2001 SOUTH CAROLINA EMISSION INVENTORY

POINT SOURCE DATA REPORT

INSTRUCTIONS

Emission Inventory And The Point Source Data Report: A state-wide emission inventory takes into account emissions from mobile sources, biogenic sources, area sources, and point sources. Point sources have actual or potential emissions large enough to warrant estimating their actual emissions on a regular basis. Information used to make these estimates is collected on Point Source Data Reports (PSDRs). It should be noted that, unlike many other states, South Carolina DHEC staff perform these emission estimation calculations. Facility staff are not required to calculate their emissions. DHEC staff rely on EPA-approved methodology and use preferred methods over less preferred methods where available. For example, stack testing emission rates are preferred over AP-42 emission factors (stack test data must be reviewed and approved by the Bureau's Source Evaluation Section); when available, continuous emission monitor data are used preferentially over stack test data. DHEC actively participates in the Emission Inventory Improvement Program (EIIP) and incorporates all EIIP Preferred Methods Documents by reference into our operating procedures. EIIP Documents, AP-42, and other EPA emission estimating tools may be downloaded from the CHIEF web page at http://www.epa.gov/ttn/chief.

Getting Started: To begin the 2001emission inventory process you should have received a cover letter, a Document Certification form, and Facility General Information page pre-populated with data specific to your facility. You will have either down-loaded this PSDR from the Bureau's web page at http://www.scdhec.net/baq or it was mailed to you. Instructions are on the back of each blank form. Questions about these forms or how emissions will be calculated should be directed to Emission Inventory Section staff by calling (803) 898-4123.

Every facility that receives this form should review for accuracy the completed Facility General Information page that was mailed to you to notify you of the 2001 emission inventory requirement. Please strike through incorrect data and make corrections. If you were not sent a completed Facility General Information page please provide the requested information on the blank page (page 5) in this document. Copy and complete as many Emission Unit Equipment, Control Device, or Stack pages as needed to adequately reflect activity at your facility during calendar year 2001.

If you have Internet capability, you may download and refer to *FIRE version 6.23* (or the most current version at the time this package is mailed out) to ensure that you are using the correct units for activities reported at your facility. This software can be obtained from the Internet at http://www.epa.gov/ttn/chief/software/fire/index.html. Many people would prefer to use paper documents instead of computer software. The Emission Inventory Improvement Program (EIIP) has developed a document that contains criteria pollutant emission factors compiled from the latest version of FIRE. It lacks emission factors for hazardous air pollutants but is still useful for helping you to determine correct process information necessary for us to estimate emissions. The document, "Chapter 14: Uncontrolled Emission Factor Listing for Criteria Air Pollutants," can be downloaded from the EIIP Technical Documents page at http://www.epa.gov/ttn/chief/eiip/techreport/volume02/ii14_july2001.pdf. If you do not have Internet capability, we have a limited number of the Chapter 14 documents. We will be glad to send you a copy. If the emissions at your facility are fuel burning related only or evaporative loss only, you may not need this document. Use of FIRE or Chapter 14 is intended to help you report activities in the correct units and to minimize over-reporting. Its use is not required and it is not intended to be a stumbling block in preparing this report. If you have any questions, please give us a call.

Any confidential data must be clearly indicated. "CONFIDENTIAL" should be stamped on every applicable page. A "PUBLIC" copy of the report should also be provided with all of the confidential information removed.

It is not necessary to type this report. Sending in your original hand-written version generally results in fewer transcription errors. We tried to design this questionnaire to fit most facilities but realize this may not always

be possible. Please pencil in explanatory notes or attach any diagrams that you think may be necessary to explain processes at your facility.

Filling out the Point Source Data Report:

Facility Information Page: Facility general information is requested on this page. We are requesting an Emission Inventory Contact Mailing Address as well as a Billing Mailing Address. All Emission Inventory-related reports and calculations will be sent to the Emission Inventory Mailing Address and all material related to Air Permit Fees will go to the Billing Mailing Address.

Emission Unit Equipment Pages: Information on these pages should be reported in terms of your current permit. Air permits list most emission unit equipment. Usually all units listed on the permit should be represented by at least one Emission Unit Equipment page. A single Emission Unit Equipment ID may require more than one page to accurately report emissions generating activities. However, some equipment's emissions are very small (less than a ton for criteria pollutants, less than 0-200 lbs for HAPs/TAPs as described below) so activity levels at these units should be summarized on a single page and noted accordingly. The appropriate information should be reported on either the:

Fuel Burning Emission Unit Equipment: One page for each significant fuel-burning source. When several fuel burning operations are grouped under one permit Emission Unit Equipment ID, add up the fuel use on one page so that emissions can be calculated in terms of the permit. Fuel use at smaller units could be summarized on one page.

Evaporative Loss Emission Unit Equipment: The information provided on this form will be used to calculate emissions using the material balance method.

Miscellaneous Emission Unit Equipment: This page should be used for Industrial Processes which are generally listed in source classification codes 30100101 through 39999999 in the document "Chapter 14: Uncontrolled Emission Factor Listing for Criteria Air Pollutants" not covered by the Fuel Burning or Evaporative Loss pages.

Incineration Emission Unit Equipment: This page should be used to report annual activity rates of waste incineration processes listed in source classification codes 50100101-50390010 in the document "Chapter 14: Uncontrolled Emission Factor Listing for Criteria Air Pollutants."

Storage Tanks Emission Unit Equipment: Detailed storage tank information is not needed unless the tanks are greater than 40,000 gallons and contain volatile petroleum liquids whose true vapor pressure is greater than 1.52 psia (10.5 kilo pascals). If the tanks at your facility meet these criteria, tank losses should be reported using the TANKS program. Please send a copy of the TANKS Summary Report with this package, not the Detail Report. TANKS can be downloaded at no charge from EPA's web page http://www.epa.gov/ttn/chief/software/tanks/index.html. If you have any questions or problems, give us a call.

Control Device Information: The department is developing a new relational database, which will track control devices separately from their associated Emission Unit Equipment and stacks. To enable reconciliation of current combined data to the new data format we have separated control device and stack. This page will also facilitate more complete reporting of Rule Effectiveness periods as discussed below under "Additional Reporting." Data on parameters for control devices should be provided on these forms.

Stack Information: A Stack Information page should be completed for each significant emissions generating source whose actual or potential emissions are measured in tons per year or any stack with a control device, regardless of emissions. These pages are used to determine the emission flow from origin to discharge into the atmosphere.

