Ambient Air QA

MARAMA Meeting
April 14, 2011
Dennis Crumpler
Audit Levels- Bracketing the Data

EPA did not provide a specific procedure for calculating the bracket to allow flexibility on developing the audit brackets. Some acceptable examples include:

- aggregate 3-years of data from all sites to choose acceptable audit windows that could be used by all sites
- aggregate the data from the sites annually
- get site specific- aggregate 3 years of data at the site specific level and then identify the audit levels for each site
- aggregate site specific data annually
Using the 80% Bracket

- Bracket lowest 80% (removing highest 20% of data)
- Bracket highest 80% (removing lowest 20%)
- Bracket middle 80% (removing lowest 10% and highest 10%)

Any option listed will produce audit concentration closer to routine concentrations than what is currently observed in AQS.
What about the 1-Point QC Checks using the same Level 1 & 2 Statistics

• Our data assessment focused on getting the Annual PE levels correct for those wanting to go to lower levels.
• \( \text{O}_3 \) – Low QC (0.01 ppm) range falls into high end of audit level 2 (0.006- 0.019 ppm)
• \( \text{SO}_2 \) and \( \text{NO}_2 \) low QC range (0.01 ppm) starts at audit level 4
• \( \text{CO} \) low QC (1.0 ppm) range also starts at audit level 4
• Assessment paper shows statistics work at audit levels 3 and above therefore difference statistic not required.

However if we lower the range of the QC checks we’ll also look to include the Level 1 & 2 statistic
NCORE Gas Audit Deployment in 2011

- RTP’s Eastern System for CO & SO2 in Region 3
- Next to Region 5 in June
- Region 1&2 Systems Testing; then will deploy
- Cert. of Western System In Region 7; then will deploy to Region 9 (or 6, then 9?)
- Case-Based SOP & results Workbook Available
- RTP NOy system testing about done; 1-5ppb points have been reliably generated & measured, using GPT, NO2, and NPN in reasonable (1-1.5ppb) agreement
SRP Program Status

- Traveling SRP in RTP being fixed; may go back to Reg.6 by end of this week
- Testing new shipping cases
- Assembling State, Regional & NIST data from required ozone standard comparisons
- Reviewing proposed approach & parameter for evaluating the required ozone standard traceability comparison results
- Looking at total variance from Agency Std. to NIST
- Goal: Develop a quantitative acceptance limit; final draft will be posted on AMTIC with Nov.2010 Revised Final Ozone Standard Guidance Document.
Entry of 2010 NPAP Gas Audit Results into AQS

- About 80% has been entered into AQS already
- Looking at remainder to correct problems & identify ways to improve the data process,
- Goal: to find ways to minimize problems that delay acceptance by AQS screening process
The World of PM$_{2.5}$ QA
Change in Supplier of MTL 46 MM PTFE Filters

• Award to MTL introduced a significantly heavier filter—400 mg vs 150 mg
  – Requires new lab calibration weights
• Serial Numbers printed as alpha-numeric characters on filter surface just inside support ring
• No appreciable bias detected in mass collected
• No appreciable background for trace elements
• [http://www.epa.gov/ttn/amtic/qafilters.html](http://www.epa.gov/ttn/amtic/qafilters.html)
PM$_{2.5}$ Network Bias

Trend equation misrepresents the average in the first few months
Comparison of 95% Confidence Intervals for National Bias Estimates
(January 2007 thru December 2010)

Average Percent Difference

Method Designation

4/7/2011

U.S. Environmental Protection Agency
PEP Implementation for Pb Network

• Requirements
  – 1 or 2 side-by-side audits with independent Hi-vol samplers
  – 4 or 6 filters provided by SLT collocated samplers from non-routine sampling days

• Implementation of Federal, Hi-volume, side by side sampling for bias has been challenging
  – Calibrating samplers for local conditions

• EPA Region 9 Lab new FEM
  – Extracts 46 mm Teflon filters and analyzes the extract with ICP-MS

• SLT collocated filters have been coming in
  – Make sure your staff has access to post and review electronic COC and Field Data Sheet information
Reporting Pb-PEP Collocation Data

To Register--
https://airqa.rti.org/

For Assistance--
Jennifer Lloyd: jml@rti.org

Ed Rickman: eer@rti.org
PM$_{2.5}$ Speciation Audit Reporting
PM$_{2.5}$ Speciation Audit Reporting

- Working out labeling issues with AQS
- Webinar coming in Mid May
  - Review reporting procedure
  - Review extracting data from AQS
- For Interim access to data, contact Ed Rickman at RTI eer@rti.org
Ambient Air Protocol Gas Program

- Had a fairly successful 2010
- Report on AMTIC
- 42 Standards Verified
  - 39 within 2%
  - 2 <4%
  - 1>10%
- Web-based survey developed for this year
- Need more participants
2010 AA- PGVP Survey Responses

**Issues**
- About a 75% response rate
- Monitoring organizations identifying distributors not producers
- Incorrect addresses
- Producers not providing lists of their facilities

**Corrective Action**
- Website developed for 2011
- 2 week reminders
- Producer pick lists