2009 QA National Meeting
San Antonio
Meeting Topic Notes

1. **Pb Monitoring and QA Aspects**- Mike Papp provided a progress report on the implementation of the new Pb NAAQS monitoring. From a QA standpoint, flow rate verifications, flow rate audits, laboratory audit strips and collocation requirements have not changed from previous regulations. EPA did add a Pb-PEP program which will require decisions by monitoring organization to self-implement or to utilize federal implementation. Monitoring organizations will need to make these decisions in July. In addition the Pb audit strip concentrations have changed due to a lowering of the standard. OAQPS is testing the development of laboratory audits on both TSP and Teflon filters by both pipette and nebulization deposition techniques. OAQPS will receive results from two "referee" laboratories by July. EPA is not responsible for developing audit strips for the monitoring organization Pb laboratories but there is a possibility that EPA could provide this service if it was agreeable to monitoring organizations. Decisions are still being made in regards to federal reference and equivalent methods for Pb. Sets of questions and answers for Pb are available on AMTIC. http://www.epa.gov/ttn/amtic/pb-monitoring.html

2. **NCore Data Quality Analysis-** Mark Shanis provided a discussion on what we've discovered with NCore data on the achievement of our proposed measurement quality objectives. We have conducted a number of NPAP audits at NCore sites and have reviewed one point QC check data from monitoring organizations submitting data to AQS. Since the audit concentrations have been lowered, there is concern that our current statistics which use a percent difference will not be met. Data evaluations indicate that at audit levels 3-5 a percent difference is acceptable. We may need to go to a straight ppm or ppb difference acceptance at lower audit levels. Also, the lower levels will require more attention to lower concentration audit gasses and more sensitive flow controllers. EPA also reviewed the AMP255 reports for the NCore sites and found most sites are providing reasonable precision and bias estimates. EPA will be looking at what concentrations were used for the one point QC and determine if there is a concentration dependent precision/bias issue. EPA will be reviewing more NPAP data for the NCore site this year and be making a decision on how to handle the low concentration points.

3. **Low Audit Concentration Level**- Mark Shanis combined this topic with the one above since they were similar.

4. **Review and acceptance of revised Ozone Transfer Standards Guidance**- Mike Papp described the work that has to revise the document: *Transfer Standards for Calibration of Air Monitoring Analyzers for Ozone*. He described the changes that have taken place to remove material no longer appropriate, and using language related to the "level" of standard based on how far a standard device is from being verified to a standard reference photometer. EPA also made suggestions on the type of device that should be used, depending on the level. For

example, a level 2 standard should be a photometer and a generator, and level 3 device should minimally be a photometer, and a level 4 device may be a generator. The document also strongly encourages that what the monitoring organization may call their "bench" standard (local primary standard in past terms) be sent for verification against the SRP rather than a surrogate. A comment was made to reconsider what happens if a SLT looses a Level 2 Bench Standard. The issue may be the difficulty with getting their level 3 standards to another level 2 Std for verification. And, if they can, the host with the level 2 standard may have limited time to conduct the 6X6 necessary to certify the client's level 3 std. EPA is also pursuing a way to provide an additive assessment of uncertainty at each comparison level. EPA hopes to have an approach drafted by the end of July for review. The draft is available for review on AMTIC at: http://www.epa.gov/ttn/amtic/srpqa.html . We are looking for comments on the document by June 19.

5. **MQO Tables and the Acceptance Criteria For PM Filter Samplers and Continuous PM Samplers-** Jeff Wasson brought up the issue that EPA has now approve a number of continuous PM instruments and due to their different operational characteristics, they do not fit neatly into the MQO tables currently in the QA Handbook. EPA did try to cover the BAM technology in the revised Handbook that came out in 12/08 but we do not cover any TEOMs since they had not been approved as FEM. During this discussion, it seemed like there was interest in having a focus workgroup proceed in the development of MQO tables for these continuous instruments. There was a suggestion that EPA provide a clear definition of an federal equivalent method (FEM). There seemed to be some confusion as to whether PM monitors with very sharp cut cyclones were federal reference methods (FRM) or federal equivalent methods (FEM).

6. **The "Art" of Data Validation –** Ceresa Stewart provided the group with the holistic validation process Arizona DEQ implements for their air monitoring program. The validation templates are one thing but there is much more to look at when one validates data. Ceresa explained the depth at which DEQ reviews their ambient air data using various field sheets and supporting data and provided case studies for the group to think about. During the presentation there was discussion of how some information management systems provide some automated techniques to data checking but these automated systems are not always flexible and as adaptable to a monitoring organization's current information management system as one would like. The presentation led to a good discussion and this topic may be one ripe for further training endeavors.

