

THE DEC POLICY SYSTEM



New York State
Department of Environmental Conservation

PROGRAM POLICY

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DAR-2

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Air Guide-19

Title: Oversight of Private Air Monitoring Networks

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Abstract:

This policy provides the procedures to be followed for the oversight of privately operated air quality monitoring networks.

Related References:

All applicable rules, regulations and requirements are listed in DAR-2.

I. PURPOSE

This policy is written to delineate the oversight procedures required by DEC for private and monitoring networks. The data from networks which do not follow the procedures set forth in this policy will not be accepted by DEC for use in permitting or compliance determinations.

II. BACKGROUND

In order to insure that private air monitoring networks are operated within DEC guidelines, this policy outlines the oversight role of DAR.

III. POLICY

This policy is written to assist operators of private air monitoring networks to insure that data from these networks will be accepted by DEC for use in permitting or compliance determination.

IV. RESPONSIBILITY

Operators of private air monitoring networks are responsible for insuring that these networks function under the applicable guidelines

V. PROCEDURE

This policy was previously issued as Air Guide-19, dated June 14, 1989. No changes have been made to that document since that time.

OVERSIGHT OF PRIVATE AND MONITORING NETWORKS

Introduction

This document describes the procedures to be followed for the oversight of privately operated air quality monitoring networks. Oversight procedures for networks required by DEC are different than procedures for informational networks. The data from networks which do not follow the procedures set forth below will not be accepted by DEC for use in permitting or compliance determination.

The process of oversight is separated into the following elements:

- Deciding whether air quality and/or meteorological monitoring is necessary
- Network design and installation
- Network operation
- Data transmission and receipt
- Quality assurance/quality control
- Data review
- Data reporting

For networks that are required by DEC, the Division of Air Resources will exercise an oversight role on each of the elements. For informational networks, oversight of some of the elements is optional except as noted in the following table:

| <u>Network Element</u> | <u>DAR Oversight</u> | |
|---------------------------------|----------------------|------------------------------|
| | <u>Reqd. Network</u> | <u>Informational Network</u> |
| Network design and installation | Yes | Yes |
| Network operation | Yes ⁽¹⁾ | No |
| Data transmission and receipt | Yes | Optional |
| QA/QC | Yes | Yes |
| Data review | Yes | Optional |
| Data reporting | Yes | Optional |

⁽¹⁾ There may be instances where DEC will operate the required network if required by the source owner.

The DAR conducts the oversight activities enumerated above to ensure that air quality data submitted to DEC is property representative and of verifiable quality.

Costs

The cost of oversight of required networks will be reimbursed to DEC by the source owner. The following information shall be included in any permit condition. Commissioner's Order, or other agreement between DEC and a source owner which required air monitoring:

“Air monitoring oversight will include the following elements: network design and installation, network operation, data transmission and receipt, quality assurance/quality control, data review and data reporting. An account to fund the air monitoring oversight will be established with the Department. Costs to be covered by this fund include direct personal service costs and non personal service costs including supplies, contractual services, equipment and travel.”

“The sum of _____ shall be submitted to the Department within thirty (30) days of the effective date of this permit/order/agreement). This sum is based on an estimate of annual costs and is subject to quarterly revision. The account balance must be sufficient to meet the next nine (9) months in anticipated expenses.”

“Within thirty (30) days of written notice by the Department that a payment is due, payment shall be forwarded to the Department.”

“At the end of the monitoring oversight, the unexpended balance, including interest will be returned.”

Oversight Tasks

The following tasks must be completed to provide oversight:

Deciding Whether Air Quality and/or Meteorological Monitoring is Necessary

DEC may require that air quality monitoring be conducted in one or more of the following instances:

1. Where an ambient air quality impact analysis has defined potential impacts to approach or exceed the levels established in the Ambient Air Quality Standard(s) (AAQS) or Prevention of Significant Deterioration (PSD) increments.
2. Where ambient air quality background levels are not adequately defined by current available monitoring. An example of which, is the establishment of baseline ambient air quality levels for PSD.
3. Where observations of the environment indicate that health and welfare impacts are occurring.
4. Where a major new source is constructed which will have a potential emission rate(s) of a criteria contaminant(s) greatly exceeding (an order of magnitude) that is considered by EPA to be significant (40 CFR 52.23).