Additional Emissions process-specific instructions appear on the back of each page of the report, except the **CHECKLIST** page. Some significant emission generating unit equipment may not appear on your permit.

However, actual emissions from these sources must be determined. Therefore, information about additional boilers or other operations that operated in 2001 should be provided on the appropriate page(s). Permit Emission Unit ID and Equipment ID should be left blank. If a small (less than 1.5 million BTU/hr.) fuel burning emission unit is not listed on the permit, it does not warrant a separate fuel burning page. However, multiple small fuel burning unit's fuel usage should be combined on one page so that emissions can be calculated. If multiple units are combined on your permit, please indicate number of units, type (furnaces, ovens, etc.), and maximum size (1.5 mmBTU/hr) for each.

Checklist: This page is optional. It is included to aid inventory preparers to ensure all Emission Unit Equipment, Stacks, and Control devices have been reported. It can be useful to large facilities with many pieces of Emission Unit Equipment.

Additional Reporting:

Rule Effectiveness: The EPA has determined that control devices do not operate at their design capacity 100% of the time. That means that traditional emission inventories underestimate actual emissions. This causes problems because emissions control strategies for non-attainment areas depend on accurate baseline emissions inventories. Most likely, 2001 data will be used as a base year for non-attainment of the new NAAQS (National Ambient Air Quality Standards). If we estimate too high, modeling will indicate that more controls must be applied than are necessary to achieve attainment. If estimates are too low, then not enough controls will be required, resulting in continued non-attainment, application of a second round of controls, and more stringent limits on industrial development.

For EPA approval, current EPA guidance requires that a correction factor, called Rule Effectiveness (RE), must be applied to the control device efficiency. The default correction factor is 80%. The equation used for RE control efficiency is: 1 - (rated overall control efficiency)(0.8). If a control device has low efficiency, the impact is not that great but RE drastically inflates emissions from a very high efficiency control device. Using other correction methods requires further EPA approval. Department staff think that under-estimating emissions is likely but that the 80% default RE is inappropriate. Furthermore, the guidance has been applied inconsistently nation-wide. It is under review by EPA but currently it establishes the rules with which we must work.

To improve the accuracy of the 2001 inventory, we are asking for information regarding control equipment downtime, malfunction or upsets. You should indicate on the Control Device page the percent of the annual process rate during which the control device operated at lower overall efficiency or did not operate at all. Department staff think that control device variability should be addressed on a facility by facility basis and not by an across-the-board one size fits all correction factor.

Air Toxics: Toxics reporting has become increasingly important. In order to ensure that the Department's data is accurate, please speciate all HAPs and TAPs used at the facility under the appropriate emission unit equipment. If known, groups of compounds such as metal compounds, polycyclic organic matter (POM), etc. should be broken into individual compounds. The CAS number should be included. If HAPs are not speciated, the EPA applies a "conservative" speciation profile when the emissions are entered into their models. Below is a list of the 33 HAPs of primary concern to the EPA for the Urban Air Toxics Strategy. If these toxics are emitted from the facility at any level, they should be reported on the Point Source Data Report. For the other HAPs and TAPs, emissions should be reported if the facility total of that HAP or TAP exceeds 200 lbs. (0.1 tons). Reporting speciated toxics will ensure that the inventory accurately represents your facility's emissions when US EPA begins modeling of these additional pollutants. The toxics speciation may be included as part of the Point Source Data Report or as a spreadsheet attachment, as long as individual emission unit equipment is identified.

acetaldehyde	coke oven emissions	manganese and compounds
acrolein	dioxin	mercury and compounds
acrylonitrile	ethylene dibromide	methylene chloride
arsenic and compounds	propylene dichloride	nickel and compounds
benzene	1, 3-dichloropropene	polychlorinated biphenyls (PCBs)

beryllium and compounds	ethylene dichloride	polycyclic organic matter (POM)
1, 3-butadiene	ethylene oxide	Quinoline
cadmium and compounds	formaldehyde	1, 1, 2, 2-tetrachloroethane
carbon tetrachloride	hexachlorobenzene	Perchloroethylene
chloroform	hydrazine	Trichloroethylene
chromium VI and compounds	lead and lead compounds	vinyl chloride

Ammonia and Condensable Organics: Ammonia, condensable organics, and organic and elemental carbon are precursors to PM 2.5. Mechanisms for addressing these pollutants have not become fully established at this time but it is still necessary to account for them in the 2001 inventory. In a manner similar to Air Toxics reporting discussed above, please report any PM 2.5 or its precursors. For condensable organics, please report any that are not captured on the Evaporative Loss Emission Units pages(s) in a separate attachment along with any applicable control device and stack data.

Insignificant Activities are identified on your Title V Permit. If emissions from these activities total one ton or more of any one criteria pollutant or pass the significance tests for air toxics discussed above, then an Emission Unit Equipment page must be filled out to account for these emissions.

Finishing up: A complete Point Source Data Report package consists of the signed Document Certification form, a corrected Facility General Information page, and as many emission generating Emission Unit Equipment, Control Device, or Stack pages as adequately represent 2001 air emissions from your facility.

When completed, Point Source Data Reports should be mailed to:

Bureau of Air Quality, Emission Inventory Section
SC DHEC
2600 Bull Street
Columbia, SC 29201

We intended to make this questionnaire as simple as possible; but when collecting technical information, there are many opportunities for misinterpretation. If you have any questions about completing this form, PLEASE CALL US at (803) 898-4123.

2001 Facility General Information

Facility Name: Permit No:

(1) Is any of the information contained in this report confidential in accordance with the Freedom of Information Act and the Pollution Control Act? _____ If yes, please provide a second copy with confidential information blanked out so that public access requests can be met without compromising trade secrets.