7. **QA Chemical Speciation Network (CSN) and the National Air Toxics Trends Network (NATTS)**. Dennis Crumpler and Dennis Mikel provided updates on the two networks. Since both networks analyze for metals but use different analytical techniques (CSN uses XRF and NATTS uses ICP-MS) and different filter media (Teflon and quartz) there was an interest in performing an laboratory intercomparison to determine data/lab comparability. In 2007, EPA commissioned a contractor to develop proficiency test samples utilizing a nebulization technique that would allow filters to be used by both analytical methods. EPA looked at 7 metals: arsenic, mercury, cadmium, nickel, manganese, lead an antimony. Although EPA is still in the process of data analysis, with the exception of mercury and antimony, the remaining metals seem generally comparable within analytical methods as well

as between methods. The results suggested the possibility of inconsistency of the metals deposit using the nebulization technique. EPA wants to evaluate this PT deposit technique further since it will also be used for the new Pb NAAQS. Dennis Crumpler also informed the group about the new mechanism to report flow rate audits and operator verifications of the CSN samplers. This reporting system will be available very soon. Tammy Eagan raised an issue that they have had a problem getting speciation 88502 PM2.5 mass data invalidated in AQS, when it grossly mismatches their FRM data. Dennis asked Tammy to send sampling days, site IDs and results and he would forward to AQS staff for deletion. There was some discussion over possible ways to help SLTs more easily recognize data that is inconsistent with FRMs. Dennis postulated that the current contract is worded to enable RTI to make these kinds of corrections but there may still be a time limit for SLTs to respond. He would look into the current contract and write up a few points on how such a process would work.

8. **Use of the 95% Confidence Intervals from One Point Checks And Flow Measurements For Comparison To Quarterly Audit Data.** Jeff Wasson raised the issue that's associated with the check in CFR which suggests that 95% of all the percent differences of the annual performance evaluations (all audit levels) and the flow rate audits should fall within the 95% probability intervals developed using the one point QC checks (gasses) or flow rate verifications (flow rate). The issue as initially described was based on an error in the use of the correct statistic for this process that was later rectified. EPA needs to check the statistics in the DASC tool with CFR to confirm that the equations are performed properly. However, we may still run into a problem where "tight" probability limits, due to a higher concentration for the one-point QC check, may result in more of the 5% failures especially at the lower audit levels (levels 1 and 2) discussed in earlier topics. What are appropriate goals for this especially with lower levels being used in Points 1 & 2 of audits and the effect of "tight" precision flow values vs. audit flows that may be higher but still within the 4% acceptance level? We are finding a number of our pollutants have trouble meeting the standard of having 5% or less outside of the PL limits without exhibiting any outward signs of poor results (>15% as stated in the new MQO tables) in the audits. Statement from MQO tables:95% of audit percent differences fall within the one point QC check 95% probability intervals at PQAO level of aggregation. It is noted that in CFR this is not a requirement (a must) but listed as "95% … **should** be captured" and therefore the intent is for a check and for development of an additional use for the performance evaluations and flow rate audits since there are performed at much less frequency then the verifications. EPA may have to review the frequency of failures of the lower audit levels to determine if a correction is necessary in the regulation.

9. **Defining drift for zero and span**. Jeff Wasson also led this topic. It did not seem that there was much issue with the newer zero/span requirements. O3 and CO had a zero drift acceptance limit of $\leq \pm$ 2% of full scale and SO2 and NO2 had $\leq \pm$ 3% of full scale. O3 had a span drift acceptance criteria of $\leq \pm$ 7% while the other 3 gaseous pollutants were $\leq \pm$ 10%. There was a question as to whether the drift be calculated as the difference from the "known" measurement or as the difference between two consecutive measurements. Jeff presented a situation where two days of span drift data, one positive and one negative, were not a problem if the result was compared against the baseline "0" but causes a failure when the values are compared against one another, i.e. span values added together 3.45 % & -4.40%

=7.85%. It was suggested that the drift be calculated from the known or baseline measurement and would therefore be in line with the evaluation of the one point precision check. Therefore, the situation above would be considered variability and not a drift issue. It sounded like there should be further discussion on this topic to either provide a better definition of the term "drift" or explain this check in more detail. As stated in the Handbook many newer monitors have auto-zeroing capabilities and may have automated corrections for span. EPA finds the use of the auto-zeroing function acceptable but does not recommend the automated span corrections.

