EPA OFFICE OF AIR QUALITY PLANNING AND STANDARDS

The QA EYE

Special QA Regulation Edition

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SPECIAL POINTS OF INTEREST:

- **CFR Part 58 Appendix A rule Published Oct 17, 2006**
- **National Ambient Air Monitoring Meeting draws close to 500 people.**
- **National QA Meeting set for June**

INSIDE THIS ISSUE:

Monitoring and QA Regulation Approved

On October 17, 2006 the EPA amended its national air quality monitoring requirements in an effort to help EPA, states, tribes and local air quality agencies improve public health protection and better inform the public about air quality in their communities. The changes focus on retaining but reshaping existing monitoring networks for all the "criteria pollutants" to ensure that monitors are concentrated is areas with air quality problems, where monitoring in most critical. The rule also will add more monitors capable of providing real-time air quality measurements. The final rule and additional information can be found at the following website http://www.epa.gov/pm/actions.html.

As has been discussed in previous Newsletters, the QA Regulations for the Ambient Air Monitoring Network, 40 CFR Part 58 Appendix A, underwent a thorough review and revision with assistance from a dedicated QA Strategy Workgroup comprised of EPA and monitoring organization personnel. This special edition will attempt to provide details of the more important changes to the QA regulations and hopefully reduce the volume of questions submitted to EPA.

Monitoring Organizations Make Decisions on Implementing the National Performance Audit (NPAP) and PM2.5 Performance Evaluation Program (PEP)

40 CFR Part 58 Appendix A makes explicit that State/local monitoring organizations are responsible for ensuring that adequate and independent audits are conduced at their PM2.5, Pb and NAAQS gases (O3, SO2, NO2, and CO) monitoring stations. In order to ensure timely implementation of the rule, on May 17, 2006, Tom Curran of OAQPS sent a memo to the EPA Regions asking them to poll their monitoring organizations for some vital information. The memo presented two options for satisfying this audit requirement: self-implementation of adequate and independent audits like those conducted in the PEP and NPAP programs, or EPA-implementation of PEP and/or NPAP using STAG grant funds that otherwise would have been awarded to the monitoring organization. It asked the Regional Offices to obtain a preliminary indication from each monitoring organization of its choice between these two options, assuming that the revisions were to be adopted as proposed. The responses to the May 17 request indicate that for CY2007 one monitoring organization (NY) has opted to self-implement the PEP program, and three monitoring organizations (NY, FL and TX) have opted to implement the NPAP program. During the week of December 4, Dennis Crumpler, EPA's PEP lead, traveled to Edison, NJ to train and certify NY scientists on the PEP procedure. Scientists from CT were also in attendance. NPAP through-the-probe (TTP) training is also being scheduled in the next few months for the three monitoring organizations mentioned.

Expect to see another memo similar to the May 17th memo in late January. This memo, which will be distributed every year, will ask the monitoring organization to decide on the two options mentioned earlier in the article for CY2008 PEP/NPAP implementation.

Photos from the National Meeting *(more on page 7)*

Eric Stevens, Reginald Smith, Walt McDonnel, Cathernine Brown and Dick Valentinetti (VT) at a break

Richard Heffern, Barbara Trost (Alaska) and Kathy Jones (TN) talk technical

"…it became apparent that the 2006 National Air Monitoring Conference (Conference) was not going to be just another conference. In fact, it ended up becoming "an event".

Kevin Cavender (OAQPS) was a great master of ceremony

Erin Pittorino & Katherine Moore (ERG) Linda Ferrell & Brenda Millar (OAQPS) Kept the meeting running smoothly

National Ambient Air Meeting A Success

By Donovan Rafferty

When yet "another conference" was proposed last year during a time in which budget cuts to programs were being proposed, it seemed unlikely many would be attending. As the date approached and the sign-up list lengthened, it became apparent that the 2006 National Air Monitoring Conference (Conference) was not going to be just another conference. In fact, it ended up becoming "an event" that attracted nearly 500 attendees to Las Vegas in order to discuss the future of national air monitoring efforts.

