***TAMS Steering Committee Call Notes***

**September 15, 2021 @ 10AM PDT**

Attending: Christal Black, Pat Childers, Vallen Cook, Hayden Hardie, Lori Howell, Carma Huseby, Josie Kamkoff, Mehrdad Khatibi, Mike King, Kayla Krauss, Chris Lee, Angelique Luedeker, Greg Noah, Tanda Roberts, Darlene Santos, Leroy Williams

**Opening Business**

Roll Call was completed, and there was a quorum of voting members.

The agendawas approved.

The July and August notes were approved.

**Quality Assurance Information** – Greg Noah, OAQPS & Leroy Williams, Gila River Indian Community (GRIC)

1. Best Practices for Review and Validation of Ambient Air Monitoring Data – Greg Noah, OAQPS

* Document History:
* In January 2018, an EPA Data Validation Workgroup formed with a goal to develop a tool that could be used to assist personnel in any state, local, or tribal (SLT) monitoring organization with performing data review and validation techniques.
* Workgroup was led by Stephanie McCarthy in Region 4 and included Regional EPA quality assurance (QA) and ambient air monitoring technical staff primarily responsible for conducting Technical Systems Audits (TSAs) and Audits of Data Quality (ADQs)
* The document was peer-reviewed by additional EPA QA staff in the Regional Offices and the Office of Air Quality Planning and Standards (OAQPS)
* Document Objective:
* Data review is covered in Section 17 of the QA Handbook and data validation templates are also presented in Appendix D of the Handbook.
* This document is intended to supplement the existing guidance by providing a step-by-step process that air monitoring organizations can follow to validate ambient air monitoring data.
* This document is intended to consolidate and present “best practices” that should result in a consistently validated, high quality dataset in the EPA’s Air Quality System (AQS) database.
* Why is this important?
* 40 CFR 58.16(c), ambient air quality monitoring data submitted to the EPA’s Air Quality System (AQS) database must be validated; as such, data collected as part of the National Ambient Air Quality Monitoring Program must undergo a comprehensive data review process prior to AQS submittal
* Document Objective:
* A vital element of any ambient air monitoring program is the establishment and implementation of a structured data review process, where data examination can be performed in a standardized, consistent manner.
* What Does This Look Like?
* Systematic Planning (e.g., DQO Process)
* QA Project Plan
* Monitoring
* Standard Operating Procedures
* Technical Assessments
* Data Verification & Validation
* Data Quality Assessment
* Planning, Implementation, Assessment
* Guiding Principles

To Effectively Validate Data, you’ll need –

Personnel:

* Technical Staff/Site operators
* Data Validators
* QA Staff
* AQS Data Handlers
* Independence
* Independence in the monitoring program is an essential component of a monitoring program’s quality system
* Data validation should be performed by individuals independent from the data collection activity
* Independence of the data validator and review procedures is critical, to avoid any conflicts of interest or the appearance of such conflicts. Independent review is necessary for any environmental data to be used for regulatory purposes
* Independence Option

EPA acknowledges that smaller monitoring organizations may not have enough trained personnel to accomplish multiple levels of independent data review.

2.1.1 has details of how organizations with commonalities and working under the same PQAO and QAPP could pool resources to achieve independence. This could be particularly helpful to tribal organizations and small local programs.

* Data Validation Tools
* Data Validation Templates – Consolidates the MQOs for each pollutant to promote national consistency in the data quality decision-making process
* Compelling Evidence – Data (reason) that concretely establishes instrument performance or the validity of a QA/QC check
* Quality Assurance Project Plans (QAPPs) – Overview of the organization’s policies and QA/QC procedures and it formalizes how the monitoring organization plans to assure the quality of the project’s data
* Data Review Process - Section 3 is designed to assist monitoring organization staff whose responsibilities include data review, including the site operator –

Quick Summary:

* Application of AQS Codes
* Data Bracketing
* Tiered Data Review Approach –

Level 0

* DAS / Sampler
* Continuous / Daily
* Distinguish measurements from measurement errors or pre-programmed (automated) QC activities

