

## Appendix 2.1

### Instructions for Reporting 2005 Annual Air Pollution Emissions





**MARICOPA COUNTY  
AIR QUALITY DEPARTMENT**

**INSTRUCTIONS**

**FOR REPORTING 2005**

**ANNUAL AIR POLLUTION EMISSIONS**

**February 2006**

**Emissions Inventory Unit  
1001 North Central Avenue, Suite 400  
Phoenix, Arizona 85004  
(602) 506-6790  
(602) 506-6985 (Fax)**

**Copies of this document, related forms  
and other reference materials are available online at our web site:  
[www.maricopa.gov/aq/ei.aspx](http://www.maricopa.gov/aq/ei.aspx)**

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# WHAT'S NEW FOR 2005?

## Emissions reporting requirements:

- The US EPA has recently designated the chemical **t-butyl acetate** (CAS number 540-88-5) as a VOC for record-keeping and emissions reporting requirements, but not for emission limitations or content requirements. If you use this chemical at your facility, see the box on page 3 for specific reporting instructions.
- It is **critical** to the accuracy of your report to use the emission calculation method that best represents **actual** emissions from your facility. Page 4 of these instructions now includes details on the preferred emission calculation methods. Please double check your emissions calculations to make sure the best method is employed.

## Reporting forms:

- Some **pre-printed information** on your report may be different from last year's version. Please review the enclosed forms carefully, and verify all pre-printed information.
- Many of our reporting forms **have changed** recently. If you use your own forms, or a computerized reproduction of our forms, the forms used **MUST** conform to the current information requirements and **FORMAT** as supplied on our preprinted forms. "Homemade" reporting forms that vary significantly from the preprinted forms sent to you will **not** be accepted.

## Miscellaneous:

- **EPA emission factors** for certain activities at sand and gravel facilities have been revised. The new emission factors appear on applicable pre-printed general process forms and are also listed on our revised Sand & Gravel Helpsheets available at: [www.maricopa.gov/aq/ei.aspx](http://www.maricopa.gov/aq/ei.aspx)
- In accordance with Maricopa County Air Pollution Control Rule 280 (Fees), the 2005 annual emission fee (for Title V sources only) is \$13.65/ton.

## I. INTRODUCTION

An annual emissions inventory is a document submitted by a business that: (1) lists all processes emitting reportable air pollutants and (2) provides details about each of those processes. Submitting the emissions inventory report is **required** as a condition of your Maricopa County Air Quality Permit. A separate emissions report is required for each business location with its own air quality permit.

Follow these steps to complete your 2005 Maricopa County emissions inventory:

**STEP 1:** Determine which forms are needed for your business. There are eight different forms available, but not all are required for every type of business. For most permitted sources, the packet you received from us contains the necessary pre-printed forms based on your site's most recent emissions inventory.

1. **Business Form:** Contains general contact information about the permitted site. This form is required for all businesses.
2. **Stack Form:** Only required if your business location annually emits over 10 tons of a single pollutant (CO, VOC, NO<sub>x</sub>, PM<sub>10</sub>, or SO<sub>x</sub>). A "stack" is defined as a stack, pipe, vent or opening through which a significant percentage of emissions (from one or more processes) are released into the atmosphere. See the "Stack Form Instructions" on page 9 for specific requirements.
3. **Control Device Form:** Required only if there is one or more emission control devices used at the business location.
4. **General Process Form** and
5. **Evaporative Process Form:** } Either or both will be required for all businesses.
6. **Off-Site Recycling/Disposal Form:** Required if you want to claim off-site recycling or disposal.
7. **Emission Factor Calculations:** Required as attachment for each process for which you calculated your own emission factors.
8. **Data Certification Form or Data Certification/Fee Calculation Form:** Only sources with a **Title V** permit are required to pay a fee for their emissions and need to use the Data Certification/Fee Calculation Form. All other sources use the Data Certification Form.

**STEP 2:** Complete the applicable forms. Verify all preprinted information, and make corrections where necessary. When making corrections, strike out the preprinted data and write in corrections beside it. Please make all changes readily noticeable. Detailed information on how to complete the most common forms is included in this document. The packet you received also contains information about other resources (workshops, one-on-one assistance, etc.) available to help you in completing the necessary forms.

**STEP 3:** Make a copy of your completed emissions inventory report. Make sure to **KEEP COPIES** of all forms submitted and copies of all records and calculations used in completing the forms. Air pollution control regulations require that you keep all documentation for at least **FIVE YEARS** at the location where pollution is being emitted.

**STEP 4:** Make sure the Data Certification Form (or Data Certification/Fee Calculation Form for Title V sources) is **signed** by a company representative. **Include your air quality permit number on all correspondence and applicable checks submitted with your report.** Return the **original**, signed copy of your annual emission report, with payment for any applicable emission fees to:

Maricopa County Air Quality Department  
Emissions Inventory Unit  
1001 North Central Avenue, Suite 100  
Phoenix, AZ 85004

## II. REPORTING REQUIREMENTS

### POLLUTANTS TO BE REPORTED:

Your emissions inventory must include your business's emissions of the following air pollutants:

- CO = Carbon monoxide
- NO<sub>x</sub> = Nitrogen oxides
- PM<sub>10</sub> = Particulate matter less than 10 microns
- SO<sub>x</sub> = Sulfur oxides
- VOC = Volatile organic compounds \*
- HAP&NON = Hazardous Air Pollutant (HAP) that is also NOT a volatile organic compound (VOC)\*\*
- NH<sub>x</sub> = Ammonia and ammonium compounds
- Pb = Lead

\* A **volatile organic compound (VOC)** is defined as any compound of carbon that participates in atmospheric photochemical reactions. This definition **excludes**: carbon monoxide, carbon dioxide, acetone, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, as well as certain other organic compounds. (See Maricopa County Air Pollution Control Rule 100, Sections 200.69 and 200.110 for a full definition.)

**NEW FOR 2005:** EPA has redesignated the chemical **t-butyl acetate (CAS Number 540-88-5)** as a VOC for record-keeping requirements and emissions reporting, but not for emission limitations or content requirements. An anticipated revision to County Rule 100, Section 200.69 (tentatively scheduled for adoption in March 2006) will incorporate this change as follows:

*“The following compound(s) are VOC for purposes of all recordkeeping, emissions reporting, photochemical dispersion modeling and inventory requirements which apply to VOC and shall be uniquely identified in emission reports, but are not VOC for purposes of VOC emissions limitations or VOC content requirements: t-butyl acetate (540-88-5).”*

Therefore, if your facility uses t-butyl acetate, it is necessary to report t-butyl acetate as a separate material on the evaporative process form, not as part of a grouped material (e.g., solvents, thinners, activators, etc.). T-butyl acetate will continue to be identified as a VOC on your emission report and count towards any applicable emission fees.

\*\* **HAP&NON:** Usage of certain materials that are: (1) a Hazardous Air Pollutant (HAP) **and** (2) **not** also a VOC (that is, not also an ozone precursor) should also be reported if:

- (a) your site is subject to a Federal MACT (Maximum Achievable Control Technology) standard **or**
- (b) your air quality permit contains specific quantitative limits for HAP emissions.

The most common materials categorized as “HAP&NON” include:

- methylene chloride (dichloromethane)
- perchloroethylene
- 111-trichloroethane (111-TCA or methyl chloroform)
- hydrochloric acid
- hydrofluoric acid

**NOTE:** HAPs that are also considered volatile organic compounds are reported as VOC.

### EMISSION CALCULATION METHOD HIERARCHY:

When preparing emission information for your report, the most accurate method for calculating **actual** emissions must be used. The hierarchy listed below outlines the preferred methods for calculating emission estimates. (The hierarchy listed below will be incorporated into an anticipated July 2006 revision of Rule 280 of Maricopa County's Air Pollution Control Rules and Regulations).

- (1) Whenever available, emissions estimates should be calculated from continuous emissions monitors certified under 40 CFR Part 75, Subpart C, or data quality assured pursuant to Appendix F of 40 CFR, Part 60.
- (2) When sufficient data obtained using the methods described in paragraph 1 is not available, emissions estimates should be calculated from source performance tests conducted pursuant to Rule 270 in Maricopa County's Air Pollution Control Rules and Regulations.
- (3) When sufficient data obtained using the methods described in paragraphs 1 or 2 is not available, emissions estimates should be calculated from material balance using engineering knowledge of the process.
- (4) When sufficient data obtained using the methods described in paragraphs 1 through 3 is not available, emissions estimates shall be calculated using emissions factors from EPA Publication No. AP-42 "Compilation of Air Pollutant Emission Factors," Volume I: Stationary Point and Area Sources.
- (5) When sufficient data obtained using the methods described in paragraphs 1 through 4 is not available, emissions estimates should be calculated by equivalent methods supported by back-up documentation that will substantiate the chosen method.



