



## Emission Inventory Instruction Sheet

### Why is an emission inventory required?

Most of the emission inventory reporting requirements originated in Title 40 of the Code of Federal Regulations (40 CFR) Part 51 and were intended for the very largest air pollution sources. These rules require that state and local agencies collect data from air pollution sources and submit the data to the National Emission Inventory (NEI). The information in the NEI database is used by EPA and by states for air quality modeling, tracking progress in meeting requirements under the Federal Clean Air Act, setting policy, and answering questions from the public. EPA recently passed the Air Emissions Reporting Rule (AERR), which requires that state and local agencies collect additional information about the air pollution sources in their jurisdictions. There are also other emission inventory reporting requirements under federal, state, and local rules and regulations. In order to comply with EPA's requirements to report emissions from sources within the ozone maintenance plan area, Southwest Clean Air Agency (SWCAA) also collects information from smaller sources that emit pollutants affecting ground level ozone.

### Who has to be inventoried?

SWCAA collects emission information from a variety of air pollution sources in order to prepare an emission inventory of the sources within the jurisdiction. The following sources, under 40 CFR Part 51 Subpart Q (40 CFR 51.320), are required to submit emission inventory information to SWCAA for inclusion in the national emission inventory:

- Any "large" source that has the potential to emit any of the following pollutants above the indicated thresholds is required to submit an emission inventory:
  - 100 tons/yr or more of nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), volatile organic compounds (VOC), ammonia (NH<sub>3</sub>), particulate matter (PM) with an aerodynamic diameter of ten microns or less (PM<sub>10</sub>), or PM with an aerodynamic diameter of 2.5 microns or less (PM<sub>2.5</sub>);
  - 1,000 tons/yr or more of carbon monoxide (CO);
  - 5 tons/yr or more of lead;
  - 10 tons/yr or more of any individual hazardous air pollutant (HAP); or
  - 25 tons/yr or more of any combination of HAPs.

The following sources are required under SWCAA 400-105 to submit emission inventory information:

- Any source within the ozone maintenance plan area in Clark County that has the potential to emit 10.0 tons/yr or more of VOCs or 25.0 tons/yr of NO<sub>x</sub>.
- Any source with actual emissions or with the potential to emit:
  - 50 tons/yr of NO<sub>x</sub>, SO<sub>2</sub>, VOC, NH<sub>3</sub>, PM<sub>10</sub>, or PM<sub>2.5</sub>;
  - 500 tons/yr of CO;
  - 1.5 tons/yr of lead;
  - 5 tons/yr or more of any individual hazardous air pollutant (HAP); or
  - 12.5 tons/yr or more of any combination of HAPs;
- Any source that has a federally enforceable "opt-out" permit; or
- Any "small" source that SWCAA has requested emission inventory information.

### What information is reported to EPA?

All of the information submitted for the current emission year is used and verified by SWCAA and submitted EPA. This information is often used by these agencies for planning, permitting, and computer modeling. The information is compiled into both state and federal inventory databases and is publically accessible through direct request for information or through the internet. Any information that is marked confidential and allowed to be made confidential under 40 CFR 2 Subpart B (emissions information is typically not considered confidential) is still required to be submitted but will retain the confidentiality flag. However, for some purposes, confidential data may be aggregated with other data, such as showing total production for a complete industry.

## General Information Form

This form provides general information about your facility. While we do our best to be sure this information is correct and current, some errors can occur. Please review the information carefully and make corrections as appropriate.