The success of the Conference was due to those who contributed their time and resources in preparing presentations, setting up display booths, designing posters and brochures or by just "showing up." The food and beverages after hours were generously provided by the vendors. There was huge support from the Environmental Protection Agency's Office of Air Quality Planning of Standards (OAQPS), led by co-chairs Kevin Cavender (OAQPS) and Pete Babich (Connecticut). Special thanks need to go to Dick Valentinetti (National Association of Clean Air Agencies) for his vision, Phil Lorang (OAQPS) for his support and Brenda Millar (OAQPS) and Erin Pittorino from Eastern Research Group, Inc. for pulling it all together.

The training workshops, breakout and plenary sessions were well attended and the response from the audience was positive. There was such a large amount of information available that there was even criticism as to the difficulty in selecting from the "menu."

As an observer, what made the Conference so memorable were "moments" not found on any agenda but in the actions of others who were attending. It was the moment Betsy Frey from Delaware requested help from the audience and it was the moment Reggie Smith from California stood up and eloquently shared his experience in an effort to help her. It was the moment Dick Valentinetti from Vermont dropped everything he was doing in order to help take pictures of attendees from the Northwest. It was the numerous times I saw of one person shaking the hands of another and saying "thank you" for all one's help in the past. It was examples like these that made the Conference so special.

It was the moment during the closing hour of the Conference when Barbara Trost from Alaska stood before the audience and made a request. As we move toward the new monitoring strategy please remember that there are still communities that are in need of help in identifying pollutants that are causing air quality impacts (such as PM10) and assistance is needed in solving these problems.

The 2006 National Air Monitoring Conference will be remembered as an impressive gathering of people from all corners of North America coming together to share their knowledge and discuss ways in which to collect ambient air data. The challenge that now faces NACAA and OAQPS will be how to continue to support this spirit of cooperation that was displayed at the Conference so often, by so many.

The presentations from the 2006 National Air Monitoring Conference are now posted at the following url: http://www.epa.gov/ttn/amtic/2006present.html

National QA Meeting Set for June

The 26th Annual Conference on Managing Environmental Quality Systems will be held June 11-14, 2007 in Cleveland, Ohio. The Call for Papers will be issued in January 2007 along with additional information about the conference. Check out the EPA's Office of Environmental Information Quality System website for more information http://www.epa.gov/quality/meeting.html

PM QA Regulations Show Overall Burden Reductions

In order to provide a level of clarity on the new particulate matter quality assurance requirements, Table 1, which is similar to Table A-2 in 40 CFR Part 58 Appendix A, is used to compare the old requirements (prior to October 17, 2006) in this appendix to the new requirements for each particulate matter quality control criteria.

Table 1. Minimum Quality Control Requirements for Particulate Matter

Method	Minimum Frequency Old Rule	Minimum Frequency New Rule	Net Effect
Automated Methods			
Flow rate verification $PM_{2.5}$, $PM_{10-2.5}$	Once every 2 weeks	Once every month	Decrease by 12/unit
PM_{10},	Once every 2 weeks	Once every month	Decrease by 12/unit
Flow rate audit $PM_{2.5}$, $PM_{10-2.5}$	Once every quarter	Once every 6 months	Decrease by 2 per unit
PM_{10},	Once every year	Once every 6 months	Increase by 1 per unit
Collocated Sampling $PM_{2.5}$, $PM_{10-2.5}$	Every 6 days	Every 12 days	Decrease by 30 per collocated unit
Performance Evaluation (PEP) $PM_{2.5}$,$PM_{10-2.5}$	25% of method designations 4 times per year	1. 5 valid audits for primary QA orgs, with ≤ 5 sites 2. 8 valid audits for primary QA orgs, with > 5 sites	Decrease nationally ~25%
Manual Methods			
Collocated Sampling $PM_{10-2.5}$, $PM_{2.5}$ PM_{10}, TSP,	Every 6 days	Every 12 days	Decrease by 30 per collocated unit
Flow rate verification $PM_{10-2.5}$, PM2.5, PM_{10} (lo-Vol)	Once every month	Once every month	No Change
PM_{10} (high-Vol), TSP	No verification	Once every quarter	Increase of 4 per unit
Flow rate audit $PM_{10-2.5}$, $PM_{2.5}$	Once every quarter	Once every 6 months	Decrease by 2 per unit
PM_{10} , TSP	Once every year	Once every 6 months	Increase by 1 per unit
Manual Methods Lead	1. Include with TSP 2. Each quarter	1. Include with TSP 2. Each quarter	No Change
Performance Evaluation (PEP) $PM_{2.5}$,$PM_{10-2.5}$	25% of method designations 4 times per year	1. 5 valid audits for primary QA orgs, with ≤ 5 sites 2. 8 valid audits for primary QA orgs, with > 5 sites	Decrease nationally by ~25%

