Meeting Date: September 12, 2001

Agenda: Planning Activity I - Data Quality Objectives

Attendees: Dennis Mikel, Mike Papp, Terry Rowles, Alissa Dickerson, Melinda Ronca-Battista,
                 and Rachael Townsend

Quality System Element: **Planning**

Quality System Activity: **Systematic Planning Process**

Activity Description:

> Quality System Activity: DQO Process, including gathering information on costs of different
> options, assessment of the impacts of options, evaluating their implications in terms of decisions,
> and writing and revising associated documentation at several iterations of the process.

> Definitions: **Data Quality Objectives (DQO) Process** — A systematic strategic planning tool
> based on the scientific method that identifies and defines the type, quality, and quantity of data
> needed to satisfy a specified use. DQOs are the qualitative and quantitative outputs from the
> DQO Process.

> **Data Quality Objectives (DQOs)** — The qualitative and quantitative statements derived
> from the DQO Process that clarify study's technical and quality objectives, define the
> appropriate type of data, and specify tolerable levels of potential decision errors that will be
> used as the basis for establishing the quality and quantity of data needed to support decisions.

> When the DQO Process is not applicable (i.e, the objective of the program is estimation,
> research, or any other objective that does not select between two opposite criteria), a
> systematic method for defining performance criteria must be used.

Activities covered under this description:

< This element applies to all data collection activities, although the EPA's graded approach to
  QA allows simplified DQO processes for small data collection activities. Current DQO
  guidance does not, however, adequately delineate those cases when a simplified DQO process
  can be used and what would be acceptable for such a simplified process. The only exception is
  for training or demonstration projects, where the data will not be used for any purpose. In
  these cases, the use of the equipment is the point of the exercise.

< The national program of data collection and analysis for the purpose of comparing to the
  NAAQS requires a rigorous DQO process for all pollutants for which there is a standard. This
  effort must come from OAQPS and should be completed as soon as possible.

< Tribe, State and local agencies should retain the flexibility to develop their own DQOs. However, DQOs for data used to compare to national standards may continue to be used as de facto allowable bias, precision and LLD values in those cases when data may eventually be used to compare to national standards. Because of this, and for EPA to adhere to its own written policies, it is imperative that OAQPS fund and complete the DQO process for all criteria pollutants.

< The DQO process may result in performance specifications, rather than equipment specifications. This will increase flexibility and may reduce overall costs.

< Metadata guidance should be prepared, so that all data incorporated into national or regional estimates from different organizations has associated information such as precision, bias, and LLD.

< Resources and funding from both EPA OAQPS and EPA Regions should be provided to Tribal, State, and local agencies in the form of training and contract support for these agencies to develop DQOs.

What is the activity's function or use:

< To ensure that the data are appropriate to be used for the objectives of the data collection effort.

Is there a product? Who is the major user of the product or information:

< The product is documentation in the form of a QA Plan or manual that includes Data Quality Objectives and other sections that were prepared using EPA guidance. The user is anyone who uses that data for any purpose.

Brief description of current activities:

< Tribe, State, and local agencies develop DQOs now, usually using guidance from EPA. EPA-funded projects receive different levels of technical review, due to differences among EPA regions and different priorities for different individuals.

< Tribe, State, and local agencies comply with extremely specific requirements for PM2.5 measurements, while other criteria pollutants, for which no national DQOs were developed, are measured without the same level of consistency in detail.

Who is responsible for the activity (currently):

< OAQPS is responsible for developing DQOs for Federally required data. Tribes, State, and local agencies are responsible for developing their own DQOs for other data uses.

Is the activity important?(what does it get us):

< The DQO process, whether simplified or extensive, is mandatory to ensure the data can answer the questions being asked. In addition, knowing the quality of the data allows users to determine if other, un-anticipated questions, can be answered by the data. Without measured quality in terms of bias, precision, and LLD the data may be easily misused.

Pros and Cons of the activity as it's currently implemented:

Pros: - Significant flexibility for Tribe, State, and local agencies, except for PM2.5, which is extremely prescriptive.
- Improved compatibility of objectives and measurement methods.

Cons: - Inconsistency among Tribe, State, and local agencies for small-scale projects.
- Potential misuse of data.

Ways of improving the activity:

< OAQPS needs to develop DQOs for the NAAQS. In addition, there should be a project to evaluate converting the DQOs for PM2.5 to include performance-based standards.

< Funding should be provided to Tribe, State, and local agencies to develop DQOs.

Who should be providing (responsible for) this activity?

< All Tribe, State, and local agencies can develop their own DQOs; however, it is incumbent upon a national organization such as OAQPS to develop the national DQOs.

< In order that DQO development be adequately conducted by tribes, states, and locals, the EPA should provide adequate resources. These would include at least Level of Effort contracting for DQO development assistance and training in DQO development specific to air programs.

Does it require changes to regulation or guidance?

Both regulation and guidance should be changed to reflect

(1) the DQOs developed by OAQPS for criteria pollutants, and

(2) performance-based DQO statement for PM2.5 and other pollutants as an alternative acceptable approach to ensuring adequate data quality.

Meeting Date: September 26, 2001

Agenda: Planning Activity II - Regulation Development

Attendees: Mark Shanis, Terry Rowles, Chris Hall and Rachael Townsend

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Quality System Element: **Planning**

Quality System Activity: **Regulation Development**

Activity Description:

Quality System Activity: Writing, presenting, and revising regulations that specify how the air quality measurements must be made in order to conform to the assumptions made in the DQO process and produce results of the type and quality needed by the decision makers.
Definition:

    Portions of 40 CFR 58 Appendix A, which include:
        1. General Information
        2. Quality System Requirements
        3. Reporting
        5. Calculations

(See the attached excerpts from 40 CFR Appendix A with requirements highlighted.)

Activities covered under this description:

    <   Writing, presenting, and revising regulations that specify how the air quality measurements must be made, analyzed, and reported.

What is the activity's function or use:

    <   Codify the specifics of quality systems nation wide.