- 1 Facility Name is the name of the facility.
- 2 Physical Address is the physical location of the source. Please do not enter any PO boxes or address descriptions (such as "milepost 3 on Route 20").
- 3 Mailing Address is the address where any mailed information concerning the facility, such as the emission inventory, is to be sent.
- 4 SWCAA ID No., EPA Emission Inventory System (EIS) ID No., Aerometric Information Retrieval System (AIRS) Plant No., and SWCAA Inspector. SWCAA assigns a unique three- or four-digit identifier to each facility. Similar EPA assigns unique identifiers, depending on the program that the data is associated with, main the EIS and AIRS numbers. The inspector is the SWCAA representative assigned to your facility, which can change from year to year.
- 5 Facility Contact Information is the person that has been designated as the emission inventory contact for the facility. Please verify this information. It can also be updated at <http://swcleanair.org> under E-INFO > MISCELLANEOUS > FACILITY CONTACTS UPDATE.
- 6 Universal Business Identifier (UBI) is a nine- or ten-digit number assigned to your facility or company by the WA Secretary of State.
- 7 Standard Industrial Classification (SIC) code is used for financial purposes and is assigned at the time of initial registration with the WA Department of Revenue or WA Secretary of State's office. This is a four-digit code that can be obtained via the internet at [http://www.osha.gov/pls/imis/sic\\_manual.html](http://www.osha.gov/pls/imis/sic_manual.html). Call SWCAA if you need help identifying this code.
- 8 North American Industry Classification System (NAICS) code is used federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy. It is loosely related to the SIC code. This code can be obtained via the internet at <http://www.census.gov/eos/www/naics/>.
- 9 Geographical Coordinates and Universal Transverse Mercator (UTM) coordinates for the facility. If this data is missing or incorrect, please provide the correct data. You may substitute the coordinates for the center of your facility or for the front entrance. Call SWCAA if you are unsure how to determine these coordinates. All sources in SWCAA's jurisdiction are in UTM Zone 10T.
- 10 Emissions is where you can enter a facilitywide summary of emissions for the reporting year. Note that the units for criteria pollutants are ton/yr, but the units for toxic and hazardous air pollutants are lb/yr. Pollutants marked as "Not Applicable" mean that the facility is not capable of emitting the pollutant.
- 11 Certification of Data Accuracy. Once you have completed filling out all the forms, sign, print your name and title, and enter the date you completed the forms in this section. It is not required that the Title V Responsible Official sign the forms, however, if they are signed by someone else, the Responsible Official will need to certify the submittal in the Title V semiannual report.

**2019 Emission Inventory**  
**Southwest Clean Air Agency**  
11815 NE 99th Street, Suite 1294, Vancouver, WA 98682-2322  
 Voice: (360) 574-3058 Fax: (360) 576-0925

Facility Name: <b>ACME Industrial Company</b>		SWCAA ID No.: <b>9826</b>
Physical Address: 247 Smith Road, Vancouver, WA 98660		EPA EIS ID No.: <b>19035211</b>
Mailing Address: PO Box 199, Vancouver, WA 98660		AIRS Plant No.: <b>053-000-0000</b>
Facility Contact and Title: Mr. Jeff Forest, Plant Superintendent		SWCAA Inspector: <b>Rick Jones</b>
Phone: 360-555-7685		
Fax: 360-555-5251		
E-mail: JForest@ACME.com		
Unified Business Identifier (UBI): 111-225-223		
Standard Industrial Classification (SIC): 2421: SAWMILLS AND PLANING MILLS, GENERAL		North American Industry Classification System (NAICS): 321113: Sawmills
Geographical Coordinates: Latitude: 45° 41' 33.65" Longitude: 122° 33' 3.56"		UTM Coordinates: Vertical: 5,060,001.1 mN Zone: 10T Horizontal: 534,960.6 mE