The second and third columns of Table 1 provide a comparison of the old (column 2) and new (column 3) requirement. Column 4 provides the net effect of the proposed rule as either a decrease (blue font), or an increase (red font) in burden from the current rule.

In order to gain a better perspective on the overall effect of the proposed regulation, 2004 PM10, PM2.5 and TSP continuous and manual data were extracted from AQS for SLAMS/NAMS/PAMS sites and aggregated into 5 categories: PM10 Continuous, PM10 Manual, PM2.5 Continuous, PM2.5 Manual and TSP Manual (monitors for Pb) and quantified at the reporting organization level as to the burden increase or decrease imposed by the new rule. Table 2 below provides the totals. Data with a negative number (blue highlight) represents a decrease in burden; a positive value (pink highlight) represents an increase. Two totals are provided, with and without PM2.5 continuous instruments. Since the PM2.5 continuous methods are not currently designated as federally equivalent methods (FEM), they are not presently required to follow 40 CFR Part 58 requirements.

Table 2. Overall Annual Burden Increase or Decrease from New Regulations.

Pollutant	Method	# Sites	Flow Rate Verification Check Decrease /Increase	Flow Rate Audit Decrease /Increase	Collocated Sampling Decrease /Increase	PEP Decrease /Increase
PM10	Continuous	123	-1722	123	NA	NA
PM10	Manual	642	2568	642	-4080	NA
PM2.5	Continuous	180	-2520	-360	-1680	0
PM2.5	Manual	937	NC	-1874	-5220	-314
TSP/Pb	Manual	100	400	100	-1050	NA
Total	(w/o 2.5 continuous)	1802	1246	-1009	-10410	-314
Total	(with 2.5 continuous)	1982	-1274	-1369	-12090	-314

As is illustrated, the decrease in burden outweighs the increase. The greatest increase in burden is in PM10 flow rate verification; the greatest decrease in burden is in collocated sampling which is a much more resource intensive (field and laboratory) activity.

Precision and Bias Statistics Change in Rule - New Guidance and Software Developed

Prior to the October 17, 2006 rule promulgation, the statistics used to estimate precision and bias (then called accuracy) were in use since the late 1970's. In 1983, the guidance document titled "*Guideline on the Meaning and Use of Precision and Accuracy Data Required by 40 CFR Part 58 Appendices A and B*" (hereafter referred to as "1983 Guideline") was developed as a companion to Appendix A and B to help explain the rational for the statistics and how they were used.

In 2002, a Focus Workgroup (FW), a subset of the QA Strategy Workgroup, was formed to review and revise the precision and bias statistics. The FW proposed that the MQOs be based on confidence intervals. This FW provided the results of its work back to the larger QA Strategy Workgroup who endorsed the conclusions and developed a paper, which is posted on AMTIC (http://www.epa.gov/ttn/amtic/parslist.html). The proposed approach was discussed at Monitoring Strategy Steering Committee meetings as well as being presented at the July, 2004 CASAC meeting where the statistics were endorsed. EPA has followed a similar path for the majority of the particulate matter measurement quality samples. One exception must be noted. Since DQOs and the accompanying statistics had been developed for PM2.5 shortly before the FW efforts to develop the new statistical techniques, and because EPA was preparing the monitoring rule proposal at a time when PM2.5 design values were being compared to the NAAQS, EPA did not want to modify the bias statistics for PM2.5 to the new absolute bias confidence limit technique. Therefore, although the precision statistic for PM2.5 has been changed to be consistent with the gaseous pollutants, the bias estimate for PM2.5 has been maintained as written prior to the 9/27/06 rule. However, for convenience, the companion software for the guidance document discussed below will provide an assessment of PM2.5 bias by both statistical methods.