Is there a product? Who is the major user of the product or information:

    <   Guidance and requirements in 40 CFR that guide quality systems.

Brief description of current activities:

    <   EPA takes the initiative, review through STAPPA/ALAPCO, proposed for CFR, then promulgated.

Who is responsible for the activity (currently):

    <   EPA (OAQPS) and designees.

Is the activity important?(what does it get us):

    <   Important and required.

Pros and Cons of the activity as it's currently implemented:

    Pros: -   consistency

    Cons: -   costly and time consuming to implementers

Ways of improving the activity:

    <   Revision of 40 CFR 58 App. A.

    <   Address how the regulation process will be affected including the DQO process.

    <   DQOs are not addressed in the CFR (guidance or required; at what level is it required or appropriate?).

    <   The CFR does not clearly discriminate between requirements and what is guidance; this is made more confusing when guidance documents are referenced in the CFR.

    <   Adjust regulation for guidance on how and when organizations can collapse QMP and QAPP.

    <   Identify methods to develop the guidance for small organizations and projects, such as those who can collapse the QMP and QAPP.

    <   The graded approach need to be addressed in the CFR, including specific criteria for different levels of QAPPs with examples.

    <   Develop a tool to identify each requirement, provide management with use and value information, and access the requirement within the regulation development process to make modifications useful to management during the process. (During processing and development of regulations, include tools for management to understand and ensure communication with technical staff on how it relates to their job. Make sure management have understanding on how to use and importance.)

Who should be providing (responsible for) this activity?

    <   EPA (OAQPS), assisted by the affected organizations among Tribes, States, and local agencies.

Meeting Date: September 19, 2001

Agenda: Planning Activity II - Regulation Development (discussion to continue Sept. 26)
                *(See the attached excerpts from 40 CFR Appendix A with
                requirements highlighted.)*

              Planning Activity III - Quality Management Plans

Attendees: Norm Beloin, Mike Papp, Terry Rowles, Alissa Dickerson, Melinda Ronca-Battista,
              and Rachael Townsend

Quality System Element: **Planning**

Quality System Activity: **Quality Management Plans**

Activity Description: Defining and requiring content for QMPs.

   Definition: **Quality Management Plan (QMP)** — A formal document that describes the quality
   system in terms of the organization's structure, the functional responsibilities of management and
   staff, the lines of authority, and the required interfaces for those planning, implementing, and
   assessing all activities conducted.

Activities covered under this description:

   <   Defining and requiring content for QMPs.

What is the activity's function or use:

   <   defines the quality system for the entire organization
   <   provides a description of the organization and its mission
   <   describes the organization's management responsibilities
   <   helps ensure consistency between programs within the organization
   <   serves as an audit tool

Is there a product? Who is the major user of the product or information:

   <   QMP guidance published by EPA's Office of Environmental Information, in the form of
       guidance document EPA QA/R-2 (August 1994); note that this was revised in the spring of
       2001 but the changes were very minor (EPA/240/B-01/002). QMPs are developed and
       revised by most larger monitoring organizations.

Brief description of current activities:

<   Revisions to EPA QA/R-2 are not scheduled.
<   Revisions to QMPs by Tribal, State, and local organizations.

Who is responsible for the activity (currently):

<   EPA's OEI and/or OAQPS, in terms of issuing guidance for QMPs, and the organizations themselves who write and use their own QMPs.

Is the activity important?(what does it get us):

<   valuable to organization, particularly States and other large monitoring organizations; see bullets above.

Pros and Cons of the activity as it's currently implemented:

Pros:- see bullets above
Cons:- QMPs are often not distributed to all staff
        S   no guidance on when the QMP and QAPP can be combined into one document(for smaller organizations)
        S   no clear guidance on how to ensure independence of QA review in small organizations
        S   no clear guidance on the use of the graded approach
        S   no resources are available in many organizations for QMP preparation

Ways of improving the activity:

<   Increase consistency between EPA Regional offices on how they review QMPs.
<   Revise EPA QA/R-2 with the substantive changes discussed here.
<   Define needs for QMPs for all agencies.

Who should be providing (responsible for) this activity?

<   EPA's OEI or a separate document from OAQPS with assistance from affected organizations.

Does it require changes to regulation or guidance?

<   Yes, changes to EPA QA/R-2 or the issuance of a separate document is required.

Meeting Date: September 26, 2001

Agenda: Planning Activity IV - QAPPs and SOPs

Attendees: Terry Rowles, Melinda Ronca-Battista, Dennis Mikel, Alissa Dickerson and Rachael Townsend

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Quality System Element: **Planning**

Quality System Activity: **QA Project Plans and SOPs**

Activity description: Requiring and specifying content for QAPPs and SOPs.

Activities covered under this description:

< Development of QAPPs and SOPs for criteria pollutants as well as other environmental sampling.

What is the activity's function or use:

< Guidance for QAPPs is used by Tribe, State, and local agencies to understand and adhere to the EPA requirements.

Is there a product? Who is the major user of the product or information:

< EPA QAPP guidance is used by Tribe, State, and local agencies to develop their required QAPPs, as well as EPA regions in their review of submitted QAPPs. Note that the QAPP guidance document (QA/R-2) was revised in the spring of 2001 but only very minor changes were made (EPA/240/B-01/002).

Brief description of current activities:

< No work is now being conducted by OAQPS or the EPA OEI to prepare or revise guidance for QAPPs.

Who is responsible for the activity (currently):

< OAQPS is the only entity that has the jurisdiction and resources for revising or producing air monitoring-specific QAPP guidance.

Is the activity important? (what does it get us):

< Revising the QAPP guidance is very important. As it now stands, Tribe, State, and local air

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departments, especially those in small organizations, are often put in the position of either hiring contractors to produce the statistical evaluation of DQOs or copying DQOs from other groups or projects. Both of these options often produce QAPPs which are not helpful. Revising the current QAPP guidance will bring increased respect for and use of QAPPs and DQOs as sensible, integrated parts of the project. As DQO development becomes a common element of QAPPs, related issues may require changes in QAPP guidance.