<b>Emissions for 2019</b> <table style="width: 100%;"> <tr><td>Nitrogen Oxides (NOx):</td><td><input type="text"/></td><td>ton/yr</td></tr> <tr><td>Carbon Monoxide (CO):</td><td><input type="text"/></td><td>ton/yr</td></tr> <tr><td>Volatile Organic Compounds (VOC):</td><td><input type="text"/></td><td>ton/yr</td></tr> <tr><td>Sulfur Dioxide (SO<sub>2</sub>):</td><td><input type="text"/></td><td>ton/yr</td></tr> <tr><td>Lead (Pb):</td><td>Not Applicable</td><td>ton/yr</td></tr> <tr><td>Particulate Matter (PM):</td><td><input type="text"/></td><td>ton/yr</td></tr> <tr><td>Particulate Matter (PM<sub>10</sub>):</td><td><input type="text"/></td><td>ton/yr</td></tr> <tr><td>Particulate Matter (PM<sub>2.5</sub>):</td><td><input type="text"/></td><td>ton/yr</td></tr> <tr><td>Ammonia (NH<sub>3</sub>):</td><td>Not Applicable</td><td>ton/yr</td></tr> <tr><td>Ozone (O<sub>3</sub>):</td><td>Not Applicable</td><td>ton/yr</td></tr> <tr><td>Toxic Air Pollutants (TAP):</td><td><input type="text"/></td><td>lb/yr</td></tr> <tr><td>Hazardous Air Pollutants (HAP):</td><td><input type="text"/></td><td>lb/yr</td></tr> </table>	Nitrogen Oxides (NOx):	<input type="text"/>	ton/yr	Carbon Monoxide (CO):	<input type="text"/>	ton/yr	Volatile Organic Compounds (VOC):	<input type="text"/>	ton/yr	Sulfur Dioxide (SO <sub>2</sub> ):	<input type="text"/>	ton/yr	Lead (Pb):	Not Applicable	ton/yr	Particulate Matter (PM):	<input type="text"/>	ton/yr	Particulate Matter (PM <sub>10</sub> ):	<input type="text"/>	ton/yr	Particulate Matter (PM <sub>2.5</sub> ):	<input type="text"/>	ton/yr	Ammonia (NH <sub>3</sub> ):	Not Applicable	ton/yr	Ozone (O <sub>3</sub> ):	Not Applicable	ton/yr	Toxic Air Pollutants (TAP):	<input type="text"/>	lb/yr	Hazardous Air Pollutants (HAP):	<input type="text"/>	lb/yr	<b>CERTIFICATION OF DATA ACCURACY</b> <small>Consistent with the requirements of SWCAA 400-105(1) and (5), I certify as the owner, operator, or designated representative of the facility, that the data presented here and in the accompanying forms is true, accurate, and complete to the best of my</small>  Signature: _____  Printed Name and Title: _____  Date: _____
Nitrogen Oxides (NOx):	<input type="text"/>	ton/yr																																			
Carbon Monoxide (CO):	<input type="text"/>	ton/yr																																			
Volatile Organic Compounds (VOC):	<input type="text"/>	ton/yr																																			
Sulfur Dioxide (SO <sub>2</sub> ):	<input type="text"/>	ton/yr																																			
Lead (Pb):	Not Applicable	ton/yr																																			
Particulate Matter (PM):	<input type="text"/>	ton/yr																																			
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Ammonia (NH <sub>3</sub> ):	Not Applicable	ton/yr																																			
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Toxic Air Pollutants (TAP):	<input type="text"/>	lb/yr																																			
Hazardous Air Pollutants (HAP):	<input type="text"/>	lb/yr																																			

## Form A – Release Point Information

2019 Emission Inventory										FORM A: Page 1 of 1	
Southwest Clean Air Agency											
11815 NE 99th Street, Suite 1294, Vancouver, WA 98682-2322											
Voice: (360) 574-3058 Fax: (360) 576-0925											
Release Point Information											
1	2	3	4	5	6	7	8	9	10	11	12
Local & EPA IDs	Release Point	Release Point Description	Release Point Type	Stack Height	Stack Diameter	Stack Flow Rate	Stack O <sub>2</sub>	Stack H <sub>2</sub> O	Release Point Temp	Fugitive Release Height	Release Point Latitude and Longitude
990 111 111 110	01	Boiler low NOx burner and FGR - Autoflame Boiler stack	Stack Release	30 ft	2 ft 5 in	10,000 acfm	10.5 %	13 %	300 °F		45° 41' 33.65" 122° 33' 3.56"
991 111 111 111	02	Dry kilns - fugitives	Fugitive Release						200 °F	25 ft	45° 41' 33.65" 122° 33' 3.56"

- 1 Local & EPA IDs. These unique identifiers are assigned by SWCAA and EPA for the Release Point.
- 2 Release Point is a generic identifier for the release point. Note that this number may differ from the identification number in your permit. There may also be a notation of whether the release point is temporarily (TS) or permanently (PS) shut down; see **Table 1** for more information.
- 3 Release Point Description is a short description of the release point and links the release point to the emission unit and process.
- 4 Release Point Type is either a Stack Release, which includes a height, diameter, and flow rate or a Fugitive Release, which is all other release points.
- 5 Stack Height is the height of the stack, measured from ground level to the discharge point of the stack.
- 6 Stack Diameter is the diameter of the stack, if circular, or the dimensions of the stack, if rectangular, at the point of discharge.
- 7 Stack Flow Rate is the flow through the stack in actual cubic feet per minute (acfm).
- 8 Stack Oxygen (%) is the oxygen content of the exhaust stream of the stack. This information is often obtained during a stack test. Ambient O<sub>2</sub> level is assumed to be 20.9%.
- 9 Stack H<sub>2</sub>O (%) is the water content of the exhaust stream of the stack. This information is often obtained during a stack test.
- 10 Release Point Temp (°F) is the exhaust temperature of either the stack or the fugitive release point. Ambient temperature is assumed to be 68°F.
- 11 Fugitive Release Height is only used where there is no defined stack and is measured from ground level to the midpoint of the release. By definition, a fugitive emission is one that is not emitted through a defined stack.
- 12 Latitude/Longitude is the latitude and longitude of the release point.