(2) Facility Name: _____ **(3)** Permit No.: _____

(4) Facility Location: Street _____ City _____ Zip Code _____

(5) Emission Inventory Contact Person:			
Contact Name:	Phone # + ext:	Fax #:	Internet Address:
Mailing Address:	Mailing City:	Mailing State:	Mailing Zip Code:

(6) Billing Contact Person:			
Contact Name:	Phone # + ext:	Fax #:	Internet Address:
Mailing Address:	Mailing City:	Mailing State:	Mailing Zip Code:

(7) Primary/Secondary/Tertiary SIC Code: _____/_____/_____

(8) Primary/Secondary/Tertiary NAICS Code: _____/_____/_____

(9) Principal Product: _____

(10) Number of Employees at Facility: _____ **(11)** Land Area at Facility: _____

(12) Please enter Lat/Long OR UTM for Facility coordinates

Latitude (DDMMSS): _____ Longitude (DDMMSS): _____

UTM Horizontal Coordinates: _____ UTM Vertical Coordinates:_____

(13) Is facility a portable facility (e.g., asphalt plants, portable concrete plants, soil remediation units or portable diesel generators)? _____ If yes, in what county were emissions generated? _____

2001 FACILITY GENERAL INFORMATION:

This page requests general information from a facility. Most facilities should receive this page with information pre-printed as we currently have it in our database. You should review this information and scratch through incorrect data and make corrections. If your page does not contain pre-printed data, then please fill it out completely. Once the entire report is complete and has been reviewed, the Responsible Facility Official should sign the Document Certification form and return both to the address provided on page 4 of this document.

(1) Any confidential data must be clearly indicated. "CONFIDENTIAL" should be stamped on every applicable page. A "PUBLIC" copy of the report should be provided with all of the confidential information removed.

(2) Company name that should be used for mailing. Many companies own two or more facilities. If this is the case for this facility, please indicate the specific name/identifier for this facility.

(3) Street address or highway number if no street address is available. Not the mailing address.

(4) Provide information for the specific location of the facility.

(5) Provide information for the Emissions Contact at your facility. This is the person we will call if there are questions about the contents of this report. It is also the person to whom any future Point Source Data Reports and other correspondence related to Emission Inventories will be sent. If there is an extension, please provide that number along with the phone number. We have included a field for "Internet Address" for those who have Internet access. This is an optional field.

(6) Provide information for the Billing Contact at your facility. This person will receive all correspondence related to permit fees. If there is a phone number extension, please provide it. We have added a field for "Internet Address" for those who have Internet access and as above, this is an optional field.

(7) SIC (Standard Industrial Classification) codes are descriptive codes for facilities. The primary SIC code should be found on your Air Permit. If you do not know your SIC Code, leave it blank and we will find the correct one to use.

(8) Optional - NAICS (North American Industrial Classification System) code. This is the new industry coding system that will replace the existing SICs. It has been developed as a consequence of the North American Free Trade Agreement. It has been left blank and is optional. We intend to convert existing SICs to NAICSs during this inventory.

(9) What is the principal product manufactured at the facility?

(10) This information can be important in estimating emissions from certain area source categories.

(11) Optional - Self Explanatory.

(12) Optional - Please update either the latitude and longitude for your facility OR the UTM (Universal Transverse Mercator) Coordinates. It is not necessary to provide both. Please update ONLY if you have valid GPS (Global Positioning System) data.

(13) Self Explanatory.

2001 Fuel Burning Emission Unit Equipment

Facility Name: Permit No:

Directions: The purpose of this section is to provide information on fuel burning operations. Please complete one page for each significant combustion source. Smaller combustion sources, such as multiple natural gas fired units with design capacities less than 10 mmBTU/hr, may be combined consistent with your record keeping procedures but some connection to your current permit should be indicated.

Emission Unit Equipment Identification:

(1) Permit Emission Unit ID: _____ **(2)** Permit Equipment ID: _____

(3) Facility Designation for Unit Equipment: _____

(4) Boiler/Dowtherm/Dryer/Furnace/Oven/Etc. (Please indicate which)_____

(5) Is it a co-gen boiler? ____ (Y/N) **(6)** Percent Fuel Used for Space Heating: _____

(7) Manufacturer/Serial No.: _____ **(8)** Date Installed: _____

(9) Maximum Design Capacity: _____ million BTU/hr **(10)** Normal Operating Rate:_____million BTU/hr

Emission Unit Equipment Operating Time:

(11) Percentage Annual Throughput:

____% Jan; ____% Feb; ____% Mar; ____% Apr; ____% May; ____% Jun;

____% Jul; ____% Aug; ____% Sep; ____% Oct%; ____% Nov; ____% Dec

(12) Normal Operating Schedule

(12a) Normal Operating Schedule: _____ hours/day; ____ days/week; ____ weeks/year

(12b) Does this Equipment typically operate during weekends? _____(Y/N) Comment: _____

(12c) Normal Operation Start Time _____ (AM/PM)

(12d) Normal Operation End Time _____ (AM/PM)

(12e) Is this Normal Operating Schedule consistent year round? _____ (Y/N)

(13) Actual Hours of Operation During the Year? _____

Emission Unit Equipment Operating Rate:

	(14) PRIMARY FUEL	(15) SECONDARY FUEL	(16) OTHER
Type of Fuel Used			
Quantity/Year[1]			
Quantity/Ozone Season Day[1]			
% Sulfur			
% Ash			
BTU Value of Fuel			
Method of Firing [2]			
Internal Combustion [3]			

[1] Please report fuel use in terms of thousands of gallons for liquid fuels, millions of cubic feet for natural gas, and tons for solid fuels.

[2] For coal designate: pulv. dry bottom; pulv. wet bottom; cyclone; spreader stoker; overfired stoker; or underfired stoker. Also, indicate whether the boiler is tangentially or wall fired.

[3] For internal combustion engines designate: turbine; reciprocating; or other (describe); otherwise leave blank.

(17a) If Source Tested, Please Provide: Date of Last Test: _____ **(17b)** Please give Operating Rate in lb/hr _____

2001 FUEL BURNING EMISSION UNIT EQUIPMENT:

One Fuel Burning Emission Unit Equipment page should be filled out for each fuel burning Emission Unit Equipment on your permit, as well as any other significant fuel burning equipment as described in the Instructions section. The type of fuel and the size of the equipment determine the significance of a source. Natural gas fired units smaller than 10 mmBTU/hr (per unit) have low emissions and their combined fuel use can be reported on one page. However, a 6 mmBTU/hr boiler that burns residual (number 5 or 6) oil has potential SO2 emissions greater than 100 tons per year, so most units that burn residual oil should be reported separately. Other fuels have intermediate emission levels, which will require the exercise of judgement about whether to summarize fuel use or report it on separate pages. The fuel burning from larger units must be itemized.