Pros and Cons of the activity as it's currently implemented:

Pros: - The model PM2.5 QAPP is thorough and widely used.
      S The general QAPP guidance is useful for large-scale projects for large organizations.

Cons: - The QAPP guidance does not include provision for small organizations, or for those projects for which a statistical treatment of DQO options is not relevant.

Ways of improving the activity:

Current guidance for QAPPs and SOPs should be modified as follows:

< Guidance should be provided for those cases when a new statistical derivation of DQOs is not necessary, for example, when a Tribe, State, or local organization is using DQOs already developed by OAQPS for the NAAQS, or when extremely simple conclusions are to be drawn from the results. This guidance should provide clear and simplified treatment of the statistics of DQOs, such as that provided for radiological measurements in the Multi-Agency Radiological Survey and Site Investigation Manual (MARSSIM, downloadable documents at: www.epa.gov/radiation/marssim/). A decision tree to facilitate the choice of options would be useful.

< Guidance to EPA regions on the need for consistency in the review of QAPPs should be issued as soon as possible. Regions now differ widely on their priorities and expectations regarding QAPPs, and this adds confusion and delay to the project approval process.

< Guidance for QAPPs should clearly state that QAPPs that are for projects covered by a QMP do not need to duplicate information in the QMP or applicable SOPs.

Who should be providing (responsible for) this activity?

< OAQPS is the only entity that can initiate this activity.

Does it require changes to regulation or guidance?

< Guidance should be modified or a second QAPP guidance document issued.

Meeting Date: October 4, 2001

Agenda: Planning Activity V - Guidance Documents, such as Network Design and Technical
            Methods

Attendees: Chris Hall, Dennis Mikel, Mike Papp, Norm Beloin, Alissa Dickerson, and Rachael
            Townsend

Quality System Element: **Planning**

Quality System Activity: **Guidance Documents, such as Network Design and Technical
                             Methods**

Activities described: Researching, writing, revising, and obtaining approval for guidance that assists
those trying to adhere to the requirements of the regulations. Documents provide non-mandatory
information including examples.

Activities covered under this description:

- < Writing of new guidance documents, technical methods and network design
- < The red books and methods associated with the red books
- < Guidance documents on siting criteria

Activities not being done:

- < Data quality assessment guidance
- < Data validation guidance
- < Data acceptance guidance
- < Guidance on what level of quality is needed for AQI decisions (real -time-data)

What is the activity's function or use:

- < Help define/expand regulations
- < Should provide a strongly recommended way of doing the work
- < Clarify what is required in the regulation
- < Provide some consistency across the nation for monitoring programs

Is there a product? Who is the major user of the product or information:

- < Guidance documents and technical documents, including new methods are used by Tribal, State
  and local agencies as well as data users, like health effects users.

Brief description of current activities:

- < Siting guidance
- < Production of guidance documents
- < Documents are reviewed periodically

Who is responsible for the activity (currently):

- < EPA (OAQPS)

Is the activity important?(what does it get us):

- < Same as function of activity stated above.

Pros and Cons of the activity as it's currently implemented:

Pros: - Pro-active approach to upgrading these documents

Cons: - Have not had enough time to work on; a number of guidance documents are outdated.
- S Don't have formal program to review relevance of guidance
- S No single way to access all of the guidance documents

Ways of improving the activity:

- < Need more state and local involvement during the early development.
- < State and locals need to have a full time person for QA for the air monitoring programs.
- < Define or clarify attributes or responsibilities of QA person or manager.
- < Get more state and locals in on which documents are more important to them, to prioritize which are more important to them to get revised and updated.
- < QA forum for continued support and exchange of information.

Who should be providing (responsible for) this activity?

- < EPA Headquarters

Does it require changes to regulations?

- < No, except for 40 CFR Part 58, App. A, Section 2.2 which states that PAMS must be consistent with EPA guidance.

Meeting Date: September 12, 2001

Agenda: Implementation– Training

Attendees: Tom Parsons, Donovan Rafferty, Jerry Sheehan, Andy Johnson, Rayna Broadway, Anna
              Kelly, Mark Shanis, Mike Papp

Quality System Element: **Implementation**

Quality System Activity: **Training**

Activity Description:

Definition: **None**

Actions covered under this description:

- Sampling equipment or measurement device operation, calibration and maintenance
- Laboratory analysis calibration
- Sample chain of custody, preparation, analysis, archiving
- Quality assurance activities - performance evaluation, auditing, data quality assessment
- Information manager

What is the function or use of this activity?

- Ensure that a consistent methodologies are followed that allows for the collection of data of
  acceptable quality.

Is the activity important?

- Yes- Provides some assurance of data comparability within and between monitoring
  organization and allows for the transfer of knowledge and experience

Is there a product?

- Yes-More experienced staff and data of acceptable quality

Is this a new activity?

   No.

Brief description of current activities
- On the job training - SLT one-on-one or group training

- < Regional training (NESCAUM, MARAMA, WESTAR, TAMS)- various training activities put on by regional organization.
- < Air and Waste Management Association (AWMA)- training put on a national or specialty conferences
- < Vendor training - training put on by vendors which can be incorporated into the purchase of equipment.
- < Air Pollution Distant Training Network (APDLN) provide remote televised training which also allow for real-time questions
- < Air Pollution Training Institute (APTI)
- < Redbook (self instruction)
- < The web sites, especially AMTIC

Who is responsible for the activity-

- < The responsibility for training occurs at all levels.

Pros and Cons of the activity as it's currently implemented:

Pros

- < On the job training is probably the most important training technique. Some SLT have good training programs
- < APDLN for $PM_{2.5}$ was successful at providing a good general level of training for the program.

Cons

- < Training is not mandatory so some people do not take training when it would be advantageous
- < Funds are not always available remote training if it is needed
- < When SLT resources are tight training is one of the first things to be cut
- < Although on the job training has advantages, the downside is there's not much standardization in that process and a newer agency or one that has lost its core personnel to attrition can't count on OJT.