Since the 1983 Guideline was helpful in providing additional details for the old statistics, OAQPS felt that a similar document for the new statistics would be helpful. The objective of this new Guideline is to provide the data user with a brief history of the establishment of the ambient air monitoring quality system, the quality control techniques that have been in place up until the 9/27/06 rule, and to provide the guidance and spreadsheets necessary to understand and implement these new statistics. This new Guideline document is intended to the replace the 1983 Guideline.

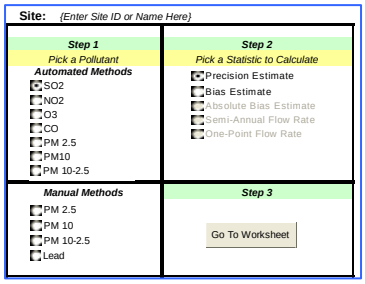
In order to make this adjustment to the new statistics as seamless as possible, Louise Camalier and Jonathan Miller of OAQPS have been developing a Data Assessment Statistical Calculator (DASC) for those organizations that: 1) want to see the step-by-step calculations, 2) would like to see the actual calculations in excel language for the development of their own spreadsheets, or 3) want to import their data into the DASC. The DASC tool can be found under its filename, "*P & B DASC*", on the Quality Assurance section of AMTIC. It uses data that you input as the basis to perform all calculations outlined in this document. The DASC contains eight different worksheets; one for each of the seven different categories of statistics that need to be calculated, and the eighth being a menu selection tool to help you find the appropriate worksheet.

All measurement quality checks start with a comparison of an audit concentration or other value (such as flow rate) to the concentration/value measured by the analyzer and all use percent difference or relative percent difference as the comparison statistic. All other calculations are based on these two "starting" statistics. To create a measurement quality spreadsheet using the DASC tool, put the analyzer value data in Column A and the corresponding audit (true) value data in Column B. All subsequent calculations will be automatically generated by the spreadsheet as well as the graphics!

The spreadsheet has been created with a pre-defined set of 13 audit pairs to provide an example which the user would remove. The calculations have been automatically generated for 500 rows. If you plan to add more data past row 500 you will have to revise the excel spreadsheet.

A draft of the new Guideline and DASC Tool will be posted to AMTIC for review and comment in early January. http://www.epa.gov/ttn/amtic/parslist.html

DASC Main Menu



Example DASC Spreadsheet

Gaseous Assessments

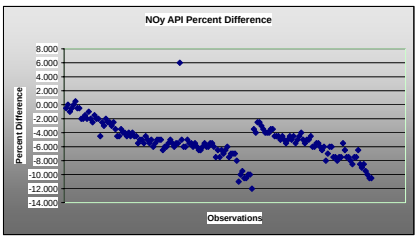
Site ID: Burdens	Pollutant type: NOy API						CV_ub (%)	Bias (%)
Meas Val (Y)	Audit Val (X)	d (Eqn. 1)	25th Percentile	d_sqrd	d_abs	d_abs ^2		
19.9	20	-0.500	-6.500	0.250	0.500	0.250		
20	20	0.000	75th Percentile	0.000	0.000	0.000		
19.8	20	-1.000	-4.000	1.000	1.000	1.000		
19.9	20	-0.500		0.250	0.500	0.250		
20	20	0.000		0.000	0.000	0.000		
20.1	20	0.500		0.250	0.500	0.250		
19.9	20	-0.500		0.250	0.500	0.250		
19.9	20	-0.500		0.250	0.500	0.250		
19.6	20	-2.000		4.000	2.000	4.000		
19.6	20	-2.000		4.000	2.000	4.000		
19.7	20	-1.500		2.250	1.500	2.250		
19.6	20	-2.000		4.000	2.000	4.000		
19.8	20	-1.000		1.000	1.000	1.000		
19.6	20	-2.000		4.000	2.000	4.000		
19.5	20	-2.500		6.250	2.500	6.250		
19.7	20	-1.500		2.250	1.500	2.250		
19.6	20	-2.000		4.000	2.000	4.000		
19.6	20	-2.000		4.000	2.000	4.000		
19.1	20	-4.500		20.250	4.500	20.250		
19.5	20	-2.500		6.250	2.500	6.250		
19.4	20	-3.000		9.000	3.000	9.000		
19.6	20	-2.000		4.000	2.000	4.000		
19.5	20	-2.500		6.250	2.500	6.250		
19.5	20	-2.500		6.250	2.500	6.250		
19.4	20	-3.000		9.000	3.000	9.000		
19.5	20	-2.500		6.250	2.500	6.250		
19.3	20	-3.500		12.250	3.500	12.250		
19.1	20	-4.500		20.250	4.500	20.250		
19.1	20	-4.500		20.250	4.500	20.250		
19.3	20	-3.500		12.250	3.500	12.250		
19.2	20	-4.000		16.000	4.000	16.000		
19.2	20	-4.000		16.000	4.000	16.000		
19.1	20	-4.500		20.250	4.500	20.250		

