United States
Environmental Protection
Agency

Office of Air Quality
Planning and Standards
Research Triangle Park NC 27711

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November 1980

Air

SOTDAT
Source Test Data System Information

EPA-450/4-80-025

SOTDAT
Source Test Data System Information

National Air Data Branch
Monitoring and Data Analysis Division

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air, Noise, and Radiation
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

November 1980

This report is issued by the Environmental Protection Agency to report technical data of interest to a limited number of readers. Copies are available from the Request and Information Section, National Air Data Branch (MD-14) [Commercial telephone (919)541-5395; FTS 629-5395] or the Library Services Office (MD-35) [Commercial telephone (919)541-2777; FTS 629-2777], U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711.

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Introduction

The Source Test Data (SOTDAT) System is an automated data processing system used by the U.S. Environmental Protection Agency to store data from testing and analysis of emissions from stationary sources of air pollution. SOTDAT is a part of the comprehensive Aerometric and Emissions Reporting System (AEROS), described in detail in a booklet, "Aerometric and Emissions Reporting System," which is available on request.

Source test data are collected on an ongoing basis by the National Air Data Branch (NADB), Monitoring and Data Analysis Division, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. EPA Order 7600.2A requires submission of coded SOTDAT Forms for all source tests conducted by EPA and its contractors. Other sources include state and local air pollution control agencies, control equipment manufacturers, engineering consultants and installations identified through the National Emissions Data System (NEDS). Coded forms are inspected manually by NADB personnel prior to keypunching, computerized editing and verification, and storage on the Univac 1110 computer at EPA's National Computer Center at Research Triangle Park, North Carolina.

This booklet is designed for persons who are not familiar with SOTDAT, to provide a description of the system and examples of the computerized SOTDAT reports that are available upon request. To meet these objectives, this booklet includes: (1) an overview of the data contained in SOTDAT, (2) descriptions of related publications, (3) a description of procedures for requesting SOTDAT data and (4) a description of SOTDAT report capabilities and examples of available computerized report formats. A list of additional references is provided for background information.

Overview of the Source Test Data System

General Description

The Source Test Data (SOTDAT) System is a computerized data handling system that accepts, stores and reports information from emissions tests performed on sources of air pollution. The system contains data on many different pollutants, but the largest volume of data is for the five original EPA "criteria" pollutants (particulates, sulfur dioxide, carbon monoxide, nitrogen oxides and hydrocarbons). Special capabilities for storage of results of trace element analyses and particle sizing tests were added as part of a general system enhancement in 1979.

Purposes

The primary purpose of SOTDAT is to make use of source test data in the development and revision of air pollutant emission factors. Empirical models can be used to predict emission factors and their characteristics for specific kinds of sources, based on SOTDAT emission, process, and fuel parameters reported from tests on such specific sources. These emission factors are essential components of other AEROS systems such as the National Emissions Data System (NEDS), in which they are used to estimate process emissions if actual measurements are not available. They are published for use by EPA and other groups in the Compilation of Air Pollutant Emission Factors (AP-42).

Additional possible applications of SOTDAT data include technical evaluation of process emissions and control equipment, prediction of control method costs, coordination of enforcement and surveillance activities, and planning and evaluation of source tests.

SOTDAT Organization and Content

The basic unit of organization in SOTDAT is the individual "source test," or sampling run. All information on a SOTDAT coding form, computerized data record or SOTDAT report pertains to a single sampling run (i.e., to the same sampling site and time period). Thus data from a typical source test report are entered into SOTDAT as the results of a number of sampling runs.

The data items in SOTDAT have been selected, defined and arranged so that sufficient information on each source test may be obtained to allow evaluation of each source test's applicability to a SOTDAT user's purpose, and to present that information in a logical format for both coder and user. Data items are grouped in various categories, which are maintained in the SOTDAT coding form, data record and computer outputs. These groups and individual data items are discussed under SOTDAT Data Form, below.

To assure usefulness of SOTDAT data for the main purposes of the system, test reports entered into SOTDAT have been required to include either uncontrolled or pre-control device tests or post-control device tests with substantial documentation of actual control device operation and efficiency. Data are not accepted from a number of test types, including tests involving experimental, developmental or obsolete processes, or testing methods, permanently-installed continuous in-stack monitors, compliance tests conducted for enforcement purposes, tests conducted under atypical or unusual conditions, and tests on most sources other than conventional stationary sources (e.g., mobile sources or fugitive emissions).

SOTDAT Data Form

Data for each source test to be entered into SOTDAT are recorded on the SOTDAT Data Form (Fig. 1). It has special sections designed specifically for results of trace element analysis and particle sizing. The first three pages of the form are used for all test types. The third page also accommodates trace element analysis results. The fourth and fifth pages provide space for additional sampling and results data related to particle size tests. The list below provides a description of the basic data groups used in the SOTDAT Data Form and maintained through the computerized data record and the SOTDAT Report format:

Card A. Source Identification: Includes the name and address of the plant where the test was performed and its NEDS geographic codes and plant and point (process) identification numbers.

Form Completed by _____

Organization _____

Date _____

SOTDAT DATA FORM

Form Number: 1 2 3 4 5 6

0 = zero Ø = Letter Ø
1 = one I = Letter I
2 = two Z = Letter Z

▲ is an implied decimal locator, not to be keypunched.

SC - heavy line under column number indicates code must be used.
- heavy line under field indicates required field.

A - SOURCE IDENTIFICATION

Card No.	1-State	2-County	3-AQCR	4-Plant	5-Point	6-Plant Name and Address	7-Zip Code
1							

B - PROCESS DATA

Card No.	1-Source Classification Code (SCC)	2-Standard Industrial Classification (SIC) Code	3-EPP Code	4-Process Design Capacity	5-Process Units	6-Process Rate This Run	7-Average Process Rate	8-Fuel Type	9-Fuel Feed Rate	10-Fuel Rate Units	11-Fuel Heat Content	12-Heat Content Units	Fuel Characteristics: 13-% Sulfur	14-% Ash	15-% N	16-Process Heat Rate	17-Heat Rate Units
1																	
2																	
3																	

C - TEST DESCRIPTION

Card No.	1-Report Number	2-Run Date: Yr	Mo	Day	3-Run Number	4-Reason Testing	5-Party Testing	6-Sponsoring Agency/Program	7-Source Testing Organization	8-Tester's Phone Number
1										

D - AMBIENT AND STACK DATA

Card No.	Ambient Conditions: 1-Temperature (°C)	2-Barom. Pressure (mm.Hg)	3-Relative Humidity (%)	4-Cross-Section Type	Stack/Duct Description: 5-Equivalent Diameter (m)	6-Cross-Sectional Area (m²)	7-Stack Height (m)	8-Angle with Vertical (Degrees)	Stack/Duct Gas Measurements: 9-Gas Temperature (°C)	10-Gas Pressure (mm.Hg.abs.)	11-Avg. Gas Velocity (m/sec)	12-Gas Flow Rate	13-Flow Rate Units	14-Gas Molecular Weight-Dry (gms/gm-mole)	Gas Composition (% by Volume): 15-% H_2O	16-% CO_2	17-% CO	18-% O_2	19-% N_2	20-% SO_2	21-Excess Air (%)
1																					

Figure 1. SOTDAT Data Form

SOTDAT DATA FORM (CONTINUED)