Ways of improving the activity:

- < Develop web- based training courses
- < Place some important training in regulation
- < Development of some type of Ambient Air Monitoring Training Certification Program for:
    - ! Ambient Air Monitoring Manager-
    - ! Site Operator
    - ! Laboratory Scientist
    - ! QA Manager
    - ! Information Manager

- < Tie career growth to training
- < Try to include vendor training as part of equipment purchases
- < Finish the Redbook.
- < Recognize that QA within a state agency may have more than one training need

Who should be providing (responsible for) this activity?

Does is require changes to regulation or guidance

Regulation

- < Need to decide if certain training should be requirement.
- < May include in regulation that training is important and records should be kept of training.

Guidance:

- < May want to improve Redbook guidance on training to include certification proposal.

Meeting Date: September 20, 2001

Agenda: Implementation– Data Verification/Validation

Attendees: Tom Parsons, Rachael Townsend, Donovan Rafferty, Rayna Broadway,   Anna
             Kelly, Mike Papp

Quality System Element: **Implementation**

Quality System Activity: **Data Verification/Validation**

Activity Description:

   Definition: **Verification** - Confirmation by examination and provision of objective evidence that
                  specified requirements have been fulfilled. In design and development, validation
                  concerns theprocess of examining a result of a given activity to determine
                  conformance to the stated requirements for that activity. (ANSI/ISO/ASQC A8402-
                  1994).

                  Validation- the process of substantiating specified performance criteria. confirmation
                  by examination and provision of <u>objective evidence</u> that the particular requirements
                  for a specific intended use are fulfilled. (ISO 8402)

Actions covered under this description

   < Verification of data entry (100% checks, double entry techniques etc.)
   < Using QC information to determine the validity of samples.
   < Using range checks or internal consistency checks to determine erroneous data.
   < Using automated flagging and data quality systems to identify outliers or erroneous data for
     possible invalidation
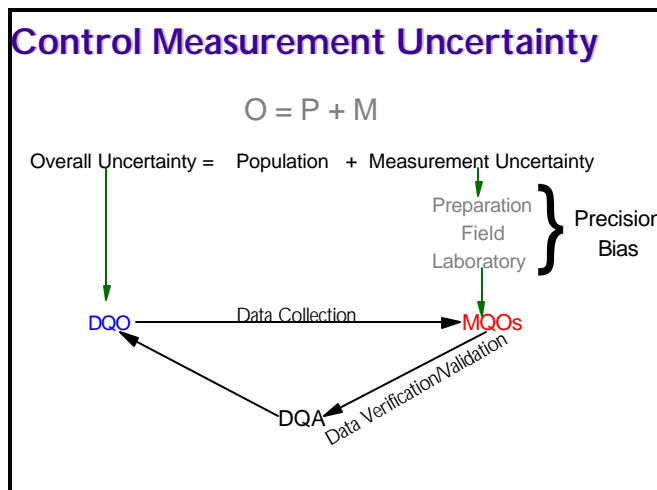
What is the function or use of this activity?

The figure can be used to illustrate where validation occurs. DQOs are developed that define the acceptable overall data uncertainty. Measurement quality objectives are developed that help assure that activities occurring at various phases of the measurement process (field, lab etc.) Maintain an acceptable level of data quality. Therefore the MQOs are identified as the

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various QC samples or QC activities undertaken to "ensure " the DQOs are met. Data verification/ validation is the process of taking this information to ensure that data of unacceptable quality is identified and appropriately handled so that it cannot effect the decision making process.

Is the activity important? (what does it get us)

<   YES

Is there a product? Who is the major user of the product or information

<   The "final" product is data of acceptable quality in a final data base. The major user of the QC data are the quality assurance personnel who need this "meta-data" to help determine data validity.

Is this a new activity? What activity does it replace or enhance?

<   No, this is not a new activity. It does not replace any activity; it enhances the usefulness of the resultant data.

Brief description of current activities

<   In general, the current activity is very similar among most SLTs. Various quality control information is required or suggested to be collected during monitoring activities. These include:

  !   zero/span checks
  !   weekly/biweekly precision checks
  !   Collocated precision
  !   equipment stability information (flow, temp pressure)
  !   shelter or laboratory information (temp, humidity etc.)
  !   Contamination information (field notes, field/trip/lab blanks)
  !   performance evaluations
  !   calibration information
  !   field notes - (sampler issues, damage, contamination etc)

However how this data is used in the validation process may differ among SLTs.

<   Once the data is entered to AIRS there is additional QA reports that are run that can also help in the final validation of data.

Who is responsible for the activity (currently).

<   SLTs

Pros and Cons of the activity as it's currently implemented:

Pros

- < Some organizations have developed procedures for the consistent verification/validation of data
- < Real time data reporting has helped to initiate verification/validation screening tools. Although these tools do not provide full validation of data, they do provide an early review of information.
- < The $PM_{2.5}$ Data Validation Template helped provide some consistency in data verification validation among SLTs

Cons

- < There is no consistency in data verification/validation techniques among SLTs.
- < Local site information could be very helpful in the validation process (events) but in many cases this information is not recorded and therefore not available.
- < Resources in some SLTs not available for timely validation
- < Present verification techniques taking too long, meaning corrective action is not taken as soon as possible.
- < Due to the diverse use by SLTs information management systems, there is currently no easy way to develop automated validation techniques (at a headquarters level) in a cost effective manner.

Ways of improving the activity:

- < Technology is available for more real time validation that could free up resources for other activities: This could start with:
  - ! Use of data logging, telemetry or "lease-lines" to get data into information management systems and validation systems more quickly.
  - ! Use of computer technology by the site operator to access data that has been reviewed at the "central office" in order to implement corrective actions in a more real time mode
  - ! Use of the new AIRS system to develop more data assessment/validation techniques that could then be consistently used by all SLTs.
- < Continue the development of Validation Templates for the other criteria pollutants
- < Development of critical review criteria in AIRS

Who should be providing (responsible for) this activity?

- < SLTs

Does this require changes to regulation or guidance?