### III. CONFIDENTIALITY OF DATA SUBMITTED

Information submitted in your annual emissions reports must be made available to the public unless it meets certain criteria of Arizona State Statutes and Maricopa County Rules. Applicable excerpts concerning confidentiality of data are reproduced below.

ARS § 49-487 D. ...the following information shall be available to the public:...

2. The chemical constituents, concentrations and amounts of any emission of any air contaminant. ...

MARICOPA COUNTY AIR POLLUTION CONTROL RULES AND REGULATIONS, Rule 100:

§ 200.107 **TRADE SECRETS** - Information to which all of the following apply:

- a. A person has taken reasonable measures to protect from disclosure and the person intends to continue to take such measures.
- b. The information is not, and has not been, reasonably obtainable without the person's consent by other persons, other than governmental bodies, by use of legitimate means, other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding.
- c. No statute, including ARS §49-487, specifically requires disclosure of the information to the public.
- d. The person has satisfactorily shown that disclosure of the information is likely to cause substantial harm to the business's competitive position.

§ 402 **CONFIDENTIALITY OF INFORMATION:**

402.2 Any records, reports or information obtained from any person under these rules shall be available to the public ... unless a person:

- a. Precisely identifies the information in the permit(s), records, or reports which is considered confidential.
- b. Provides sufficient supporting information to allow the Control Officer to evaluate whether such information satisfies the requirements related to trade secrets as defined in Section 200.107 of this rule.

For emissions inventory information to be deemed confidential, the following steps must be followed:

- Specific data which you request be held confidential must be identified by marking an "X" in the corresponding gray confidentiality box(es) on the relevant report forms.
- Provide a written explanation which gives factual information satisfactorily describing why releasing this information could cause substantial harm to the business's competitive position.
- Use the gray-shaded boxes on the reporting forms to indicate which data are to be held confidential. Do NOT stamp "Confidential", highlight data, or otherwise mark the page.

***No data can be held confidential without proper justification.***

#### IV. HELPFUL HINTS AND INFORMATION

Be sure to verify all preprinted information on forms. If any information is incorrect or blank, please provide correct information. Making a change on the Business Form will **NOT** transfer the permit ownership or location. You must contact the Department's Permit Engineering Division at (602) 506-6464 to accomplish this.

**WHAT IS A PROCESS?** A *process* is a business activity at your location that emits one or more of the pollutants listed on page 3, and has only *one* material type as input and *one* operating schedule. For each applicable process at your business, you must assign a unique Process ID number to differentiate each process.

#### PROCESSES AND MATERIALS THAT DO **NOT** HAVE TO BE REPORTED:

- Welding.
- Acetone usage.
- Fuel use for forklifts or other vehicles. (NOTE: Fuel use in *non-vehicle* engines *is* reportable.)
- Soil remediation activities. (Note: Other periodic reporting requirements may exist; consult your permit.)
- Storage emissions from fuels or organic chemicals in any tank with a capacity of 250 gallons or less.
- Storage emissions of diesel and Jet A fuel in underground tanks of any size.
- Storage emissions of diesel and Jet A fuel in aboveground tanks, with throughput < 4,000,000 gal/yr.
- Routine pesticide usage, housekeeping cleaners, and routine maintenance painting at your facility.

Please group all similar equipment and materials together before applying the following limitations:

- Internal combustion engines (e.g., emergency generators) or external combustion equipment (e.g., boilers and heaters) that operated less than 100 hrs. and burned less than 200 gals. diesel or gas, or less than 100,000 cubic feet of natural gas.
- Materials with usage of less than 15 gallons or 100 pounds per year.

#### GROUPING MATERIALS AND/OR EQUIPMENT UNDER ONE PROCESS ID:

You can group together under one process ID:

- All internal combustion engines *less than 600 hp* if they burn the same fuel and have similar operating schedules.
- All external combustion equipment (boilers, heaters) with a capacity of *less than 10,000,000 Btu* per hour if they burn the same fuel and have similar operating schedules.
- All similar evaporative materials with similar emission factors that have similar operating schedules and process descriptions. For example, group low-VOC red paint, green paint and white paint together as one material: "Paint: Low-VOC." Do *not* group dissimilar materials together, such as thinners and paints. Attach documentation (see example, p. 20) showing how the grouped emission factor was determined.
- All underground tanks with the same fuel and same type of vapor recovery system.

#### ASSIGNING IDENTIFICATION NUMBERS (IDs):

Unique IDs are required for the following report elements: Stacks, Control Devices and Processes. For processes, that means a process ID number may be used only once on each General Process form and for each material reported on the Evaporative Process Forms.

These numbers are usually assigned by the person who prepares the original report. If you are adding a new item to a preprinted report, assign a number not already in use. Once an ID number is assigned, continue

using the same number for that item each year. If that item is no longer reportable, return the preprinted form with a brief explanation. Do not use that ID number again.

**INDUSTRY-SPECIFIC INSTRUCTIONS:** Additional help sheets, detailed examples, and special instructions are available for a number of specific processes or industries listed below. To get copies of any of these documents, please visit our web site at [www.maricopa.gov/aq/ei.aspx](http://www.maricopa.gov/aq/ei.aspx) or call (602) 506-6790.

- Bakeries
- Concrete Batch Plants
- Fuel Storage and Handling
- Incinerators and Crematories
- Lg. Aboveground Storage Tanks
- Natural Gas Boilers/Heaters
- Polyester Resin
- Printing Plants
- Roofing Asphalt
- Sand and Gravel Plants
- Using EPA's TANKS 4.09d Program
- Vehicle Refinishing
- Vehicle Travel on Unpaved Roads
- Woodworking

**COMMONLY USED CONVERSION FACTORS:**

1 gram/liter	= 0.00834 lbs/gal	1 foot	= 0.0001894 mile
1 liter	= 0.2642 gallon (US)	1 square foot	= 0.000022957 acre
1 therm	= 0.0000952 MMCF	1 pound	= 0.0005 ton

NOTE: MM = 1,000,000      Example: MMCF = 1,000,000 cubic feet  
M = 1,000                Example: MGAL = 1,000 gallons

**ADDITIONAL RESOURCES AND ASSISTANCE:**

The Maricopa County Emissions Inventory web site at [www.maricopa.gov/aq/ei.aspx](http://www.maricopa.gov/aq/ei.aspx) contains additional reference materials, such as:

- blank copies of most emissions reporting forms.
- an updated list of emission factors for a large number of industrial processes, including SCC codes.
- a list of Tier Codes for industrial processes.
- detailed help sheets for a number of specific industries or processes.

To receive any of the above materials by fax or mail, or for additional information or assistance in how to calculate and report your emissions, please call us at (602) 506-6790.

## V. INSTRUCTIONS AND EXAMPLES FOR COMPLETING EMISSIONS REPORTING FORMS

### ***Business Form*** Instructions

Verify all preprinted information, and make corrections where necessary. When making corrections, strike out the preprinted data and write in corrections beside it. Please make all changes readily noticeable.

**NOTE:** Indicating a change in ownership or business location on the Business Form will ***not*** serve to transfer the permit ownership or location. You must contact the Department's Permit Engineering Division at (602) 506-6464 to accomplish this.

#### **Data fields:**

- 6 Number of employees: This should be the annual average number of full-time equivalent (FTE) employee positions ***at this business location***.
- 9 NAICS Code: This 5- or 6-digit North American Industrial Classification System (NAICS) code has been introduced to replace the 4-digit Standard Industrial Classification (SIC) codes. Please list the primary and secondary NAICS codes for your business, if known. (Consult our website, at [www.maricopa.gov/aq/ei.aspx](http://www.maricopa.gov/aq/ei.aspx), for a link to a full list of NAICS codes.)
- 10 Preparer of the Inventory (primary contact for technical questions concerning this report): This should be the person who knows the most about the data in the report. If this person has an e-mail address used for business purposes, please provide it.

**Stack Form** Instructions

A “stack” is defined as a **stationary** stack, pipe, vent or opening through which a significant percentage of emissions (from one or more processes) are released into the atmosphere (with or without a control device).

**NOTE:** Stack information is required only if your business location annually emits over 10 tons of any one individual pollutant. If so, you must complete a Stack Form for:

- each stack connected to a control device.
- any stack that discharges annually more than 5 tons of combined pollutant emissions (such as a paint booth exhaust).

**EXAMPLE** Stack Form Information:

1	2	3	4	5a OR 5b	6a OR 6b & 6c	7		
Stack ID	Stack Type Code*	Stack Height**	Exit Gas Temperature	Velocity feet/sec	Flow Rate acfm	Diameter inside inch	Length / Width inside inch	Stack Name/Description. Include lat/long coordinates of stack (in decimal degrees)
1	W	30 ft	90 °F		20,000	36		paint booth Lat: N33.531873 Long: W112.261331
2	V	14 ft	200 °F		19,186	40		thermal oxidizer, Bldg. 2 Lat: N33.5325 Long: W112.26136

- \* Stack Type Codes:     **V** = Vertical unobstructed                             **H** = Horizontal unobstructed  
                                    **D** = Downward unobstructed                             **G** = Gooseneck  
                                    **W** = Obstructed vertical (e.g. weather cap)

\*\* Stack height is calculated relative to the surrounding terrain. For instance, the stack height of a 10-foot stack on top of a 20-foot tall building is 30 feet.