n	st dev(d)	st dev (d^2)	sum(d_abs)	"AB" (Eqn 3a)
162	2.544	27.349	863.500	5.330
n-1	**sum(d)**	**sum(d^2)**	**sum(d_abs^2)**	**"AS" (Eqn 3b)**
161	-850.500	5507.250	5507.250	2.370

Bias (%) (Eqn 3)	Both Signs Positive
5.64	FALSE
Signed Bias (%)	**Both Signs Negative**
-5.64	TRUE

CV (%) (Eqn 2)
2.74

Upper Probability Limit	Lower Probability Limit
-0.26	-10.24



AQS Issue-Two Local Primary Standards Codes Replaced

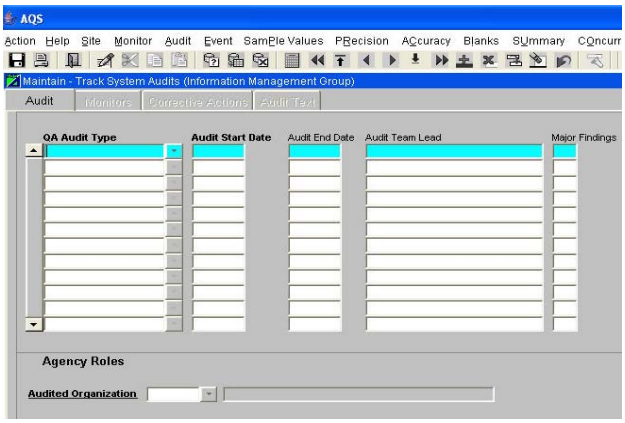
At the request of the OAQPS QA Team, we have inactivated two local primary standard codes within AQS: "NBS SRM" and "EMSL REFERENCE GAS." These two codes reference organizations which no longer exist. We have created the code "NIST SRM" to replace "NBS SRM" and have also created the code "EPA PROTOCOL GAS." "EPA PROTOCOL GAS" does not necessarily replace "EMSL REFERENCE GAS" since there are some acceptance requirements on what can be called "EPA PROTOCOL GAS" that may not have been met for"EMSL REFERENCE GAS" standards.

Inactivated Code	*New Code*
NBS SRM	NIST SRM
EMSL REFERENCE GAS	
	EPA PROTOCOL GAS

Please begin using the new codes or another code in lieu of the inactivated codes immediately. There is no need to retroactively go back and correct any historical data that may have used the inactivated codes. We apologize for any inconveniences this change may cause. If you have any questions, please contact Jonathan Miller at miller.jonathan@epa.gov.

Technical Systems Audit Tracking Available on AQS

Back when AQS was being re-engineered, the QA Workgroup discussed the need for an area where one could track the various qualitative audits that are implemented throughout the year, be they EPA Regional Technical Systems Audits (TSAs), TSAs conducted by Battelle and the EPA Regions on the National Air Toxics Trends sites, the Office of Radiation and Indoor Air TSAs conducted on the PM2.5 Speciation and IMPROVE laboratories or other internal or external audits conducted by monitoring organization that they would like to track and document. The AQS system does have an area developed that would provide the capability of tracking these types of audit. There has been a limited amount of information included in this tracking system but there appears to be some testing needed before the system is fully functional. In 2007, OAQPS plans on reviewing the tracking system and revising it to add the appropriate codes to make it fully functional to support all types of audits.