(1) Emission Unit ID as it appears on your current operating permit (ID 01, 02, etc.). If the emission unit does not appear on your operating permit, then please enter the construction permit ID (CA, CB, etc.). If the emission unit is not on any permit, please leave blank.

(2) Equipment ID as it appears on your current operating or construction permit. If the emission unit is not on a permit, please leave blank.

(3) What is this emission unit equipment called to distinguish it from other facility operations (Boiler #1, Dryer #1, etc)?

(4) Self explanatory. Select one.

(5) A co-generation boiler produces more than one useful form of energy (such as process heat and electric power).

(6) Optional

(7) Optional- May be used for identification purposes, if available.

(8) Optional - Self explanatory. Useful for identifying applicable regulations. Prior to 1971, rounding to the nearest year is sufficient.

(9) Manufacturer's rated maximum rate of operation. This information is very important as it is used to identify facilities affected by various regulations or regional strategy development. For small units, if several sources are grouped at the equipment level on your permit and you have grouped them on one page, please identify them as:
< 10 mmBTU each; 10 - 100 mmBTU each; or > 100 mmBTU each. Emission factors may differ depending on the size of the unit.

(10) Enter the average operating rate during the year of inventory.

(11) Percentage of annual throughput for each month of the year. The total must equal 100%.

(12) These questions allow us to reduce annual emissions estimates to more specific temporal estimates for various regulatory or modeling purposes.

(13) Enter the actual hours of operation for the year. This is important when calculating stack tests with emission rates in terms of "lbs/hr." If Actual Hours Of Operation is not provided, we will calculate it using the "Normal Operating Schedule."

(14) - (16) Each type of fuel has characteristics which make some pieces of information more important than for other types of fuel. Fuel oil emission calculations are directly impacted by the average sulfur percent in the fuel burned. We are asking for an average of the actual sulfur percent of the fuel burned during 2001, not the limit listed on your permit. Ash and sulfur percent are equally important for calculating emissions from coal and waste oil combustion. For coal boilers, please designate whether it is pulverized dry bottom, pulverized wet bottom, cyclone furnace, spreader stoker, overfired stoker, or underfired stoker. It is also important to indicate whether it is tangentially or wall fired. Propane and Butane are considered liquified petroleum gases and hence should be reported in thousands of gallons (kilogallons). "Ozone Season Day" means a single day during Ozone Season (May - September). Divide the quantity of fuel burned during the ozone season by 153. That yields the average Process Rate for any day during the period.

(17) If a source test has been done on this equipment, please provide the date of the most recent test. When we calculate emission factors for tested equipment, we give preference to tests using EPA Reference Methods which have been approved and corrected by the Source Evaluation Section of the Bureau of Air Quality. If you have a test you would like to submit for evaluation, let us know. We will use DHEC approved tests or emission factors preferentially over tests that are not approved by DHEC. Tests that have not been approved by the Department may be used if there are no nationally recognized emission factors available. When calculating particulate emissions using a stack test, the BTU value of the fuel is important. When the BTU value is not provided, we use averages from EPA's AP-42. If we use a stack test to calculate an emission factor, we also need to know the operating rate during the test.

2001 Evaporative Loss Emission Unit Equipment

Facility Name: Permit No:

Directions: The purpose of this page is to gather information on VOC and HAP evaporative loss sources. The information on this page will be used to calculate emissions by material balance. An evaporative loss source may be a single unit or a line of equipment. Please include information on this page for all VOCs and HAPs used at your facility. Attach additional pages as necessary. Feel free to supplement this information with a spreadsheet and/or process flow diagram.

Emission Unit Equipment Identification:

(1) Permit Emission Unit ID: _____ **(2)** Permit Equipment ID: _____

(3) Company Emission Unit Equipment Designation: Please give a brief description: _____

_____

(4) Manufacturer/Serial No.: _____ **(5)** Date Installed:_____

(6) Maximum Design Rate: _____ **(7)** Normal Operating Rate: _____

Emission Unit Equipment Operating Time:

(8) Percentage Annual Throughput:
____% Jan; ____% Feb; ____% Mar; ____% Apr; ____% May; ____% Jun;

____% Jul; ____% Aug; ____% Sep; ____% Oct%; ____% Nov; ____% Dec

(9) Normal Operating Schedule

(9a) Normal Operating Schedule: _____ hours/day; ____ days/week; ____ weeks/year

(9b) Does this equipment typically operate during weekends? _____(Y/N) Comment:

_____

_____

(9c) Normal Operation Start Time _____ (AM/PM)

(9d) Normal Operation End Time _____ (AM/PM)

(9e) Is this Normal Operating Schedule Consistent Year Round? _____ (Y/N)

(10) Actual Hours of Operation During the Year? _____

Emission Unit Equipment Operating Rate:

(11) VOC/HAP/TAP-Containing Materials Used [1]	VOC/HAP/TAP Content	Annual Quantity Used	Ozone Season Day Quantity Used
	lb/gal	gal/yr	gal/day
	lb/gal	gal/yr	gal/day
	lb/gal	gal/yr	gal/day

[1] Be sure to list separately solvents added as thinners or used for cleanup. Attach additional pages as necessary.

(12) VOC/HAP/TAP-Containing Sent Out in Product	VOC/HAP/TAP Content	Annual Quantity Sent Out in Product	Ozone Season Day Quantity Sent Out in Product
	lb/gal	gal/yr	gal/day
	lb/gal	gal/yr	gal/day
	lb/gal	gal/yr	gal/day

(13) If VOCs/HAPs/TAPs are bound in products, please provide VOC and each HAP/TAP content of product. Specify mass % or volumetric % _____

(14) Amount of VOCs/HAPs/TAPs sent out to be reprocessed or disposed of and to whom (in terms of lbs pure VOC and each HAP/TAP sent out):

_____

_____

(15a) If Source Tested, Please Provide Date Last Tested:_____ **(15b)** Please give Operating Rate in lb/hr _____

2001 EVAPORATIVE LOSS EMISSION UNIT EQUIPMENT:

This page allows reporting of VOCs (volatile organic compounds), HAPs (hazardous air pollutants) and TAPs (toxic air pollutants). Most HAPs/TAPs are also VOCs, so when reporting HAPs/TAPs be sure to make it clear to us if they are also included in your total VOC count. The 33 HAPs listed in the general instructions should be speciated if any amount is present at the facility. For all other HAPs and TAPs, please speciate any that have a plant-wide total of 200 lbs. (0.1 tons). If known, groups of compounds such as metal compounds, polycyclic organic matter (POM), etc. should be broken into individual compounds. The CAS number should be included. If you have a question about VOCs, HAPs or TAPs, give us a call. For the purpose of the remainder of these instructions they will all be called VOCs.