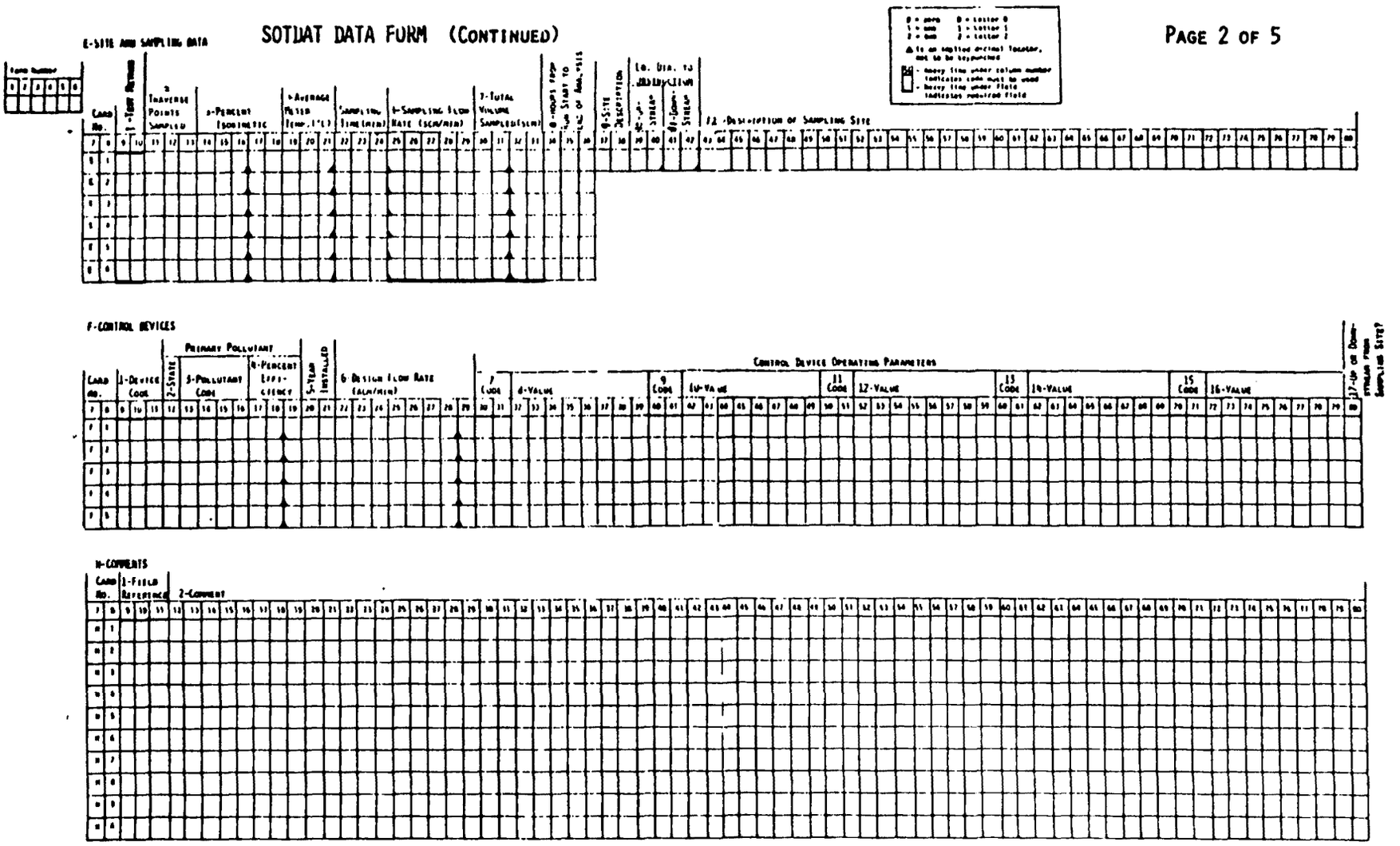

Figure 1. SOTDAT Data Form (continued)

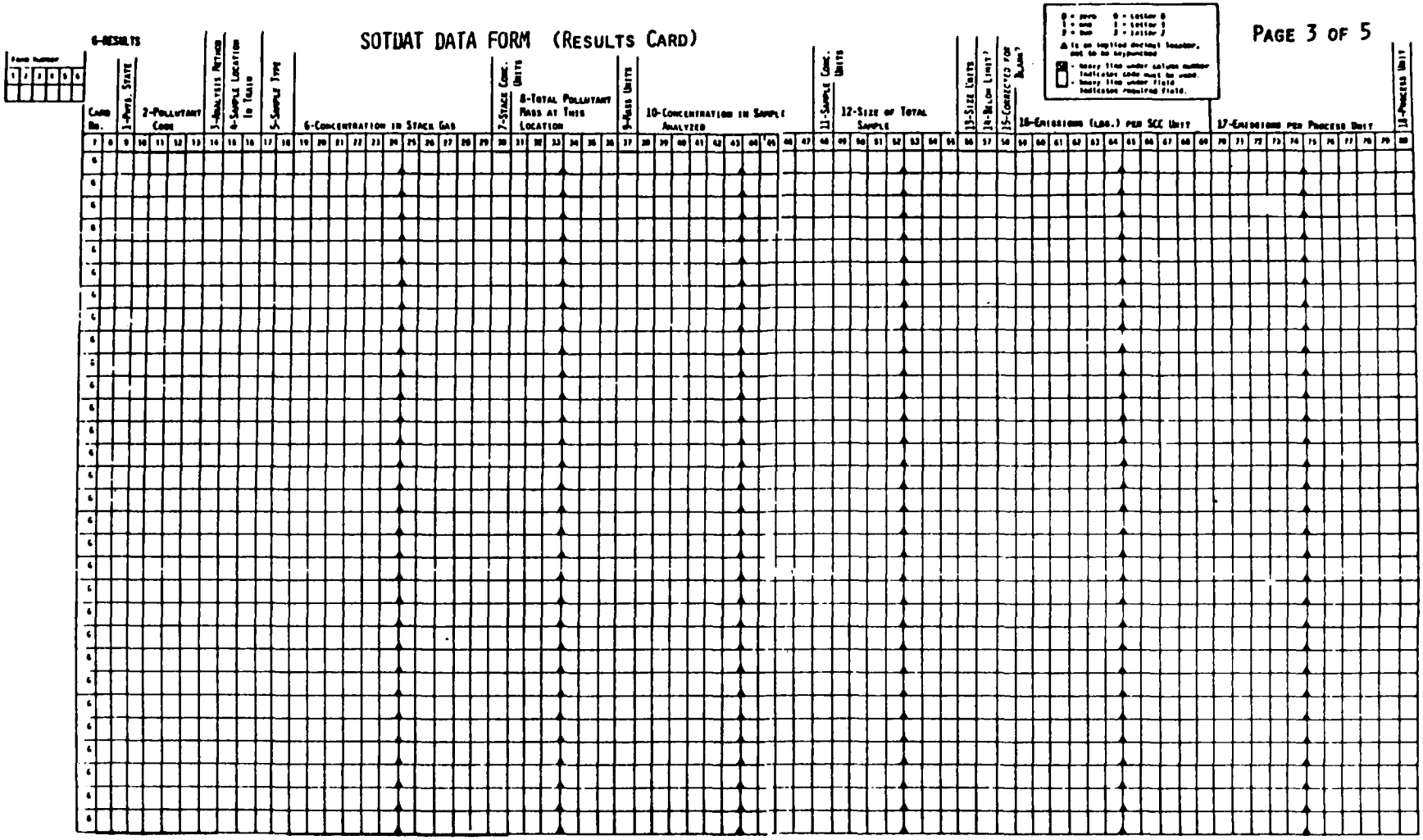

Figure 1. SOTDAT Data Form (continued)

SOTDAT DATA FORM (PARTICLE SIZE SAMPLING DATA)

0 = zero O = Letter O
1 = one I = Letter I
2 = two Z = Letter Z

▲ is an implied decimal locator, not to be keypunched.

SC - heavy line under column number indicates code must be used.
☐ - heavy line under field indicates required field.

J-MEASUREMENT INSTRUMENTATION

Form Number: 1 2 1 0 5 0

Card No.	1-Instrument Type	2-Particle Sizing Instrument Manufacturer Name	3-Instrument Model Number	Date Last Calibrated: 4-Pre-Impactor Yr	Mo	Day	5-Impactor Yr	Mo	Day
7 8	9 10	11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68	69 70	71 72	73 74	75 76	77 78	79 80
J	1								

K-SAMPLING TRAIN AND PROCEDURES

Card No.	1-Probe Length (m)	2-Nozzle Inside Diameter (cm)	3-Pre-Impactor Device?	4-Pre-Impactor Devices 1st	2nd	3rd	4th	5th	5-No. of Impactor Stages	6-Removable Substrates?	7-Substrate Coated?	8-In or Out of Stack?	9-Surfaces All Moist.?	10-Heated Bef. Insertion?	11-Heated After Insertion?	12-Thermally Insulated?	13-Temperature Measured?	14-In-Stack Equilibration Time (min.)	Card F Number	16-Sampling Train Code	17-Devices in Sampling Train (If not Method 5, list codes for devices in order starting at impactor exit): 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	17th	18th	19th
7 8	9 10	11 12 13 14 15	16	17 18	19 20	21 22	23 24	25 26	27 28	29	30	31	32	33	34	35	36	37 38 39	40	41 42	43 44	45 46	47 48	49 50	51 52	53 54	55 56	57 58	59 60	61 62	63 64	65 66	67 68	69 70	71 72	73 74	75 76	77 78	79 80
K	1																																							