AQS Training Increasing to Support Tribal Needs

OAQPS is very interested in assisting the Tribes in reporting their ambient air data to AQS as well has providing them the ability to report the Air Quality Index (AQI) to AIRNOW. To help in that effort, a morning session was devoted to Tribal issues at the November National Air Monitoring Meeting in Las Vegas. The data reporting session, co-chaired by Norm Beloin from EPA Region 1 and Melinda Ronca-Battista, an instructor at the Tribal Air Monitoring Support (TAMS) Center, provided an open discussion of information management impediments as well as various solutions for improving the Tribes' capabilities to report data to AQS. The discussion was lively and there were a number of follow-up actions necessary in order to determine the best step(s) forward. One obvious step is more training. In December, the OAQPS National Air Data Group cooperated with the Institute for Tribal Environmental Professionals (ITEP) to implement a 3-day AQS training course for the Tribes in RTP. From all accounts, the training went very well. In addition, two more courses for the Tribes are planned in 2007: in San Francisco in March and in Seattle in April. Any tribes wanting more information on the courses can contact Pat Ellsworth at ITEP, 928-523-6721 (patricia.ellsworth@nau.edu)

Jonathan Miller OAQPS AQS trainer helping student at Tribal AQS training class

Primary Quality Assurance Organization Replaces Reporting Organization Definition

With the signing of the Ambient Air Monitoring Regulation by the Administrator on September 27, 2006, the term "Reporting Organization" was replaced with the term "Primary Quality Assurance Organization (PQAO)" in 40 CFR Part 58 Appendix A section 3.1. EPA believes that there has been some confusion over a number of years about how the term "reporting organization" is used. It appears that some organizations used the term as it had been defined in Appendix A and some may be using it to identify itself as the agency reporting data to AQS. Therefore EPA believes that the term "reporting organizations" currently has two applications.

There is no way of knowing which meaning is currently being applied to each reporting organization in AQS but it is important that the distinction be addressed. The term PQAO has very important implications to quality assurance activities. For example, it is used to determine how many collocated particulate monitors need to be implemented, how many PM Performance Evaluation Program (PEP) and National Performance Audit Program (NPAP) audits need to be implemented. It is also used to aggregate data for assessments of completeness, precision and bias. Therefore, EPA feels that providing the new term PQAO will correct this double meaning, make data quality assessments more informative and potentially save monitoring organizations valuable resources.

The new rule adds one additional common factor to the old definition but essentially the definition remains the same. The table below provides the comparison of the old and new rule. The changes in the new rule are highlighted in blue and underlined.

EPA believes that the 5 common factors listed are the key criteria to be used when an agency decides the sites to be considered for aggregation to a PQAO. The requirement does not intend that all 5 factors have to be fulfilled but that these factors are considered. However, common procedures and a common QAPP should be strongly considered as key to making decisions to consolidate sites into a PQAO.

Old Rule (before 9/27/06)	New Rule
3.0.3 Each reporting organization shall be defined such that measurement uncertainty among all stations in the organization can be expected to be reasonably homogeneous, as a result of common factors. (a) Common factors that should be considered by in defining reporting organizations include: (1) Operation by a common team of field operators (2) Common calibration facilities. (3) Oversight by a common quality assurance organization. (4) Support by a common laboratory or headquarters.	3.1.1 Each primary quality assurance organization shall be defined such that measurement uncertainty among all stations in the organization can be expected to be reasonably homogeneous, as a result of common factors. Common factors that should be considered by monitoring organizations in defining primary quality assurance organizations include: (a) Operation by a common team of field operators according to a common set of procedures; (b) Use of a common QAPP or standard operating procedures; (c) Common calibration facilities and standards; (d) Oversight by a common quality assurance organization; and (e) Support by a common management, laboratory or headquarters.

Many States' monitoring sites are currently aggregated into a single reporting organization. We are assuming that they have used the current definition of reporting organization correctly and will also remain as one primary quality assurance organization. There are a few States that have many small local reporting organizations that appear to conform to many of the common factors that describe a PQAO and these reporting organizations could potentially be aggregated into a single PQAO. This aggregation could save the monitoring organization resources by reducing the number of collocated PM monitoring, the number of Performance Evaluation Program (PEP audits) and to some extent the number of National Performance Audit Program (NPAP) audits.