In general, any monitoring plan should address items 1-7 including the following topics:

1. Monitoring siting - the location of the monitor should meet federal requirement and/or be suited to the purpose for which the sampling is being conducted.
2. Instrumentation - use of EPA designated reference or equivalent methods and instruments is mandatory. These instruments must be operated in a manner consistent with the EPA approved operator's manual.

3. Data storage, retrieval and reporting - the data acquisition and reporting system must be suitable to the data being collected. Data retrieval should exceed 90% for short term and 75% for long term monitoring.
4. Quality assurance - a written QA protocol must exist and must be followed. This document will detail all aspects of the data collection system (i.e., operation and control charts, maintenance, calibration, accuracy auditing, precision checks, data editing and reporting QA reports including data completeness, and data precision and accuracy).

Toxic Monitoring Quality Assurance

Monitoring for toxic substances is particularly demanding since there exists no EPA designated reference or equivalent methods for these substances. The choice of type and location of sampling equipment requires a knowledge of the source characteristics, atmospheric chemistry and diffusion patterns of the area in question. A detailed QA document is particularly important for toxics monitoring since many of the sampling and analytical methods are not standardized as they are for criteria pollutants.

Every quality assurance plan should contain the following elements:

1. Policy and objectives - a statement of commitment to an effective quality assurance effort and specific quality assurance goals that will be pursued.
2. Methodology - specific physical and chemical methods that will be employed to collect and analyze toxic substances.
3. Sample Handling - method of transporting sample from field to laboratory and procedures taken to ensure integrity of samples. This section should also include chain of custody procedures to document correct handling samples.
4. Audits - flow checks of sample handling equipment. Use of spiked samples to check accuracy of laboratory analyzer and system audits to determine overall integrity of sampling network.
5. Instrument operating techniques - specific operating procedures employed in maintaining instrumentation.
6. QA data reporting methods - way in which the QA data is used and format by which it will be reported.

Meteorological monitoring may be required alone or in conjunction with air quality monitoring if current available meteorological data do not adequately characterize the dispersion characteristics of the site such as to allow: 1) meteorological interpretation of air quality measurements being taken and/or 2) assessment of air quality impact by acceptable dispersion modeling demonstrating compliance with AAQS or PSD increments.

Network Design and Installation

Initially, the applicant must be advised on the type, amount, location, and duration of monitoring. Then the applicant will submit a detailed written plan containing all the technical specifics of the monitoring program. This document will be reviewed for completeness and correctness and either accepted or returned for modification. Division staff will do a site visit to confirm the appropriateness of the station locations prior to selection of sites and installation of equipment.

Once accepted, the applicant will use this written plan to establish its network. In no instance does the Department propose to purchase instrumentation, negotiate for sites, or install equipment. When the network is established, division staff will make a final site inspection.

Network Operation

The networks will be operated and maintained by either the source owner or his consultant. In some unusual cases, the Department may operate the network if mutually agreeable. Operation of all pollutant and meteorological instruments shall be in accordance with manufacturers' operating instructions and the approved QA/QC plan and shall meet EPA reference or equivalent method requirements as applicable.

Data Transmission and Receipt

When continuous instrumentation is operated, data must be electronically transmitted to the Department's data reception facility in appropriate format. Average hourly data will be transmitted at least once per day. If data are transmitted directly from a field telemetry to a central computer by telephone, DEC must be provided with the phone number of the telemetry to allow access to the data at any time. If the data is transmitted from a field telemetry to a central computer by other than telephone, DEC must be able to access the data in the computer at any time. Informational networks must transmit data in appropriate form as discussed in the Data Reporting Section or may choose to electronically transmit the data. For those special cases where the sampling is performed by the Department, data will be made available to transmission to the source owner. The potential network operator should be advised to contact Bureau of Technical Assistance well in advance to obtain data transmission protocol.

When manual instrumentation is operated, data shall be transmitted to the Department monthly.