## Form B – Emission Unit Information

2019 Emission Inventory					FORM B: Page 1 of 1
Southwest Clean Air Agency					
11815 NE 99th Street, Suite 1294, Vancouver, WA 98682-2322 Voice: (360) 574-3058 Fax: (360) 576-0925					
Emission Unit Information					
1 Local & EPA IDs	2 Emission Unit	3 Emission Unit Description	4 EPA Emission Unit Classification	5 Maximum Design Capacity (Fuel Burning Equipment Only)	6 Emission Unit Comment
725 66 852 014	01	Boiler low NOx burner and FGR - Cleaver Brooks stack	100: Boiler	45 MMBtu/hr	
725 66 852 017	02	Dry kilns - Wellons fugitives	211: Lumber Dry Kiln		

- 1 **Local & EPA IDs.** These unique identifiers are assigned by SWCAA and EPA for the emission unit.
- 2 **Emission Unit** is a generic identifier for the emission unit and is independently assigned from release point. Note that this number may differ from the identification number in your permit. There may also be a notation of whether the emission unit is temporarily (TS) or permanently (PS) shut down; see **Table 1** for more information.
- 3 **Emission Unit Description** is a short description of the emission unit.
- 4 **Emission Unit Classification** is a three-digit code, required by EPA, that broadly defines the emission unit type; see **Table 2** for more information.
- 5 **Maximum Design Capacity** is the maximum energy throughput (in MMBtu/hr) or engine rating (in BHP) for an emission unit that burns fuel.
- 6 **Emission Unit Comment** is a space for any comments you wish to make regarding the emission unit.

## Form C1 – Emission Process, Operational Schedule

**2019 Emission Inventory**  
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 Voice: (360) 574-3058 Fax: (360) 576-0925

FORM C1: Page 1 of 1

**Emission Process – Operational Schedule**

1 Local & EPA IDs	2 Emission Unit & Process	3 Process Description	4 Operation by Season				5 Typical Operating Schedule			6 Actual Operating Hours for 2019	7 Process Comment
			%	%	%	%	Hours per Day	Days per Week	Weeks per Year		
			Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec					
600 22 222 214	01 – 01	Boiler low NOx burner and FGR - Autoflame Boiler stack diesel					16	7	51		
601 22 222 215	02 – 01	Dry kilns - fugitives - Douglas Fir					16	7	51		

- 1 Local & EPA IDs. These unique identifiers are assigned by SWCAA and EPA for the Emission Process.
- 2 Emission Unit & Process is a generic pair of identifiers for the emission unit (from Form B) and the process that the emission unit uses for emission calculations. A single emission unit may have multiple processes that are typically based on different fuels that can be burned, alternate modes or operation, or major differences in product types. There may also be a notation of whether the emission unit is temporarily (TS) or permanently (PS) shut down; see **Table 1** for more information.
- 3 Process Description is a short description of the emission process. This description should be similar to the emission point description but is more specific. Instead of "Boiler #1", the process description may read "Boiler #1, natural gas usage."
- 4 Operation by Season is the percent of time that each process is operating for each quarter in the year. The total of the four entries should equal 100%.
- 5 Typical Operating Schedule represents how this process operates over the course of the year. It may be the maximum or the actual operation for the year.
- 6 Actual Operating Hours is the total number of hours that the process operated. The maximum is 8,760 hr/yr (or 8,784 hr on leap years).
- 7 Process Comment is a space for any comments you wish to make regarding the process.

## Form C2 – Emission Process, Production Details

**2019 Emission Inventory**  
**Southwest Clean Air Agency**  
 11815 NE 99th Street, Suite 1294, Vancouver, WA 98682-2322  
 Voice: (360) 574-3058 Fax: (360) 576-0925

FORM C2: Page 1 of 1

**Emission Process – Production Details**

Local & EPA IDs	Emission Unit & Process	Process Description	①	②	③	Fuel Information		
			Source Classification Code	Annual Production/Rate for 2019	Hourly Production/Rate for 2019	Sulfur and Ash Content in Liquid and Solid Fuels		Fuel Heat Content
600 22 222 214	01 – 01	Boiler low NOx burner and FGR - Autoflame Boiler stack diesel	1-02-005-02	1000 Gallons of Fuel Oil Burned/Year	1000 Gallons of Fuel Oil Burned/Hour	15 ppm		137000 BTU/GAL
601 22 222 215	02 – 01	Dry kilns - fugitives - Douglas Fir	3-07-008-42	1000 Board Feet of Wood Processed/Year	1000 Board Feet of Wood Processed/Hour	④	⑤	⑥

