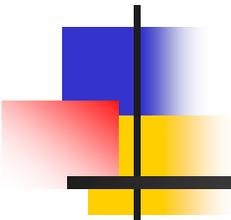


Precursor Gas Monitoring Overview

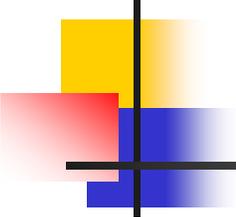


Dennis K. Mikel

U.S. EPA, Office of Air Quality
Planning and Standards

24th Annual National Conference
San Diego, CA
April 13, 2005





Outline

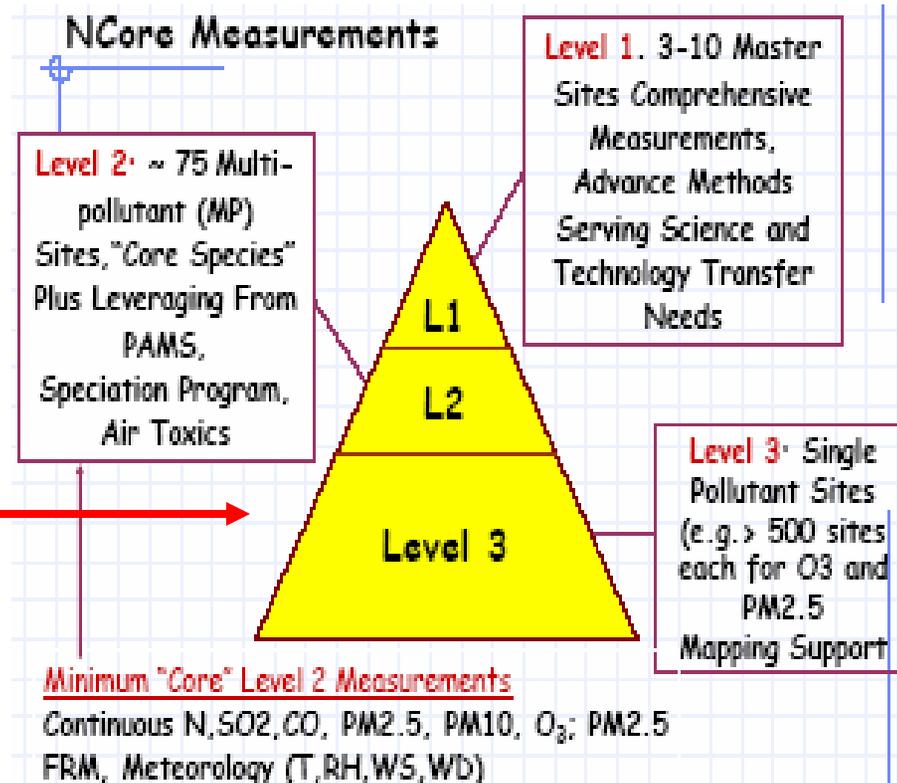
- Why we need it ?
- What is it?
- Products and Deliverables
- "TTT"
- QA
- Next Steps



Why Precursor Gas Monitoring is Needed

National Ambient Air Monitoring Strategy (NAAMS)

- Roll out Starts 2005
- Rethinking Monitoring Network
- Designation of National Core "NCORE" sites



Why Precursor Gas Monitoring is Needed

- Develop emission control strategies
 - Air quality model evaluation
 - Rural monitoring - background transport
 - Source apportionment
 - Observation-based models
- Support long-term health and epidemiology studies



Precursor Gases – What are they?

Carbon monoxide (CO)

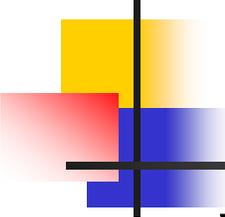
Sulfur dioxide (SO₂)

Reactive oxides of nitrogen (NO_y)

Ammonia (NH₃)

Nitric Acid (HNO₃)



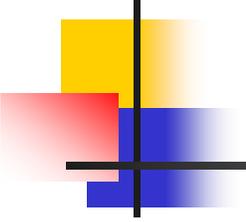


Precursor Gas Monitoring

What makes a Precursor Gas instrument?

- Higher sensitivity
- Digital and analog interface
- Ethernet or Internet interface (optional)
- Dual range – low range → high range
- Increased interferent rejection
- Auto referencing/adjustment

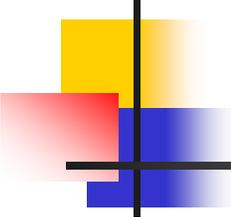




Products and Deliverables

- **Products and deliverables**
 - Short method summaries (1 pagers)
 - Instrument testing and evaluation – lab & field
 - Standard Operating Procedures (SOPs)
 - Technical Assistance Document (TAD)
 - Technology Transfer and Training





Precursor Gas Team

- **Joann Rice:** Methods Team Lead
- **Tim Hanley:** Monitoring Program Lead
- **Kevin Cavender:** NO_y Method
- **Dennis Mikel:** CO Method
- **Michael Papp:** Quality Assurance
- **Solomon Ricks:** SO₂ Method
- **Nealson Watkins:** Data Management
- **Lewis Weinstock:** Technology Transfer
- **Keith Kronmiller:** Contractor Support
- **Louise Camalier:** Statistical Support

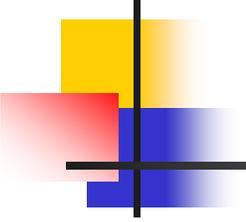


Technology Transfer and Training

Technology Transfer Topics

- Background – why monitoring is needed
- Individual methods and principles of operation
- Statistical evaluations (LDL, precision, bias, etc.)
- Hardware considerations and technical issues
- Quality Assurance
- Information Technology
 - Data management and digital data transfer considerations

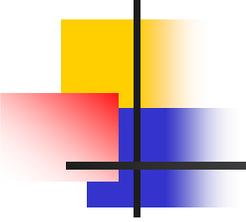




Quality Assurance

- Data Quality Objectives (DQOs)
 - Planned for completion Fall 2005
- Data Quality Indicators (DQIs)
 - Precision, bias, sensitivity, completeness, comparability
- Measurement Quality Objectives (MQOs)
 - Includes DQIs and method specific Quality Control
- Redbook revisions (in progress)
 - Data validation templates, QC and QA
- National Performance Evaluation Program (NPEP)





Next Steps

- Products and deliverables → SLTs
- Pilot monitoring network of ~22 sites
 - Sites to begin implementation during 2005
- Technology transfer
 - Workshop under development for spring/summer 2005