(1) Emission Unit ID as it appears on your current operating permit (ID 01, 02, etc.). If the unit does not appear on your operating permit, then please enter the construction permit ID (CA, CB, etc.). If the emission unit is not on a permit, please leave blank.

(2) Equipment ID as it appears on your current operating or construction permit. If the emission unit is not on a permit, please leave blank.

(3) What is this emission unit equipment called to distinguish it from other Facility operations (Degreaser #1, Coater Line #1, etc)?

(4) Optional- May be used for identification purposes, if available.

(5) Self Explanatory. Useful for identifying applicable regulations. Prior to 1971, rounding to the nearest year is sufficient.

(6) Manufacturer's rated maximum rate of operation.

(7) Enter the average operating rate during 2001.

(8) Percentage of annual throughput for each month of the year. The total must equal 100%.

(9) These questions allow us to reduce annual emissions estimates to more specific temporal estimates for various regulatory or modeling purposes.

(10) Enter the actual hours of operation for the year. This is important when calculating stack tests with emission rates in terms of "lbs/hr." If Actual Hours Of Operation is not provided, we will calculate it using the "Normal Operating Schedule."

(11) Report the total amount of each VOC/HAP-Containing material used during the inventory year. Below is an example of how this can be determined:

	VOC-containing material on hand at beginning of 2001	=	20 gallons at 7.6 lb. VOC/gal.
plus			
	VOC-containing material purchased during 2001	=	50 gallons at 7.6 lb. VOC/gal.
minus			
	VOC-containing material on hand at end of 2001	=	10 gallons at 7.6 lb. VOC/gal.

Using this formula, 60 gallons at 7.6 lb. VOC/gal. were used during the year. Report this amount in the "VOC/HAP/TAP-Containing Materials Used" spaces. Unless it can be accounted for in some other way (questions 11-13), we assume it all was emitted to the atmosphere. When reporting the "VOC/HAP/TAP-containing Materials Used," please give: (1) the VOC content and each HAP/TAP content of the material (lb VOC/ gal and lb of each HAP or TAP/gal) along with the gallons used for the year, or (2) the % weight of the material which is volatile and the % weight of each HAP/TAP along with the lbs used for the year. An MSDS (material safety data sheet) will usually provide some information to determine the lb VOC/gal or % weight makeup. These MSDS sheets should be provided with the PSDR to aid us in our calculations.

"Ozone Season Day" means a single day during Ozone Season (May - September). Divide the ozone season quantity by 153. That yields the average Process Rate for any day during the period.

(12) If your facility manufactures or mixes a product which contains VOCs/HAPs, most of it can be accounted for by subtracting the gallons and lb. VOC/gal. and lb. of each HAP or TAP/gal sent out in the product. For example, the material you received may be 7.6 lb. VOC/gal. and 1.2 lb. toluene/gal but after it is mixed the formula may be 5.2 lb. VOC/gal and 0.82 lb. toluene/gal. Report this information in the "VOC/HAP/TAP-Containing Materials Sent Out in Product" spaces.

(13) If VOCs/HAPs/TAPs are bound in the product and a percent of them do not evaporate (e.g., polymer manufacturing or spraying fiberglass in the manufacture of products), indicate the percent of each bound in the product.

(14) Many facilities send waste VOC/HAP/TAP-containing material out to be reprocessed or disposed. Report this amount in lbs. of each VOC/HAP/TAP sent out OR gallons of VOC/HAP/TAP sent out and lbs. of VOC/gal and lbs. of each HAP or TAP/gal.

(15) (a) Material balance is usually the preferred method for estimating emissions from evaporative loss sources. However, if a source test has been done on this equipment, and if material balance is not feasible for this process, please provide the date of the most recent test. (b) If we use a stack test to calculate an emission factor, we need to know the operating rate during the test.

2001 Miscellaneous Emission Unit Equipment

Facility Name: Permit No:

Directions: This page should be used for each emissions-generating operation that is not reported on either the fuel burning, evaporative loss, storage tank, or incinerator pages. Throughput for loading racks at gasoline terminals should also be reported here.

Emission Unit Equipment Identification:

(1) Permit Emission Unit ID: _____ **(2)** Permit Equipment ID: _____

(3) Company Emission Unit Equipment Designation? Please give a brief description:
_____

(4) Manufacturer/Serial No.: _____ **(5)** Date Installed: _____

(6) Maximum Design Capacity: _____ **(7)** Normal Operating Rate: _____

Emission Unit Equipment Operating Time:

(8) Percentage Annual Throughput:
____% Jan; ____% Feb; ____% Mar; ____% Apr; ____% May; ____% Jun;

____% Jul; ____% Aug; ____% Sep; ____% Oct%; ____% Nov; ____% Dec

(9) Normal Operating Schedule

(9a) Normal Operating Schedule: _____ hours/day; ____ days/week; ____ weeks/year

(9b) Does this equipment typically operate during weekends? _____(Y/N) Comment:
_____
_____

(9c) Normal Operation Start Time _____ (AM/PM)

(9d) Normal Operation End Time _____ (AM/PM)

(9e) Is this Normal Operating Schedule Consistent Year Round? _____ (Y/N)

(10) Actual Hours of Operation During the Year? _____

Emission Unit Equipment Operating Rate:

(11) Major Raw Materials	Annual Throughput	Ozone Season Day Throughput

(12) Major Products	Annual Quantity	Ozone Season Day Throughput

Note: Report operating rate in units of the emission factor for the emission generating operation given in the document "Chapter 14: Uncontrolled Emission Factor Listing for Criteria Air Pollutants" or *FIRE Version 6.23.* If the emission factor is in terms of the amount of raw materials input, then it is not necessary to provide major product output and vice-versa. You need provide only Emission Unit Equipment Operating Rate information that is necessary to calculate emissions.

(13a) If Source Tested, Please Provide Date of Last test: _____ **(13b)** Please give Operating Rate in lb/hr _____

2001 MISCELLANEOUS EMISSION UNIT EQUIPMENT:

This page covers most manufacturing operations which are neither fuel burning nor evaporative loss sources, although for some manufacturing processes this form and a fuel burning form should be completed. You should not report stack names or control devices here. Stacks and control devices are reported on the Stack and/or Control Device pages.

