SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

CHAPTER I

INTRODUCTION

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DEFINITION AND PURPOSE

An air pollution control program aims to decrease the amount of air contaminants that result from human activities. Measuring the release of these contaminants, by type and quantity, is an essential step in a successful control program.

Accurate measurement of an air contaminant can be elusive. Since the method of collection can alter the sample and affect the amount of contaminant measured, the test method often "defines" the contaminant being measured. Thus the test method used to determine rule compliance must be the same test method used to develop the rules.

Methods and procedures described in this manual are concerned primarily with the measurements of emissions from stationary sources. They are used by the South Coast Air Quality Management District to determine compliance with emission limits for stationary sources. They are based on many years of testing experience and reflect improvement in both procedure and equipment. This does not mean that no other acceptable test methods exist. Use of methods not contained in this manual requires approval of the Executive Officer.

New test equipment and techniques are continually being developed to improve reliability and accuracy and to reduce laboratory analysis effort. Since this will result in ongoing changes in test methods and procedures, this manual has been published in loose-leaf form for easy updating.

USES OF DATA

Data obtained from source emission tests may be used in several phases of an air pollution control program.

Of primary concern to most government control agencies is the determination of compliance with emission limitations. In many cases, compliance can be demonstrated only by testing the emissions source.

Information from source tests is a valuable guide for decreasing emissions. This information can be used to select proper control equipment, determine the efficiency of the control equipment by testing gases entering and leaving the control equipment, and determine equipment or process modifications needed to comply with Rules and Regulations.

Results of source testing also are used to develop emission inventories. Test analyses can identify the predominant sources of specific air contaminants. An evaluation of these analyses with studies of area-wide emissions often demonstrates the need for new or revised control regulations to improve air quality.

BASIC REQUIREMENTS

The prime objective in testing an air pollution source is to obtain reliable and representative data on the composition of the effluent gases and the rate of emission into the atmosphere. A source test has the following basic requirements:

1. Samples collected for analysis must be representative of the gas stream being sampled.

2. The gas stream being sampled must be either the total or a known portion of the emissions from the source.

3. The volume of test sample withdrawn must be accurately measured to determine the concentration of the analyzed constituents.

4. The gas flow from the source must be accurately measured to determine the emission rates of the various constituents.

5. Analytical methods must give results consistent with the "definition" of the contaminant being measured.

This manual describes how to meet these requirements and also discusses other factors to be considered in performing a successful source test.

OVERALL TEST PROCEDURES

A source test has a series of tasks, from initial planning to the

final report. The scope of these tasks depends on the magnitude and complexity of the source test. Relatively routine tests require less time and effort than tests on new sources or processes that call for innovative methods. Since over familiarity can cause errors or disregard for subtle changes, several basic tasks should be carefully conducted in a stepwise manner on all source tests:

1. Identify the need and background for the source test.

2. Inspect the source for physical test requirements.

3. Plan and select test procedures to be used.

4. Schedule the test.

5. Prepare and calibrate test equipment.

6. Measure flow rate.

7. Collect samples.

8. Process and analyze samples.

9. Calculate emission rates from field and laboratory data.

10. Prepare report.