Level 1

* Operator / Technician / Peer
* Daily / Monthly
* Distinguish measurements from measurement errors or interferences

Level 2

* Independent Reviewer (QA)
* Monthly /Quarterly
* Verify Level 1 Review
* Ensure data meets QA/QC requirements and objectives of its intended use

Level 3

* Independent Review (QAM)
* Monthly /Quarterly
* Verify Level 1 and 2 Reviews
* Approve data suitability for release to AQS
* Data Review Process – Data Validation and Analytical Laboratories –

The final validation of the ambient air monitoring data – incorporating records and data from both the field and laboratory operations, reviewing them in tandem – must be performed by the monitoring organization.

Analytical laboratories may offer validation of data; however, this validation does NOT include other data quality components such as field audits, siting acceptability, and other field or programmatic concerns.

You have the final validation responsibility!!!

* Overall Assessment of Data Quality – Assessment is the process of evaluating the aggregated data set’s ability to meet the intended objectives such as DQOs. Assessments can occur on a quarterly, annual, or multi-year basis, when larger sets of data are available for evaluation. Many tools are available:
* AQS Data Review
* DASC Tool (for calibration)
* EPA Air Data Webpage (series of graphs for different pollutants)
* Annual Data Certification (network specific)
* Box and Whisker Plots
* AMP 504 Report (distills down a lot of data used in AQS makes more useable)
* ADQs (walk through life of a sample; great tool)
* Appendices –
* Appendix A: Data Verification and Validation Checkllists

Example checklists that can be used by Level 1 – 3 data reviewers as a comprehensive guide to verify and validate ambient air monitoring data on a monthly or quarterly basis

* Appendix B: Data Coding Examples

Help data reviewers select the most applicable AQS null or QA qualifier codes, using real-world monitoring scenarios as examples

* Appendix C: Weight of Evidence Examples

Help data reviewers better understand the “weight of evidence” concept, using real-world monitoring scenarios as illustrations

* Will there be a process by which OAQPS will be providing specific guidance to the region’s on how to follow this process and how to apply this guidance document to the QAPPs that they are going to be reviewing that the tribes submit?

1. Issues Tribes are encountering with meeting QA requirements and how can the TAMS SC help – Leroy Williams, GRIC

* The Issue - QA requirements are preventing tribes from being equal partners in the management of the nation's air quality.
* The Current Situation

Background/History: Tribal Air Monitoring Network

* History
* CAA
* TIP, designation
* Resources

1. Personnel – full time, qualified, professional, technical skills, experience
2. Data management
3. Monitoring Functions

* QA Requirements

1. QA Independence
2. Levels of data validation
3. Personnel qualifications
4. Data quality

* What is needed/Suggestions on how to address

I have shared with you the technical QA requirement dilemma that GRIC has encountered. GRIC continues to have a difficult time requesting for additional personnel. GRIC is committed to operating a quality air monitoring program. Under the proposed QA independence criteria, GRIC will have a difficult time meeting timelines and protocols of the intense data validation criteria. My presentation displays a problem that needs to be resolved by EPA and the Tribes. My suggestion can start with the TAMS Center SC to initiate this problem-solving effort either by preparing the TAMS Center to support this type of services for tribes and collaborate with NTAA whose mission is "to advance air quality management policies and programs" to resolve this issue with QA requirements put forth on tribal air monitoring programs by EPA.

Air Quality Program

**Program Manager**

**Department Director**

DEQ Policy/Planner

**QA Management Oversight**

Env Specialist

**QA Manager**

Env Engineer

**Data Management / Reporting**

Senior Env Tech

**Field Operations**

Env Tech

**Field Operations**

**EPA Region 9**

(Support Services for Monitoring & QA)