(1) Emission Unit ID as it appears on your current operating permit (ID 01, 02, etc.). If the emission unit does not appear on your operating permit, then please enter the construction permit ID (CA, CB, etc.). If the emission unit is not on a permit, please leave blank.

(2) Equipment ID as it appears on your current operating or construction permit. If the emission unit is not on a permit, please leave blank.

(3) What is this emission unit equipment called to distinguish it from other facility operations? A brief description of the actual process which GENERATES the emissions will help us to identify the best emission factor.

(4) Optional- May be used for identification purposes, if available.

(5) Optional - Useful for identifying applicable regulations. Prior to 1971, rounding to the nearest year is sufficient.

(6) Manufacturer's rated maximum rate of operation.

(7) Enter the average operating rate during the year of inventory.

(8) Percentage of annual throughput for each month of the year. The total must equal 100%.

(9) These questions allow us to reduce annual emissions estimates to more specific temporal estimates for various regulatory or modeling purposes.

(10) Enter the actual hours of operation for the year. This is important when calculating stack tests with emission rates in terms of "lbs/hr." If Actual Hours Of Operation is not provided, we will calculate it using the "Normal Operating Schedule."

(11) & (12) Report operating rate in units of the emission factor for the emission generating operation given in "Chapter 14: Uncontrolled Emission Factor Listing for Criteria Air Pollutants" or *FIRE Version 6.23.* If the emission factor is in terms of the amount of raw materials input, then it is not necessary to provide major product output and vice-versa. You need only provide Emission Unit Equipment Operating Rate information which is necessary to calculate emissions. Use of Chapter 14/FIRE is intended to help you report activities in the correct units and to minimize over-reporting. If you are unsure whether to provide "Major Raw Materials" or "Major Products" data, provide both if that is easier than for you to use than Chapter14/FIRE. You may also call any emission inventory staff at (803) 898-4123 for assistance. If there is no AP-42 or Chapter 14/FIRE reference listed for a process, we will be able to use the rate you developed for permit applications, trade group factors, modeling questionnaires, or testing of similar equipment in order to calculate emissions. Please indicate alternative emission factors on the front of this page if there are no preferred factors in AP-42 or in Chapter 14/FIRE; or if no EPA Reference Method stack tests have been performed.

"Ozone Season Day" means a single day during Ozone Season (May - September). Divide the ozone season quantity by 153. That yields the average Process Rate for any day during the period.

(13) If a source test has been done on this equipment, please provide the date of the most recent test. When we calculate emission factors for tested equipment, we give preference to tests using EPA Reference Methods which have been approved and corrected by the Source Evaluation Section of the Bureau of Air Quality. If you have a test you would like to submit for evaluation, let us know. We will use DHEC approved tests or emission factors preferentially over tests that are not approved by DHEC. Tests that have not been approved by the Department may be used if there are no nationally recognized emission factors available. When calculating particulate emissions using a stack test, the BTU value of the fuel is important. When the BTU value is not provided, we use averages from EPA's AP-42. If we use a stack test to calculate an emission factor, we also need to know the operating rate during the test.

2001 Incineration Emission Unit Equipment

Facility Name: Permit No:

Directions: Complete one page for each waste incineration process listed in source classification codes 50100101-50390010 listed *FIRE version 6.23* or "Chapter 14: Uncontrolled Emission Factor Listing for Criteria Air Pollutants."

Emission Unit Equipment Information:

(1) Permit Emission Unit ID: _____ **(2)** Permit Equipment ID:_____

(3) Type of Incinerator (examples include multiple chamber, controlled air, conical, trench, pathological, etc.):
_____

(4) Facility Designation For Incinerator: _____

(5) Manufacturer/Serial No.: _____ **(6)** Installation Date: _____

(7) Maximum Design Capacity: _____ **(8)** Normal Operating Rate: _____

Emission Unit Equipment Operating Time:

(9) Percentage Annual Throughput

____% Jan; ____% Feb; ____% Mar; ____% Apr; ____% May; ____% Jun;

____% Jul; ____% Aug; ____% Sep; ____% Oct%; ____% Nov; ____% Dec

(10) Normal Operating Schedule

(10a) Normal Operating Schedule: _____ hours/day; ____ days/week; ____ weeks/year

(10b) Does this equipment typically operate during weekends? _____(Y/N) Comment:
_____

_____

(10c) Normal Operation Start Time _____ (AM/PM)

(10d) Normal Operation End Time _____ (AM/PM)

(10e) Is this Normal Operating Schedule Consistent Year Round? _____ (Y/N)

(11) Actual Hours of Operation During the Year? _____

Emission Unit Equipment Operating Rate:

(12) Material Incinerated [1]	Annual Amount Burned [2]	Ozone Season Day Amount Burned

[1] Also indicate if it is a Solid (S), Liquid (L), or Gas (G).

[2] Gallons or tons per year as indicated in *FIRE version 6.23* or "Chapter 14: Uncontrolled Emission Factor Listing for Criteria Air Pollutants."

Note: If more than 1 mmcf of gas; 1000 gal of liquid fuel; or 1 ton of solid fuel is used, then the fuel burning should be indicated on a separate Fuel Burning form.

(13a) If Source Tested Please, Provide Date of Test: _____ **(13b)** Please give Operating Rate in lb/hr _____

2001 INCINERATION EMISSION UNIT EQUIPMENT:

Waste incineration operations should be reported on this page. Many facilities have "incinerators" which are actually control devices. For example, a fume incinerator is considered a control device. The correct place to report this type incinerator is on the Control Device page. Any natural gas used to operate the control device should be reported.

(1) Emission Unit ID as it appears on your current operating permit (ID 01, 02, etc.). If the emission unit does not appear on your operating permit, then please enter the construction permit ID (CA, CB, etc.). If the emission unit is not on a permit, please leave blank.

(2) Equipment ID as it appears on your current operating or construction permit. If the emission unit is not on a permit, please leave blank.

(3) See AP-42, "Chapter 14: Uncontrolled Emission Factor Listing for Criteria Air Pollutants," (source classification codes 50100101-50390010), or *FIRE version 6.23* to help you to determine the types of incinerator that should be reported here. You may also call any emission inventory staff at (803) 898-4123 for help.

(4) What is this Emission Unit Equipment called to distinguish it from other facility operations?