**Data fields:**

- Stack ID: (See “Assigning Identification Numbers” on page 6.) A number (up to three digits, numeric only) which identifies a specific stack. It is suggested you start with 1, then 2, etc.
- Exit Gas Temperature: Should represent average operating conditions, in degrees Fahrenheit. **DO NOT** report “ambient”.
- 5a Exit Gas Velocity: **OR** 5b Gas Flow Rate:  
Provide **EITHER** the exit velocity (in feet per second) **OR** the flow rate of gas (in actual cubic feet per minute) exiting the stack during normal operations. Preprinted information provides both.
- 6a Inside Stack Diameter: For round stacks, provide Inside Stack **Diameter** in inches.  
**OR**
- 6b & 6c Inside Stack Length and Width: For square or rectangular stacks, provide inside **Length and inside Width** in inches.
- 7 Stack Name/Description and Lat/Long Coordinates: Provide a brief text description of the stack along with the latitude and longitude coordinates of the stack (in decimal degrees).

**Control Device Form** Instructions

EXAMPLE Control Device Form Information

1	2	3	4	5	6
Control ID	Installation/ Reconstruction* Date	Size or Rated Capacity**	Control Type Code	Control Device Name/Description	Stack ID
1	05/09/98	25,000.0 cfm	021	Thermal oxidizer	2
4	03/10/97	cfm	153	Watering with water trucks	

**Data fields:**

- 1 **Control ID:** (See “Assigning Identification Numbers” on page 6.) A unique number (up to three digits) that you assign to identify a specific control device.
- 2 **Installation/Reconstruction Date:** The completion date (given in *mm/dd/yy* format) of installation or the most recent reconstruction of the identified control device. This is not a date on which routine repair or maintenance was done. Reconstruction means any component of the control device was replaced and the cost (fixed capital) of the new component(s) was more than half of what it would have cost to purchase or construct a new control device.
- 3 **Size or Rated Capacity:** Report the air or water flow rate in ***cubic feet per minute***. Some devices (e.g., water trucks for dust control) will not include a value in this field.
- 4 **Control Type Code:** A 3-digit code designating the type of control device. A complete list of all EPA control device codes can be found on the Web at [www.maricopa.gov/aq/ei.aspx](http://www.maricopa.gov/aq/ei.aspx) or call (602) 506-6790 for assistance.
- 6 **Stack ID:** Not all businesses require a Stack ID. This is required if the Stack Form is used for your site (see page 9) **and** the control device is vented through that identified stack. This is the ID number shown in column 1 of the Stack Form. The Stack ID can be entered on this form after the Stack Form has been filled out.

## **General Process Form** Instructions

The General Process Form is used to record data on all emissions-producing processes except evaporative processes. A “*general process*” is normally characterized by the burning or handling of a material. One form reports all the pollutants for one process. For example, several pollutants are produced by burning fuel, and PM<sub>10</sub> is emitted by processing rock products, processing materials such as wood or cotton, and driving on unpaved areas.

**Data fields:** (See sample forms on pages 13 and 14.)

- 1 **Process ID:** A number (up to three digits) that is preprinted or you assign. (See “Assigning Identification Numbers” on page 6.) This Process ID number can not be used for any other process at this location.
- 2 **Process Type/Description:** Brief details on the type of activity that is occurring.
- 3 **Stack ID(s):** The stack ID number(s) shown in column 1 of the Stack Form that identify the stack(s) which vent pollution created by this process. Not all businesses are required to report stacks. This is only required if the Stack Form is required for your site (see page 9) *and* the process has a stack.
- 4 **Process Tier Code and** If these codes are not preprinted on your form, please consult the  
5 **SCC Code:** section “Other Resources” on our web site, or call (602) 506-6790.
- 6 **Seasonal Throughput Percent:** Enter the percent of total annual operating time that occurred per season, rounded to the nearest percent. For example, “Dec-Feb 30%” means 30% of total annual activity occurred in January, February and December 2005. The total for all four seasons must equal 100%.
- 7 **Normal Operating Schedule and** These reflect the normal daily, weekly, and annual operating  
8 **Typical Hours of Operation:** parameters of *this process* during 2005.
- 9 **Emissions Based on:** Provide the *name* of the material used, fuel used, product produced, or whatever was measured for the purpose of calculating emissions, such as “natural gas”, “hours of operation,” “vehicle miles traveled,” or “acres.”
- 10 **Used, Produced or Existing:** Indicate whether calculated emissions are based on a material type or fuel *used* (an input, such as “paint” or “natural gas”), or an *output* (such as “sawdust produced” or “finished product”). Use “Existing” if the parameter reported on line 9 is not directly used or produced in the process (such as “vehicle miles traveled” or “acres”).
- 11 **Annual Amount:** The annual amount (a number) of material that was used, fuel combusted, product produced, hours of operation, vehicle miles traveled, or acres.
- 12 **Fuel Sulfur Content (in percent):** For processes that involve the combustion of oil or diesel fuels, report the sulfur content of the fuel as a decimal value. Example: 0.05 % (= 500 ppm)
- 13 **Unit of Measure:** Units of the material used, fuel used or product produced shown on line 9. For example: gallons, pounds, tons, therms, acres, vehicle miles traveled, units produced.
- 14 **Unit Conversion Factor:** You must provide this if you use an emission factor with an emission factor unit (see item 17 below) that is *not* the same as the unit of measure (from line 13). This is the standard number you would multiply your amount (line 11) by to convert it to the units of the emission factor. See page 7 for a list of commonly used conversion factors.

**General Process Form** Instructions (continued)

- 15 Pollutant: See page 3 for a list of pollutants that need to be reported.
- 16 Emission Factor (EF): The number to be multiplied by the annual amount (line 11) to determine how much of the pollutant was emitted. If you calculate your own emission factor or change the preprinted emission factor, you must provide details of your calculations in an attachment.
- 17 Emission Factor (EF) Units: Enter the appropriate Emission Factor Units in pounds (lb) per unit; e.g., lb/ton, lb/MMCF, lb/gal.
- 18 Controlled Emission Factor (EF)? YES or NO: Indicate “YES” if: 1) you have your own emission factor from testing **and** included the control device efficiency within the factor, or 2) the emission factor used is clearly identified as a controlled emission factor. A “YES” response requires the use of Formula A (see #25 below). Indicate “NO” if: 1) there is no emission control device, or 2) the emission factor represents emission rates **before** controls. A “NO” response requires the use of Formula B (see #25 below).
- 19 Calculation Method: Enter the number code (listed at the bottom of the General Process Form) which best describes the method you used to obtain this emission factor. Code 5, “AP-42/FIRE Method or Emission Factor” means that the factor comes from EPA documents or software. **NOTE**: If you have continuous emissions monitors (CEM) data or conducted a source test that was required and approved by the County for a specific process or piece of equipment, you **must** use the emission data from the CEM or the test results. Report “1” in this column for CEM data or “4” for performance test data.
- 20 through 24: Leave blank if there is no control device.
- 20 Capture % Efficiency: The percent of the pollutant that is captured and sent to the primary control device in this process. Be sure to list capture efficiency separately for **each** pollutant affected.
- 21 Primary Control Device ID: If this pollutant is being controlled in this process, enter the Control Device ID number which represents the first control device affecting the pollutant.
- 22 Secondary Control Device ID: If this pollutant is being controlled sequentially by 2 devices, enter the Control Device ID number which represents the second control device; otherwise leave this field blank.
- 23 Control Device(s) % Efficiency: Enter the total control efficiency of the control device(s). Be sure to list control device efficiency separately for **each** pollutant affected. If you report control device efficiency, you must **also** show capture efficiency in column 20.
- 24 Efficiency Reference Code: Enter the code (1 through 6) that best describes how you determined the **control device efficiency**. A list of possible codes is included at the bottom of the form.
- 25 Estimated Actual Emissions (in pounds/year): You may round the calculated emissions values to the nearest pound. Calculate as follows:
- A. Emissions with no controls or controls are reflected in the emission factor:  
Column 25 = line 11 × line 14 × column 16
- B. Emissions after control:  
Column 25 = line 11 × line 14 × column 16 × (1 – [column 20 × column 23])  
Use the decimal equivalent for columns 20 and 23. Example: 96.123% = 0.96123



Place an X in any gray cell to mark data requested to be held confidential. See page 5 for requirements for information to be deemed confidential.