* QA Section
* Monitoring Technical Support & Annual NPAP Audits

***Air Monitoring Organization Function Summary for Data Collection***

**Air Quality Monitoring Organizational Chart**

**Monitoring Function Summary**

|  |  |  |
| --- | --- | --- |
| Environmental Specialist | Environmental Engineer | Sr. Environmental Technician |
| (QA Oversight of Air Monitoring) | (Data Management and Reporting) | (Field Operations) |
| Data Audits | Network Design and Evaluation | Network Design and Evaluation |
| Performance Audits | Air Monitoring | Air Monitoring |
| Air Quality Data Action | Data Certification | Data Certification |
| Data Validation Level 3 | Data Validation Level 2 | Data Validation Level 1 |
|  | Data Verification | Data Verification |
|  | Corrective Action Notifications | QC Checks |
|  |  | Instrument Calibrations |
|  |  | Corrective Action Notifications |

**Data Pathway Summary**

SET – Sr. Environmental Technician maintains field operations

EE – Environmental Engineer maintains data

ES – Environmental Specialist is QA oversight of SET and EE

**Generation**

Instruments (L0)

SET (L1)

**Validation**

EE (L2)

**Upload to AQS**

EE

**Certification**

EE

***GRIC Air Monitoring Data Flow***

**Monitor Audits**

ES

**Validation**

ES (L3)

Note – Levels of Data Validation:

1. Level 0 Validation – automated validation by instrument/data logger
2. Level 1 Validation –performed by SET
3. Level 2 Validation –performed by EE
4. Level 3 Validation –performed by ES

**Roles and Responsibilities**

PRIMARY QUALITY ASSURANCE ORGANIZATION

ROLES AND RESPONSIBILITIES

GRIC has defined the roles and responsibilities of GRIC PQAO personnel in regard to operation of the PQAO ambient air monitoring network in order to ensure the generation of high quality, legally defensible data.

Environmental Engineer (EE)

* Adopt (sign)/implement GRIC QAPP (all volumes)
* Adopt (sign)/implement GRIC SOPs (all volumes)
* Participate in EPA required technical system audits conducted by R9 EPA
* Review and approve SOPs prepared by SET
* Participate in AZ Workgroup Monitoring meetings and other informational forums and disseminate relevant meeting information to AQP staff
* Participate in public notice and meetings for Annual Network Review to discuss GRIC PQAO monitoring network status
* Uploading validated data directly to AQS in accordance with EPA requirements
* Primary Quality Assurance Organization (PQAO) point-of-contact to allow for effective and timely dissemination of information
* Convey relevant operational-related information from EPA to Senior Environmental Technician (SET) within GRIC’s PQAO
* Maintain and disseminate Quality Management Plan (QMP) with the GRIC PQAO. EE shall regularly request input from GRIC DEQ and reviews and updates the QMP as needed. EE will communicate updates to GRIC DEQ accordingly
* Review and approve QMP prepared by GRIC DEQ AQP which requires EE, ES, and EPA approval
* Provide adequate training with SET on key air monitoring fundamentals related to operations, maintenance, quality assurance/quality control, and data management procedures
* Facilitate ambient monitoring meetings and information updates. Topics may include field, CARB/instrument manufacturers, quality assurance, and data management related items
* Maintain and disseminate AQM QAPP for GRIC
* Provide notification to PQAO and DEQ Management of updates/revisions to GRIC QAPPs and SOPs
* Manage SOPs for monitoring data collection and analysis. These SOPs may also include forms (i.e., check sheets, calibration forms, maintenance forms, etc.)
* Conduct annual siting evaluations at each air monitoring station to determine compliance with 40 CFR Part 58, Appendix E, and consistency with current Air Quality System (AQS) parameters
* Maintain a database of Corrective Action Notifications (CANs), to be used by monitoring organizations to report operational problems, instrument malfunctions, and/or any items needing corrective action or investigation
* Perform annual certification of data process for which GRIC has AQS submittal authority by May 1st of each year
* Provide procedures and criteria for data acceptability and corrective action determination
* Perform an annual evaluation of the statistical summaries of quality assurance and quality control data from all GRIC air monitoring sites in the GRIC PQAO
* Resolve AQDAs, CANs and TSA findings, or develop corrective action plan as appropriate
* Utilize the CAN process to notify ES of issues regarding data quality as well as impending data actions in EPA’s Air Quality System (AQS)
* Validate air monitoring data prior to upload to AQS; and notify ES when data have been altered or modified after it has been submitted (prior to annual data certification); and
* Provide an annual survey questionnaire to SET regarding GRIC monitoring network planned changes (i.e., new/removed instruments, site closures, new sites, contracted services, etc.) for drafting annual network plans as required by 40 CFR 58.10. EE shall review completed questionnaires and provide feedback as necessary to SET regarding network changes