- < If data validation is tied to performance (DQOs) process (see figure) then some regulations changes may occur if QC criteria are changed or removed.
- < Guidance in Redbook could be changed to reflect validation templates

Meeting Date: October 9, 2001

Agenda:	Implementation– Internal Quality Control Activities

Attendees:	Tom Parsons, Donovan Rafferty, Jerry Sheehan, Andy Johnson, Rayna Broadway,
	Anna Kelly, Mark Shanis, Mike Papp

Quality System Element:	**Implementation**

Quality System Activity:	**Internal Quality Control Activities**

Activity Description:

Definition:	the overall system of technical activities whose purpose is to measure and control the quality of a product or service so that it meets the needs of users. The aim is to provide quality that is satisfactory, adequate, dependable, and economical.

Actions covered under this description

< see Redbook Measurement Quality Objective Forms (Appendix 3)
< Zero/Span checks
< Accuracy audits
< Verification checks (flow rate, temp, pressure, time)
< Calibrations
< Recertifications (SRP program, primary standards and transfer standards) gases, other QC instruments
< Precision checks (automated and collocated)
< Detection limit tests
< NPAP/State Audits (may also be included under performance evaluation)
< Routine instrument maintenance

What is the function or use of this activity?

< Ensure sampling, measurement equipment, or environmental monitoring conditions (shelters, labs) are operating within acceptable ranges to produce data of know and acceptable quality.

Is the activity important? (what does it get us)

< Yes quality control activities provide data users with checks at enough frequency to maintain "control" over data quality at various phases (sampling, preparation, analysis) of the measurement process.

Is there a product? Who is the major user of the product or information

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< In most case there is not a product other than routine data of acceptable quality. However, some of the major quality control samples are reported to AIRS and can be used to provide a measure of precision and bias for reporting agencies. Products such as control charts etc. can also help to document data of acceptable quality.

Is this a new activity? What activity does it replace or enhance?

< No it's not a new activity

Brief description of current activities

< Activities defined in Redbook

Who is responsible for the activity (currently)

< In most case State/local/Tribes are responsible for these activities

Pros and Cons of the activity as it's currently implemented:

Pros-

< The current QC check requirements and guidance do seem to provide an adequate evaluations of data quality

Cons-

< Some organizations may feel "audited to death". There may be some redundancies with our various auditing activities such as NPAP, State and internal auditing functions
< Some QC checks have "lost there value" due to the improvements of monitoring technology.
< Reducing frequencies of some checks may have the potential for invalidating more data.

Ways of improving the activity:

< Automate measurement systems as much as possible. Providing state of the art measurement, data logging/data transfer and QC systems will provide coast savings in the long run and provide for QC at higher frequency at no additional cost.

< Automate zero/span - Some organizations may still be performing these manually and at less frequency than recommended.

< Through-the-probe zero/span/precision checks - have checks cover entire inlet/manifold systems

< Develop QC checks based on system performance. Some checks, due to better, more stable equipment may not need to be checked as frequently as required or suggested.

<   Have vendors of new instruments be required to develop adequate SOPs as part of the reference and equivalency process (may need to be added to SOP form).

Who should be providing (responsible for) this activity?

<   State/local/Tribal monitoring agencies will maintain responibility for this activity.

Does is require changes to regulation or guidance?

<   Unsure at present- a thorough review of QC requirements in CFR and guidance should be implemented.

Meeting Date: October 16, 2001

Agenda: Implementation– Record Keeping

Attendees: Tom Parsons, Andy Johnson, Don Gourley, Anna Kelly, Mike Papp

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Quality System Element: **Implementation**

Quality System Activity: **Record Keeping**

Activity Description:

Definition: a written, documented group of procedures describing required records, steps for
               producing them, storage conditions, retention period and circumstances for their
               destruction or other disposition.

Actions covered under this description

   <   Storage of pertinent ambient air monitoring program documents and records at
        State/local/Tribal organization, EPA Regions and Headquarters.

What is the function or use of this activity?

   <   To document or provide supporting documentation of the quality/validity of ambient air
        monitoring data and adherence to ambient air monitoring requirements.

Is the activity important? (what does it get us) - YES

   <   provides for a repository of pertinent program information.(current and historical)
   <   provides documentation of data validity

Is there a product? Who is the major user of the product or information

   <   Products are the records/documents. The user is the organization collecting the information and
        potentially organizations required to review the records during auditing activities or challenges to
        the data validity.

Is this a new activity? What activity does it replace or enhance?

   <   No, not a new activity.

Brief description of current activities.

Workgroup used Section 5 "Documentation and Records" of the Quality Assurance Handbook for Air Pollution Measurement Systems (Volume II Part 1) as a source of information on this subject. The table below, which is in the section, was reviewed to determine whether the categories and record types were appropriate and comprehensive.

Categories	Record/Document Types
Management and Organization	State Implementation Plan Reporting agency information Organizational structure of monitoring program Personnel qualifications and training Quality management plan Document control plan Support contracts
Site Information	Network description Site characterization file Site maps/pictures
Environmental Data Operations	QA Project Plans Standard operating procedures (SOPs) Field and laboratory notebooks Sample handling/custody records Inspection/maintenance records
Raw Data	Any original data (routine and QC)
Data Reporting	Air quality index report Annual SLAMS air quality information Data/summary reports Journal articles/papers/presentations
Data Management	Data algorithms Data management plans/flowcharts
Quality Assurance	Control charts Data quality assessments QA reports System audits Network reviews

A number of points were made during the discussions;

<   Some organizations have data archive requirements for much longer than the statute of limitations described in Section 5 of the Redbook (3 years).

<   It appeared that resources needed for records archive and storage were adequate.

<   The Breakout Group felt the table sufficiently covered the records and document types for the ambient air monitoring program. However certain records (i.e., record types in management and

organization) may be the responsibility of management levels outside the monitoring organization.

< A monitoring organization may be responsible for data collection activities implemented by organizations outside of the immediate office (contractors or other local organizations) . We may need some additional guidance on what would need to be archived.

