Welcome to the 2024 National Ambient Air Quality Monitoring Conference!

QA Training Session

QA Training – Morning Session

8:30 AM – 9:00 AM	**Welcome and QA 101**	**Greg Noah, USEPA, OAQPS**
9:00 AM – 10:00 AM	**Data Validation and AQS Coding**	**Keith Hoffman, USEPA, Region 3**
10:00 AM – 10:30 AM	**Break**	
10:30 AM – 11:00 AM	**Weight of Evidence Explanation and Examples**	**Brannon Seay, USEPA, OAQPS**
11:00 AM – 12:00 PM	**Reviewing and Assessing NATTS/PAMS Data**	**Shannon Hammaker, Battelle**
12:00 PM – 1:30 PM	**Lunch**	

QA Training – Afternoon Session

1:30 PM – 2:30 PM	**PM Rule Changes for QA (Appendices A, B, and E)**	**Greg Noah, USEPA, OAQPS**
2:30 PM – 3:00 PM	**New Quality Assurance Project Plan Standard**	**Verena Joerger, USEPA, Region 3**
3:00 PM – 3:30 PM	**Break**	
3:30 PM – 4:30 PM	**Ozone Transfer Standard Guidance Training**	**Scott Hamilton, USEPA, Region 5 Allison Smalley, USEPA, Region 5**
4:30 PM – 5:00 PM	**Developing a Training Plan**	**Rene Bermudez, South Coast Air Quality Monitoring District**
5:00 PM – 5:30 PM	**Questions and Discussion**	**All Trainers and Participants**

QA Training

We want to answer your questions!

Three ways to ask and get answers…

- **There *should* be time following each presentation to ask questions to the presenter.**
- **Post a question under the session in the Whova app. The training team will answer them over the course of the session.**
- **We have half an hour at the session for Q&A if you want to save it.**
- **Or, catch your favorite presenter following the session or later during the conference. Warning: Don't get in between me and a bowl of gumbo for dinner! ☺**

QA Training – QA Poster

Summary of EPA National QA Programs

- Program Summaries
- Program Documentation (Regulations, SOPs, TADs)
- National and Regional Contacts
- Scan the QR Code to Access, or
- Follow the link below:

[QA Summary Poster]

National Ambient Air Monitoring Conference, New Orleans, August 2024

Quality Assurance 101

Greg Noah
US EPA, OAQPS
Ambient Air Monitoring Group

National Ambient Air Monitoring Conference, New Orleans, August 2024

QA 101 – Why are we here?

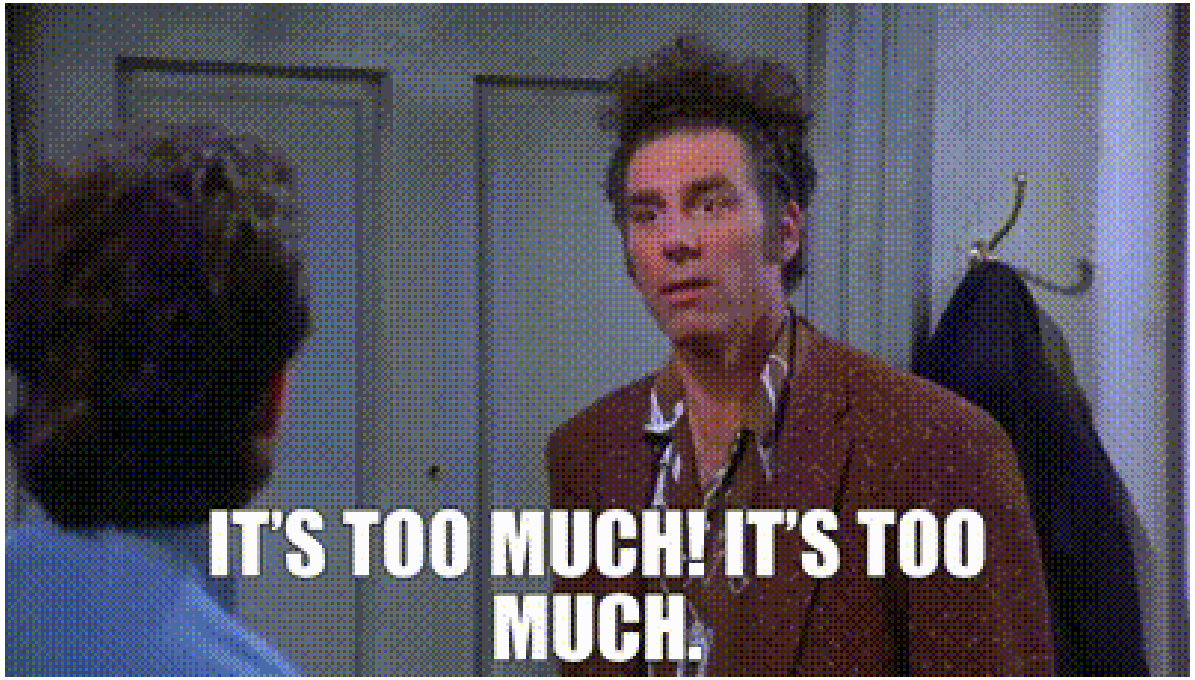
Most likely, you are responsible for implementing some part of a quality system within EPA, a State, Local, or a Tribe.