1- Process ID 80

2- Process Type/Description: 3 ENGINES FOR CRUSHING (EACH LESS THAN 600 HP)

3- Stack ID(s) (only if required on Stack Form) \_\_\_\_\_

4- Process TIER Code: 020599 FUEL COMB. INDUSTRIAL: INTERNAL COMBUSTION

5- SCC Code 20200102 (8 digit number) IND:DIESEL-RECIPROCATING

6- Seasonal Throughput Percent: Dec-Feb 25 % Mar-May 25 % Jun-Aug 25 % Sep-Nov 25 %

7- Normal Operating Schedule: Hours/Day 8 Days/Week 5 Hours/Year 2080 Weeks/Year 52

8- Typical Hours of Operation: (military time) Start 0700 End 1530

9- Emissions based on (name of material or other parameter, e.g. "rock", "diesel", "vehicle miles traveled") DIESEL

10-  Used (input) or  Produced (output) or  Existing (e.g. VMT, acres)

11- Annual Amount: (a number) 16,250 12- Fuel Sulfur Content (in percent) 0.05 %

13- Unit of Measure: (for example: tons, gallons, million cu ft, acres, units produced, etc.) GALLONS

14- Unit Conversion Factor (if needed to convert Unit of Measure to correlate with emission factor units) 0.001

Emission Factor (EF) Information					Control Device Information					
15	16	17	18	19	20	21	22	23	24	25
Pollutant	Emission Factor (EF) (number)	Emission Factor Unit (lb per)	Controlled EF? Yes or No	Calculation Method Code*	Capture % Efficiency	Primary Control Device ID	Secondary Control Device ID	Control Device(s) % Efficiency	Efficiency Reference Code**	Estimated Actual Emissions
CO	130	M GALS	N	5						2,113 lbs
NOx	604	M GALS	N	5						9,815 lbs
PM-10	42.5	M GALS	N	5						691 lbs
SOx	39.7	M GALS	N	5						645 lbs
VOC	49.3	M GALS	N	5						801 lbs

\* Calculation Method Codes:

- 1 = Continuous Emissions Monitoring Measurements
- 2 = Best Guess / Engineering Judgment
- 3 = Material Balance
- 4 = Source Test Measurements (Stack Test)
- 5 = AP-42 / FIRE Method or Emission Factor

- 6 = State or Local Agency Emission Factor
- 7 = Manufacturer Specifications
- 8 = Site-Specific Emission Factor
- 9 = Vendor Emission Factor
- 10 = Trade Group Emission Factor

\*\* Control Efficiency Reference Codes:

- 1 = Tested efficiency / EPA reference method
- 2 = Tested efficiency / other source test method
- 3 = Design value from manufacturer
- 4 = Best guess / engineering estimate
- 5 = Calculated based on material balance
- 6 = Estimated, based on a published value

Place an X in any gray cell to mark data requested to be held confidential. See page 5 for requirements for information to be deemed confidential.

1- Process ID 28

2- Process Type/Description: UNPAVED ROAD TRAVEL: HEAVY-DUTY TRUCKS @ 15 MPH

3- Stack ID(s) (only if required on Stack Form) \_\_\_\_\_

4- Process TIER Code: 140799 MISCELLANEOUS: FUGITIVE DUST

5- SCC Code 30502504 (8 digit number) SAND/GRAVEL: HAULING

6- Seasonal Throughput Percent: Dec-Feb 25 % Mar-May 25 % Jun-Aug 25 % Sep-Nov 25 %

7- Normal Operating Schedule: Hours/Day 8 Days/Week 5 Hours/Year 2080 Weeks/Year 52

8- Typical Hours of Operation: (military time) Start 0700 End 1530

9- Emissions based on (name of material or other parameter, e.g. "rock", "diesel", "vehicle miles traveled") VEHICLE MILES TRAVELED (VMT)

10-  Used (input) or  Produced (output) or  Existing (e.g. VMT, acres)

11- Annual Amount: (a number) 7,500 12- Fuel Sulfur Content (in percent) \_\_\_\_\_%

13- Unit of Measure: (for example: tons, gallons, million cu ft, acres, units produced, etc.) VMT

14- Unit Conversion Factor (if needed to convert Unit of Measure to correlate with emission factor units) \_\_\_\_\_

Emission Factor (EF) Information				Control Device Information						
15	16	17	18	19	20	21	22	23	24	25
Pollutant	Emission Factor (EF) (number)	Emission Factor Unit (lb per)	Controlled EF? Yes or No	Calculation Method Code*	Capture % Efficiency	Primary Control Device ID	Secondary Control Device ID	Control Device(s) % Efficiency	Efficiency Reference Code**	Estimated Actual Emissions
<i>PM-10</i>	<i>3.2</i>	<i>VMT</i>	<i>N</i>	<i>6</i>	<i>100</i>	<i>4</i>		<i>70</i>	<i>6</i>	<i>7200</i> lbs
										lbs
										lbs
										lbs
										lbs
										lbs

**NOTE: Emissions in col. 25 are calculated as follows: (line 11 × col. 16) × (1 - [col. 20 × col. 23])**

- \* Calculation Method Codes:**
- 1 = Continuous Emissions Monitoring Measurements
  - 2 = Best Guess / Engineering Judgment
  - 3 = Material Balance
  - 4 = Source Test Measurements (Stack Test)
  - 5 = AP-42 / FIRE Method or Emission Factor

- 6 = State or Local Agency Emission Factor
- 7 = Manufacturer Specifications
- 8 = Site-Specific Emission Factor
- 9 = Vendor Emission Factor
- 10 = Trade Group Emission Factor

- \*\* Control Efficiency Reference Codes**
- 1 = Tested efficiency / EPA reference method
  - 2 = Tested efficiency / other source test method
  - 3 = Design value from manufacturer
  - 4 = Best guess / engineering estimate
  - 5 = Calculated based on material balance
  - 6 = Estimated, based on a published value

## ***Evaporative Process Form*** Instructions

The Evaporative Process Form is used to report all emissions produced by evaporation. Examples include: cleaning with solvents, painting and other coatings, printing, using resin, evaporation of fuels from storage tanks, ammonia use, etc. All other processes should be shown on the General Process Form.

One Evaporative Process Form may be used to report numerous materials, with each material given a separate process ID number, as long as the information on lines 1–5 apply to all items on that form. Use a separate form for each group of materials that has a different Process Type/Description (shown on line 1), different Tier Code (line 2) or different operating schedule (lines 3, 4, or 5).

**Data fields:** (See sample forms on pages 17 and 18.)

- 1 Process Type/Description: Brief details of the activity in which the listed materials were used.
- 2 Process Tier Code: If this 6-digit code is not preprinted on your form, please refer to the Tier Code list at [www.maricopa.gov/aq/ei.aspx](http://www.maricopa.gov/aq/ei.aspx) or call (602) 506-6790.
- 3 Seasonal Throughput Percent: Enter the percent of total annual operating time that occurred per season (rounded to the nearest percent). For example, “Dec-Feb 30%” means 30% of the total annual activity occurred during January, February and December 2005. The total for all four seasons must equal 100%.
- 4 Normal Operating Schedule and  
5 Typical Hours of Operation: These represent the usual number of hours, time of day and weeks per year when *this process* occurred during the calendar year.
- 6 Process ID: A number (up to three digits) that represents this specific material (process). Each process on one form must have the same tier code and operating schedule as that shown in the top portion of the form. This Process ID number can *not* be used for any other process at this business location. See page 6 of these instructions for more explanation of ID numbers and for exclusions and guidance on grouping materials.
- 7 Stack ID(s): The stack ID number(s) shown in column 1 of the Stack Form that identify the stack(s) which vent pollution created by this process. Not all businesses are required to report stacks. This is only required if the Stack Form is required for your site (see page 9) *and* the process has a stack.
- 8 Material Type: Provide the name of the material used in this process. Give the chemical name for pure chemicals or a name that reflects its use (paint, ink, etc.), rather than just a brand name or code number. Examples of materials include: paint, thinner, degreasing solvent (plus its common name), ink, fountain solution, ammonia, alcohol, ETO (ethylene oxide), gasoline (in a storage tank).
- 9 Annual Material Usage/Input: Amount of this material used during the year. In most cases, the amount purchased is suitable. Write in “lbs” or “gal” (pounds or gallons).
- 10 Pollutant: The only pollutants reported on this form are VOC, HAP&NON and NH<sub>x</sub> (see definitions on page 3). When one process (or material) has more than one of these pollutants, list each pollutant on a separate line, using the same process ID number.

**Evaporative Process Form** (continued)

11 **Emission Factor (EF):** An emission factor is a number used to calculate the pounds of pollutant emitted based on the quantity of material used in a process. Emission factors can be obtained from your supplier (usually provided on a Material Safety Data Sheet or environmental data sheet), and must correspond with the material units reported in column 9. If the material unit is “gal,” then the emission factor must be in pounds of pollutant per gallon. If the material unit is “lb,” then the emission factor must be in pounds of pollutant per pound of material.

Verify (and correct, where necessary) all pre-printed emission factors, as the composition of materials used may have changed since your last report. A “lb/gal” emission factor is almost always less than 8 and never greater than 14. A “lb/lb” emission factor is never larger than 1.0.

