QA Strategy Workgroup Conference Call Notes
Thursday 08/14/03

Attendees

Keith Duncan	Michael Papp
Shelley Eberly	Basil Coutant
Melinda Ronca-Battista	John Glass
Mark Shanis	Terry Rowles
Anna Kelly	Chris Hall
Andy Johnson	Paul Sanborn
Matt Plate	Don Gourley
Nealson Watkins	Keith Duncan
Tom Parsons	Mickey Palmer

There may have been individuals who called in after the call got started. If I missed your name, please e-mail me and I'll add it to the attendee list. ***Action items listed in bold italics***

The goals of this meeting was primarily to discuss the document entitled *"Ozone Data Quality Objective Scenarios.*

QA Related Progress/Information

- On 8/28 Shelly and Mike will be presenting the Ozone DQO and the P & B proposals to a number the groups writing the trends report and responsible for the developing the NAAQS standard.

- We will moving forward in a 3-year Precision and Accuracy Report. We will probably have a draft out in the Late October early November. We plan on providing the current CFR statistics and the proposed P & B statistics in the same report.

- The EPA Regions and OAQPS will be meeting in Atlanta the week of September 8. If you have any QA issues that you think need to be raised, talk to your Regions.

- CFR - I sent out a set of revisions to the Workgroup and well as a document that highlights the major changes. ***Please provide comments on these changes ASAP***. A conference call is scheduled for Aug 27 to discuss these changes.

- CASAC Monitoring Strategy Review. CASAC reviewed the Monitoring Strategy July 8-9. In general there was endorsement of the direction of the Strategy. A report has not been provided but will be distributed to the Workgroup when available. A few highlights include:

    - Endorsement of the use of the DQO process.
    - The need to ensure resource availability for quality assurance
    - The need for more training

Related to the need for training, Mike forwarded a memo on the national QA training put on by the EPA Quality Staff occurring in Atlanta. Tom Parsons wondered if that would be a better

venue for our QA Strategy Workgroup meeting rather than the QA National Meeting. Matt Plate mentioned that the QA training and the examples they use are not catered toward ambient air and that the monitoring agencies should contact the Regions for specific training needs.

In either case, Mike will look into the frequency of the QA training and as we go through our year we can determine what suits the Ambient Air QA community the best. Remember, the ***QA Workgroup should be thinking about what QA related training they might like to receive for the next National QA Meeting.***

Ozone DQO Paper

The review of the Ozone DQO paper started with a brief review by Basil Coutant of the procedure we went through to develop the ozone model and the performance curves. The paper describes these procedures.

We had a number of general comments on the draft including:

No spatial uncertainty component - In a typical DQO scenario one usually takes a number of samples from various locations in order to characterize the area of concern (boundary). There is a spatial variability component (dependent on the number of locations from which samples are taken or how a particular sample location is selected) that causes the gray zones in the performance curve to widen/shrink. Since every SLAMS ozone site can be compared to the NAAQS, the site can be considered an island unto itself and therefore the spatial uncertainty component is eliminated even though this site (or a group of sites) represent an area. If the site is selected based on logistical constraints, it may not represent the true concentration of that area. Therefore, there may be a need for an added uncertainty component in the model to account for this variability. The temporal component of uncertainty is included in the DQO model, the spatial component is not. In our previous work (1997) with $PM_{2.5}$ and ozone DQOs we brought this up to OAQPS technical staff and they basically asked us to assume no spatial uncertainty. For the paper, we can explain that we do not have a spatial uncertainty component.

Alternative decisions - Melinda has used the DQO process in a number of remediation activities brought up and commented that she did not see a set of consequences or alternate decisions around the action limit and the costs associated with being on one or the other side of the action limit.

The following in an excerpt from the 1997 Ozone PM2.5 DQO Workshop held in RTP.

Before assigning limits to the probabilities of the false positive and false negative, the Team discussed decision consequences. Three types of consequences or costs emerged: human health, financial, and political. These were evaluated for the two types of decision error and are reported in Table 2.

Considering the different consequences and their seriousness, the Team decided that the false negative was the more serious type of attainment decision error. Looking at the two cases, as represented by the distributions, the Team elected to control the false negative decision error rate to 1% while controlling the false positive decision rate to 5%. Therefore, they were willing to take the risk of declaring an area as "attainment" when truly it was not only 1% of the time, while risking declaring an area "non attainment" when it truly was in attainment 5% of the time. The ratio of these

two error rates (5 to 1) may be interpreted as the ratio of "seriousness" for the consequences of the false negative to the false positive.

Table 2. Consequences of False Positive and False Negative Decision Errors

Type of Consequence	False Positive (Distribution 1) (Declaring nonattainment when it is actually in attainment)	False Negative (Distribution 2) (Declaring attainment when it is actually in nonattainment)
Human Health Environment	Some marginal improvement in health of most sensitive individuals (this positive consequence somewhat offsets the other consequences)	Sensitive subpopulations placed at unacceptable risk - **most serious consequence**
Financial	Cost of taking action is incurred, some funds are no longer available for addressing other (more serious?) environmental problems	Cost saved by not taking action may now be available for addressing other problems Cost associated with human health and environmental effects.
Political	Damage to agency credibility in the event that the error is detected and corrected damage to of city/locality image	damage to agency credibility if the error is detected/corrected - likely if number of affected individuals is large

The ozone paper does not associate the actual costs of these decision errors. Remember the width of the gray zone is established because the high cost or resources required to tighten the gray zone outweigh the consequences of choosing the wrong course of action. These costs could be more sites, better instruments, more QC checks and audits (which might equate to more personnel.)

The earlier DQO paper (1997) provides much more background on the DQO process that we did not include in the current draft. ***If anyone would like to see our earlier work you can send Mike and e-mail***

Performance Curves - Section 4 of the paper ended with a table that showed the gray zones based on a variety of measurement uncertainty input parameters. There was a suggestion to provide the performance curves for these scenarios. We can create another appendix and include the performance curve figures.

Ozone Questions

Mike had distributed some questions to the Workgroup earlier in the week and had planned on going through them with each participant. Unfortunately we ran out of time on the call. It appeared that there was a general understanding of the concepts described in the paper (question 1) and there were comments to help the papers readability.

Question 2 related to whether you agreed with the proposed 7.5% precision and bias measurement quality objectives. This elicited some good discussion with alternate proposals for 5% and 10% . Matt Plate asked that we look at NPAP bias to confirm the confidence limit values we report in the paper. It became apparent that another call was needed to discuss the DQO more thoroughly.

A call will be scheduled for August 20. Please think about these MQOs. Table 1 in the report shows the percentiles of sampler and hourly measurement CV. As Tom Parsons mentioned, we've also provide you with site level precision and bias information a few weeks back.