L-MEASURED PARAMETERS AND RESULTS

Card No.	1-Total Pressure Drop Across Impactor (mm Hg)	2-Impactor Temperature (°C)	3-Sample Temperature (Impactor Exit, °C)	4-Total Catch, Pre Impactor Devices (mg)	5-Total Impactor Catch (mg)	6-Total Catch, Post-Impactor Devices (mg)	7-Cumulative Particle Size Distribution (% by weight): 0 µm	0 µm	1 µm	2 µm	3 µm	5 µm	10 µm	20 µm	8-Curve-Fitting Method	Maximum Observed Percent Variation in Parameters for this Run (%): 9-Stack Gas Temperature	10 Stack Gas Pressure	11 Stack Gas Velocity	12-Sampling Flow Rate	13 Impactor Pressure Drop
7 8	9 10 11 12	13 14 15 16	17 18 19 20	21 22 23 24 25	26 27 28 29 30	31 32 33	34 35 36	37 38 39	40 41 42	43 44 45 46	47 48 49 50	51 52 53	54 55 56	57 58 59	60	61 62 63 64	65 66 67 68	69 70 71 72	73 74 75 76	77 78 79 80
L	1																			

Figure 1. SOTDAT Data Form (continued)

SOTDAT DATA FORM (PARTICLE SIZE STAGE DATA)

N-STAGE CHARACTERISTICS AND RESULTS

Form Number: 1 2 3 4 5 6

Card No. | 1-Stage Number | 2-Stage Type | 3-Number of Jets this Stage | 4-Length or Radius of Jet (mm) | 5-Width of Jet (mm) (000.000 if circular) | 6-Pressure Drop this Stage | 7-How Determined | 8-Jet Velocity (m/sec) | 9-Aerodynamic D_{50} (micrometers) | 10-How Determined | 11-Particle Density This Stage (gm/cc) | 12-How Determined | 13-Actual D_{50} Calculated (micrometers) | 14-Type Substrate | 15-Type Coating | 16-Substrate Treatment | 17-Washed or Dry | 18-Tare Weight Before Run (mg) | 19-Final Weight (mg) | 20-Tare Weight After Run (mg)

Data on typified overhead transparency, not to be keypunched

- heavy line under column number indicates code must be used.
- heavy line under field indicates required field.

N-STAGE RESULTS AND COMMENTS

Card No. | 1-Net Catch Weight (mg) | 2-Cumulative Weight Thru This Stage | 3-Individual Stage Comments (on line corresponding to relevant stage)

Figure 1. SOTDAT Data Form (continued)

Card B. Process Data: Includes all information on the process being sampled, such as the appropriate Source Classification Code (SCC), Standard Industrial Classification (SIC), Implementation Planning Program (IPP) Process Code, design, average and sampling-period process rates, data on fuel feed rate, heat content, composition, and process heat rate. Space is provided for up to three entries in each field to allow for the input of multiple process descriptions and data on multiple fuels.

Card C. Test Description: Includes general descriptive information on the test--test report number, run number, date, reason, identification of the sponsoring agency, and testing organization.

Card D. Ambient and Stack Data: Includes ambient meteorological data, stack geometry data, and stack gas measurements and composition.

Card E. Sampling and Site Data: Includes test method, number of sampling traverse points, and other sampling details (such as flow rate and volume sampled), as well as fields describing the sampling site. The sampling data can be repeated as many as six times to accommodate data on multiple samples taken in a single test run.

Card F. Control Devices: Includes identification, location, design efficiency and flow rate, pollutant controlled, and up to five other operating parameters for control devices in the sample stream. Operating parameters are selected from lists for various types of control devices. Multiple cards can be used for data on up to five control devices.

Card G. Results: Includes the pollutant, analysis method, sample description, stack gas concentration, and emission factors (based on SCC or other process units), as well as pollutant mass, sample concentration, sample size, and other data for reporting of trace element analyses. (Note that Card G has been placed on Page 3 of the Form, to allow for multiple pollutants or trace elements.)

Card H. Comments: Provides space for comments on individual data fields (using the field number) or general comments related to any aspect of the test. A total of 10 comments are allowed, each on a separate card.

(No Card I is used.)

Card J. Measurement Instrumentation: Includes the type, manufacturer, model, and calibration dates for the instrument used in particle size tests.

Card K. Sampling Train and Procedures: Describes the particle size sampling train (probe, preimpactor devices, impactor stages, and following devices) and defines some of the critical techniques used in the sampling procedure.

Card L. Measured Parameters and Results: Includes averages and percent variation observed in a number of sampling and stack parameters, total catches of the impactor and preimpactor and postimpactor devices, and a standardized cumulative particle size distribution.

Card M. Stage Characteristics and Results: Includes, for each of up to 12 stages or other sizing devices, a number of design and operating parameters (type, jet number, dimensions, and velocity, pressure drop, aerodynamic and actual D_{50}, particle density, substrate, coating and treatment) and tare and final weights.

Card N. Stage Results and Comments: Includes the net catch weight, cumulative weight percent, and any comments for each stage.

Publications Related to Source Test Data

The publications described below may be of interest to persons concerned with source tests and emissions data. There are no periodic publications of SOTDAT data such as those available for the emissions and air quality data in NEDS and SAROAD.

Compilation of Air Pollutant Emission Factors (AP-42)

This volume contains emission factors (emissions per process unit) for most of the common emission categories: fuel combustion by stationary and mobile sources; combustion of solid wastes; evaporation of fuels, solvents and other volatile substances; various industrial processes; and miscellaneous sources. Compiled for use in air pollution emission inventories, these emission factors are based on source test data, material balance studies and engineering estimates. Emission factors are only available for the primary pollutants (particulates, CO, SO_2, NO_x, and hydrocarbons). There are many instances in which a need for information on emissions from various source types can be fulfilled by reference to this volume.

Source Test Data System (SOTDAT) Coding Manual

The SOTDAT Coding Manual is the basic reference document for persons entering data into SOTDAT. It includes general coding rules, full instructions and specifications for each individual data item, and other information for SOTDAT data input. The SOTDAT user may find access to this information necessary for detailed interpretation and analysis of data retrieved from the system. The Coding Manual also includes some specific guidance on its recommended use in becoming familiar with SOTDAT and interpreting SOTDAT reports. Users of SOTDAT data are encouraged to obtain the manual and to refer to it to be sure that relevant definitions and specifications correspond with their own.

The above publications may be requested from:

Library Services Office (MD-35)
Office of Administration
U.S. Environmental Protection Agency
Research Triangle Park NC 27711

FTS: 629-2777
Commercial: (919)541-2777

Procedure for Requesting Computerized Reports

The computerized reports described in the next section may be requested from:

Requests and Information Section (MD-14)
National Air Data Branch
U.S. Environmental Protection Agency
Research Triangle Park NC 27711

FTS: 629-5395
Commercial: (919)541-5395

All requests except those received from within EPA or from other Federal agencies will be processed in accordance with the Freedom of Information Act. In order for a request to be evaluated and processed, the request must be made in a letter; however, before submitting the letter, a telephone call to NADB is recommended to assure the feasibility of a desired type of retrieval and otherwise clarify or expedite the request.

When requesting by letter, the following items must be specified:

1) Computerized report name, or if none specifically applies, the data items required.
2) Desired select and sort options (see next section for details).
3) Name of person to contact in case of questions, and telephone number.
4) Any time constraints involved.
5) Authorization to assume costs of providing the requested data.

Requests for computerized reports can often be filled within two weeks. If a request is likely to take longer, the requestor will be notified.

As a Federal agency, EPA normally makes no charge for reports requested by other Federal agencies; however, if a request is of major impact on NADB's computer budget, NADB may request that user and account codes be established by way of interagency agreements.

Many AEROS users are non-Federal, and typically include state and local air pollution control agencies, universities, contractors, private industry, consultants and private citizens. For non-Federal users other than state

and local air pollution control agencies, a charge may be necessary to cover the costs of retrieving and printing the requested data; if so, the requestor will be notified before any cost is incurred. This booklet cannot give estimates of specific costs due to the variety of possible requests.

SOTDAT Computerized Reports

Three report formats and a selection and sort capability are available to SOTDAT users, as described in detail below. The Standard SOTDAT Report contains all information for a specific test run. The Abbreviated Report is a subset of the Standard Report, including the unique SOTDAT Form Number, identification of the plant tested, names of parties sponsoring and performing the test, pollutants for which results were obtained and other identifying items. The Emission Factor Report calculates and displays estimated emission factors and related statistics for groups of test runs specified by the SOTDAT user. The select/sort capability allows the user to select all test runs in the data base with desired values or ranges of values for specific data items, to sort the selected runs according to the values of one or more data items and to print the selected and sorted test results in any of the above report formats.

Select/Sort Capability

The SOTDAT select/sort capability allows the user to select SOTDAT test runs containing specific data values or ranges of values and to specify data items by which a selected group of test runs should be sorted prior to printing in one of the SOTDAT report formats. Only certain data items can be used as selection and sort criteria, as listed in Figure 2.