Who is responsible for the activity (currently)

< organizations responsible for ambient air data collection activities

Pros and Cons of the activity as it's currently implemented:

Pros-

Cons

< some organizations may not have a central filing capability. Therefore, individuals are filing and archiving information for which they are immediately responsible. During personnel turnover there is a possibility that this information gets discarded.

NOTE: This situation occurred with the CY2000 PM2.5 network where a significant amount of QC data disappeared when a site operator was removed from his/her position

< There may be discrepancies within organizations documentation (QMP/QAPPS/PPG) with regards to record keeping. Monitoring organization must ensure there is consistency among these various documents.

Ways of improving the activity:

< Centralize filing systems - it appeared that organizations are moving in this direction.
< Review Table 5-1 in Redbook- ensure agreement on record types.

Who should be providing (responsible for) this activity?

< Organization dependent.

Does it require changes to regulation or guidance?

< No change in regulation; may be modification to guidance

Other issues:

< Need to check on the defensibility of electronic data.

Meeting Date: September 13, 2001

Agenda: Assessment/Reporting -Site Characterization

Attendees: Mike Miguel, Michael Papp, Mark Shanis, Richard Heffern

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Quality System Element: **Assessment/Reporting**

Quality System Activity: **Site Characterization**

Activity Description

Definition: Applicable siting criteria for SLAMS, NAMS and PAMS are specified in 40 CFR Part 58
Appendix E. The on-site visit itself consists of the physical measurements and observations
needed to determine compliance with the Appendix E requirements, such as height above
ground level, distance from trees, paved or vegetative ground cover, etc

What is the function or use of this activity?

< The function of the Site Characterization is to ensure national uniformity of parameter specific
air monitoring activities.

Is the activity important? (What does it get us)

< Yes, the activity is important and it allows us to see if the network conforms to the regulations.

Is there a product? Who is the major user of the product or information?

< Yes, there is a product (report) and all levels of government use the information.

Is this a new activity? What activity does it replace or enhance?

< No, it enhances the overall consistency of air monitoring data.

Brief description of current activities.

< States/local conduct site evaluations of their air monitoring networks once a year. The Regions
usually conduct site evaluations during a Technical System audit and only conduct a percentage
(5%) of a air monitoring network.

Who is responsible for the activity (currently).

< OAQPS, Regions and States are responsible for this activity.

Pros and Cons of the activity as it's currently implemented:

Pros:
- < Aids the Regions and State/local to evaluate the air monitoring networks.
- < Provides Uniformity
- < Some states have a Website for current site activities.

Cons

- < No consistent documentation of site evaluations
- < Most States do not have a website for current site activities.
- < No consequent fo not conducting site evaluations (No comparison between AIRS an Hard Copy in the files).

Ways of improving the activity:

- < Conduct polls the Regions and State/locals on who is conducting site evaluations.

Who should be providing (responsible for) this activity.

- < The Regions and the States should be responsible for this activity.

Does this require changes to the regulation or guidance?

- < No

Meeting Date: September 26, 2001

Agenda: Assessment/Reporting - Performance Evaluations

Attendees: Danny France, Matt Plate, Mark Shanis, Mike Miguel, Richard Heffern, Rayna
            Broadway, Vic Guide, Rachael Townsend, Scott Hamilton

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Quality System Element: **Assessment/Reporting**

Quality System Activity: **Performance Evaluation** (NPAP, PEP, Ozone Verification)

Definition: a type of audit in which the quantitative data generated in a measurement system are
            obtained independently and compared with routinely obtained data to evaluate the
            proficiency of an analyst or laboratory.

What is the function or use of this activity?

   <   To ensure the quality of data collect and resolve any significant quality assurance problems.

Is the activity important? (What does it get us)

   <   The activity is important. It allows for the intercomparability of data sets and identify problem
        areas.

Is there a product? Who is the major user of the product or information.

   <   Uniform data on a national level. All levels of the government/tribes and industry are major
        users of this information.

Is this a new activity? What activity does it replace or enhance?

   <   No. The performance evaluation program enhances the overall quality system on the nation's
        air monitoring program.

Brief description of current activities.

   <   State/locals and PSD networks participate in the NPAP and PEP. Most tribal agencies do not
        participate in the programs.

Who is responsible for the activity (currently) ?

   <   OAQPS, Regions and States are responsible for the activity.

Pros and Cons of the activity as it's currently implemented.

Pros:

- < It enhances the overall consistency of air monitoring data.
- < Some states like the program as it is.

Cons:

- < Very little return for the VOCs and Carbonyl for the PAMS.
- < To much duplication in the program.
- < Need more flexibility in the program.
- < Regulatory guidance in certifying ozone transfer standards is 20 years old.

Ways of improving the activity:

- < PAMS NPAP should be conducted in the January to March time frame so that potential problems can be rectified prior to the ozone season.
- < Less compounds could be included in the PAMS NPAP audits. Participants would prefer   if higher quality standards (NIST) are utilized with less compounds.
- < It was suggested that ambient air comparisons be used to compare between lab results. This is already being done at some Regions.
- < Headquarters should certify auditors for parameters. This is being done for PM2.5.
- < Recommendations for NPAP program: eliminate duplication in the program, EPA could certify states that do have QA in place, conduct round robin with labs.
- < Some states have such small air monitoring programs it is impossible to have adequate separation QA and monitoring staff. In this case, independence is not achieved. These instances should be over sighted by EPA or another state monitoring program.
- < The current regulatory guidance used in certifying ozone transfer standards is 20 years old.
- < Ozone transfer standards are much more stable than they were when this guidance was written. A discussion was held regarding whether or not this guidance is still appropriate.
- < The current regulation require transfer standards to undergo a 6-certification at the beginning of each ozone season (provided the previous 6-days certification lapsed) and then a 1-day recertification at the end of 90 days. This poses a problem in some areas which have to ship ozone standards. The current frequency may be overkill. The group commented that this would depend on the situation. For example, if a reporting organization was experiencing discreprencies or other QA/QC problems, the frequency may need to be increased so that the problem could be resolved. Conversely, if a reporting organization was running smoothly with audits, calibrations and span checks showing expected results, then this frequency may

be too much. The group concluded that the 90-day frequency seems to be appropriate but is subjective.