12 **Pounds of pollutant sent off-site:** Required only if you wish to take credit for reduced emissions because waste of this material is sent off-site for recycling or disposal. Only waste generated during the report year may be claimed. The Off-Site Recycling/Disposal Form **must** be completed if you wish to claim a credit. The number of pounds reported in column 12 **must** equal the number of pounds reported on the Off-Site Recycling/Disposal Form(s) for the same Process ID number.

13 and 14: Leave these fields blank if there is no control device present.

13 **Capture % Efficiency:** The percent of the pollutant from this process that is captured and sent to the control device.

14 **Control ID:** If this pollutant is being controlled in this process, enter the Control Device ID number from column 1 of the Control Device Form.

**Control % Efficiency:** Enter the percent of this pollutant that is controlled by this control device.

**Code:** Select the Control Efficiency Reference Code from the list at the bottom of the form.

15 **Estimated Emissions (lbs/yr):** Estimated pounds of the pollutant emitted during the year, after off-site recycling/disposal and controls if applicable. **Credit will not be given for off-site recycling/disposal unless it is shown on the Off-Site Recycling/Disposal Form.** Round to the nearest pound. If the answer is 0, give a decimal answer to the first significant digit. Column 15 is calculated as follows:

*Emissions without off-site recycling/disposal or controls:*

$$\text{Column 15} = \text{column 9} \times \text{column 11}$$

*Emissions with off-site recycling/disposal:*

$$\text{Column 15} = (\text{column 9} \times \text{column 11}) - \text{column 12}$$

*Emissions with off-site recycling/disposal and controls:*

$$\text{Column 15} = ([\text{column 9} \times \text{column 11}] - \text{column 12}) \times (1 - [\text{column 13} \times \text{column 14}])$$

Use the decimal equivalent for columns 13 and 14. Example: 96.123% = 0.96123

## EXAMPLE: Coating and Painting

### Evaporative Process Form 2005

Permit number(s)   v99999  

Place an X in any gray cell to mark data requested to be held confidential. See page 5 for requirements for information to be deemed confidential.

1- Process Type/Description:   Coating metal widgets  

2- Process TIER Code:   080415   **SOLVENT USE: SURFACE COATING - MISC METAL PARTS**

3- Seasonal Throughput Percent: Dec-Feb   25   % Mar-May   25   % Jun-Aug   25   % Sep-Nov   25   %

4- Normal Operating Schedule: Hours/Day   8   Days/Week   5   Hours/Year   2080   Weeks/Year   52  

5- Typical Hours of Operation (*military time*) Start   0800   End   1700  

6	7	8	9		10	11		12	13	14			15
Process ID	Stack ID(s)	Material Type	Annual Usage Input	lb or gal	VOC, HAP&NON or NHx	Emission Factor	EF Units (lbs per)	Pounds of pollutant* sent off site	Capture Efficiency %	Control ID	Control Efficiency %	Control Efficiency Code**	Estimated Emissions (lbs/yr)
800	1	Lacquer 6455-06	95	g1	VOC	4.7	gal		%		%		447
801	1	lacq thinner	120	g1	VOC	7.1	gal		%		%		852
802	1	Paint red 4039-03	940	g1	VOC	4.2	gal		%		%		3,948
803	1	paint thinner	707	g1	VOC	7.0	gal		%		%		4,949
804	1	powder paint 8730-11	20,200	lb	VOC	0.001	lb		%		%		20
									%		%		

**Note:** Do NOT change pre-printed Process ID numbers. See page 6 of these instructions for information on how to delete materials that are no longer used, or to assign Process ID numbers for new materials.

\* If you have off-site recycling/disposal of any of the materials listed above, you must complete an Off-site Recycling/Disposal Form to receive credit for reduced emissions.

**NOTE: Emissions in col. 15 are calculated as follows:**  $([\text{col. 9} \times \text{col. 11}] - \text{col. 12}) \times (1 - [\text{col. 13} \times \text{col. 14}])$

**\*\* Control Efficiency Reference Codes**

1 = Tested efficiency / EPA reference method

2 = Tested efficiency / other source test method

3 = Design value from manufacturer

4 = Best guess / engineering estimate

5 = Calculated based on material balance

6 = Estimated, based on a published value.

**EXAMPLE: Cleaning solvent (with recycling)**

**Evaporative Process Form 2005**

Permit number(s) v99999

Place an X in any gray cell to mark data requested to be held confidential. See page 5 for requirements for information to be deemed confidential.

1- Process Type/Description: Cleaning metal parts

2- Process TIER Code: 080103 SOLVENT USE: DEGREASING - COLD CLEANING

3- Seasonal Throughput Percent: Dec-Feb 25 % Mar-May 25 % Jun-Aug 25 % Sep-Nov 25 %

4- Normal Operating Schedule: Hours/Day 8 Days/Week 5 Hours/Year 2080 Weeks/Year 52

5- Typical Hours of Operation (military time) Start 1300 End 1700

6	7	8	9	10	11	12	13	14			15		
Process ID	Stack ID(s)	Material Type	Annual Usage Input	lb or gal	VOC, HAP&NON or NHx	Emission Factor	EF Units (lbs per)	Pounds of pollutant* sent off site	Capture Efficiency %	Control ID	Control Efficiency %	Control Efficiency Code**	Estimated Emissions (lbs/yr)
3	2	sanitizer	716	lb	VOC	1.0	lb		95 %	1	80 %	3	172
6		gun cleaner	180	gal	VOC	7.2	gal	569	%		%		727
7		xyz stripper	1300	gal	VOC	3.3	gal	1,884	%		%		2,406
8		cleaning solvents	358	gal	VOC	6.4	gal	1,006	%		%		1,285
9		generoclean	2258	gal	VOC	6.8	gal	6,741	%		%		8,613
									%		%		

**Note:** Do NOT change pre-printed Process ID numbers. See page 6 of these instructions for information on how to delete materials that are no longer used, or to assign Process ID numbers for new materials.

\* If you have off-site recycling/disposal of any of the materials listed above, you must complete an Off-site Recycling/Disposal Form to receive credit for reduced emissions.

**NOTE:** This example shows the case where 2,400 of the original 4,096 gallons of materials #6 through 9 were captured for off-site recycling, and the pollutant content of the waste material was estimated to be 75% of the original. The pounds of pollutant sent off-site shown in column 12 is calculated on the example Off-Site Recycling/Disposal Form on the next page.

# EXAMPLE

## Off-Site Recycling/Disposal Form 2005

Permit number(s) V99999

**NOTE: If you need blank copies of this form, call the Emissions Inventory Unit at (602) 506-6790 or consult our web page at [www.maricopa.gov/aq/ei.aspx](http://www.maricopa.gov/aq/ei.aspx).**

Provide one off-site recycling/disposal form for each waste stream at your business location. A waste stream is the waste from one or more processes mixed together to make one waste product before it is taken off site for recycling, disposal or combustion.

- 1) Assign a unique two-digit ID number to identify the waste stream that will be described below. 01  
 (Start with ID# 01 for first waste stream. Make copies of a blank Off-Site Recycling/Disposal form and use 02 for second, etc.)

Check one:

pounds  
 gallons

- 2) What was the quantity of this waste stream in 2005? 2,400  
 Indicate whether this quantity is reported in pounds or gallons. Keep waste disposal company manifests as proof that this amount of waste was taken off-site.

- 3) What was the **average** pollutant content of the waste stream? NOTE: Report in the same units (pounds or gallons) as used in line 2.

VOC 4.25 lbs/unit HAP&NON \_\_\_\_\_ lbs/unit NHx \_\_\_\_\_ lbs/unit

**NOTE: Waste normally has less pollutant content than the new product. Some of the pollutant evaporates during the use of the product, and there is usually dirt, water or other contaminants in the waste stream. The estimated pollutant content of the waste is usually between 50% and 95% of the new product. This example estimates an average VOC content (on line 3) to be 75% of the original VOC content of 5.67 lbs/gal., to account for evaporation and contaminants. See page 20 to calculate a weighted average.**

- 4) Calculate the **total** annual pollutant content of the waste in this waste stream.  
 (volume of waste, from Line 2) × (pollutant content, from Line 3) = Total pollutants in waste stream, in lbs/yr.

VOC 10,200 lbs/yr HAP&NON \_\_\_\_\_ lbs/yr NHx \_\_\_\_\_ lbs/yr

- 5) List the process ID numbers of the processes contributing to this waste stream. Also estimate the pounds of pollutant that each process contributed to this waste stream.

**NOTE: In this example, the amount each process material contributed to total pollutants in the waste stream (Line 4) is based on the percentage, by weight, of each material that contributed to the waste stream. (e.g. Process ID #6 contributed 5.6%, therefore 5.6% × 10,200 lbs/yr = 569 lbs. See example on page 20.)**

**NOTE:** Column totals in the table below must equal the total for each pollutant type reported on line 4. The quantities you report below for each pollutant and process must also be reported in column 12 on the Evaporative Process Form.