Through the choice of appropriate selection criteria, SOTDAT retrievals can be limited to test runs containing information likely to be of interest to the user. Tests conducted at specific plants can be obtained by requesting only those test runs with desired NEDS plant identification numbers. Tests of all processes of given types can be obtained by specifying the relevant Source Classification Codes. Maximum and/or minimum criteria can be used to specify retrieval of groups of tests with related selection criteria, such as those tests with similar SOTDAT form numbers, run dates, test or analysis methods, etc. Up to 20 selection criteria can be used simultaneously to define the subset of SOTDAT desired. Each selection can consist of an equality, maximum or minimum or both maximum and minimum values for one of the criteria in Figure 2.

Selected test runs can be sorted by any combination of the select/sort keys, in user-specified order. All 24 keys can theoretically be used at one time. Typical retrievals will involve only two or three keys, however, since each successive sort key operates only on test runs with identical values for all previous keys. Since SOTDAT Form Numbers are unique, sort keys to be used after the Form Number will have no effect.

It is recommended that the Abbreviated SOTDAT Report be requested by users who are unsure of the number of test runs which may result from a desired set of selection criteria, to avoid unnecessary printing of large numbers of the Standard Report. Examination of the selected Abbreviated Reports should be sufficient to specify, by direct use of SOTDAT Form Numbers or other revised selection keys, those test runs for which the full Standard Report is of interest.

Figure 2. SOTDAT SELECT/SORT KEYS

Pollutant
Test method

Source Classification Code
Standard Industrial Classification Code

Run date
Reason tested
Party testing
Fuel type
Particle sizing device
Analysis method
Sampling position
Control device

SOTDAT Form Number
State
County
Air Quality Control Region
NEDS plant identification number
NEDS point identification number

Standard SOTDAT Report

The Standard SOTDAT Report (Figures 3, 4, and 5) contains all information entered into SOTDAT for a given test run. It may also include several data values calculated from entered data by algorithms in the SOTDAT Edit-Validation Program, depending on the completeness of the information originally entered. All data values entered as numeric or alphabetic codes are fully interpreted by referencing code description files, and appear in the Standard Report with English descriptors. Figures 3, 4, and 5 are examples of Standard Reports for the three test types accommodated by SOTDAT (typical source test, test involving trace element analysis and particle size test).

```
                                   S T A N D A R D   S O T D A T   R E P O R T                    DATE  11/15/79   RECORD NO.  0001

                                                FORM NUMBER:  A12345

*************************SOURCE IDENTIFICATION*********************     ******************TEST DESCRIPTION*********************

STATE(34): NORTH CAROLINA                                              REPORT NO: 12-ABC-3      RUN DATE: 03/21/78      RUN NO: 00001
COUNTY(110): DURHAM CO                                                 REASON TESTED(1): NSPS PREPARATION
AQCR(166): EASTERN PIEDMONT                                            TESTED BY(7): FEDERAL AGENCY CONTRACTOR
PLANT(4321):  EXAMPLE PLANT  10 SAMPLE ST  DURHAM NC                   SPONSORING AGENCY/PROGRAM: EPA OAQPS
NEDS POINT: 01                ZIP CODE: 27711       SOURCE TESTING ORGANIZATION: ENVIRONMENTAL INC                  PH:(919)782-4700

************************************************** PROCESS DATA **************************************************

SIC(2999):  CHEMICALS AND CHEMICAL PREPARATIONS, NOT ELSEWHERE CLASSIFIED       IPP(**)
SCC(3-01-100-01):   CHEMICAL MFG        ORGANIC CHEMICALS   MALEIC ANHYDRIDE    GENERAL/OTHER  **
PROCESS RATES IN UNITS OF TONS PRODUCT                                  DESIGN CAPACITY=0002.853    THIS RUN=0002.110    AVERAGE=0002.100

        FUEL TYPE                 FUEL FEED RATE      SULFUR    ASH     NITROGEN     HEAT CONTENT        PROCESS HEAT RATE
( ):NO DATA                            NO DATA           %        %        %          NO DATA                 NO DATA

************************************************ SAMPLING ENVIRONMENT AND CONDITIONS ************************************

   *** AMBIENT CONDITIONS ***                  *** STACK/DUCT GEOMETRY ***                          *** GAS PARAMETERS ***
TEMPERATURE = 25.2 DEGREES CELSIUS    (T)CIRCULAR    CROSS SECTION = 0000.65 SQ.METERS     GAS TEMPERATURE    = 041.0 DEGREES CELSIUS
BAROMETRIC PRESSURE = 766 MM HG       EQUIVALENT DIAMETER = 00.91 METERS                   GAS PRESSURE       =  0766.2 MM HG ABSOLUTE
RELATIVE HUMIDITY = 75.0 %            ANGLE WITH VERTICAL =  90 DEGREES                    AVERAGE VELOCITY   = 12.88 METERS/SECOND
                                      STACK HEIGHT = 0015 METERS                           AVERAGE FLOW RATE = 01011  SCMM-DRY

            *** SAMPLING SITE DESCRIPTION ***                                                      *** GAS COMPOSITION ***
SITE DESCRIPTION(01): DUCT, CONTROL DEVICE INLET                                            DRY MOLECULAR WEIGHT = 30.02 GM./GM-MOLE
                      INLET TO INCINERATOR                                                   % EXCESS AIR      =        %
NUMBER OF STACK EQUIVALENT DIAMETERS FROM SAMPLING SITE TO NEAREST DISTURBANCE--             % WATER BY VOLUME = 06.8 %
      UPSTREAM: 08 DIAMETERS,  DOWNSTREAM: 10 DIAMETERS                                      % CO2   BY VOLUME = 00.0 %
                                                                                             % CO    BY VOLUME = 00.0 %
                                                                                             % O2    BY VOLUME = 20.8 %
                                                                                             % N     BY VOLUME = 79.2 %
                                                                                             % SO2   BY VOLUME = 00.0 %

************************************************** CONTROL DEVICE DATA ***************************************************

CONTROL DEVICE(010): CATALYTIC AFTERBURNER                 DOWNSTREAM                    DESIGN OPERATING PARAMETER              VALUE
MAIN POLLUTANT CONTROLLED(0101):                     PHYSICAL STATE       (  )NO DATA                                          =
TOTAL HYDROCARBON                                 - GASEOUS               (  )NO DATA                                          =
CONTROL EFFICIENCY =       %                                              (  )NO DATA                                          =
YEAR INSTALLED - 19                                                       (  )NO DATA                                          =
DESIGN FLOW RATE =            ACTUAL CUBIC METERS PER MINUTE              (  )NO DATA                                          =

************************************************** TEST NUMBER 1 *********************************************************

                                                 ***  TEST METHOD DATA  ***

TEST METHOD(95): FLEXIBLE BAG - CBAD SAMPLING                          NUMBER OF TRAVERSE POINTS SAMPLED THIS RUN = 001
AVERAGE METER TEMPERATURE = 074 DEG.CELSIUS                            AVERAGE % ISOKINETIC SAMPLING = 101.04 %
HOURS FROM START TO END ANALYSIS = 022                                 SAMPLING TIME = 120 MINUTES
TOTAL VOLUME SAMPLED = 01.21 STANDARD CUBIC METERS                     SAMPLING FLOW RATE =  .01000 STANDARD CUBIC METERS/MINUTE
```

Figure 3. Standard SOTDAT Report: Typical Source Test

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                                        *** TEST RESULTS  ***

POLLUTANT(D'101): CARBON MONOXIDE                          - PHYSICAL STATE(D): GASEOUS
ANALYSIS METHOD(K): GAS CHROMOTOGRAPHY                   EMISSION RATES:              LB/SCC UNIT                NO DATA
CONCENTRATION IN STACK GAS = 002000.00000 PPM DRY                          CORRECTED FOR BLANK?        BELOW DETECTION LIMIT?
SAMPLE TYPE(61): FLEX. GRAB SAMPLE        LOCATION IN TRAIN(TO): TOT. RESULT     TOTAL POLLUTANT MASS AT LOCATION          NO DATA
POLLUTANT CONCENTRATION IN SAMPLE ANALYZED =             NO DATA                        SIZE OF TOTAL SAMPLE =          NO DATA

POLLUTANT(D'101): TOTAL HYDROCARBON                        - PHYSICAL STATE(D): GASEOUS
ANALYSIS METHOD(K): GAS CHROMOTOGRAPHY                   EMISSION RATES:              LB/SCC UNIT                NO DATA
CONCENTRATION IN STACK GAS = 000010.00000 PPM DRY                          CORRECTED FOR BLANK?        BELOW DETECTION LIMIT?
SAMPLE TYPE(61): FLEX. GRAB SAMPLE        LOCATION IN TRAIN(TO): TOT. RESULT     TOTAL POLLUTANT MASS AT LOCATION          NO DATA
POLLUTANT CONCENTRATION IN SAMPLE ANALYZED =             NO DATA                        SIZE OF TOTAL SAMPLE =          NO DATA