10. ***QA Handbook Vol II*.** Mike Papp described some of the higher level changes that that were included in the development of the revised QA Handbook which was completed in Dec 2008. We have generally received positive comments on the Handbook but some individuals have found some discrepancies that need revision. Some effect the validation templates so that is one area we need to get back to. In addition, earlier topics discussed the need for additional PM continuous validation templates so edits to current validation template would be a natural fit. EPA initially thought we could change sections of the document without having to go through a complete revision but we found out we can not and a change would include establishing a new document number. We will determine the most effective way of providing corrections to the document this year. Gordon Jones led a team through the development of the technical systems audit form and he walked the meeting participants through the new TSA form. The TSA form is included in the Handbook which is on AMTIC at: http://www.epa.gov/ttn/amtic/qabook.html

11. **Review Of The New And Improved AMP255 Reports-** Jonathan Miller revised the AMP255 to the new CFR requirements and has also reformatted the document based on monitoring organization input. The report does have a new look and allows for a printable report and well as a spreadsheet. Jon reviewed the new report as well as discussed other important AQS QA related topics. There have been some issues with how the report calculates some of the requirements. Since the meeting we have also received comments on various calculations. So far, nothing that has been commented on is incorrect; however, the calculations have led to some confusion and/or concern. Jon has created a read-me file that covers most of these but we may need to provide some additional material to help define these issues and how EPA would determine whether or not they would effect data certification.

12. **Collecting and Reporting P&B data for the PAMS Program**. Mike Papp described this topic which was submitted as a topic at the 2008 meeting. There are currently no minimum requirements for the collection of QC information for the PAMS Program and no mechanism in place to submit P&B data into AQS. It has been the Region's opinion all along that the PAMS Program needs some means to measure the quality of PAMS data. The Region believes the PAMS Program needs to have a performance component to it that is linked nationally, perhaps one similar to the NATTS Program or like what CT DEP proposed last year. CT DEP proposed a procedure for collecting P&A data using autocal data for precision and "high calibration" samples for bias. Since not all PAMS sites use auto GC's we would have to find equivalent techniques for laboratory analysis or come up with possible some other creative mechanisms for reporting a consistent set of P&B data. Participants at

the meeting where interested in pursuing this activity and EPA will work to set up a meeting of interested participants.

13. **Protocol Gas Verification Program (PGVP)-** Mike Papp described progress in developing an Ambient Air Protocol Gas Verification Program. Regions 7 and 2 have agreed to perform analysis of 40 cylinders each (80 cylinders total) starting in 2010. EPA has developed an implementation plan that is currently on AMTIC for review at http://www.epa.gov/ttn/amtic/npepqa.html. EPA would like any comment on the plan by June 19th. Monitoring organizations would be asked to fill out a survey each year of what specialty gas vendors they are using and to determine whether they would like to participate in the program. Participation would require the monitoring organization to pay for shipping an unused gas cylinder to Region 7 or 2 within a specified timeframe. The Regions would cover the cost of shipping cylinders back to the monitoring organizations.

14. **School Toxics Monitoring Initiative**. Dennis Mikel and Jonathan Miller went over the current plan for the School Toxics Monitoring Initiative. This was mainly informative about how schools were selected, what sampling methods are being used, the compounds of interest and the timeline for events. Jonathan Miller went over the reporting of the data and how soon information would be reported.

15. **Use of CASTNET and NPS data**. Tammy Eagan facilitated a discussion about the roles of CASTNET and National Park Service Data. With the expansion of rural NCore sites there is some concern about the quality of other National criteria pollutant monitoring networks. How much do these networks follow the Appendix A requirements and beyond the requirements, are there other quality assurance related issue that need to be addressed? EPA provided input that the CASTNET program is attempting to conform to the Appendix A requirements and is working with OAQPS on the efforts. EPA also commented that the NPS had submitted its ozone QAPP to EPA for review and does have a substantial QA program. Other participant chimed in that they feel NPS QA has improved over the years. There was some concern about states being able to perform technical systems audits of the CASTNET and NPS sites. EPA can pursue this issue CASTNET and the NPS.

16. **Citizen Monitoring-** Tammy Eagan led this discussion. With various citizen monitoring programs out and about (e.g. bucket brigades) is there anything we can or should do to provide basic information or guidance on collecting data of “known” or “adequate” quality and to educate people when data can and can’t be used for certain decisions. Since we can’t stop data from being collected, the discussion led to determining what ways we might be able to educate citizens in what it takes to make monitoring data legally defensible. Reading CFR will not help but if there was some information we could put forward that illustrates the rigor that needs to go into declaring and area attainment/non-attainment, citizen groups contemplating monitoring may become better informed on how to actually collect data of known and acceptable quality.