

1.0.1 POLICY AND OBJECTIVES

1.0.1.1 POLICY - It is the policy of the Air Resources Board (ARB) to support and conduct appropriate quality assurance activities to ensure that the objectives stated below are met.

1.0.1.2 OBJECTIVES - The overall objectives of the ARB Quality Assurance Program are:

1. To provide accurate and precise data to meet the ARB's monitoring objectives by controlling air monitoring through the implementation of procedures, policies, specifications, standards, and corrective measures;
2. To minimize loss of air quality data due to malfunctions; and
3. To assess the quality of the air monitoring data to provide representative and comparable data of known precision and accuracy.

NOTE: Data quality objectives have not yet been established for non-criteria pollutants.

Air quality data accuracy and precision estimates are calculated and reported each calendar quarter and each calendar year in accordance with 40 CFR Part 58 regulations. For the ARB, objectives for criteria pollutants for a calendar year are:

1. Accuracy - Based on ARB performance audits, air quality data shall be within ± 15 percent of true value, with the exception of the PM10 flow data, which shall be within ± 10 percent of the true value. Photochemical Assessment Monitoring Stations (PAMS) and Motor Vehicle performance audits shall be within ± 20 percent for each component. For NOX analyzers, the converter efficiency shall be equal to or greater than 96.0 percent. Quarterly reported 95 percent probability limits for the reporting organization shall be less than 20 percent.
2. Precision - Based on ARB checks performed at least five days/week, air quality precision data shall be within ± 15 percent of true value. Quarterly reported 95 percent probability limits for the reporting organization shall be less than 20 percent.

3. Data Capture - In addition, the ARB shall strive to obtain at least 85 percent data capture, while maintaining the precision and accuracy objectives. Data capture (DC) for a single pollutant at a single site (SS) is defined as:

$$\%DC = \frac{(\text{total number of hours possible}) - (\text{hours lost to calibration}) - (\text{hours lost to downtime})}{\text{total number of hours possible}} \times 100$$

The relevant time periods (day, month, quarter, year) for determining data completeness are covered in Table 1.0.1.1.

Data capture for the reporting organization* (RO) for a single pollutant shall be defined as:

$$\%DC_{RO} = \frac{1}{n} \sum_{i=1}^n \%DC_{SSi}$$

Where n = the number of stations reporting

4. Representativeness - Spatial and temporal data representativeness shall be achieved by assuring that criteria are met for station siting as defined in federal regulations, and that air quality measurements and statistics are compiled as listed in Table 1.0.1.1. In general, statistics are considered representative if 75 percent of the possible short-term values are included and are distributed throughout the entire statistical time period.
5. Completeness- Data for a site will be complete if there are representative data (as determined in accordance with Title 17, California Code of Regulations, Section 70306, Appendix 1) during the required hours of the day during the required months for the required years. The purpose of these data completeness criteria is to specify the minimum data necessary to assure that sampling occurred at times when a violation is most likely to occur.
6. Comparability- Data comparability shall be achieved through the use of uniform procedures and Environmental Protection Agency designated reference or equivalent methods Statewide.

* Reporting organizations are defined and designated in Section 1.0.2.

Table 1.0.1.1 Data Completeness Criteria
ARB Air Monitoring Quality Assurance Manual,
Volume I (Quality Assurance Plan)
**CRITERIA FOR REPRESENTATIVENESS OF AIR QUALITY MEASUREMENTS AND
STATISTICS FOR CRITERIA POLLUTANTS***

Representative Calendar Statistic	Sampling Time Period	Basis of Statistic of Requirement	Number of Representative Periods Required
Year	Any		Four representative calendar quarters
Quarter	24- Hour	Based on daily sample	Three representative months
	Less than 24- Hour	Based on daily statistic	69 or more representative calendar days
		Based on hourly samples	1643 or more hours
Month	24- Hour	Based on one sample every 6 days	4 or more 24-hour samples
		Based on one sample every 3 days	8 or more 24-hour samples
	Less than 24- Hour	Based on daily statistic	23 or more representative calendar days
		Based on hourly samples	548 or more hours
		Based on all 2-hour samples	274 or more 2-hour samples
		Based on all 3-hour samples	183 or more 3-hour samples
Day	1- Hour		6 or more hours in each 1/3 day (hours 0 through 7, 8 through 15, 16 through 23) and missing no more than 2 consecutive hourly samples
		Based on all 2-hour samples	9 or more samples
		Based on all 3-hour samples	6 or more samples
		Based on daily sample	22 but no more than 26 hours of sampling

Mean of N Hour Period	N	Number of Samples Needed
	24	18 or more hourly samples
	8	6 or more hourly samples
	6	5 or more hourly samples
	4	3 hourly samples
	3	3 hourly samples
	2	2 hourly samples
	1	30 minutes or more of continuous sampling**

* Refer to Code of Federal Regulations, Title 40, Protection of the Environment, Part 58, Ambient Air Quality Surveillance (July 1996) for details. Representativeness criteria have not yet been established for measurement of acid deposition, toxic pollutants, and meteorological parameters. Applicable to gaseous and particulate criteria pollutants.

** Refer to Air Monitoring Quality Assurance, Volume II, Standard Operating Procedures for Air Quality Monitoring, California Air Resources Board, April 2000, Section 2.0.2.7