POLLUTANT(D'204): PROPANE                                  - PHYSICAL STATE(D): GASEOUS
ANALYSIS METHOD(K): GAS CHROMOTOGRAPHY                   EMISSION RATES:              LB/SCC UNIT                NO DATA
CONCENTRATION IN STACK GAS = 000010.00000 PPM DRY                          CORRECTED FOR BLANK?        BELOW DETECTION LIMIT?
SAMPLE TYPE(61): FLEX. GRAB SAMPLE        LOCATION IN TRAIN(TO): TOT. RESULT     TOTAL POLLUTANT MASS AT LOCATION          NO DATA
POLLUTANT CONCENTRATION IN SAMPLE ANALYZED =             NO DATA                        SIZE OF TOTAL SAMPLE =          NO DATA

POLLUTANT(D'502): FORMALDEHYDE                             - PHYSICAL STATE(D): GASEOUS
ANALYSIS METHOD(K): GAS CHROMOTOGRAPHY                   EMISSION RATES:              LB/SCC UNIT                NO DATA
CONCENTRATION IN STACK GAS = 000000.00423 GRAIN/SCF                        CORRECTED FOR BLANK?        BELOW DETECTION LIMIT?
SAMPLE TYPE(61): FLEX. GRAB SAMPLE        LOCATION IN TRAIN(TO): TOT. RESULT     TOTAL POLLUTANT MASS AT LOCATION          NO DATA
POLLUTANT CONCENTRATION IN SAMPLE ANALYZED =             NO DATA                        SIZE OF TOTAL SAMPLE =          NO DATA

POLLUTANT(D'201): BENZENE                                  - PHYSICAL STATE(D): GASEOUS
ANALYSIS METHOD(K): GAS CHROMOTOGRAPHY                   EMISSION RATES:              LB/SCC UNIT                NO DATA
CONCENTRATION IN STACK GAS = 000700.00000 PPM DRY                          CORRECTED FOR BLANK?        BELOW DETECTION LIMIT?
SAMPLE TYPE(61): FLEX. GRAB SAMPLE        LOCATION IN TRAIN(TO): TOT. RESULT     TOTAL POLLUTANT MASS AT LOCATION          NO DATA
POLLUTANT CONCENTRATION IN SAMPLE ANALYZED =             NO DATA                        SIZE OF TOTAL SAMPLE =          NO DATA

*************************************************************** COMMENTS ***************************************************************

                    ITEM REFERENCED
B02 IPP CODE                                          PRODUCTION OF MALEIC ANHYDRIDE BY CATALYTIC OXIDATION OF BENZENE
C03 TEST RUN NUMBER                                   RUN NUMBER 1 AT INLET
E01 TEST METHOD                                       MYLAR BAG
G03 ANALYSIS METHOD                                   EPA DRAFT BENZENE METHOD
G06 POLLUTANT CONCENTRATION IN STACK GAS              CARD 1 AS BENZENE
G06 POLLUTANT CONCENTRATION IN STACK GAS              CARD 3 GREATER THAN 2000
G06 POLLUTANT CONCENTRATION IN STACK GAS              CARD 4 AS PROPANE
X01 GENERAL COMMENT                                   CONCURRENT OUTLET TESTS ON FORM A12344
```

Figure 3. Standard SOTDAT Report: Typical Source Test (continued)

```
                    S T A N D A R D   S O T D A T   R E P O R T                    DATE  11/15/79   RECORD NO.  0003

                                        FORM NUMBER:  A12347

*************************SOURCE IDENTIFICATION*************************     ***********************TEST DESCRIPTION*************************

STATE(34): NORTH CAROLINA                                                 REPORT NO: 17-ABC-4      RUN DATE: 09/07/74      RUN NO: 0001A
COUNTY(1100): DURHAM CO                                                   REASON TESTED(1): NSPS PREPARATION
AREA(166): EASTERN PIEDMONT                                               TESTED BY(7): FEDERAL AGENCY CONTRACTOR
PLANT(4324):  TRACE ELEMENT EXAMPLE CO  17 SAMPLE ST  DURHAM NC           SPONSORING AGENCY/PROGRAM: NADR-RTP
NEDS POINT: 01                ZIP CODE: 27711        SOURCE TESTING ORGANIZATION: ENVIRONMENTAL INC                  PH:(517)782-4700

*************************************************** PROCESS DATA ***************************************************

SIC(3411):  METAL CANS                                                                    IPF(**)
SCC(3-09-020-99):   FABRICATED METALS   CAN MAKING OPRNS    NOT CLASSIFIED      SEE COMMENT    **
PROCESS RATES IN UNITS OF TONS PRODUCT                                  DESIGN CAPACITY=0002.800    THIS RUN=0002.400    AVERAGE=0002.500

        FUEL TYPE                FUEL FEED RATE      SULFUR     ASH      NITROGEN      HEAT CONTENT        PROCESS HEAT RATE
( ):NO DATA                            NO DATA           %         %          %          NO DATA                  NO DATA

*************************************** SAMPLING ENVIRONMENT AND CONDITIONS ****************************************

   *** AMBIENT CONDITIONS ***                  *** STACK/DUCT GEOMETRY ***                          *** GAS PARAMETERS ***
TEMPERATURE = 21.0 DEGREES CELSIUS    (1)CIRCULAR    CROSS SECTION = 0000.04 SQ.METERS     GAS TEMPERATURE    = 040.6 DEGREES CELSIUS
BAROMETRIC PRESSURE = 760 MM HG       EQUIVALENT DIAMETER = 00.22 METERS                   GAS PRESSURE       =  0756.2 MM HG ABSOLUTE
RELATIVE HUMIDITY = 70.0 %            ANGLE WITH VERTICAL =  00 DEGREES                    AVERAGE VELOCITY   = 13.05 METERS/SECOND
                                      STACK HEIGHT = 0011 METERS                           AVERAGE FLOW RATE = 00026  SCMM-DRY

              *** SAMPLING SITE DESCRIPTION ***                                                      *** GAS COMPOSITION ***
SITE DESCRIPTION(00): DUCT NEAR PROCESS OUTLET                                                 DRY MOLECULAR WEIGHT = 28.86 GM./GM-MOLE
                      SOLDER LINE NO. 3 WIPER VENT                                              % EXCESS AIR       =        %
NUMBER OF STACK EQUIVALENT DIAMETERS FROM SAMPLING SITE TO NEAREST DISTURBANCE--                % WATER BY VOLUME = 01.3 %
      UPSTREAM: 10 DIAMETERS,  DOWNSTREAM: 02 DIAMETERS                                         % CO2   BY VOLUME = 00.5 %
                                                                                                % CO    BY VOLUME = 00.0 %
                                                                                                % O2    BY VOLUME = 19.6 %
                                                                                                % N     BY VOLUME = 79.9 %
                                                                                                % SO2   BY VOLUME =      %

************************************************** CONTROL DEVICE DATA *************************************************

CONTROL DEVICE(000): NO EQUIPMENT                          DOWNSTREAM                    DESIGN OPERATING PARAMETER              VALUE
MAIN POLLUTANT CONTROLLED(      ):                   PHYSICAL STATE        (  )NO DATA                                    =
UNDEFINED                                     - NO DATA                  (  )NO DATA                                    =
CONTROL EFFICIENCY -       %                                             (  )NO DATA                                    =
YEAR INSTALLED = 19                                                      (  )NO DATA                                    =
DESIGN FLOW RATE =            ACTUAL CUBIC METERS PER MINUTE             (  )NO DATA                                    =

*************************************************** TEST NUMBER 1 ******************************************************

                                          ***  TEST METHOD DATA  ***

TEST METHOD(51): EPA METHOD 5 WITH IMPINGERS                          NUMBER OF TRAVERSE POINTS SAMPLED THIS RUN = 001
AVERAGE METER TEMPERATURE = 024 DEG.CELSIUS                           AVERAGE % ISOKINETIC SAMPLING = 099.70 %
HOURS FROM START TO END ANALYSIS = 050                                SAMPLING TIME = 060 MINUTES
TOTAL VOLUME SAMPLED = 01.37 STANDARD CUBIC METERS                    SAMPLING FLOW RATE =  .02280 STANDARD CUBIC METERS/MINUTE
```

Figure 4. Standard SOTDAT Report: Trace Element Analysis