Process ID	Annual VOC (lbs)	Annual HAP&NON (lbs)	Annual NHx (lbs)
6 Contributed about	569 lbs	lbs	lbs
7 Contributed about	1,884 lbs	lbs	lbs
8 Contributed about	1,006 lbs	lbs	lbs
9 Contributed about	6,741 lbs	lbs	lbs

## EXAMPLE: Documentation of Emission Factor Calculations

Identify the process ID number(s) and pollutant(s). Show calculations made to obtain the emission factors used for the process(es). Include references to data sources used, including the document name, date published, page numbers, etc.

### Emission Factor Calculation

Process ID 201

Permit number V99999

*Emission factors derived from source test performed 12/2/00 by XYZ Engineering Company (copy of summary tables also attached).*

**Outlet (after controls):**

$$\begin{aligned} \text{CO} &= 0.43 \text{ lb/hr} \times 1 \text{ hr}/60 \text{ min} \times 1 \text{ min}/77.9 \text{ cu. ft} \times 1,000,000 \text{ cu. ft/MMCF} \\ &= 92.0 \text{ lb/MMCF} \end{aligned}$$

$$\begin{aligned} \text{NOx} &= 0.09 \text{ lb/hr} \times 1 \text{ hr}/60 \text{ min} \times 1 \text{ min}/77.9 \text{ cu. ft} \times 1,000,000 \text{ cu. ft/MMCF} \\ &= 19.3 \text{ lb/MMCF} \end{aligned}$$

**Weighted average sample calculation**

**NOTE:** The example below shows how the weighted average of the materials going into the waste stream is calculated. A weighted-average emission factor has been calculated by listing usage amounts and emission factors for each material, summing each column, and then dividing the total emissions by the total gallons used.

*In this example: 23,231 lbs ÷ 4,096 gal = 5.67 lb/gal average VOC content. This emission factor is then used to calculate the average pollutant content in the Off-site Recycling / Disposal Form example.*

*This process can also be used to find the weighted average emission factor for similar materials if you are reporting them together as a single line item on the Evaporative Process form. Refer to the explanation of "grouping" on page 6.*

Process ID #	Material Type	2005 Usage	Units	VOC (lbs/unit)	VOC Emissions (= Usage × VOC content)	Percent contributed to waste stream
6	gun cleaner	180	gal	7.2	1,296 lbs.	5.6 %
7	xyz stripper	1,300	gal	3.3	4,290 lbs.	18.5 %
8	cleaning solvent	358	gal	6.4	2,291 lbs.	9.9 %
9	generoclean solvent	2,258	gal	6.8	15,354 lbs.	66.1 %
	<b>Totals:</b>	<b>4,096</b>	<b>gal</b>		<b>23,231 lbs.</b>	<b>100.0 %</b>

<b>Average VOC content:</b>	$\frac{23,231 \text{ lbs.}}{4,096 \text{ gals}}$	=	$5.67 \text{ lb/gal}$
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***How to calculate an emission fee (for Title V sources only):***

1. For each pollutant listed on the “Data Certification/Fee Calculation” form, total up all emissions recorded on your General Process and Evaporative Process Forms. Enter these numbers in column 1, “Totals from Process Forms.”

**NOTE:** While most processes that generate PM<sub>10</sub> should be reported on line 5 of the Data Certification/Fee Calculation form, “[f]ugitive emissions of PM<sub>10</sub> from activities other than crushing, belt transfers, screening, or stacking” (County Rule 280, § 305.2d) are NOT subject to annual emission fees. The most common occurrences of these PM<sub>10</sub>-producing activities that are NON-billable are listed below:

**SCC codes and description of PM<sub>10</sub>-producing processes that are NOT subject to emission fees**

SCC	Major Category	Subcategory	Facility / Process Type	Process Description
30200814	Industrial Processes	Food and Agriculture	Feed Manufacture	Storage
30400737	Industrial Processes	Secondary Metal Production	Steel Foundries	Raw Material Silo
30500120	Industrial Processes	Mineral Products	Asphalt Roofing Manufacture	Storage Bins: Ferric Chloride
30500121	Industrial Processes	Mineral Products	Asphalt Roofing Manufacture	Storage Bins: Mineral Stabilizer
30500134	Industrial Processes	Mineral Products	Asphalt Roofing Manufacture	Blown Saturant Storage
30500135	Industrial Processes	Mineral Products	Asphalt Roofing Manufacture	Blown Coating Storage
30500141	Industrial Processes	Mineral Products	Asphalt Roofing Manufacture	Granules Storage
30500143	Industrial Processes	Mineral Products	Asphalt Roofing Manufacture	Mineral Dust Storage
30500203	Industrial Processes	Mineral Products	Asphalt Concrete	Storage Piles
30500212	Industrial Processes	Mineral Products	Asphalt Concrete	Heated Asphalt Storage Tanks
30500213	Industrial Processes	Mineral Products	Asphalt Concrete	Storage Silo
30500290	Industrial Processes	Mineral Products	Asphalt Concrete	Haul Roads: General
30500303	Industrial Processes	Mineral Products	Brick Manufacture	Storage of Raw Materials
30500608	Industrial Processes	Mineral Products	Cement Manufacturing (Dry Process)	Raw Material Piles
30500708	Industrial Processes	Mineral Products	Cement Manufacturing (Wet Process)	Raw Material Piles
30501710	Industrial Processes	Mineral Products	Mineral Wool	Storage of Oils and Binders
30502007	Industrial Processes	Mineral Products	Stone Quarrying - Processing	Open Storage
30502011	Industrial Processes	Mineral Products	Stone Quarrying - Processing	Hauling
30502504	Industrial Processes	Mineral Products	Construction Sand and Gravel	Hauling
30502507	Industrial Processes	Mineral Products	Construction Sand and Gravel	Storage Piles
30502760	Industrial Processes	Mineral Products	Industrial Sand and Gravel	Sand Handling, Transfer, & Storage
30531090	Industrial Processes	Mineral Products	Coal Mining, Cleaning, Material Handling	Haul Roads: General
30532007	Industrial Processes	Mineral Products	Stone Quarrying - Processing	Open Storage
30704002	Industrial Processes	Pulp and Paper & Wood Pdts.	Bulk Handling and Storage - Wood/Bark	Stockpiles
31100199	Industrial Processes	Building Construction	Construction: Building Contractors	Other Not Classified
31100299	Industrial Processes	Building Construction	Demolitions/Special Trade Contracts	Other Construction/Demolition
50100401	Waste Disposal	Solid Waste Disposal	Landfill Dump	Unpaved Road Traffic
50100402	Waste Disposal	Solid Waste Disposal	Landfill Dump	Fugitive Emissions
50100403	Waste Disposal	Solid Waste Disposal	Landfill Dump	Area Method
50100404	Waste Disposal	Solid Waste Disposal	Landfill Dump	Trench Method
50100405	Waste Disposal	Solid Waste Disposal	Landfill Dump	Ramp Method

2. Report any accidental releases in column 2. Add columns 1 and 2 together for each pollutant, and enter the sum in column 3. Sum lines 1 through 5 together, and enter the total on line 6.
3. Divide your facility's total billable emissions (on line 6) by 2000 to convert pounds into tons. **Round to the nearest ton.** Enter this value on line 7. Multiply this number by **\$13.65**, and enter the result on line 8. This is your 2005 emission fee.

## EXAMPLE (for Title V sources only)

### Data Certification/Fee Calculation Form 2005

Permit number     v99999    

For EACH pollutant listed, total up all emissions recorded on your General Process and Evaporative Process Forms. Enter these numbers in column 1, "Totals from Process Forms." Report any emissions from accidental releases in column 2.

Add the figures in each row across, and enter the result in column 3, "Total Emissions".

Carefully follow the instructions on lines 6 through 8 to calculate any emission fee owed.

**NOTE: "Accidental Releases" reported in column 2 should include all excess emissions reported to the Department under Rule 140, Section 500.**

Summary of 2005 Annual Emissions:	(1) Totals from Process Forms	(2) + Accidental Releases	(3) = TOTAL 2005 Emissions
CO	2,113	0	2,113
NH <sub>x</sub>	0	0	0
Lead	0	0	0
PM <sub>10</sub> (non-billable; see page 22)	7,200	0	7,200

**Emissions fees are based on your emissions of the following pollutants ONLY:**

1	HAP&NON	0	0	0
2	VOC	24,220	0	24,220
3	NO <sub>x</sub>	9,815	0	9,815
4	SO <sub>x</sub>	645	0	645
5	PM <sub>10</sub> (billable; see page 22)	691	0	691
6	<b>Add "TOTAL" column from lines 1 through 5 ONLY:</b>			<b>35,371 lbs.</b>
7	Divide the total on line 6 by 2000 (pounds per ton) to get tons, and round the number to the nearest ton. (Drop any decimal of .499 or less. Increase to the next whole number any decimal of .500 or more.) Enter the resulting WHOLE NUMBER here.			<b>18 TONS</b>
8	Multiply line 7 (a WHOLE number) by \$ 13.65. This is your 2005 ANNUAL EMISSION FEE.			<b>\$ 245.70</b>

**NOTE: Review specific requirements for data confidentiality on page 5. We cannot hold any data confidential without the required documentation.**

**TO COMPLETE YOUR EMISSIONS INVENTORY REPORT:**

- Include a check (made payable to Maricopa County Air Quality Department) for the amount calculated on line 8 above.
- Complete the Confidentiality Statement below.
- Sign and date this form below where indicated.
- Send the **original** copy of your completed forms, along with any emission fee due to: Maricopa County Air Quality Department, Emissions Inventory Unit, 1001 N. Central Ave., Suite 100, Phoenix, AZ 85004. Keep a copy of all forms for your records.

