



# **Precision & Accuracy Redesign**



**AQS Conference  
August 22, 2012  
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# Precision & Accuracy Redesign



- What is the P&A component of AQS?
- Why redesign?
- Project Scope
- Project Status
- Summary



- What is the P&A component of AQS?
  - Data supplied to meet 40 CFR Part 58 Appendix A Quality Assurance requirements
    - » Primarily for SLAMS, Tribal, Special Purpose, and PSD Monitors
  - Other programs have quality assurance guidance
    - » National Air Toxics Trends Stations (NATTS)
    - » Chemical Speciation Network monitors (CSN)
  - AQS forms, reports, data base tables, views, software programs, transaction formats, guidance documents
    - » Standard reports for data retrieval
    - » AQSP&A Transaction Generator spreadsheet
    - » AQS Data Schema for XML data submission



- Why Redesign?
  - Transaction “Overloading” has occurred over time
    - 2 transactions (RA and RP) used for more than a dozen assessments
      - Different fields required on the same transaction type based upon which assessment is being reported
      - Generic or inappropriate field names for some assessments
      - Different AQS processing occurs based upon the pattern of data submitted on the transaction
    - This leads to confusion, complexity, and increased system support requirements



- Why Redesign?
  - Different data requirements from “Overloading” transaction
  - Examples - RP transaction
    - Indicated Value is required for collocated sampling, but must be null for PEP audits
    - “Agency Performing FRM Audit” is required for reporting PEP results
    - “Agency Performing FRM Audit” must be left blank for flow rate verifications, collocated sampling results, and 1-Point QC Checks



- Why Redesign?
  - Generic or inappropriate names from transaction “Overloading”
    - Which transaction should be used for each assessment type?
      - Flow rate verification = RP
      - Semi-annual flow rate audit = RA
    - Field names on transactions
      - Monitor id fields on laboratory audit of Pb Audit strips
      - Actual value = primary monitor value for collocation
      - Actual value = collocated PEP monitor value for PEP audits
      - Audit Type, Accuracy Type Audit Class on RA Transaction



- Project Scope

- OAQPS Ambient Air Monitoring Group is project “sponsor”; Mike Papp is lead
- No changes to data being monitored or collected
- No changes to Appendix A QA data submittal requirements
- NADG working with AAMG to define:
  - New transaction format for each assessment type
  - Concept of Operations document will define the detailed process of reporting data using each new transaction
- Continued support for current transactions
- New XML schema with revised QA data elements
- AQSP&A will be revised to conform to new transactions



- Project Scope (continued)
  - Discoverer End User Layer coordination
  - Collocated precision data will always be system generated from raw data submittals
    - For primary and QA monitor
    - For other collocations also
  - Introduce Agency Level transactions
    - For Pb audit strip assessments
    - AA – PGVP (USEPA Ambient Air Protocol Gas Verification Program)
    - Ozone SRP (Ozone Standard Reference Photometer Program)
    - TSA (Technical Systems Audit)
  - Revised Data Quality Indicator Report (AMP255)





- Project Status
  - Project initiated in Jan 2012
  - Stakeholder workgroup formed
  - New transactions drafted – in 3 rounds
  - Initial workgroup review of 2/3 of new transactions
  - Concept of Operations document under development
    - Completion by early Fall
    - Review by EPA / AQS users
    - Provides basis for design efforts
  - Begin software design and development for completion in 2013
  - Data Conversion – migrate old data to new tables - ongoing

# Precision & Accuracy Redesign



## QA Transaction Workgroup

<b>Monitoring Organizations</b>			
Heather Stewart TCEQ	Benedicto Villamin TCEQ	Bryan Paris AZDEQ	Rayna Broadway MODNR
Scott Dubble TCEQ	Ann Sorensen MADEP	Patricia Maliro MODNR	Tammy Eagan FLDEP
Hien Tran CARB	Harek Nijjar CARB		
<b>EPA Regions</b>		<b>TAMS/ITEP</b>	
Roseanne Sakamoto USEPA Region 9	Wendy McDougall USEPA Region 1	Melinda Ronca-Battista NAU - ITEP	Angelique Luedeker NAU - ITEP
<b>USEPA/OAQPS</b>			
Chris Chapman NADG	Bill Frietsche NADG	Robert Coats NADG	Dennis Crumpler AAMG
Mark Shanis AAMG	Mike Papp AAMG		

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## Assessment Transactions page1

Assessment	Status
1-Point QC (Automated)	Draft Proposed
Annual performance evaluation (Automated)	Draft Proposed
Flow rate verification (Automated and manual)	Draft Proposed
Semi-annual flow rate audit (Automated and manual)	Draft Proposed
Collocated sampling (Automated and manual)	Proposal to generate from raw data

# Precision & Accuracy Redesign



## Assessment Transactions page 2

Assessment	Status
Performance Evaluation Program (Automated and Manual)	Draft Proposed
Pb PEP	Draft Proposed
Pb PEP Lab Audit (Collocated Pb PEP)	Draft Proposed
NPAP-TTP (Through the Probe)	Draft Proposed
PT	In Process
Replicate	In Process
Duplicate	In Process

# Precision & Accuracy Redesign



## Assessment Transactions page 3

Assessment	Status
Pb Strip	Draft Proposed
AA – PGVP (USEPA Ambient Air Protocol Gas Verification Program)	In Process
Ozone SRP	In Process
TSA (Technical Systems Audit)	In Process
ADQ (Audit of Data Quality)	In Process
Round Robin	In Process

# Precision & Accuracy Redesign



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- **Summary**

- Enhance AQS to handle new QA assessments that do not map into historical RP and RA transactions (e.g., lead strips)
- Make QA Data Reporting easy to understand and implement
- Remove ambiguities about the meaning, requirement and permissibility of fields in AQS QA transactions
- QA data collection at the monitor level is unchanged
- Assessment types will drive transactions, which should make the process easier
- Workgroup currently drafting new AQS transactions, about 2/3 done with first round of proposal and comments
- Goal of having “standardized” definitions of terms and processes for Appendix A requirements and other QA assessments



# Questions?