```
                                        *** TEST RESULTS  ***

POLLUTANT(A2129): LEAD                                  - PHYSICAL STATE(A): TOTAL PARTICULATE
ANALYSIS METHOD(A): ATOMIC ABSORPTION                 EMISSION RATES: 000000.01053 LB/SCC UNIT                NO DATA
CONCENTRATION IN STACK GAS = 254014.59799 UG/SCM DRY                  CORRECTED FOR BLANK? YES    BELOW DETECTION LIMIT? NO
SAMPLE TYPE(U?): WHATMAN FILTER           LOCATION IN TRAIN(TO): TOT. RESULT     TOTAL POLLUTANT MASS AT LOCATION 000.348 GRAMS
POLLUTANT CONCENTRATION IN SAMPLE ANALYZED =          NO DATA                        SIZE OF TOTAL SAMPLE =          NO DATA


POLLUTANT(A2140): TIN                                   - PHYSICAL STATE(A): TOTAL PARTICULATE
ANALYSIS METHOD(A): ATOMIC ABSORPTION                 EMISSION RATES: 000000.00071 LB/SCC UNIT                NO DATA
CONCENTRATION IN STACK GAS = 000000.00009 GRAIN/SCF                   CORRECTED FOR BLANK? YES    BELOW DETECTION LIMIT? NO
SAMPLE TYPE(U?): WHATMAN FILTER           LOCATION IN TRAIN(TO): TOT. RESULT     TOTAL POLLUTANT MASS AT LOCATION         NO DATA
POLLUTANT CONCENTRATION IN SAMPLE ANALYZED =          NO DATA                        SIZE OF TOTAL SAMPLE =          NO DATA


POLLUTANT(A2167): ZINC                                  - PHYSICAL STATE(A): TOTAL PARTICULATE
ANALYSIS METHOD(A): ATOMIC ABSORPTION                 EMISSION RATES: 000000.00008 LB/SCC UNIT                NO DATA
CONCENTRATION IN STACK GAS = 000001.62043 UG/SCM DRY                  CORRECTED FOR BLANK? YES    BELOW DETECTION LIMIT? NO
SAMPLE TYPE(U?): WHATMAN FILTER           LOCATION IN TRAIN(TO): TOT. RESULT     TOTAL POLLUTANT MASS AT LOCATION 002.220 MICROGRAM
POLLUTANT CONCENTRATION IN SAMPLE ANALYZED - 000000.0700 PERCENT BY WEIGHT        SIZE OF TOTAL SAMPLE = 3172.000 MICROGRAMS

*************************************************************** COMMENTS ***************************************************************

                    TYPE REFERENCED
B03 IPD CODE                                          CAN SOLDERING
E01 TEST METHOD                                       WITH TRACE ELEMENT ANALYSIS IN PERKIN-ELMER (MODEL 500) ATOMIC
                                                      ABSORPTION SPECTROPHOTOMETER
G02 ANALYSIS METHOD                                   PERKIN-ELMER (MODEL 500) ATOMIC ABSORPTION SPECTROPHOTOMETER
G05 SAMPLE TYPE                                       WHATMAN NO.1
```

Figure 4. Standard SOTDAT Report: Trace Element Analysis (continued)

```
                    S T A N D A R D   S O T D A T   R E P O R T                    DATE  11/15/79   RECORD NO.  0002

                                        FORM NUMBER:  A12744

*************************SOURCE IDENTIFICATION*************************,    ***********************TEST DESCRIPTION*************************

STATE(34): NORTH CAROLINA                                                 REPORT NO: 5002000      RUN DATE: 06/09/77      RUN NO: 18000
COUNTY(119): DURHAM CO                                                    REASON TESTED(0): SPECIAL STUDIES
AQCR(166): EASTERN PIEDMONT                                               TESTED BY(1): CONTRACTOR FOR OWNER
PLANT(4*27):  EXAMPLE COMPANY  11 SAMPLE ST  DURHAM NC                    SPONSORING AGENCY/PROGRAM: PRIVATE
NEDS POINT: 17                 ZIP CODE: 27711       SOURCE TESTING ORGANIZATION: ENVIRONMENTAL INC                  PH:(513)782-4700

************************************************** PROCESS DATA **************************************************

SIC(2899):  CHEMICALS AND CHEMICAL PREPARATIONS, NOT ELSEWHERE CLASSIFIED       IPP(01)
SCC(1-03-002-12):   EXTERNAL BOILER      COMMERCL-INSTUTNL   BITUMINOUS COAL     <100MMBTU UNSTOK**
PROCESS RATES IN UNITS OF NON-SCC UNITS. SEE COMMENTS.              DESIGN CAPACITY=********    THIS RUN=8300.000    AVERAGE=9000.000

        FUEL TYPE                FUEL FEED RATE      SULFUR    ASH     NITROGEN     HEAT CONTENT        PROCESS HEAT RATE
(03):MED VOLATILE BITUMINOUS   002500.0 LBS/HR.      00.85%   11.40%    01.40%    12120 BTU/POUND       000100.00 MBTU/HR

************************************** SAMPLING ENVIRONMENT AND CONDITIONS **************************************

   *** AMBIENT CONDITIONS ***                 *** STACK/DUCT GEOMETRY ***                          *** GAS PARAMETERS ***
TEMPERATURE = 21.1 DEGREES CELSIUS    (2)RECTANGULAR CROSS SECTION = 0014.03 SQ.METERS     GAS TEMPERATURE    = 292.2 DEGREES CELSIUS
BAROMETRIC PRESSURE = 748 MM HG       EQUIVALENT DIAMETER = 01.46 METERS                   GAS PRESSURE       =  0748.0 MM HG ABSOLUTE
RELATIVE HUMIDITY = 60.0 %            ANGLE WITH VERTICAL =  90 DEGREES                    AVERAGE VELOCITY   = 12.19 METERS/SECOND
                                      STACK HEIGHT = 0050 METERS                           AVERAGE FLOW RATE = 26793  SCFM-DRY

            *** SAMPLING SITE DESCRIPTION ***                                                      *** GAS COMPOSITION ***
SITE DESCRIPTION(01): DUCT, CONTROL DEVICE INLET                                            DRY MOLECULAR WEIGHT = 29.50 GM./GM-MOLE
                      DUCT A SOUTH OF MULTICYCLONE                                           % EXCESS AIR       = 00035 %
NUMBER OF STACK EQUIVALENT DIAMETERS FROM SAMPLING SITE TO NEAREST DISTURBANCE--             % WATER BY VOLUME = 05.8 %
      UPSTREAM: 08 DIAMETERS,  DOWNSTREAM: 05 DIAMETERS                                      % CO2   BY VOLUME = 05.7 %
                                                                                             % CO    BY VOLUME = 00.0 %
                                                                                             % O2    BY VOLUME = 14.4 %
                                                                                             % N     BY VOLUME = 79.9 %
                                                                                             % SO2   BY VOLUME = 00.0 %

************************************************** CONTROL DEVICE DATA **************************************************

CONTROL DEVICE(0C4): CENTRIFUGAL COLLECT- MED EFFCNY     DOWNSTREAM                     DESIGN OPERATING PARAMETER              VALUE
MAIN POLLUTANT CONTROLLED(A1101):                  PHYSICAL STATE      (01)WIDTH OF GAS INLET (M)                          = 0000.700
TOTAL PARTICULATE                            - TOTAL PARTICULATE       (02)INLET GAS VELOCITY (M/SEC)                      = 0015.240
CONTROL EFFICIENCY = 94.0 %                                            (05)DIAMETER OF GAS OUTLET (M)                      = 0000.250
YEAR INSTALLED = 1969                                                  (70)OTHER GASEOUS DEVICE PARAMETER--SEE COMMENT     = 00020.00
DESIGN FLOW RATE = 00077284.2 ACTUAL CUBIC METERS PER MINUTE           (  )NO DATA                                         =

************************************************** TEST NUMBER 1 **************************************************

                                        ***  TEST METHOD DATA  ***

TEST METHOD(20): AM. SOC. OF MECHANICAL ENGINEERS(MI)                 NUMBER OF TRAVERSE POINTS SAMPLED THIS RUN = 048
AVERAGE METER TEMPERATURE = 075 DEG.CELSIUS                           AVERAGE % ISOKINETIC SAMPLING = 107.70 %
HOURS FROM START TO END ANALYSIS = 000                                SAMPLING TIME = 120 MINUTES
TOTAL VOLUME SAMPLED = 01.63 STANDARD CUBIC METERS                    SAMPLING FLOW RATE =  .01360 STANDARD CUBIC METERS/MINUTE
```

Figure 5. Standard SOTDAT Report: Particle Size Test

