Tribal Air Monitoring

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RTOC

Introduction

- Assessing Potential Air Quality Issues
  - Method of Assessment
- Overview of Ambient Air Monitoring Objectives
  - Setting Data Quality Objectives
  - Monitoring for “Regulatory Purposes”
  - Monitoring for “Informational Purposes”
- Ambient Air Quality Monitoring QA Requirements
  - EPA and Tribal Resource Constraints

Assessment of Potential Air Quality Issues

- There are many ways to learn about air quality impacts
  - Development of emissions inventory
  - Review of existing monitoring data
    - Nearby monitoring sites/spatial scales
    - AIRNow-Tech: www.airnowtech.org
    - EPA AirExplorer: www.epa.gov/airexplorer
    - AQS: http://www.epa.gov/ttn/airs/airsaqs
  - Air quality modeling
    - EPA Support Center for Regulatory Atmospheric Modeling (SCRAM): www.epa.gov/scram001
  - Ambient air quality monitoring

Overview of Region 9 Ambient Air Monitoring

- Placeholder for Fletcher Monitoring Map

Overview of Region 9 Ambient Air Monitoring

- Placeholder for AIRNow Screenshot

Ambient Air Monitoring Objectives: Monitoring & Data Quality Objectives

- Seven general steps to developing a project

Ambient Air Monitoring Objectives: Informational Monitoring

- Objectives consistent with “Informational Monitoring”
  - Initial assessment of air quality pollutants of concern
  - Public information/outreach/notification
  - High pollution episode characterization
  - Identification of potential source impacts
  - Source apportionment
  - Verification of emissions inventory estimates
  - Support research studies
  - Evaluate effectiveness of pollution control strategies

Ambient Air Monitoring Objectives: EPA Regulatory Purposes

- Monitoring for "regulatory purposes" meets a very specific objective
  - This type of monitoring is needed to serve the sole basis for specific EPA regulatory actions
    - NAAQS designations decisions
    - Attainment/Clean data findings
- A few scenarios where such data may be explicitly needed:
  - There are no nearby monitors capable of characterizing air quality on tribal lands
  - Tribal lands are located in a current non-attainment area, but tribal air quality is different (attaining the NAAQS) than the surrounding area
  - Tribal lands are located in a current attainment area, but tribal air quality is violating the NAAQS due to sources outside of tribal lands.

Ambient Air Monitoring QA Requirements: EPA Regulatory Purposes

- Monitoring for "regulatory purposes" requires adherence to 40 CFR 58 Appendices A, C, D, & E
  - Approved up-to-date QAPP & Network Plan
  - Perform all required QC checks
    - One point QC checks (O^3, NO_2, SO_2 & CO)
    - Bi-weekly/quarterly flow verifications (PM_{10} & $PM_{2.5}$)
  - Perform all required QA audits
    - Annual/quarterly performance evaluations (O^3, NO_2, SO_2 & CO)
    - Semi-annual flow audits (PM_{10} &$PM_{2.5}$)
  - Provide funds for & participate in National QA programs
    - National Performance Evaluation Program (NPAP) (O^3, NO_2, SO_2 & CO)
    - Performance Evaluation Program (PEP) ($PM_{2.5}$)
  - Participate in Region 9 Technical System Audit (TSA)

Ambient Air Monitoring QA Requirements: EPA Regulatory Purposes

- Data Requirements
  - 3 Years of complete data
    - 75% per quarter (PM_{10} & $PM_{2.5}$)
    - 75% per year & 90% per 3 year period (O^3)
  - Data must be submitted to AQS every quarter
    - Precision and accuracy data must also be submitted
      - Results from one-point QC checks, flow verifications & audits, etc…

Ambient Air Monitoring QA Requirements: PEP/NPAP/TSA

- Provide funds for National QA programs
  - PEP Costs: $11,000
  - NPAP Costs: $3,000
- Region 9 TSAs
  - 1-2 days
  - Program evaluation
  - Data audit
  - Monitoring site evaluation
  - Issuance of an EPA TSA report
  - Tribe is required to respond to audit with a Corrective Action Plan (CAP)

Ambient Air Monitoring QA Requirements: EPA Regulatory Purposes

- Why are there so many stringent requirements for "regulatory monitoring"?
- Clean Air Act (Section 103):
  - [c]ollect, an compile data with quantification of uncertainty in the status and trends of…air quality…to ensure the comparability of air quality data collected in different States and obtained from different nations."
  - National decisions on air quality (NAAQS designations, clean data findings, etc) must be consistent.

Ambient Air Monitoring QA Requirements: Informational Purposes

- Monitoring for “information purposes” does not require strict adherence to 40 CFR 58 Appendices A, C, D, &E
- QA/QC requirements are dependant on the specific monitoring purpose and associated data quality objectives

Ambient Air Monitoring QA Requirements: Benefits of Informational Monitoring

- Informational air quality data can be used to drive local policy and regulation
  - State/Local agencies regularly rely on informational monitoring
    - Seasonal ozone monitoring to assess impacts at elevation
    - PM10 monitoring to support source apportionment
    - Use of portable PM2.5 monitors to inform public about exposure during wildfires or other high pollution events
- Increased flexibility in implementation
  - Monitoring equipment, location, duration
- Less requirements + more flexibility = LESS COST

EPA Expectations for Tribal Air Monitoring

- Regardless of monitoring objective, tribal monitoring programs should:
  - Efficiently implement monitoring
  - Maintain appropriate quality systems (QAPP approval & appropriate QA/QC implementation)
  - Submit data to EPA via AQS (or other agreed upon format)
  - Clear expectations on monitoring objectives and length of monitoring program
  - Good communication