- ① **Source Classification Code (SCC):** EPA requires that SWCAA assign each process an SCC code. This code broadly classifies each process for EPA purposes. These codes are available from the EPA website at <http://cfpub.epa.gov/webfire/SearchEmissionFactor/searchpage.cfm>. For example, SCC 1-02-006-02 is for a 10–100 MMBtu/hr natural gas boiler. The SCC mandates, in most cases, a unit of measure for the code that is related to calculation of emissions. In the example, SCC 1-02-006-02 specifies units of million cubic feet (MMcf) of gas burned. A single emission unit may have two or more SCC codes if it uses more than one type of raw material or burns more than one type of fuel.
- ② **Annual Production/Rate** is a value representing a production quantity, consumption quantity, usage quantity, or other quantity related to the emissions of air pollution. The units of measure are listed under to the right of the box; this is a specific data entry, so do not change the unit. If there is an additional unit of measure, you may enter it into the comment box.
- ③ **Hourly Production/Rate** is the actual hourly production quantity, consumption quantity, usage quantity, or other quantity related to the emissions of air pollution on an hourly basis. It can be calculated by taking the annual rate divided by the hours of operation listed on Form C1 for the process. Do not enter the maximum or "potential-to-emit" rate. The units of measure are listed under to the right of the box; this is a specific data entry, so do not change the unit. If there is an additional or alternate unit of measure, you may enter it into the comment box.
- ④ **% Sulfur** is the percent sulfur in the liquid, semi-solid, or solid fuel being burned in the emission unit. It applies only to combustion units. This data element is not typically required for gaseous fuels.
- ⑤ **% Ash** is the percent ash in the liquid, semi-solid, or solid fuel being burned in the emission unit. It applies only to combustion units. The gray column is that data entered from last year. This data element is not typically required for gaseous fuels.
- ⑥ **Heat Value:** If a gaseous, liquid, semi-solid, or solid fuel is being burned, provide the heat content for the fuel in the appropriate units, Btu/scf, Btu/gal, and Btu/lb, respectively. Do not use therms. Default values are listed in **Table 3**.



## Form D – Criteria Pollutant Emissions

2019 Emission Inventory			FORM D: Page 1 of 1													
Southwest Clean Air Agency																
11815 NE 99th Street, Suite 1294, Vancouver, WA 98682-2322																
Voice: (360) 574-3058 Fax: (360) 576-0925																
Emission Process – Criteria Pollutant Emissions																
Local & EPA IDs	Emission Unit & Process	Process Description	PM (TSP)		PM <sub>10</sub>		PM <sub>2.5</sub>		VOC		NOx		CO		SO <sub>2</sub>	
			Est. Code	2019 TPY	Est. Code	2019 TPY	Est. Code	2019 TPY	Est. Code	2019 TPY	Est. Code	2019 TPY	Est. Code	2019 TPY	Est. Code	2019 TPY
600 22 222 214	01 – 01	Boiler low NOx burner and FGR - Autoflame Boiler stack diesel	4 1	2	4 1	2	4 1	2	8 1	2	4 1	2	4 1	2	8 1	2
601 22 222 215	02 – 01	Dry kilns - fugitives - Douglas Fir	4		4				4							

- 1 **Estimation Code (Est. Code):** For each emission process and each pollutant, provide the estimation code. If you have questions about the code, please call SWCAA. The estimation codes and descriptions are listed in **Table 4**.
- 2 **Tons per Year:** For each emission process and each pollutant, enter the amount of the pollutant emitted in tons per year (TPY). **Table 5** includes data from EPA's Particulate Matter Calculator (Version 2.0) that has partitioning of PM into PM<sub>10</sub> or PM<sub>2.5</sub> based on the SCC code. Emissions may be rounded to the nearest 0.01 tpy (if less than 0.01 tpy is emitted, you may enter zero).

