

APPENDIX A-1

**PREPARATION OF
PENNSYLVANIA POINT SOURCE INVENTORIES**

**Bureau of Air Quality
Department of Environmental Protection
Division of Air Information**

A. Introduction

This document describes the methodology used by the Commonwealth of Pennsylvania to develop inventories of air pollutants emitted as required by the U. S. Environmental Protection Agency's Consolidated Emission Reporting Rule (CERR) (40 CFR Part 51, Subpart A). The 2002 inventory will also be the base year inventory for State Implementation Plan (SIP) revision development for PM_{2.5}, 8-hour ozone and regional haze.

The CERR requires the Commonwealth to report actual emissions for the following pollutants: sulfur oxides, volatile organic compounds (VOC), nitrogen oxides, carbon monoxide, lead and lead compounds, primary PM_{2.5}, primary PM₁₀, and ammonia (40 CFR 51.15(a)). The CERR lists primary PM as an optional pollutant for reporting purposes. The CERR does not require the submission of hazardous air pollutant emissions data.

Emissions from point sources are reported for 65 of the Commonwealth's 67 counties. Point source emissions from sources located in Allegheny County are reported directly to EPA by the Allegheny County Health Department. Point source emissions from sources located in Philadelphia Counties are reported directly by the Philadelphia County Health Department, Air Management Services.

The annual emission inventory must be temporally resolved to provide seasonal data for air quality modeling purposes. Temporal adjustments to the annual inventory are made because of seasonal differences in the rate of emissions or activity, or to apportion emissions to a particular season or day. For the 8-hour ozone National Ambient Air Quality Standard (NAAQS) emissions inventory, VOC, NO_x, and CO emissions are reported as actual annual and actual summer weekday. Summer weekday emissions are defined as an average day's emissions for a typical summer day during the ozone season. For the PM_{2.5} NAAQS and regional haze rule emission inventories, direct emissions (including condensibles) of PM₁₀ and PM_{2.5}, and the precursor VOC, NO_x, SO_x, and NH₃ are reported as actual annual data.

For the ozone SIP inventories, rule effectiveness and rule penetration are applied. Rule effectiveness reflects the ability of a regulatory program to achieve all the emission reductions that could have been achieved by full compliance with the applicable regulations at all sources at all times. Rule penetration is an estimate of the extent to which a regulation covers emissions from an area source category for a specified control area. Rule penetration is applied to the control efficiency for a regulation to account for less than 100 percent coverage of the emissions for an area source category. Because the inventory was developed prior to EPA's issuance of the November, 2005 revision to the rule effectiveness guidance, Commonwealth followed the previous EPA guidance and assumed an 80% rule effectiveness for applicable sources unless specified to the contrary.

B. Point Sources

A point source is a stationary, identifiable source of air pollution that usually emits the air pollutants through a stack or vent. A facility contains one or more point sources and is not limited to industrial facilities. Examples of an air pollution facility are steel mills, oil refineries, electric generating facilities, and coal preparation plants. A non-industrial facility may contain a large boiler or other air pollution source.

The data for the 2002 and 2004 sulfur oxides, volatile organic compounds (VOC), nitrogen oxides, carbon monoxide, lead and lead compounds, primary PM_{2.5}, primary PM₁₀, and ammonia point source emission inventory is derived from the Pennsylvania Air Information Management System (AIMS). AIMS sources are identified and inventoried by Pennsylvania regional air quality offices through permitting operations and regional and central office field inspections and surveys. The AIMS system is designed to include all point source emission categories as required by the CERR.

The AIMS database is linked to the Department's eFACTS (Environment Facility, Application, Compliance Tracking System) database. This allows Department-wide sharing of data for all program areas. In addition, the public is provided better access to the information through the Department's Internet website.

The point source inventories for Allegheny and Philadelphia Counties will be prepared by the Allegheny County Health Department and the Philadelphia County Health Department, respectively. The two county agencies will submit their point source emission inventories directly to EPA's National Emission Inventory as required by the CERR. The county agencies will also provide their point source data to the Department in order that effective State Implementation Plan preparation may be undertaken.

Paper Submittal of Inventory Data

Annually, facilities complete worksheets for each source that operated and emitted pollutants for the year. Data required for processes include monthly material throughputs, days and weeks the sources operated, material processed, maximum throughput per hour, and correct Source Classification Code (SCC) number. In addition to these process data, combustion unit data must include fuel used, fuel characteristics such as sulfur content and Btu. For each source, an estimate of total criteria and hazardous pollutant emissions must be supplied, along with the estimation method. If emissions are estimated using anything other than emissions factors from SCC codes, methodology must be provided. In addition to emissions estimates for each piece of equipment, site emissions are required. If there is equipment that is too small for individual reporting, emissions from this equipment will be reflected in the site total.

After the facilities provide these data, DEP reviewers input the data into the AIMS system. At this time, the system may create an error message if emissions are significantly different from those expected, based upon emissions factors and throughputs. At this point, the reviewer must determine if the estimate is accurate and may either override the error message or contact the facility for corrections, which are then input by the reviewer.

After all data are entered, reports are generated to show comparisons between emissions years. If there are significant differences, reviewers must determine why emissions are different. Explanations may include changes in production or change in material input. Once all discrepancies have been corrected or explained, the data are accepted, and the inventory is considered complete.

Instructions Available

DEP has developed instructions for companies to complete the annual inventory submission, which describes the database fields in the AIMS/eFACTS system. This document is revised annually to reflect any new guidance for the applicable reporting year.

Information on the emission inventory reporting system, including the instructions, can be found at: www.dep.state.pa.us/dep/deputate/airwaste/aq/emission/Emission_Inventory.htm