< PM2.5 PEP comments: Alaska commented that the PEP auditor need to space out audits throughout the year. It was suggested that the quarterly audits may be too many. The frequency of could be determined by the success (or failure) of the previous audit.

< OAQPS commented that it may be appropriate to look at the data and determine who may need less or more PEP audits.

< A comment was made that the 1999 QA report was not useful. It was unclear whether or not this person had the entire report including the tables at the end. The 2000 QA report is out.

< A comment was made regarding the timeliness of that report. It was explained that the data used in preparing that report is not available (certified by the reporting organization) until

< July 1st of the year and the task of crunching these numbers is very time consuming.

Who should be providing(responsible for) this activity?

< OAQPS , Regions and the States should be responsible for this activity.

Does the activity require changes to regulation or guidance?

< Current regulatory guidance used in certifying ozone transfer standards may need to change.

Meeting Date: October 10, 2001

Agenda: Assessment/Reporting - PSD networks participation in NPAP

Attendees: Danny France, Matt Plate, Mark Shanis, Michael Papp, Mike Miguel
              Scott Hamilton, Richard Heffern, Rayna Broadway

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Quality System Element: **Assessment/Reporting**

Quality System Activity: **PSD networks participation in NPAP**

What is the function or use of this activity?

< The function of the PSD networks participation in the National Performance Audit Program is to ensure that the ambient air data collected is of a known quality.

Is the activity important? (What does it get us)

< Yes, the activity is important and it gives us a picture of an industry's quality system.

Is there a product? Who is the major user of the product or information?

< Yes, there is a product (report) and OAQPS, Regions and the States will use the information.

Is this a new activity? What activity does it replace or enhance?

< No, this is not a new activity and the NPAP will provide a assessment of an industry's air monitoring network.

Brief description of current activities.

< Most States require that the industries participate in the NPAP.
< Some PSD networks ambient air data is submitted to AIRS.

Who is responsible for the activity (currently).

< OAQPS , Regions and States are responsible for this activity.

Pros and Cons of the activity as it's currently implemented:

Pros:

- < Aids State/local to evaluate the industries air monitoring networks.
- < Industries are requesting to participate in the NPAP.

Cons

- < No mechanism in place to receive money from industry for their participation in the NPAP.
- < Funds being cut from the NPAP, therefore industry participation is lessen.

Ways of improving the activity:

- < There should be a mechanism in place, to allow industry to pay for their participation in the NPAP.

Who should be providing (responsible for) this activity.

- < OAQPS , Regions and the States should be responsible for this activity.

Does this require changes to the regulation or guidance?

- < Yes.

Meeting Date: October 10, 2001

Agenda: Assessment/Reporting - Technical Systems Audits

Attendees: Danny France, Matt Plate, Mark Shanis, Michael Papp, Mike Miguel,
            Scott Hamilton, Richard Heffern, Rayna Broadway

Quality System Element: **Assessment/Reporting**

Quality System Activity: **Technical Systems Audits**

Activity Description:

   Definition: a thorough, systematic on-site, qualitative review of facilities, equipment, personnel,
               training, procedures, record keeping, data validation, data management, and reporting
               aspects of a total measurement system

What is the function or use of this activity?

   <   The function of the Technical System Audits (TSA) are to promote national uniformity
in the evaluation of state and local agency monitoring programs and agencies performance.

Is the activity important? (What does it get us)

   <   Yes, the activity is important and it gives us a picture of an agencies overall performance.

Is there a product? Who is the major user of the product or information?

   <   Yes, there is a product and all levels of government use the TSA report.

Is this a new activity? What activity does it replace or enhance?

   <   No, this is not a new activity and the TSA will promote the uniformity of the air monitoring
        program.

Brief description of current activities.

   <   Most Regions and some states conduct TSA's. There may be a need to conduct TSA's of
        Tribal organizations.

Who is responsible for the activity (currently).

   <   The Regions and States are responsible for this activity.

Pros and Cons of the activity as it's currently implemented:

Pros:

- <   Promote uniformity in the evaluation of the State/local agencies.
- <   TSA's can identify problem areas.

Cons

- <   Some Regions and States are not conducting TSAs.

Ways of improving the activity:

- <   There should be a minimum level of tracking TSAs. (Maybe in the new AIRS)
- <   Develop TSA Teams (Regions, State/local)
- <   Conduct TSA of Tribal air monitoring programs.
- <   Collect the various audit forms being used in the nation in one place and make available to the air monitoring community.

Who should be providing (responsible for) this activity.

- <   The Regions and States should be responsible for this activity.

Does this require changes to the regulation or guidance?

- <   No.

Meeting Date: October 3, 2001

Agenda: Assessment/Reporting - Data Quality Assessment

Attendees: Danny France, Matt Plate, Shelly Eberly, Mike Miguel, Don Gourley, Rayna Broadway, Vic Guide, Kuenja Chung, Richard Heffern, Michael Papp, Regina Charles

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Quality System Element: **Assessment/Reporting**

Quality System Activity: **Data Quality Assessment**

Definition: the statistical evaluation of a data set to establish the extent to which it meets user-defined application requirements (i.e., DQOs).

What is the function or use of this activity?

< To ensure the quality of data collected can be used to make a decision with a desired confidence.

Is the activity important? (What does it get us)

< The activity is important. It gives us a statistical evaluation of data.

Is there a product? Who is the major user of the product or information.

< Yes, there is a product and OAQPS and the regions are the major users.

Is this a new activity? What activity does it replace or enhance?

< Yes. The Data Quality Assessments enhances the overall quality system on the nation's air monitoring program

Brief description of current activities.

< All levels of government perform Data Quality Assessments, but not from a statistical standpoint.

Who is responsible for the activity (currently) ?