## Form E – Toxic and Hazardous Air Pollutants

**2019 Emission Inventory**  
**Southwest Clean Air Agency**  
 11815 NE 99th Street, Suite 1294, Vancouver, WA 98682-2322  
 Voice: (360) 574-3058 Fax: (360) 576-0925

**FORM E: Page 1 of 1**

**Emission Process – Toxic Pollutant Emissions**

Local & EPA IDs	Emission Unit & Process	Process Description	3 HAP?	4 Est. Code	5 2019 Emissions	
600 22 222 214	02 – 01	Dry kilns - fugitives - Douglas Fir				
	<b>1</b> CAS Number	<b>2</b> Pollutant Name				
	75-07-0	ACETALDEHYDE	Yes	3		LB/YR
	107-02-8	ACROLEIN	Yes	3		LB/YR
	50-00-0	FORMALDEHYDE	Yes	3		LB/YR
	67-56-1	METHANOL	Yes	3		LB/YR

- 1 **Chemical Abstract Service (CAS) Number:** For each Emission Process, enter the CAS number for the toxic air pollutant (TAP) emitted. The CAS number can be found on Safety Data Sheets or Technical Data Sheets for a specific chemical that is being used. Otherwise, you may use SWCAA's webpage to look up chemical information by CAS or by name at <http://www.swcleanair.org> under POLLUTANTS > POLLUTANT SEARCH.
- 2 **Pollutant Name:** The chemical name can be found on Safety Data Sheets or Technical Data Sheets for a specific chemical that is being used. Otherwise, you may use SWCAA's webpage to look up chemical information by CAS or by name at <http://www.swcleanair.org> under POLLUTANTS > POLLUTANT SEARCH.
- 3 **Hazardous Air Pollutant (HAP)** is shown either as a "Y" for those toxic pollutants also listed as federal HAPs, or "N" for pollutants listed only as WA State toxic air pollutants (TAPs).
- 4 **Estimation Code (Est. Code):** For each emission process and each pollutant, provide the estimation code. If you have questions about the code, please call SWCAA. The estimation codes and descriptions are listed in **Table 4**.
- 5 **Pounds per Year:** For each Emission Process and each pollutant, enter the amount of the pollutant emitted in pounds per year (lb/yr). Emissions must be rounded to either the nearest 0.1 lb/yr. If the quantity of emission is less than 0.1 lb/yr, include at least one non-zero significant digit (e.g., 0.0022 lb/yr reported as  $2 \times 10^{-3}$  lb/yr). Some toxics, especially metals, have very low regulatory limits, so they are treated differently.

### Additional Information

When submitting the forms to SWCAA, it is recommended that the facility include any calculations you have made and include a description of any assumptions made when determining your emissions. SWCAA staff can then understand how the emissions were calculated. If you have any questions about how to fill out these emission forms, or how emission information should be determined, please contact your facility's SWCAA representative at (360) 574-3058.



# APPENDIX

**Table 1: Operating Status**

OP	Operating	Release Point, Emission Unit, or Process operated at any time during the year.
TS	Temporarily Shut Down	Release Point, Emission Unit, or Process did <u>not</u> operate in the year, but may be expected to operate in the future ("turn-key" ready). Permit must be maintained and "turn-key" ready.
PS	Permanently Shut Down	Release Point, Emission Unit, or Process, did <u>not</u> operate in the year, is completely shut down, and will <u>never</u> operate again, is removed from the facility, or is no longer permitted to operate.

**Table 2: EPA Emission Unit Classification**

Description	Unit Type Code	Description	Unit Type Code
Boiler .....	100	Open Burning .....	285
Calciner .....	220	Open Storage Pile .....	785
Chemical Reactor .....	600	Open Tank or Vat .....	410
Combined Cycle (Boiler/Gas Turbine) ...	140	Other bulk material equipment .....	790
Conveyor .....	760	Other combustion .....	290
Cooling Tower .....	680	Other evaporative sources .....	490
Crusher .....	720	Other fugitive .....	390
Degreaser .....	430	Other process equipment .....	690
Direct-fired Dryer .....	250	Oxidation Unit .....	610
Distillation Column/Stripper .....	620	Printing Line .....	470
Dryer, unknown if direct or indirect. ....	255	Process Equip. & Process Area Drains ....	360
Duct Burner .....	150	Process Equip. Fugitive Leaks .....	350
Engine Test Cell .....	170	Process Heater .....	180
Flare .....	280	Reciprocating IC Engine .....	160
Furnace .....	200	Roof vents/Building vents .....	310
Gasoline Loading Rack or Arm .....	480	Screen .....	740
Grinder .....	730	Silo .....	780
Incinerator .....	270	Spray Booth or Coating Line .....	450
Indirect-fired Dryer .....	260	Storage Tank .....	400
Kiln .....	210	Transfer Point .....	770
Mixer .....	640	Turbine .....	120
Open Air Fugitive Source .....	300	<b>Unclassified .....</b>	<b>999</b>