- QA Manager
- QA Staff
- Monitoring staff who wants to know more about the quality system
- Or a community member wanting to learn about EPA's Quality System

QA 101 – Summary and Key Points

Can’t Cover Everything, So We’ll Hit a Few Key Points

- What is QA and what are the requirements?
- Reminders on a few QA principles.
- Why is QA important?



QA 101 – Policy and Regulations

EPA Quality Policy – NEW UPDATES

Environmental Information Quality Policy, March 20, 2024 - CIO 2105.4

Quality Assurance Project Plan (QAPP) Standard

Quality Management Plan (QMP) Standard

40 CFR Part 58, Appendix A, §2.1.3

The PQAO/monitoring organization's quality system **must** have adequate **resources** both in **personnel** and **funding** to plan, implement, assess and report on the achievement of the requirements specified in 40 CFR Part 58, Appendix A, as well as the organization's approved QAPP.

QA 101 – Policy and Regulations

40 CFR Part 58, Appendix A, §2.1

All PQAOs must develop a **quality system** that is **described and approved** in quality management plans (**QMPs**) and quality assurance project plans (**QAPPs**) to ensure that the monitoring results:

- Meet a well-defined need, use, or purpose;
- Provide data of adequate quality for the intended monitoring objectives;
- Satisfy stakeholder expectations;
- Comply with applicable standards specifications;
- Comply with statutory (and other legal) requirements; and,
- Reflect consideration of cost and economics.

QA 101 – QA Gives Us Consistency

Many resources are developed to ensure consistency…

- CFR Regulations
- Quality Policy
- Guidance Documents
- Field and Analytical Methods
- QAPPs
- SOPs

Following standardized methods, policies, and requirements allows for measurements to be representative anywhere they are made.

QA 101 – QA Is a Circular Process

Planning
Methods
QAPP
Training

Implementation
QAPP Implementation
Internal QC
QC Reporting

Reports and Corrective Actions
Improvements based on
Data Quality Assessments
QA Reports
Audit Reports

Assessments
Systems Audits
Network Reviews
Performance
Evaluations

QA 101 – Corrective Action

Corrective action is CRITICAL to the QA Process… and probably the TOUGHEST component!

Corrective action re-triggers the “plan” portion of the process again; this is continuous improvement. QA does not end.
Difficult because it requires collaboration between auditor and organization. Be persistent!

Why audit or conduct QA if we aren’t going to follow-up? Imagine what that would look like…

QA 101 – Independence

For the QA Process to work successfully, QA Independence is MANDATORY!

40 CFR Part 58, Appendix A, §2.2

The QA management function **must** have sufficient technical expertise and management authority to conduct **independent oversight** and assure the implementation of the organization's quality system relative to the ambient air quality monitoring program.

Independence in QA can be difficult in small organizations; the keys are to delegate QA responsibilities to avoid conflicts of interest.

QA 101 – Who Does QA?

Only QA Staff “does QA”, true or false?

- Station operators – Level 1 data review, documentation
- Maintenance staff – Calibrations, repair, FEM/FRM compliance
- QA Auditors – TSAs, ADQs, corrective action
- Data Reviewers – Data assessments, AQS coding
- Quality Assurance Manager – Quality document development, oversight of QA program
- Monitoring Manager- Providing resources, implementing corrective action

QA 101 – Documentation

The 5 W's of Documentation

Who is performing the work? (signed and dated)

What pollutant, procedure, analyzer, calibrator? (IDs, makes/models/(Traceability!)

When is the activity occurring? (Time and date)

Where is the data being collected? (location of the site/data acquisition)

Why is the activity needed? (Be specific! Details are vital for data validation)

For example: Is it time for an annual recalibration per the SOP, or has an instrument malfunctioned? **Explain.** If the latter, what was the **specific** malfunction?

QA 101 – Documentation

One last comment on documentation…

If it’s not documented, it didn’t happen!

QA 101 – Why is QA So Important

The Success of ANY Program Starts and Ends with QA

Final Rulemaking: 40 50, Appe

Below are
Reference
the Atmosp

Fact She
Principle a
(136.9 KB)

FEDI

Final Rule: Multi-Emissions Standa Years 2027 and Later Light-Duty and Medium-Duty Vehicles

Quality Assurance for Air Sensors

On this page:

Making a Plan

- Quality Assurance Project Plans (QAPPs)
- QAPP Guidance and Templates

ards for Particulate Matter

A Rule by the Environmental Protection Agency on 01/15/2013

QA 101 – When QA Fails

4. Mars Climate Orbiter

6. Amazon's AWS outage

9. Boeing 737 Max crashes

10. Lehman Brothers

8. Spanish submarine "Isaac Peral" (S-81)

During the submarine's design, a decimal point error in the displacement calculation resulted in the vessel being 75–100 tons overweight. The magnitude of the error meant that the submarine was too heavy to float and had to be completely redesigned, causing extensive delays and costing over €2 billion.

QA 101 – Questions?