< OAQPS and Regions are responsible for the activity.

Pros and Cons of the activity as it's currently implemented.

Pros:

- < Summary on information for criteria pollutants available in AIRS.
- < Good DQOs will help develop good DQAs.

Cons:

- < Not many DQAs performed from a statistical standpoint.

Ways of improving the activity:

- < Provide real time feedback.
- < Provide statistical assessments (maybe available in new AIRS).

Who should be providing(responsible for) this activity?

- < OAQPS and the Regions should be responsible for this activity.

Does the activity require changes to regulation or guidance?

- < Yes

Meeting Date: October 3, 2001

Agenda: Assessment/Reporting - QA Reports

Attendees: Danny France, Matt Plate, Shelly Eberly, Mike Miguel, Rayna Broadway,   Vic Guide, Kuenja Chung, Richard Heffern, Michael Papp, John Gourley,   Regina Charles

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Quality System Element: **Assessment/Reporting**

Quality System Activity: **QA Reports**

Definition: Documents describing a quality system for a particular project or program for a particular period of time and the resultant data quality. The term is used as a catch all for various types of reports including reports on results of performance evaluations and systems audits, results of periodic data quality assessments, and significant quality assurance problems and recommended solutions

What is the function or use of this activity?

< The function of the QA Reports are to provide an overall assessment of the air monitoring program to management.

Is the activity important? (What does it get us)

< Yes, the activity is important. QA reports give us the ability to identify problem areas in our air monitoring system.

Is there a product? Who is the major user of the product or information?

< Yes, there is a product and all levels of government use the QA reports.

Is this a new activity? What activity does it replace or enhance?

< No, this not a new activity and it will enhance the quality of air monitoring data collected in the nation.

Brief description of current activities.

< Most States/locals, Regions and OAQPS use QA reports.

Who is responsible for the activity (currently)

< OAQPS, Regions and States/locals are responsible for the activity.

Pros and Cons of the activity as it's currently implemented:

Pros:

- < QA reports used by all levels of government.
- < QA reports improves the quality system of an agency.

Cons:

- < PSD QA reports should be assess.

Ways of improving the activity:

- < Need to assess the system audits of contractors (especially PSD).

Who should be providing (responsible for) this activity?

- < Headquarters, Regions, State/locals/Tribal should be responsible for this activity.

Does this require changes to the regulation or guidance?

- < Yes

Meeting Date: October 3, 2001

Agenda: Assessment/Reporting - P&A Reports

Attendees: Danny France, Matt Plate, Shelly Eberly, Mike Miguel, Rayna Broadway,   Vic Guide,
            Kuenja Chung, Richard Heffern, Michael Papp, John Gourley,   Regina Charles

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Quality System Element: **Assessment/Reporting**

Quality System Activity: **P&A Reports**

Definition: Reports describing the achievement of the precision and accuracy requirements for the
                Ambient Air Quality Monitoring Program.

What is the function or use of this activity?

<   The function of the P&A Reports are to provide an overall assessment of air monitoring data.

Is the activity important? (What does it get us)

<   Yes, the activity is important. P&A reports give us the ability to identify problem areas in our air
      monitoring system.

Is there a product? Who is the major user of the product or information?

<   Yes, there is a product and all levels of government use the P&A report.

Is this a new activity? What activity does it replace or enhance?

<   No, this not a new activity and it will enhance the quality of air monitoring data collected in the
      nation.

Brief description of current activities.

<   Most States/locals, Regions and OAQPS use P&A reports.
<   Tribes need to use precision and accuracy reports.

Who is responsible for the activity (currently)

<   OAQPS and the Regions are responsible for the activity.

Pros and Cons of the activity as it's currently implemented:

Pros:

- < Summary information for precision and accuracy data is available in AIRS
- < P&A Reports used by all levels of government.

Cons

- < PSD networks should have P&A Reports.
- < P&A probability limits should be reviewed.

Ways of improving the activity:

- < Correct problems of uploading precision data in AIRS.
- < Burden reduction of precision and accuracy checks should be addressed in the regulations.
- < Improve cooperation from States/locals/tribes in getting precision data into AIRS.
- < Include frequency of audits of in the QAPP.

Who should be providing (responsible for) this activity?

- < Headquarters, Region, State/locals should be responsible for this activity.

Does this require changes to the regulation or guidance?

- < Yes

Meeting Date: October 10, 2001

Agenda: Assessment/Reporting - Quality System Audits

Attendees: Danny France, Matt Plate, Mark Shanis, Michael Papp, Mike Miguel,
          Scott Hamilton, Richard Heffern, Rayna Broadway

Quality System Element: **Assessment/Reporting**

Quality System Activity: **Quality System Audits**

Definition: the qualitative assessment of a data collection operation and/or organization(s) to establish whether the prevailing quality management structure, practices, and procedures are adequate for ensuring that the type and quality of data needed and expected are obtained

What is the function or use of this activity?

< The function of the Quality System Audit (QSA) is a process of qualitatively assessing the effectiveness of management practices in applying QA/QC to environmental data operations.

Is the activity important? (What does it get us)

< Yes, the activity is important and it gives us a picture of an agency quality system.

Is there a product? Who is the major user of the product or information?

< Yes, there is a product (report) and OAQPS, Regions and the States will use the information.

Is this a new activity? What activity does it replace or enhance?

< Yes, this is a new activity and the QAS will provide a assessment of an agency's Quality Management Plan.

Brief description of current activities.

< OAQPS and some Regions have conducted QSAs.

Who is responsible for the activity (currently).

< OAQPS , Regions and States are responsible for this activity.

Pros and Cons of the activity as it's currently implemented:

Pros:

- < Aids management to evaluate the entire agency's program concerning a quality system.

Cons

- < No joint audit form (TSA and QSA audit form).

Ways of improving the activity:

- < There should be development of an audit form to include TSA and QSA .

Who should be providing (responsible for) this activity.

- < OAQPS , Regions and the States should be responsible for this activity.

Does this require changes to the regulation or guidance?

- < No.