**Table 3: Fuel Heat Content (defaults)**

Acetylene .....	1,476 Btu/cu ft	LNG .....	88,000 Btu/gal
Alder bark dust .....	15,300,000 Btu/ton	Methane .....	1,011 Btu/cu ft
Biodiesel .....	140,000 Btu/gal	Natural gas .....	1,020 Btu/cu ft
Butane .....	103,000 Btu/gal	Propane – commercial .....	91,600 Btu/gal
Diesel No 1 .....	137,000 Btu/gal	Propane – HD-10 .....	91,600 Btu/gal
Diesel No 2 .....	140,000 Btu/gal	Propane – HD-5 .....	91,600 Btu/gal
Diesel No 4 <1.5 %S .....	146,000 Btu/gal	Propene .....	87,740 Btu/gal
Diesel No 5 <1.75 %S .....	148,000 Btu/gal	PS300 .....	149,000 Btu/gal
Diesel No 6 .....	150,000 Btu/gal	Sander dust .....	8,400 Btu/lb
Digester gas .....	600 Btu/cu ft	Sewage sludge .....	10,400 Btu/lb
Ethane .....	68,900 Btu/gal	Used oil .....	144,000 Btu/gal
Ethene .....	70,910 Btu/gal	Wood waste .....	8,400 Btu/lb
Isobutane .....	99,300 Btu/gal	Wood waste and sander dust .....	8,400 Btu/lb
Landfill gas .....	485 Btu/cu ft		

# APPENDIX

**Table 4: Estimation Codes (Est Code)**

Emission Est. Code	Description	Notes
1	Continuous Emission Monitoring System	
2	Engineering Judgment	
3	Material Balance	
4	Stack Test (no Control Efficiency used)	use if source is uncontrolled or if test was after controls
5	EPA Speciation Profile	use where emissions for one pollutant were derived as a fraction of or ratio to another pollutant's emissions
6	State/Local Air Agency Speciation Profile	use where emissions for one pollutant were derived as a fraction of or ratio to another pollutant's emissions
7	Manufacturer Specification	
8	EPA Emission Factor (no Control Efficiency used)	use if source and Emission Factor are uncontrolled or if Emission Factor itself accounts for controls without need to apply a control efficiency in emissions calculation
9	State/Local Air Agency Emission Factor (no Control Efficiency used)	use if source and Emission Factor are uncontrolled or if Emission Factor itself accounts for controls without need to apply a control efficiency in emissions calculation
10	Site-Specific Emission Factor (no Control Efficiency used)	use if source and Emission Factor are uncontrolled or if Emission Factor itself accounts for controls without need to apply a control efficiency in emissions calculation
11	Vendor Emission Factor (no Control Efficiency used)	use if source and Emission Factor are uncontrolled or if Emission Factor itself accounts for controls without need to apply a control efficiency in emissions calculation
12	Trade Group Emission Factor (no Control Efficiency used)	use if source and Emission Factor are uncontrolled or if Emission Factor itself accounts for controls without need to apply a control efficiency in emissions calculation
13	Other Emission Factor (no Control Efficiency used)	use if source and Emission Factor are uncontrolled or if Emission Factor itself accounts for controls without need to apply a control efficiency in emissions calculation
24	Stack Test (pre-control) plus Control Efficiency	use if test was before controls and therefore a control efficiency was also used in emissions calculation
28	EPA Emission Factor (pre-control) plus Control Efficiency	use if Emission Factor was before controls and therefore a control efficiency was also used in emissions calculation
29	State/Local Air Agency Emission Factor (pre-control) plus Control Efficiency	use if Emission Factor was before controls and therefore a control efficiency was also used in emissions calculation

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Emission Est. Code	Description	Notes
30	Site-Specific Emission Factor (pre-control) plus Control Efficiency	use if Emission Factor was before controls and therefore a control efficiency was also used in emissions calculation
31	Vendor Emission Factor (pre-control) plus Control Efficiency	use if Emission Factor was before controls and therefore a control efficiency was also used in emissions calculation
32	Trade Group Emission Factor (pre-control) plus Control Efficiency	use if Emission Factor was before controls and therefore a control efficiency was also used in emissions calculation
33	Other Emission Factor (pre-control) plus Control Efficiency	use if Emission Factor was before controls and therefore a control efficiency was also used in emissions calculation
40	Emission Factor based on Regional Testing Program	
41	Emission Factor based on data available peer reviewed literature	
42	Emission Factor based on Fire Emission Production Simulator (FEPS)	