```
                                    *** TEST RESULTS  ***

POLLUTANT(A11C1): TOTAL PARTICULATE                        - PHYSICAL STATE(A): TOTAL PARTICULATE
ANALYSIS METHOD(G): GRAVIMETRIC METHOD                  EMISSION RATES: 000103.40000 LB/SCC UNIT   00023.09191 KG/NON-SCC UNITS
CONCENTRATION IN STACK GAS = 000000.22147 GRAIN/SCF                  CORRECTED FOR BLANK?        BELOW DETECTION LIMIT?
SAMPLE TYPE(2M): OTHER FILTER            LOCATION IN TRAIN(TO): TOT. RESULT     TOTAL POLLUTANT MASS AT LOCATION          NO DATA
POLLUTANT CONCENTRATION IN SAMPLE ANALYZED =            NO DATA                        SIZE OF TOTAL SAMPLE =          NO DATA

********************************************************** COMMENTS ***********************************************************

                    ITEM REFERENCED
B04 PROCESS DESIGN CAPACITY                                  CONFIDENTIAL INFORMATION
C04 REASON TESTED                                            TO DETERMINE EMISSIONS STANDARDS FOR NEW CONTROL INSTALLATION
F01 CONTROL DEVICE CODE                                      FLOW SPLIT INTO TWO PARALLEL MULTICYCLONES
G05 SAMPLE TYPE                                              ALUNDUM IN-STACK FILTER - FIBERGLASS BACKUP FILTER
J01 PARTICLE SIZING INSTRUMENT TYPE                          SIERRA MODEL 226 SOURCE CASCADE IMPACTOR
F12 CONTROL DEVICE OPERATING PARAMETER CODE                  PRESSURE DROP ACROSS UNIT (INCHES OF WATER)
X01 GENERAL COMMENT                                          LATER GASEOUS AND METHOD 5 TEST ON FORMS A12348, A12349


                                    *** PARTICLE SIZING RESULTS ***
                                          FOR TEST NUMBER 1
                          (REFER TO TEST NUMBER 1, ABOVE FOR TEST METHOD DATA AND ADDITIONAL TEST RESULTS)

*****************************************PARTICLE SIZE INSTRUMENTATION*****************************************************

  ***PROBE***        PRE-IMPACTOR DEVICE?   NO                    *****PARTICLE SIZING INSTRUMENT*****
                       DATE LAST CALIBRATED   INSTRUMENT TYPE(06): SEE COMMENTS              COLLECTION SURFACES ALL HORIZONTAL? NO
 LENGTH =  01.20 METERS        /  /          MANUFACTURER: SIERRA INSTRUMENTS INC                  REMOVABLE SUBSTRATES?     YES
                          (  )NO DATA         MODEL NUMBER: MODEL 226                               SUBSTRATE COATINGS?       YES
  NOZZLE                  (  )NO DATA         DATE LAST CALIBRATED: 06/06/77                        HEATED BEFORE INSERTION?  YES
 INTERNAL = 0.65 CM       (  )NO DATA         NUMBER OF STAGES: 05                                  HEATED AFTER INSERTION?   YES
 DIAMETER                 (  )NO DATA         USED IN OR OUT OF STACK? IN                           THERMALLY INSULATED?      NO
                          (  )NO DATA         IN STACK EQUILIBRATION TIME:     MIN.                 TEMPERATURE MEASURED?     YES
```

Figure 5. Standard SOTDAT Report: Particle Size Test (continued)

***** SAMPLING TRAIN (AFTER PARTICLE SIZER) *****
(1)EPA METHOD 5 WITH IMPINGERS

**** DEVICE LIST: STARTING AT IMPACTOR EXIT ****

CUMULATIVE PARTICLE SIZE
DISTRIBUTION (% BY WEIGHT)

<= 0.1 MICRONS =	%
<= 0.5 MICRONS =	%
<= 1.0 MICRONS =	02%.0%
<= 2.0 MICRONS =	040.0%
<= 3.5 MICRONS =	055.0%
<= 5.0 MICRONS =	060.0%
<=10.0 MICRONS =	075.0%
<=20.0 MICRONS =	085.0%
> 20.0 MICRONS =	015.0%

CURVE FITTING METHOD
(2)ESTIMATED LOG-NORMAL

*** TOTAL CATCH ***

PRE-IMPACTOR DEVICES =	. 0 MG
IMPACTOR/PARTICLE SIZER =	005.30 MG
POST-IMPACTOR DEVICES =	MG

*** IMPACTOR MEASUREMENTS ***

TOTAL PRESSURE DROP =	0760 MM.HG.
IMPACTOR TEMPERATURE =	037.8 C
SAMPLE TEMPERATURE (AT IMPACTOR EXIT) =	032.8 C

MAXIMUM OBSERVED PERCENT VARIATION
IN MEASUREMENT PARAMETERS

STACK GAS TEMPERATURE =	005.2%
STACK GAS PRESSURE =	075.2%
STACK GAS VELOCITY =	077.4%
SAMPLING FLOW RATE =	005.0%
PRESSURE DROP ACROSS IMPACTOR =	005.0%

**********INDIVIDUAL STAGE PARAMETERS**********

STAGE NO.	STAGE TYPE	D50 AERODYNAMIC (MICRONS)	HOW D50 IS DETERMINED	CUMULATIVE WEIGHT PERCENT	NET CATCH WEIGHT PER STAGE	D50 ACTUAL (MICRONS)	PARTICLE DENSITY (GMS/CU.CM.)	HOW DENSITY IS DETERMINED
01	(1)IMPACTOR	016.000	(2)CALCULATED	99.9%	000.000MG			( )NO DATA
02	(1)IMPACTOR	008.600	(2)CALCULATED	99.9%	000.000MG			( )NO DATA
03	(1)IMPACTOR	003.900	(2)CALCULATED	99.9%	000.400MG			( )NO DATA
04	(1)IMPACTOR	002.400	(2)CALCULATED	92.5%	001.900MG			( )NO DATA
05	(1)IMPACTOR	001.200	(2)CALCULATED	59.5%	001.500MG			( )NO DATA
06	(1)IMPACTOR	000.610	(2)CALCULATED	30.2%	001.600MG			( )NO DATA

STAGE NO.	STAGE TYPE	#-JETS	JET LENGTH OR RADIUS	JET WIDTH	JET VELOCITY	%-PRESSURE DROP	HOW DROP DETERMINED	TARE WEIGHT BEFORE RUN	TARE WEIGHT AFTER RUN	FINAL WEIGHT	SAMPLE W/D
01	(1)	000	**	**	001.910 M/SEC	%	( )NO DATA	0000.158 MG	0000.158 MG	0000.158 MG	DRY
02	(1)	000	**	**	003.440 M/SEC	%	( )NO DATA	0000.143 MG	0000.143 MG	0000.143 MG	DRY
03	(1)	000	**	**	007.910 M/SEC	%	( )NO DATA	0000.138 MG	0000.138 MG	0000.538 MG	DRY
04	(1)	000	**	**	014.300 M/SEC	%	( )NO DATA	0000.143 MG	0000.143 MG	0001.943 MG	DRY
05	(1)	000	**	**	025.500 M/SEC	%	( )NO DATA	0000.156 MG	0000.156 MG	0001.655 MG	DRY
06	(1)	000	**	**	060.000 M/SEC	%	( )NO DATA	0000.143 MG	0000.143 MG	0001.743 MG	DRY

STAGE NO.	STAGE TYPE	STAGE SUBSTRATE	TYPE COATING	TYPE TREATMENT	SUBSTRATE STAGE COMMENTS
01	(1)	WHATMAN GF/A	NO DATA	NO DATA	
02	(1)	WHATMAN GF/A	NO DATA	NO DATA	
03	(1)	WHATMAN GF/A	NO DATA	NO DATA	
04	(1)	WHATMAN GF/A	NO DATA	NO DATA	
05	(1)	WHATMAN GF/A	NO DATA	NO DATA	
06	(1)	WHATMAN GF/A	NO DATA	NO DATA	

Figure 5. Standard SOTDAT Report: Particle Size Test (continued)

Abbreviated SOTDAT Report

The Abbreviated SOTDAT Report (Figure 6) consists of the first few lines of identifying information from the Standard Report and a list of the pollutants tested in each test run. This Report was designed to allow users to survey the results of a set of select/sort criteria in condensed form prior to requesting full Standard Reports for desired test runs.