**CONFIDENTIALITY STATEMENT:**

This annual emissions report contains requests to keep some data confidential.     YES     NO

If you check "YES", you must submit documentation and meet certain requirements before your data can be deemed confidential.

See enclosed instructions for further details.

**NOTE: The Data Certification form must be signed by a responsible company official.**

**CERTIFICATION STATEMENT:**

I declare under penalty of perjury that the data (e.g. inputs, emission factors, controls, and annual emissions) presented herein represents the best available information and is true, accurate and complete to the best of my knowledge.

Signature of owner/business officer	Date of signature	Telephone number
Type or print full name of owner/business officer	Type or print full title	



## Appendix 2.2

### Calculating Rule Effectiveness for Controlled (Title V and non-Title V) Point Source Processes



Title V

**A. Most important factors (2 criteria, each assigned weighting of 20% of total):**

	Range		Midpt. value	Description	Weight	Value assigned to MCAQD	Score (= weight × value)
<b>Monitoring</b>	94%	100%	97%	Source specific monitoring used for compliance purposes, and monitoring records filed with regulatory agency at least every 4 months.			
	87%	93%	90%	Source specific monitoring used as an indicator of compliance, and monitoring records filed with regulatory agency every 6 to 9 months.	20%	90%	18.0%
	81%	86%	84%	Source specific monitoring used as an indicator of compliance, and monitoring records filed with regulatory agency each year.			
	70%	80%	75%	General guidance exists for source specific enhanced monitoring, and monitoring records required but aren't submitted to regulatory agency.			
		< 70%	35%	No requirements for any type of monitoring.			

<b>Compliance History</b>	94%	100%	97%	The facility has been in compliance for the past eight quarters.		18 of 39 facilities	9.0%
	87%	93%	90%	The facility is believed to have been in compliance for the past eight quarters, although inspection frequency is such that this can't be positively confirmed.		5 of 39 facilities	2.3%
	81%	86%	84%	On schedule; the facility is meeting its compliance schedule.			
	70%	80%	75%	In Violation; facility is in violation of emissions and/or procedural requirements.		7 of 39 facilities	2.7%
		< 70%	35%	High Priority Violator (HPV): the facility is in significant violation of one or more applicable requirement of the CAA.		9 of 39 facilities	1.6%
					20%	Sum:	15.6%

**B. Other important factors (4 criteria, each assigned weighting of 6% of total):**

<b>Type of Inspection</b>	94%	100%	97%	Inspections involve compliance test methods with a high degree of accuracy, such as stack testing or other types of precise emissions measurement.	6%	97%	5.8%
	87%	93%	90%	Inspections involve detailed review of process parameters & inspection of control equipment.			
	81%	86%	84%	Inspections involve review of process and inspection of control equipment.			
	70%	80%	75%	Inspections generally consist of only a records review.			
		< 70%	35%	Inspections most likely consist of visual inspection (e.g., opacity), or drive by.			

<b>Operation &amp; Maintenance</b>	94%	100%	97%	Control equipment operators follow and sign daily O&M instructions.			
	87%	93%	90%	Control equipment operators follow daily O&M instructions.	6%	90%	5.4%
	81%	86%	84%	Control equipment operators follow daily or weekly O&M instructions.			
	70%	80%	75%	O&M requirements exist, but on no specific schedule.			
		< 70%	35%	No specific O&M requirements.			

Title V

	Midpt. value			Description	Weight	Value	Score
	Range					assigned to MCAQD	(= weight × value)
<b>Unannounced Inspections</b>	94%	100%	97%	Routinely conducted.	6%	97%	5.8%
	87%	93%	90%	Sometimes done.			
	81%	86%	84%	Done, but infrequently.			
	70%	80%	75%	Rarely done.			
	< 70%		35%	Never done.			

<b>Enforcement Penalties</b>	94%	100%	97%	Agency has the authority to impose punitive measures, including monetary fines, towards violators such as in delegated Title V Operating Permit programs.	6%	97%	5.82%
	87%	93%	90%	Agency has the authority to impose punitive measures, including monetary fines, towards violators such as in delegated Title V Operating Permit programs.			
	81%	86%	84%	Agency has the authority to impose punitive measures, including monetary fines, towards violators such as in delegated Title V Operating Permit programs.			
	70%	80%	75%	Agency has the authority to impose punitive measures, including monetary fines, towards violators such as in delegated Title V Operating Permit programs.			
	< 70%		35%	Agency does not have sufficient authority to impose punitive measures towards violators.			

**C. Other factors (9 criteria, each assigned weighting of 4% of total):**

<b>Compliance Certifications</b>	94%	100%	97%	Source subject to Title V or other type of compliance certification.	4%	97%	3.88%
	87%	93%	90%	Source subject to Title V or other type of compliance certification.			
	81%	86%	84%	Source not subject to any type of compliance certification.			
	70%	80%	75%	Source not subject to any type of compliance certification.			
	< 70%		35%	Source not subject to any type of compliance certification.			

<b>Inspection Frequency</b>	94%	100%	97%	Source(s) are inspected once every 2 years or more frequently.	4%	97%	3.88%
	87%	93%	90%	Source(s) inspected every 3 years or more frequently.			
	81%	86%	84%	Source(s) inspected every 5 years or more frequently.			
	70%	80%	75%	Inspection of source(s) infrequent. > every 5 years.			
	< 70%		35%	Inspections rarely, if ever, performed.			

<b>EPA HPV Enforcement</b>	94%	100%	97%	Agency has sufficient resources to implement EPA's 12/22/98 HPV policy.	4%	97%	3.88%
	87%	93%	90%	Agency's resources allow it to implement EPA's 12/22/98 HPV policy in most instances.			
	81%	86%	84%	Agency's resources allow it to implement EPA's 12/22/98 HPV policy in most instances.			
	70%	80%	75%	Agency's resources allow it to implement EPA's 12/22/98 HPV policy more often than not.			
	< 70%		35%	Resource constraints prohibit agency from implementing EPA's 12/22/98 HPV policy in most instances.			



Title V

	Midpt. value			Description	Weight	Value	Score
	Range					assigned to MCAQD	(= weight × value)
<b>Operator Training</b>	94%	100%	97%	Control equipment operators complete a formal training program on use of the equipment, and such program is kept up to date and has been reviewed by the regulatory agency.			
	87%	93%	90%	Control equipment operators complete formal training program, and such program is kept up to date and available for review by the regulatory agency upon request.			
	81%	86%	84%	Control equipment operators complete some amount of formal training.	4%	84%	3.36%
	70%	0.8	75%	Control equipment operators receive only on the job training .			
		< 70%	35%	Control equipment operators receive no specific training.			

<b>Media Publicity</b>	94%	100%	97%	Media publicity of enforcement actions.	4%	97%	3.88%
	87%	93%	90%	Media publicity of enforcement actions.			
	81%	86%	84%	Media publicity of enforcement actions.			
	70%	80%	75%	Media publicity of enforcement actions.			
		< 70%	35%	No media publicity of enforcement actions.			

<b>Regulatory Workshops</b>	94%	100%	97%	Regulatory workshops are available annually, and/or the implementing agency mails regulatory information packages each year.	4%	97%	3.88%
	87%	93%	90%	Regulatory workshop are available every 1-2 years, and/or the implementing agency mails regulatory information packages every 1-2 years.			
	81%	86%	84%	Regulatory workshop are available every 2-3 years, and/or the implementing agency mails regulatory information packages once every 2-3 years.			
	70%	80%	75%	Regulatory workshop not routinely available, but implementing agency mails regulatory information packages out about once every 2-3 years.			
		< 70%	35%	Regulatory workshops not routinely available. implementing agency mails regulatory information packages infrequently, if ever.			