Senior Environmental Technician (SET)

* Adopt (sign)/implement GRIC QAPP (all volumes)
* Adopt (sign)/implement GRIC SOPs (all volumes)
* Participate in EPA required technical system audits conducted by R9 EPA
* Review/update SOPs on an established schedule and notify EE of any revisions made as they occur
* Make available to EE a record of quality assurance related documents (monitor site modifications, SOP revisions, training plan, field operation documents, etc.) being utilized by the GRIC’s ambient air monitoring network field operations
* Utilize CARB/instrument manufacturer certification, calibration, and verification services, or provide the name of the facility being used and the record of traceability to NIST
* Provide timely certification, calibration, and verification services that meet or exceed 40 CFR Part 58 requirements via the CARB or other instrument manufacturer’s Standards Laboratory upon request
* Review the annual site/monitor details summary and update with any changes to the monitoring site
* Communicate all other site changes not mentioned in the annual site/monitor details summary (e.g., openings, closures, relocations)
* Participate in GRIC PQAO monitoring network status meetings/teleconferences
* Provide timely sample return and proper documentation of field sample collection activities (i.e., chain-of-custody, sample collection dates and times, etc.)
* Participate in national, local, and EPA-sponsored ambient air monitoring training
* Participate in AZ Workgroup Monitoring meetings and review information updates; and
* Participate in national air monitoring meetings and other informational forums.

Environmental Specialist, Quality Assurance Manager (QAM)

* Adopt (sign)/implement GRIC QAPP (all volumes)
* Adopt (sign)/implement GRIC SOPs (all volumes)
* Adopt (sign) and implement GRIC QMP (QAPP Volume 1)
* Coordinate EPA required technical system audits conducted by R9 EPA
* Oversee CAN process for reporting instrument malfunctions, operational problems, and/or any items needing corrective action or investigation
* Coordinate public notice and meetings for Annual Network Review to discuss GRIC PQAO monitoring network status
* Review GRIC data in AQS on a quarterly basis to verify accuracy and completeness (AMP 255 and 430 or equivalent reports)
* Identify pollutant-specific parameters that are included in the GRIC PQAO
* Conduct Performance Evaluation (PE) audits of GRIC monitoring sites as required in 40 CFR Part 58, Appendix A, including Section 3.2.2 (PE audits for O3), and Section 3.2.4 (semiannual flow rate audit for Particulate Matter (PM samplers), as well as applicable meteorological audits
* Initiate Air Quality Data Action (AQDA) requests if an instrument or analyzer is found to be outside acceptable limits during an audit; and
* Review and verify data quality against GRIC and EPA established acceptance criteria prior to submittal to AQS (Level 3 Review)

Continuation…

b. Issues Tribes are encountering with meeting QA requirements and how can the TAMS SC help – Leroy Williams, GRIC

* Pat commented one of the things the TAMS SC needs to hear more of is the voice of 88 monitoring tribes more frequently; figure out how to get these voices in every meeting
* Keep in mind the president’s budget put in $8 million more of a stag for last year; we’ll see what happens with that
* Also, ARP money is coming but limited for equipment; to be discussed further during next presentation of EPA updates
* NTAA is doing needs assessment; hoping these type of questions can be included in their questionnaire so they can record this important need; STAG money stayed stagnant for about 10 years and it’s being shared now not only for monitoring and traditional air quality programs, but there is a big chunk going to indoor air and other areas and takes away some of the original money
* Pat mentions key question raised, TAMS staff taking on some of these roles to lighten the load on the tribes; perhaps we can reconfigure how the TAMS grant works; TAMS and EPA staff can maybe play that role in QA
* Lori has experienced same issue and expressed concerns about feeling pressured and overwhelmed
* Chris mentions this is certainly a bigger issue that needs to be addressed; this issue will be included in the fall meeting for more discussion and start to strategize on ways that the TAMS center can help with issues
* Leroy mentions a lot of tribes are looking forward to getting their QAPP reapproved but most likely will face the same issue because of that QA independence, too many overlaps was the main message of the response on the QAPP review