Quality Assurance/Quality Control

Quality assurance/quality control shall be maintained in accordance with the EPA and equipment manufacturers' requirements and the Department's quality assurance requirements. A monitoring plan must be developed by the network operator and submitted to the Department in accordance with the Department's "Guidelines for Air Monitoring Systems in New York State". This guideline is included as Appendix A to this policy. Division staff will conduct quarterly performance audits and annual system audits. These audits will be reported to the respective network operators. The network operating staff will perform zeros, spans, precision checks, and multipoint audits as detailed in the approved QA plan.

When manual monitoring instruments are used, DEC may use one or more of the following QA/QC cross checks:

- Independently analyze split samples on a periodic basis.
- Send “unknown” spiked samples to be analyzed in the network operator’s laboratory.
- Require the network operator to have a system audit performed by an independent consultant.
- Other actions that are appropriate to the individual situation such as flow audits.

Data Review

The goal of data review is to assure that only data that is definable in terms of accuracy and precision and is within the accuracy and precision limits of DEC is accepted and entered into the DEC data record. To accomplish this, DEC staff will review all transmitted data each working day. A routine scheduled telephone contact will be made with the designated private monitoring network manager. At that time, DEC will request the result of weekly zero/span checks, precision checks and audits and will discuss any data abnormalities and missing data. Data review criteria will be the same as used for DEC operated monitors. DEC will review only electronically transmitted data which is received in a timely manner. In the event of a data transmission failure, DEC will accept backup hard copy data for a short time. It is incumbent on the network operator to determine when data is missing and supply that data to DEC within seven (7) days. Network operators are required to record data on strip charts as backup for the electronic data acquisition system. The charts will be made available for review when requested. DEC reserves the right of final determination of the acceptability of all data, although every effort will be made to resolve conflicts over data acceptability.

These regulations define USEPA acceptable measurement techniques and data handling procedures.

In many instances the references listed in the above regulations will provide more detail and background, including discussions on how to properly site air monitors for special purpose monitoring. As in the past, the State Department of Environmental Conservation is available for limited consultation if a written monitoring plan is submitted.

Manual Instruments

Data from manual sampling will be reviewed monthly.

Data Reporting

The reporting of edited and accurate data is the final step in the oversight of the air monitoring network. For required networks, the Department will prepare quarterly reports containing air quality data and quality assurance information. For other networks semi-annual reports shall be prepared by the source owner in a format acceptable to the Department. As a minimum, all reports shall include ambient and meteorological data, a quality assurance section, a data summary section and a standards compliance section.

APPENDIX A

3.2.0 Guidelines for Air Monitoring systems in New York State

A number of non-governmental and governmental agencies have established air monitoring systems which are separate from the State Air Monitoring Network. The state has, in the past, issued detailed guidelines and provided consultation for, and review of, proposed air monitoring efforts. Recent federal regulations and the changing state-of-the-art of air pollution measurement have obsoleted the guidelines issued by the State on August 21, 1975.

Most of the technical requirements are now codified in the following federal regulations and references:

1. 40 CFR 50, EPA Regulations on National Primary and Secondary Ambient Air Quality Standards
2. 40 CFR 51, EPA Regulations on Preparation of Implementation Plans
3. 40 CFR 53, EPA Regulation on Ambient Air Monitoring and Equivalent Methods
4. 40 CFR 58, EPA Ambient Air Quality Surveillance Regulations
5. List of Designated Reference and Equivalent Methods as periodically updated by USEPA. EMSL, RTP, N.C. 27711
6. Quality Assurance Handbook for Air Pollution Measurement Systems Vols. I, II, III, IV (as revised)
Volume I, Principles, EPA-600/9-76-005
Volume II, Ambient Air Specific Methods, EPA-600/4-77-027a
Volume III, Stationary Source Specific Methods, EPA-600/4-77-027b
Volume IV, Meteorological Measurements, EPA-600-4-82-060
7. Ambient Monitoring guidelines for Prevention of Significant Deterioration, EPA-450/4-80-012
8. The Quality Assurance Bibliography, EPA-600/4-80-009, February 1980