BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Manual of Procedures

Volume IV

Source Test Policy and Procedures

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(Adopted January 20, 1982)

Volume IV

Source Test Policy And Procedures
Part 1

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1. Source Test Policy

1.1 Introduction

The purpose of this volume of the Manual of Procedures is to advise persons subject to the Regulations of the Bay Area Air Quality Management District of the policy of the Air Pollution Control Officer relative to source testing and to promulgate procedures used to determine compliance with the regulations of this District.

Source Test methodology is a state of the art practice and therefore occasional changes will be made to this volume. A form has been provided in the front of this volume for those who wish to receive these periodic changes.

1.2 General Provisions:

The contents of this Manual, and its subsequent changes, are subject to approval by the Board of Directors of this District, and therefore, become law as provided for in the Health and Safety Code of the Sate of California.

1.2.1 Definitions:

The definitions used herein are consistent with those used in the regulations of the District. The definitions of type "A" and "B" sample points are expanded for clarification.

1.2.2 Representative Sampling:

The overriding factor for all source tests shall be that every reasonable effort must be made to obtain samples that are truly representative of the source being tested for that given set of precise variables. In all cases accepted engineering practice shall be followed for all test procedures.

1.2.3 Sampling Points:

The sampling point is the location on a source or its related control equipment where samples are taken. For purposes of determining compliance with District Regulations, samples taken at a sampling point shall be deemed identical to those at the point of emission to the atmosphere. The Regulations address themselves to type "A" and "B" emission points.

The primary consideration for locating a sample port shall be that the sample port location accurately represents the nature, extent, quantity and

degree of the contaminant at the emissions point. Ports shall be located, if reasonably possible, at a type "A" sample point.

1.2.3.1 Sampling at type "A" emissions points

A type "A" sample point shall be located in a smooth stack at least eight stack diameters downstream of any bends, inlets, constriction, flow altering device or change of area or geometry and two diameters upstream of the stack exit or other flow disturbance. For a non-circular duct, the equivalent diameter will be determined from the following equation:

$$\text{Equivalent Diameter} = 2\left(\frac{\text{length} \times \text{width}}{\text{length} + \text{width}}\right)$$

1.2.3.2 Sampling at type "B" emission Points

A type "B" sample point means any sample point not qualifying as a type "A" emission point.

The quantity of emission from a type "B "emission point shall be the quantity of emission computed by multiplying the quantity of emission from a test area by the proportion which the whole area bears to such a test area. Such test area may be taken as the cross sectional area of the inlet to a sample probe. The emission from any test area of a type "B" emission point shall be deemed to be representative in every respect of the emissions from the entire area. Emissions from the test area may be measured at the place and by the procedure which result in the highest measurement of air contaminants.

1.2.4 Sampling Facilities

Section 1-501 of Regulation 1 places the burden of providing proper sampling facilities on the person responsible for the emission. The following are normally considered necessary:

1.2.4.1 Sample Ports

For circular ducts, at least two ports 90 degrees apart on a plane perpendicular to the longitudinal axis of the duct shall be installed at the sample point. For circular ducts, ten feet in diameter or greater, four ports 90 degrees apart on a plane perpendicular to the longitudinal axis shall be installed.

For non circular ducts, access shall be provided to the entire cross-sectional area of the duct.

Each port, where possible, shall be a nominal three inch diameter pipe with external tapered pipe threads.

Ports shall be installed flush with the interior stack wall.

Gate valves should be installed on sample ports only when extreme stack conditions or the presence of hazardous materials require such devices for safety considerations.

Questions concerning locations should be referred to the Chief of Source Test.

1.2.4.2 Sampling Area Clearance

There shall be sufficient clearance in the vicinity of each test port to allow the insertion of a probe equal in length to the stack diameter.

1.2.4.3 Safety

Sampling facilities, access ways and platforms shall meet all applicable OSHA requirements for industrial and personal safety and conform to any other relevant safety guidelines.

1.2.5 Quality Assurance

It is absolutely essential in any testing program that a quality assurance program be established and maintained. The provisions of Air Monitoring Quality Assurance, Volume IV, Quality Assurance in the Testing of Stationary Sources, California State Air Resources Board shall apply.

1.2.5.1 Instrumental Methods

Specifications and procedures for zero and span checks on analytical instruments are in each test procedure. Where available, calibration gases shall be traceable to National Bureau of Standards reference materials. Confirmation of their values shall be made by reference procedures at interval of not more than three months.

1.2.5.2 Recorders

Analog chart recorders must be compatible with instrument output.

1.2.5.3 Manual Methods

Sampling shall be conducted to compensate, where reasonably possible, for significant stratification and non-homogeneity in the gas stream, so that the sample of the gas stream approaches a representative sample.

All sampling lines shall be checked for the presence of condensation. If condensation has occurred, adjustments in

procedure shall be made either to prevent it or to compensate for the condensed material in the sample line.

Sufficient test data and notes shall be recorded at the time of the test by the personnel conducting the sampling to permit the determination of emissions and evaluation of results at a later date.

All sampling lines shall be leak-free. The distance between the sample gas inlet and the sample collection or analytical device shall be as short as feasible. The sampling lines shall be composed of inert materials. The sampling lines shall be purged thoroughly with sample gas prior to the taking of the sample.

Sampling equipment which comes in contact with the collected sample shall not alter the composition, and shall be used in such a manner that significant leaks can be detected.

1.3 Alternate Methods

EPA methods may be used alternately without prior approval. Alternate methods may be approved at the discretion of the Chief of Source Test. The burden of proof of equivalency is on the person seeking alternate status. Such alternate status may be granted on a "one-time only" basis. All such requests and supporting documentation shall be made in writing.

1.4 NSPS and NESHAPS Testing

The Bay Area Air Quality Management District has been delegated authority by the U. S. Environmental Protection Agency (EPA) to enforce the New Source Performance Standard (NSPS) and the National Emission Standards for Hazardous Air Pollutants (NESHAPS).

EPA requires that all testing for these standards use its methods unless alternate or equivalent stature to it's methods has been granted. The District has been granted alternate status for the instrumental SO_2 and NO_X procedures, ST-19A and ST-13A and the integrated sulfur oxides procedure, ST-20. EPA methods are published in Title 40 of Code of Federal Regulations, Part 60, and are available form the U. S. Government Printing Office.

1.5 Tests Conducted by Other Persons

Any person who conducts a source test for the purpose of furnishing data to the Air Pollution Control Officer is subject tot he following conditions

1.5.1 Notifications

The Chief of Source Test shall be notified at least one week prior to the date the test is to be conducted. Source Test Engineers from the District shall observe any such tests as deemed necessary.

1.5.2 Methodology

The procedures set forth in this volume shall be adhered to in any test except as provided in paragraph 1.3.

1.5.3 Data Presentation

Data shall be collected and presented in the format of the forms shown herein. All calculations shall be included and clearly identified.

1.5.4 Process Information

Where applicable, pertinent process data including rates during the test and maximum capacities shall be included in the data. Confidential information shall be clearly marked as such.

1.5.5 Test Review

Tests furnished the District shall be sent to the attention of the Source Test Section for review and disposition.

1.6 Confidentiality of Process Information

Process information is a necessary part of any source test in that the test data represents those process conditions at the time of the test.

Source Test records are public information. However, proprietary information is not. Information of a confidential nature should be clearly labeled to insure proper treatment.

1.7 Applicability

Each test procedure is applicable to a specific regulation. The designation appears in the upper left hand corner of the procedure.