of remote measurement and monitoring techniques applicable to stationary sources. This handbook will address technologies and measurement approaches utilizing these technologies, including example DQO/MQOs and QAPPs, applicability of the approaches, strengths and limitations, and summarize the verification and validation data available. A first draft will be available by the end of 2010. Contact: Dennis Mikel (919) 541-5511, Jason DeWees, dewees.jason@epa.gov, (919) 541-9724, and Robin Segall, segall.robin@epa.gov, (919) 541-0893.