**EPA Updates –** Pat Childers/James Payne/Hayden Hardie, EPA

1. ARP Funds –

* $22.5 million for direct funding; specifically for agencies already monitoring
* No tribal set aside in the direct funding
* There will be tribal set aside and the competitive funding which will come later; direct funding is being utilized
* Introduces Kayla Krauss, the new EPA Region 10 Tribal Air Coordinator
* EPA regions are talking to tribes, states and locals that are monitoring and asking questions about their equipment; they will take data and go back to OAR and the regions and make a decision on how to utilize this funding; prioritizing those that are most in line with the needs, but again, this is for states, locals and tribes, there is no tribal set aside here at this point
* First area of concern is looking at the tribes that are currently doing ambient air quality monitoring; how many of them could qualify for getting this funding and if so, how can they use it so they’ll know what to talk about and how to put in for it
* Talk to other tribes and your regions making sure the other tribes in your regions are having these conversations with their tribal air monitoring people and their regional tribal air coordinators
* Conversations with tribes, states and locals have already started in all regions and have been ongoing for awhile
* A month from now, there will be an RFA out for $20 million in monitoring; competitive RFA; broader focus than just replacing existing equipment; still large part of focus but there will be other allowances potentially for sensors and other things
* Important for TAMS and the TAMS SC to help tribes realize they are eligible for this money and how they can utilize it; Pat will work with NTAA as well
* There will be a tribal set aside announced in the RFA; do not know what level tribal set aside is, hopefully it’ll be several billions of dollars; figure out how to utilize but money is slightly different than the direct funding; prioritize our focus; TAMS, SC and tribal EPA staff make sure tribes that are doing monitoring are talking to their regional monitoring contacts and their tribal air coordinators on what their needs are
* Opportunity for Leroy and other tribes to work on their equipment needs and figure out how to at least upgrade their equipment to help do their job a little more efficiently
* Right now there isn’t long term funding increases yet; hopefully that will happen through 103/105 and GAP grants
* There was $8 million additional in the President’s budget; reducing match requirements for PPG grants
* ARP money should be used to buy equipment and support it
* The discussion in the letter from TAMS SC, NTAA and NTC regarding the $300k TAMS loaner program was well received and taken into consideration; no update on status

1. Loan Program –

* Hayden reported working on shuffling equipment in and out
* Limited funding for some calibration of equipment
* Currently working on some equipment excess of older equipment

**AIAQTP Training Courses –** Mehrdad Khatibi, Christal Black, ITEP

* Review of upcoming training course schedule
* Anticipated in-person courses in January
* Devised work plan for this coming year; reconsidered plans due to rise of Covid and travel restrictions
* Need to reconsider courses scheduled January through March with alternate plans
* Start to have conversation about what alternatives are and what we can do if we’re not able to do in-person courses as planned
* There is a need to consider having more trainings regarding quality assurance and QAPPs from earlier presentation; discuss further in fall meeting
* Working on revised version; will present final revised version; requesting SC members feedback/comment

**Grants Training Update** – Pat Childers

* ARP grant will have it’s own specific grants funding that EPA will be doing
* Working with Christal making sure we’re lining up so we’re giving same information

**TAMS Center Issues and Concerns** – Chris Lee, TAMS

* TAMS Needs Assessment – move to fall meeting; share results with SC members via email; develop framework for the implementation plan
* New Member Call for Nominations – call for nominations for final member will be sent out today

**Selection of TAMS SC Vice-Chair –** Vallen Cook, Grand Portage Chippewa

* SC members agree to discuss further via email; Vallen will send out email today

Submitted by:

Darlene Santos