(5) Optional- May be used for identification purposes, if available.

(6) Optional - Useful for identifying applicable regulations. Prior to 1971, rounding to the nearest year is sufficient.

(7) Manufacturer's rated maximum rate of operation.

(8) Enter the average operating rate during the year of inventory.

(9) Percentage of annual throughput for each month of the year. The total must equal 100%.

(10) These questions allow us to reduce annual emissions estimates to more specific temporal estimates for various regulatory or modeling purposes.

(11) Enter the actual hours of operation for the year. This is important when calculating stack tests with emission rates in terms of "lbs/hr." If Actual Hours Of Operation is not provided, we will calculate it using the "Normal Operating Schedule."

(12) Report the material incinerated in the space indicated and refer to "Chapter 14: Uncontrolled Emission Factor Listing for Criteria Air Pollutants" or *FIRE version 6.23* for the correct units to be reported.

"Ozone Season Day" means a single day during Ozone Season (May - September). Divide the ozone season quantity by 153. That yields the average Process Rate for any day during the period.

(13) If a source test has been done on this equipment, please provide the date of the most recent test. When we calculate emission factors for tested equipment, we give preference to tests using EPA Reference Methods which have been approved and corrected by the Source Evaluation Section of the Bureau of Air Quality. If you have a test you would like to submit for evaluation, let us know. We will use DHEC approved tests or emission factors preferentially over tests that are not approved by DHEC. Tests that have not been approved by the Department may be used if there are no nationally recognized emission factors available. When calculating particulate emissions using a stack test, the BTU value of the fuel is important. When the BTU value is not provided, we use averages from EPA's AP-42. If we use a stack test to calculate an emission factor, we also need to know the operating rate during the test.

2001 Control Device Information	
Facility Name:	Permit No:

Directions: Complete one page for each control device.

(1a) Control Device ID _____ **(1b)** Control Device Description: _____

(2) Emission Unit Equipment ID(s) Vented to this Control Device	**(3)** Emission Unit Equipment Name(s):

(4) Stack IDs to which Control Device exhausts	**(5)** Stack Names

(6) Control Device Type: _____ **(7)** Manufacturer: _____

(8) Emission Reductions by process modification instead of add-on control devices

(8a) If multiple cyclones are used for wood fired or coal boilers, is flyash reinjection used? _____(Y/N)

(8b) If not clearly indicated on the Emission Unit page, are emissions reductions brought about by process changes such as Low NOx burners, Low Solvent Coatings, etc? If so, please describe. _____

_____

(9) Control Device Rated Efficiency by Pollutant

Pollutant: _____ CAS # _____ Rated Capture Efficiency: ____% Rated Control Efficiency: _____%

Pollutant: _____ CAS # _____ Rated Capture Efficiency: ____% Rated Control Efficiency: _____%

Pollutant: _____ CAS # _____ Rated Capture Efficiency: ____% Rated Control Efficiency: _____%

(10) Were there any periods of control equipment down-time, control equipment upsets, or periods of operation at less than design control efficiency during 2001: _____(Y/N)

(11) If yes, what percent of the annual operation of the Emission Unit Equipment occurred during these periods of less than rated control efficiency? Please document each incident as a separate percentage of the entire year.

_____% 1st Event What was the overall control efficiency (control efficiency times capture efficiency) during this period? ____%

_____% 2nd Event What was the overall control efficiency (control efficiency times capture efficiency) during this period? ____%

_____% 3rd Event What was the overall control efficiency (control efficiency times capture efficiency) during this period? ____%

(12) Amount and type of air pollutants emitted due to significant spills or accidents that were not taken into account on the Evaporative Loss page?

_____

_____

2001 CONTROL DEVICE INFORMATION

A Control Device Page should be completed for Control Device. The purpose of this section is to allow Department staff to estimate emissions reductions caused by control devices. It also will enable linking of Emission Unit Equipment to Control Devices to Stacks in the Department's relational data base. Finally, we have separated this page out to make it easier for you to report periods of control equipment downtime or malfunction for certification of reporting Rule Effectiveness. Please copy and complete this form for each control device.

(1) If your Title V permit has been issued, please provide the Control Device ID. If your Title V permit has not been issued, please identify the Control Device using your own company identification for it. Then provide the Control Device Description (either Title V or your own).

(2) If this device receives emissions from one or more pieces of Emission Unit Equipment, identify the Emission Unit Equipment IDs in the "Emission Unit Equipment ID" space. Please list any additional Emission Unit Equipment in the spaces provided.

(3) Give the company identification(s) for the Emission Unit Equipment emissions collected at this control device.

(4) If this device vents emissions to only one Stack, identify the Stack ID (if there is one) in the "Stack ID" space. Please list any additional Stacks in the spaces provided.

(5) Give the company identification for the Stack(s) that are supplied by this control device.

(6) Please be as specific as possible. For example: medium efficiency centrifugal collector, catalytic afterburner with heat exchanger, low temperature fabric filter, multiple cyclone without flyash reinjection, low efficiency wet scrubber, etc.

(7) Optional - Please indicate the manufacturer of the Control Device.

(8) Whether flyash reinjection is present or not affects the emission factor that is used for multiclone control devices. The purpose of this question is to capture information about emissions reductions achieved by process/equipment modification rather than add-on control equipment.

(9) List the pollutants controlled by this device. List as many pollutants as are controlled with their pollutant-specific information. If there is a CAS Number for the pollutant, please provide it. Pollutants like PM10 do not have CAS numbers. On the other hand, please note the increased Air Toxics reporting requirements this year. Certain HAPs, such as glycol ethers or chromium compounds, represent groups of compounds. Please be specific, by means of CAS number, about which glycol ether, etc., is being controlled. The Rated Control Efficiency is the manufacturer's stated efficiency for that pollutant. Capture efficiency is the percentage of the gas stream that actually goes to the control device. If you have performed DHEC-approved testing and have a more accurate capture and/or control efficiency, please provide those percentages over the manufacturer's rated capture or control efficiency. Please add additional spaces on the form or attach additional pages if necessary.

(10) EPA has documented significant concerns that emission estimates developed may be too low because emissions are calculated based on the control device's rated overall control efficiency. EPA's data indicate that control devices do not operate at rated efficiencies all the time. If inventory preparers cannot account for control device variability, EPA applies a correction factor called Rule Effectiveness. The intent of questions 10, 11, and 12 is to address EPA's concerns about Rule Effectiveness. Indicate if there was any time when the control device(s) was not operating at rated efficiency when the process(es) to which it is attached remained operational.