<b>Inspector Training</b>	94%	100%	97%	Inspectors must undergo 2 weeks of comprehensive basic training, and 1 to 2 weeks of source specific training, and such training is updated each year.			
	87%	93%	90%	Inspectors must undergo 1 to 2 weeks of basic training and 1 week of source specific training, and such training is updated every 1-2 years.	4%	90%	3.60%
	81%	86%	84%	Inspectors must undergo 1 to 2 weeks of basic training and 3 to 5 days of source specific training, and such training is updated every 1-2 years.			
	70%	80%	75%	Inspectors must undergo 1 to 2 weeks of basic training and 1 to 3 days of source specific training, and such training is updated every 1-2 years.			
		< 70%	35%	Inspectors must undergo less than 5 days of basic training less than 3 days of source specific training, and such training is updated only every 2 years or less frequently.			

Title V

	Range		Midpt. value	Description	Weight	Value assigned to	Score (= weight × value)
						MCAQD	
<b>Testing Guidelines</b>	94%	100%	97%	Specific guidelines and schedule for testing and test methods exist.	4%	97%	3.88%
	87%	93%	90%	Specific guidelines on testing and test methods exist, but no schedule for testing.			
	81%	86%	84%	Specific guidelines on testing and test methods exist, but no schedule for testing.			
	70%	80%	75%	Specific guidelines on testing and test methods, but no schedule for testing.			
		< 70%	35%	Only general guidance on testing, or no mention of testing requirements.			

<b>Follow-up Inspections</b>	94%	100%	97%	Follow-up inspections always or almost always done (90 % of the time or more).	4%	97%	3.88%
	87%	93%	90%	Follow-up inspections usually done (approximately 75% of the time).			
	81%	86%	84%	Follow-up inspections sometimes done (approximately 50% of the time).			
	70%	80%	75%	Follow-up inspections infrequently done (approximately 25% of the time).			
		< 70%	35%	Follow-up inspections rarely or never done (10% of the time or less)			
							<b>90.55%</b>

**A. Most important factors (2 criteria, each assigned weighting of 20% of total):**

	Range		Midpt. value	Description	Weight	Value assigned to	Score
						MCAQD	(= weight × value)
<b>Monitoring</b>	94%	100%	97%	Source specific monitoring used for compliance purposes, and monitoring records filed with regulatory agency at least every 4 months.			
	87%	93%	90%	Source specific monitoring used as an indicator of compliance, and monitoring records filed with regulatory agency every 6 to 9 months.			
	81%	86%	84%	Source specific monitoring used as an indicator of compliance, and monitoring records filed with regulatory agency each year.			
	70%	80%	75%	General guidance exists for source specific enhanced monitoring, and monitoring records required but aren't submitted to regulatory agency.	20%	75%	15.0%
		< 70%	35%	No requirements for any type of monitoring.			

<b>Compliance History</b>	94%	100%	97%	The facility has been in compliance for the past eight quarters.		182 of 748 facilities	4.7%
	87%	93%	90%	The facility is believed to have been in compliance for the past eight quarters, although inspection frequency is such that this can't be positively confirmed.		404 of 748 facilities	9.7%
	81%	86%	84%	On schedule; the facility is meeting its compliance schedule.			
	70%	80%	75%	In Violation; facility is in violation of emissions and/or procedural requirements.		156 of 748 facilities	3.1%
		< 70%	35%	High Priority Violator (HPV): the facility is in significant violation of one or more applicable requirement of the CAA.		6 of 748 facilities	0.1%
						Sum:	17.6%

**B Other important factors (4 criteria, each assigned weighting of 6% of total):**

<b>Type of Inspection</b>	94%	100%	97%	Inspections involve compliance test methods with a high degree of accuracy, such as stack testing or other types of precise emissions measurement.			
	87%	93%	90%	Inspections involve detailed review of process parameters & inspection of control equipment.	6%	90%	5.4%
	81%	86%	84%	Inspections involve review of process and inspection of control equipment.			
	70%	80%	75%	Inspections generally consist of only a records review.			
		< 70%	35%	Inspections most likely consist of visual inspection (e.g., opacity), or drive by.			

<b>Operation &amp; Maintenance</b>	94%	100%	97%	Control equipment operators follow and sign daily O&M instructions.			
	87%	93%	90%	Control equipment operators follow daily O&M instructions.	6%	90%	5.4%
	81%	86%	84%	Control equipment operators follow daily or weekly O&M instructions.			
	70%	80%	75%	O&M requirements exist, but on no specific schedule.			
		< 70%	35%	No specific O&M requirements.			

Non-Title V

	Midpt.			Description	Weight	Value	Score
	Range	value				assigned to	(= weight ×
						MCAQD	value)
<b>Unannounced Inspections</b>	94%	100%	97%	Routinely conducted.	6%	97%	5.8%
	87%	93%	90%	Sometimes done.			
	81%	86%	84%	Done, but infrequently.			
	70%	80%	75%	Rarely done.			
		< 70%	35%	Never done.			

<b>Enforcement Penalties</b>	94%	100%	97%	Agency has the authority to impose punitive measures, including monetary fines, towards violators such as in delegated Title V Operating Permit programs.	6%	97%	5.82%
	87%	93%	90%	Agency has the authority to impose punitive measures, including monetary fines, towards violators such as in delegated Title V Operating Permit programs.			
	81%	86%	84%	Agency has the authority to impose punitive measures, including monetary fines, towards violators such as in delegated Title V Operating Permit programs.			
	70%	80%	75%	Agency has the authority to impose punitive measures, including monetary fines, towards violators such as in delegated Title V Operating Permit programs.			
		< 70%	35%	Agency does not have sufficient authority to impose punitive measures towards violators.			

**C. Other factors (9 criteria, each assigned weighting of 4% of total):**

<b>Compliance Certifications</b>	94%	100%	97%	Source subject to Title V or other type of compliance certification.			
	87%	93%	90%	Source subject to Title V or other type of compliance certification.			
	81%	86%	84%	Source not subject to any type of compliance certification.			
	70%	80%	75%	Source not subject to any type of compliance certification.	4%	75%	3.00%
		< 70%	35%	Source not subject to any type of compliance certification.			

<b>Inspection Frequency</b>	94%	100%	97%	Source(s) are inspected once every 2 years or more frequently.	4%	97%	3.88%
	87%	93%	90%	Source(s) inspected every 3 years or more frequently.			
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	70%	80%	75%	Agency's resources allow it to implement EPA's 12/22/98 HPV policy more often than not.			
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Non-Title V

	Midpt.			Description	Weight	Value	Score
	Range		value			assigned to	(= weight ×
						MCAQD	value)
<b>Operator Training</b>	94%	100%	97%	Control equipment operators complete a formal training program on use of the equipment, and such program is kept up to date and has been reviewed by the regulatory agency.			
	87%	93%	90%	Control equipment operators complete formal training program, and such program is kept up to date and available for review by the regulatory agency upon request.			
	81%	86%	84%	Control equipment operators complete some amount of formal training.			
	70%	80%	75%	Control equipment operators receive only on the job training .	4%	75%	3.00%
		< 70%	35%	Control equipment operators receive no specific training.			

<b>Media Publicity</b>	94%	100%	97%	Media publicity of enforcement actions.	4%	97%	3.88%
	87%	93%	90%	Media publicity of enforcement actions.			
	81%	86%	84%	Media publicity of enforcement actions.			
	70%	80%	75%	Media publicity of enforcement actions.			
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	87%	93%	90%	Inspectors must undergo 1 to 2 weeks of basic training and 1 week of source specific training, and such training is updated every 1-2 years.	4%	90%	3.60%
	81%	86%	84%	Inspectors must undergo 1 to 2 weeks of basic training and 3 to 5 days of source specific training, and such training is updated every 1-2 years.			
	70%	80%	75%	Inspectors must undergo 1 to 2 weeks of basic training and 1 to 3 days of source specific training, and such training is updated every 1-2 years.			
		< 70%	35%	Inspectors must undergo less than 5 days of basic training less than 3 days of source specific training, and such training is updated only every 2 years or less frequently.			

Non-Title V

	Midpt.			Description	Weight	Value	Score
	Range		value			assigned to	(= weight ×
						MCAQD	value)
<b>Testing Guidelines</b>	94%	100%	97%	Specific guidelines and schedule for testing and test methods exist.	4%	97%	3.88%
	87%	93%	90%	Specific guidelines on testing and test methods exist, but no schedule for testing.			
	81%	86%	84%	Specific guidelines on testing and test methods exist, but no schedule for testing.			
	70%	80%	75%	Specific guidelines on testing and test methods, but no schedule for testing.			
		< 70%	35%	Only general guidance on testing, or no mention of testing requirements.			

<b>Follow-up Inspections</b>	94%	100%	97%	Follow-up inspections always or almost always done (90 % of the time or more).	4%	97%	3.88%
	87%	93%	90%	Follow-up inspections usually done (approximately 75% of the time).			
	81%	86%	84%	Follow-up inspections sometimes done (approximately 50% of the time).			
	70%	80%	75%	Follow-up inspections infrequently done (approximately 25% of the time).			
		< 70%	35%	Follow-up inspections rarely or never done (10% of the time or less)			
							<b>87.95%</b>