```
S O T D A T   P L A N T   N A M E   A N D   A D D R E S S   L I S T I N G        DATE  11/15/79   RECORD NO.  0001
                          FORM NUMBER:  A12345

STATE(34): NORTH CAROLINA                                        REPORT NO: 12-ABC-3     RUN DATE: 03/21/78     RUN NO: 00001
COUNTY(1180): DURHAM CO                                          REASON TESTED(1): NSPS PREPARATION
AQCR(164): EASTERN PIEDMONT                                      TESTED BY(7): FEDERAL AGENCY CONTRACTOR
PLANT(4321):  EXAMPLE PLANT  10 SAMPLE ST  DURHAM NC             SPONSORING AGENCY/PROGRAM: EPA OAQPS
NEDS POINT: 01              ZIP CODE: 27711       SOURCE TESTING ORGANIZATION: ENVIRONMENTAL INC                PH:(513)782-4700
POLLUTANTS TESTED:  D2121K  D3101K  D3204K  D3502K  D5201K

S O T D A T   P L A N T   N A M E   A N D   A D D R E S S   L I S T I N G        DATE  11/15/79   RECORD NO.  0002
                          FORM NUMBER:  A12346

STATE(34): NORTH CAROLINA                                        REPORT NO: 50020000     RUN DATE: 06/09/77     RUN NO: 1A000
COUNTY(1180): DURHAM CO                                          REASON TESTED(0): SPECIAL STUDIES
AQCR(166): EASTERN PIEDMONT                                      TESTED BY(1): CONTRACTOR FOR OWNER
PLANT(4322):  EXAMPLE COMPANY  11 SAMPLE ST  DURHAM NC           SPONSORING AGENCY/PROGRAM: PRIVATE
NEDS POINT: 17              ZIP CODE: 27711       SOURCE TESTING ORGANIZATION: ENVIRONMENTAL INC                PH:(513)782-4700
POLLUTANTS TESTED:  A1101G

S O T D A T   P L A N T   N A M E   A N D   A D D R E S S   L I S T I N G        DATE  11/15/79   RECORD NO.  0003
                          FORM NUMBER:  A12347

STATE(34): NORTH CAROLINA                                        REPORT NO: 12-ABC-4     RUN DATE: 09/03/74     RUN NO: 0001A
COUNTY(1180): DURHAM CO                                          REASON TESTED(1): NSPS PREPARATION
AQCR(164): EASTERN PIEDMONT                                      TESTED BY(7): FEDERAL AGENCY CONTRACTOR
PLANT(4323):  TRACE ELEMENT EXAMPLE CO  12 SAMPLE ST  DURHAM NC  SPONSORING AGENCY/PROGRAM: NADR-RTP
NEDS POINT: 01              ZIP CODE: 27711       SOURCE TESTING ORGANIZATION: ENVIRONMENTAL INC                PH:(513)782-4700
POLLUTANTS TESTED:  A2128A  A2160A  A2147A
```

Figure 6. Abbreviated SOTDAT Report

SOTDAT Emission Factor Report

The Emission Factor Report (Figure 7) computes an average emission factor (in lbs. per SCC unit) and associated statistics for tests of processes having a specific Source Classification Code and a test result for the desired pollutant. Qualifying test runs are previously selected from SOTDAT using the Select/Sort Program and approved by the user as applicable. The user can also specify weights to be given to specific test runs in computation of the emission factor.

```
                    S O T D A T   E M I S S I O N   F A C T O R   R E P O R T

 1 POLLUTANT SELECTIONS WERE READ.
 1 POLLUTANT SELECTIONS WERE ACCEPTED.
 0 SELECTIONS WERE IGNORED DUE TO ABSENCE OF POLLUTANT SELECTION SPECIFICATION.
****************************************** SUMMARY OF TEST RESULTS USED IN COMPUTATIONS ******************************

 NEDS POINT ID              SCC RATE   AVERAGE STACK GAS                                                EMISSIONS     FORM
ST CNTY PLNT PT    SCC      THIS RUN       FLOW RATE        POLLUTANT     CONCENTRATION IN STACK GAS    LB/SCC UNIT   NUMBER WEIGHT
26-1680-0003-    10100202   277.700    *****  SCFM-DRY      A-TSP -G       0.05600 GRAIN/SCF              3.00000    A00133   02
26-1680-0003-    10100202   277.700    *****  SCFM-DRY      A-TSP -G       0.20000 GRAIN/SCF              1.00000    A00134   03
26-1680-0003-    10100202   229.200    *****  SCFM-DRY      A-TSP -G       0.17600 GRAIN/SCF              3.00000    A00135   01*
*** END OF SOT-SUBFILE.

NOTE:  SCC UNITS USED IN THIS COMPUTATION ARE  TONS BURNED                          ALL RESULTS IN OTHER UNITS ARE REJECTED.
*** FOOTNOTE:  WEIGHTING VALUES MARKED WITH ASTERISK WERE BLANK ON CARD - ASSUMED EQUAL TO ONE.

************************************************************ RESULTS OF EMISSION FACTOR ANALYSIS ******************************
                                    3 = NUMBER OF TEST RESULTS FOR EMISSION RATE USED IN COMPUTATION
                              2.33333 = ARITHMETIC MEAN OF TEST RESULTS (LB/SCC UNIT)
                              1.15469 = STANDARD DEVIATION OF TEST RESULTS (LB/SCC UNIT)
                              3.00000 = MAXIMUM TEST RESULT (LB/SCC UNIT)
                              1.00000 = MINIMUM TEST RESULT (LB/SCC UNIT)
                              1.05838 = ARITHMETIC MEAN OF TEST RESULTS (KG/SCC UNIT)
                              0.52375 = STANDARD DEVIATION OF TEST RESULTS (KG/SCC UNIT)
                              1.36077 = MAXIMUM TEST RESULT (KG/SCC UNIT)
                              0.45359 = MINIMUM TEST RESULT (KG/SCC UNIT)

                                          *** WEIGHTED COMPUTATIONS ***
                              2.00000 = WEIGHTED MEAN OF TEST RESULTS (LB/SCC UNIT)
                              1.22474 = STANDARD DEVIATION OF TEST RESULTS ABOUT THE WEIGHTED MEAN (LB/SCC UNIT)
                              1.09544 = WEIGHTED DEVIATION OF TEST RESULTS ABOUT THE WEIGHTED MEAN (LB/SCC UNIT)
                              0.90718 = WEIGHTED MEAN OF TEST RESULTS (KG/SCC UNIT)
                              0.55553 = STANDARD DEVIATION OF TEST RESULTS ABOUT THE WEIGHTED MEAN (KG/SCC UNIT)
                              0.49688 = WEIGHTED DEVIATION OF TEST RESULTS ABOUT THE WEIGHTED MEAN (KG/SCC UNIT)

************************************************************ RUN SUMMARY ******************************************************
    3 RECORDS WERE READ FROM SOT-SUBFILE.
    0 RECORDS FROM SOT-SUBFILE WERE IGNORED--INCONSISTENT SCC OR NO WEIGHTING CARD.
    3 RECORDS WERE ACCEPTED.
    4 FORM NUMBER WEIGHTING CARDS WERE READ.
    0 FORM NUMBER WEIGHTING CARDS WERE REJECTED.
    4 FORM NUMBER WEIGHTING CARDS WERE ACCEPTED.
    1 FORM NUMBERS WERE NOT FOUND IN SOT-SUBFILE.
    3 FORM NUMBERS WERE FOUND IN SOT-SUBFILE.
```

Figure 7. SOTDAT Emission Factor Report

Additional References

Other publications that supplement this booklet for SOTDAT as well as other AEROS data bases include:

1. AEROS Manual Series, Volume I: AEROS Overview, EPA-450/2-76-001. As the name implies, it presents and overview of the system.

2. AEROS Manual Services, Volume II: AEROS User's Manual, EPA-450/2-76-029. This manual describes data coding as well as the data flow procedures.

3. AEROS Manual Series, Volume III: Summary and Retrieval, EPA-450/2-76-009. This manual describes computerized reports as well as several examples of data analysis.

4. AEROS Manual Series, Volume V: AEROS Manual of Codes, EPA-450/2-76-005. This manual contains all necessary AEROS codes.

These manuals are available from the same sources as the publications related to source test data mentioned earlier.

Additional information can be obtained by communicating with:

SOTDAT Project Manager
Requests and Information Section (MD-14)
National Air Data Branch
U.S. Environmental Protection Agency
Research Triangle Park NC 27711

FTS: 629-5491
Commercial: (919)541-5491

TECHNICAL REPORT DATA
(Please read Instructions on the reverse before completing)

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16. ABSTRACT

The Source Test Data (SOTDAT) System is an automated data processing system used by the U.S. Environmental Protection Agency to store data from testing and analysis of emissions from stationary sources of air pollution.

This booklet is designed for persons who are not familiar with SOTDAT, to provide a description of the system and examples of the computerized SOTDAT reports that are available upon request. To meet these objectives, this booklet includes: (1) an overview of the data contained in SOTDAT, (2) descriptions of related publications, (3) a description of procedures for requesting SOTDAT data and (4) a description of SOTDAT report capabilities and examples of available computerized report formats. A list of additional references is provided for background information.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
SOTDAT AEROS NEDS NADB emissions		

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