(11) Answer only if you answered "Yes" to Question 10. If there were periods in 2001 when control devices were not operating at their rated overall control efficiencies, supply the percentage of activity that occurred while the control equipment was malfunctioning (e.g. 20% of the coal burned for the year was burned while the control equipment was not operating; 5% of the total batteries were made while the control equipment was operating at 50% overall control efficiency; etc.). If there were 2 or more separate incidents where Overall Control Efficiency were the same combine them to give a single percentage of annual activity (fuel burned, batteries made, etc.). If there were multiple malfunctions with different Overall Control Efficiencies, report them separately.

(12) Please account for any significant spills or accidents resulting in air emissions. This question is to obtain additional information and should not include VOC emissions which have already been accounted for on any Evaporative Loss Emission Units pages. This field is specific for processes whose evaporative loss emissions are determined by stack tests or emission factors, and not from material balance calculations. The stack test and emission factor would represent normal activity, but we need to account for any occurrences that result in higher than normal evaporative loss emissions. Any spills reported here should include the same information that is outlined for reporting "VOC/HAP - containing Materials Used" on the Evaporative Loss Emission Units page.

2001 Stack Information

Facility Name: Permit Number:

Directions: The purpose of this section is to track emissions from the equipment which produces them, through any control devices, and out the stack(s). Please copy and complete this form for additional stacks. If this stack is part of a multiple stack system, all exhausting from one Emissions Unit, please provide information below for the stack that is most representative or for the vent or roof monitor that represents "worst case." If necessary, sketch the stack/control Device/Emission Unit relationship in the space at the bottom of the page.

(1a) Stack ID _____ **(1b)** Stack Description/Fugitive Emissions Source: _____

(2) Control Device ID(s) Vented to this Stack	**(3)** Control Device Name(s)

(4) Emission Unit Equipment ID(s)Vented to this Stack	**(5)** Emission Unit Equipment Name(s):

(6) Is this stack part of a multiple stack system, all exhausting from one Emissions Unit? _____(Y/N)

(7) Does the stack have a horizontal discharge or a raincap that impedes vertical flow? _____(Y/N)

(8) Stack/Exhaust Height Above Ground: _____ft.

(9) Stack Inside Diameter: _____ft. (Equivalent diameter of non-round stack = 1.128 x square root of area)

(10) Stack Exit Gas Temperature:_____ ^{o}F **(11)** Stack Exit Gas Velocity: _____ft/sec

(12) Latitude ___ __ __, Longitude ___ __ ___ **OR** UTM Horizontal _____, UTM Vertical _____

(13) Is this stack equipped with a continuous emission monitor? _____(Y/N)

(13a) If yes, provide manufacturer, model, and serial no.: _____

(13b) If yes, also provide the measured emission rate in units that will allow calculation of tons per year: _____

2001 STACK INFORMATION:

A Stack Information page should be completed for each significant emissions generating source whose actual or potential criteria emissions are measured in tons per year, HAPS are greater than 0-200 lbs. as described in the instructions or any stack with a control device, regardless of emissions. These pages are used to determine the emission flow from origin to emission into the atmosphere.

(1) If your Title V permit has been issued, please provide the Stack ID. If your Title V permit has not been issued, please identify the Stack using your own company identification for it. Then provide the Stack Description (either Title V or your own). If there is no stack and emissions are fugitive either directly to the air or through vents, please indicate here and complete only questions 2 - 5.

(2) If gases from Emission Unit Equipment pass through a Control Device prior to being vented to this Stack, please provide the Control Device ID. Please list any additional Control devices in the spaces provided.

(3) If gases from Emission Unit Equipment pass through a Control Device prior to being vented to this Stack, please identify each using your company name for the control device.

(4) If this stack exhausts one or more pieces of Emission Unit Equipment, identify the Emission Unit Equipment ID in the "Emission Unit Equipment ID(s) Exhausted" space.

(5) Give the company identification for the unit(s) exhausted.

(6) Some processes have more than one discharge point, for example, multiple stacks, vents or roof monitors. Indicate if this is such a stack by marking "Yes" or "No."

(7) A raincap or horizontal discharge will interfere with exit gas velocity. This information will tell modelers whether to use the exit velocity of the stack or to use default values.

(8) Please provide in feet above the ground.

(9) Please provide in feet.

(10) Please provide in degrees Fahrenheit.

(11) Please provide in feet per second.

(12) Optional - Please provide ONLY if you have valid GPS data.

(13) (a) Continuous emission monitors (CEMs) measure actual emissions out of stacks. They are required for certain categories of sources, such as electric utilities, cement manufacturers, pulp and paper mills, and steel mills. For Emission Inventory purposes, opacity monitors are not CEMs. (b) On a national basis, discrepancies have been identified between emissions inventory reporting and emissions reported to EPA's Clean Air Markets Division (formerly the Acid Rain Division). Providing this information will allow Department staff to develop the best possible emission estimates.

2001 CHECKLIST

Facility Name_____ Permit No. _____

Emission Unit Equipment Information: List all boilers/equipment that are listed on your Bureau of Air Quality permit by Permit Emission Unit ID and Equipment ID. Operations identified as "Insignificant Activities" on your permit should be listed next. For these "Insignificant Activities" indicate insignificant activity in the Permit Emission Unit ID column and give its ID in the Permit Equipment ID column. Any emission generating equipment not listed on your air permit, for which a construction permit has been issued should be listed next by construction permit ID (CA, CB, etc.). If your facility does not have an air permit or the emission generating equipment is not on your permit, the emissions generating equipment should be listed last and a Company Unit ID should be indicated. Control devices, i.e., baghouses, condensers, cyclones, etc., should not be listed as emission generating units. You should make a check mark in the "Completed" space provided below for each Emission Unit Equipment page completed.

Permit Emission Unit ID	Permit Equipment ID	Emission Unit	Completed

Control Device/Stack Information: Use to help you ensure that all pages are included in your package.

From Emission Unit Equipment ID	To Control Device ID	To Stack ID	Completed

If there are more emission generating units than spaces provided above, please attach additional sheets by making copies of this one.

Ammonia, Condensable Organics, **Organic/Elemental Carbon Information** Attached? _____ (Y/N/NA)