We expect that this change will affect a minority of States that can, at a minimum, reassess the common factors to determine whether there is a potential for consolidation into fewer PQAOs. The Ambient Air Monitoring Group will work with the National Air Data Group (NADG) to modify AQS to accept this role name and provide guidance and instructions on its use. We expect that most monitoring organizations will be able to use the same PQAO code value as the reporting organization code value. Once the monitoring organizations confirm this (EPA will develop a process), NADG will be able to implement the change and therefore this change will not be a burden to the monitoring organization's information technology staff. For those monitoring organizations that are consolidating, either one current reporting organization code can be used as the PQAO (as applicable by the PQAO definition) or a new unique code can be developed. In either case, once we are made aware of the wishes of the monitoring organizations, we can implement the changes through the NADG. Then, as new sites come on line, the monitoring organizations will be responsible for populating this data.

AQS will retain the reporting organization code and it can be used to identify the agency reporting data to AQS or, with coordination of the monitoring organizations and AQS user community, have its meaning redefined as the user community feels is appropriate. NADG will pursue this at the next annual AQS meeting. This revision will clarify the application of PQAOs, ensure that data quality will be evaluated consistently and potentially provide some level of costs savings for some monitoring organizations.

More Pictures from National Meeting

EPA Office of Air Quality Planning and Standards

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C304-02
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The Office of Air Quality Planning and Standards is dedicated to developing a quality system to ensure that the quality of the Nation's ambient air quality data is of appropriate quality for informed decision making. We realize that it is only through the efforts of our EPA partners and the monitoring organizations that this data quality goal will be met. This newsletter is intended to provide up-to -date communications on changes or improvements to our quality system. Please pass a copy of this along to your peers. And please e–mail us with any issues you'd like discussed.

Mike Papp & Joe Elkins

Important People and Websites

Since 1998, the OAQPS QA Team is working with the Office of Radiation and Indoor Air in Montgomery and Las Vegas in order to accomplish it's QA mission. The following personnel are listed by the major programs they implement. Since all are EPA employees, their e-mail address is: last name.frst name@ epa.gov.

The **EPA Regions** are the primary contacts for the monitoring organizations and should always be informed of QA issues.

Program	Person		Affiliation
STN/IMPROVE Lab Performance Evluations	Eric	Bozwell	ORIA- Montgomery
Tribal Air Monitoring	Emilio	Braganza	ORIA-LV
Statistics, DQOs, DQA, precision and bias	Louise	Camalier	OAQPS
Speciation Trends Network QA Lead	Dennis	Crumpler	OAQPS
OAQPS QA Manager	Joe	Elkins	OAQPS
PAMS & NATTS Cylinder Recertifications	Rich	Flotard	ORIA LV
Standard Reference Photometer Lead	Tracy	Klamser-Williams	ORIA-LV
Speciation Trends Network/IMPROVE Field Audits	Jeff	Lantz	ORIA -LV
National Air Toxics Trend Sites QA Lead	Dennis	Mikel	OAQPS
PAMS & NATTS Cylinder Recertifications	David	Musick	ORIA-LV
Criteria Pollutant QA Lead	Mike	Papp	OAQPS
NPAP Lead	Mark	Shanis	OAQPS
STN/IMPROVE Lab PE/TSA/Special Studies	Jewell	Smiley	ORIA-Montgomery
NATTS PT studies and Technical Systems Audits	Candace	Sorrell	OAQPS
STN/IMPROVE Lab PE/TSA/Special Studies	Steve	Taylor	ORIA-Montgomery

Websites

The following websites will get you to the important QA Information.

Website	URL	Description
EPA Quality Staff	http://www.epa.gov/quality1/	Overall EPA QA policy and guidance
AMTIC	http://www.epa.gov/ttn/amtic/	Ambient air monitoring and QA
AMTIC QA Page	http://www.epa.gov/ttn/amtic/quality.html	Direct access to QA programs
Ambient Air QA Team	http://www.epa.gov/airprogm/oar/oaqps/qa/	Information on Ambient Air QA Team
Contacts	http://www.epa.gov/ttn/amtic/contacts.html	Headquarters and Regional contacts