**Table 5: PM<sub>10</sub> and PM<sub>2.5</sub> Partitioning Factor for Specific Source Classification Codes**

SCC Code	Equipment Type/Description	%PM as PM <sub>10</sub>	%PM as PM <sub>2.5</sub>
1-01-004-01	External Combustion Boilers, Electric Generation, Residual Oil, Grade 6 Oil: Normal Firing	71%	52%
1-02-006-02	External Combustion Boilers, Industrial, Natural Gas, 10-100 MMBtu/hr	100%	100%
1-02-006-03	External Combustion Boilers, Industrial, Natural Gas, <10 MMBtu/hr	100%	100%
1-02-009-02	External Combustion Boilers, Industrial, Wood/Bark Waste, Wood/Bark-fired Boiler	90%	83%
1-02-009-03	External Combustion Boilers, Industrial, Wood/Bark Waste, Wood-fired Boiler, Wet Wood (>=20% moisture)	90%	80%
1-02-010-02	External Combustion Boilers, Industrial, Liquefied Petroleum Gas (LPG), Propane	100%	100%
2-02-002-01	Internal Combustion Engines, Industrial, Natural Gas, Turbine	100%	100%
2-02-010-02	Internal Combustion Engines, Industrial, Liquefied Petroleum Gas (LPG), Butane: Reciprocating	100%	100%
3-01-888-01	Industrial Processes, Chemical Manufacturing, Fugitive Emissions	94%	78%
3-01-888-03	Industrial Processes, Chemical Manufacturing, Fugitive Emissions	94%	81%
3-01-999-99	Industrial Processes, Chemical Manufacturing, Other Not Classified	96%	91%
3-02-005-05	Industrial Processes, Food and Agriculture, Feed and Grain Ter-	48%	21%

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	Industrial Processes, Unloading (Receiving)		
3-02-005-06	Industrial Processes, Food and Agriculture, Feed and Grain Terminal Elevators, Loading (Shipping)	42%	13%
3-02-005-07	Industrial Processes, Food and Agriculture, Feed and Grain Terminal Elevators, Removal from Bins (Tunnel Belt)	15%	2%
3-02-005-08	Industrial Processes, Food and Agriculture, Feed and Grain Terminal Elevators, Elevator Legs (Headhouse)	15%	2%
3-05-014-15	Industrial Processes, Mineral Products, Glass Manufacture, Glass Etching with Hydrofluoric Acid Solution	100%	100%
3-07-004-01	Industrial Processes, Pulp and Paper and Wood Products, Pulpboard Manufacture, Paperboard: General	94%	88%
3-07-008-99	Industrial Processes, Pulp and Paper and Wood Products, Sawmill Operations, Other Not Classified	51%	23%
3-07-030-99	Industrial Processes, Pulp and Paper and Wood Products, Miscellaneous Wood Working Operations, Sanding/Planing Operations	58%	31%
3-08-007-22	Industrial Processes, Rubber and Miscellaneous Plastics Products, Fiberglass Resin Products, Gel Coat: Spray On	85%	30%
3-90-006-99	Industrial Processes, In-process Fuel Use, Natural Gas	85%	46%
4-02-001-01	Petroleum and Solvent Evaporation, Surface Coating Operations, Surface Coating Application - General, Paint: Solvent-base	91%	78%
4-02-009-01	Petroleum and Solvent Evaporation, Surface Coating Operations, Thinning Solvents - General,	94%	90%
4-02-009-98	Petroleum and Solvent Evaporation, Surface Coating Operations, Thinning Solvents - General	94%	78%
4-05-003-01	Petroleum and Solvent Evaporation, Printing/Publishing, General, Printing: Flexographic	94%	78%

For example, if your Wood/Bark-fired Boiler (SCC 10200902) has a PM emission of 12.0 tons/yr, from the table above, you would enter 12.0 tons/yr for PM, 10.8 tons/yr for PM<sub>10</sub> (12.0 tons/yr × 90%) and 9.96 tons/yr for PM<sub>2.5</sub> (12.0 tons/yr × 83%).