

INSTRUCTIONS

Plan Approval Application.

ATTENTION:

Small combustion Unit (Less than 50 mmBTU/hr and burn No. 2 oil or gas), storage tank and construction for minor emission source (Less than 8 tons/yr of VOC or SO_x, 20 tons/yr of CO, 10 tons/yr of NO_x, 3 tons/yr of particulate, 1 ton of single HAP/yr, and 2.5 tons of total HAPs/yr) may use the GENERAL PLAN APPROVAL or MINOR EMISSION SOURCE application instead of this application.

- I. The application must be completed and signed by a responsible officer. Provide all information requested in each applicable section of the application. If more space is required, use separate sheets of paper and attach to the application. Write NA ("Not Applicable") if a question does not pertain to your source. Incomplete forms will not be accepted and will be returned or not acted upon until completed. The application, with supporting documents, is to be submitted in triplicate to Air Management Services (AMS).
- II. The plan approval fees are based on the type of review required. Enclose the appropriate fee from the table below for each application, and make the check payable to the "City of Philadelphia". Rows 1 and 2 from the following table are exclusive; however, Rows 3, 4, 5 and 6 are additive. If you enclose an incorrect fee, AMS will notify you of correct fee.

| Rows | Fees \$ | | Types of review required |
|------|----------------|------------|--|
| | Year 2000-2004 | Year 2005- | |
| 1 | 850 | 1,000 | Sources which are not subjected to NSPS, NESHAPs, MACT, NSR and PSD. |
| 2 | 230 | 300 | Source requiring a minor modification or extension of a plan approval. |
| 3 | 1,400 | 1,700 | Sources subject to NSPS (National Standards of Performance for Stationary Sources) or NESHAPs (National Emission Standards for Hazardous Air Pollutants). If a source is subject to both NSPS and NESHAPs, the fee is doubled from \$ 1,400 to \$ 2,800. |
| 4 | 4,300 | 5,300 | Sources requiring approval under New Source Review (NSR) regulation, Subchapter E, Section 127 of 25 Pa. Code. |
| 5 | 6,700 | 8,000 | Sources requiring the establishment of a MACT (Maximum Achievable Control Technology) limitation. |
| 6 | 18,500 | 22,700 | Sources requiring approval under PSD (Prevention of Significant Deterioration) regulation Subchapter D, Section 127 of 25 Pa. Code. |

Examples:

1. If a source is subject to NSPS and New Source Review (NSR), enclose fee of \$5,700 (\$1400 + \$4300).
 2. If a source is subject to MACT, NSPS and NESHAPs, enclose fee of \$7100 (\$4300 + \$1400 + \$1400).
- III. Complete a compliance review form in accordance with the instruction provided and submit in duplicate to AMS. The form must be certified with an original signature.
 - IV. All information in the application is available to anyone requesting the information except in limited circumstances. If you wish to keep production or other qualifying information confidential, please place the confidential information on separate sheets, so that this information can be removed from the rest of the application. AMS's review engineer will review the confidential information and inform you if it meets the criteria for confidentiality.
 - V. Application

Section A - Application Information

1. **Location of Source.** Provide the street address of the physical location where the permitted or other authorized activity will occur. **NO PO BOX NUMBERS WILL BE ACCEPTED.**
2. **Firm name.** The name of the company.
3. **Owner.** First and last name of owner or operator
4. **Tax ID No.** This is the Federal Tax ID or social security number. If the applicant has an Employer Identification Number (EIN), this number must be used.
5. **Contact Person.** Provide the name and title of a contact person for questions relating to information provided in this application.
6. **Telephone Number.** Provide the telephone number of the contact person given above.
7. **Mailing Address.** Provide the street address of the contact person to which the permit should be mailed.

SECTION B - DESCRIPTION OF ACTIVITY

1. **Application Type.** Check the box that best describes the general activity for which you are seeking to obtain a permit.
2. **New source.** Construction of something that doesn't presently exist or has not been permitted.
3. **Modification.** Changing an existing facility, operation, license, permit or other authorization.
4. **Reactivation.** Reactivate an existing facility that has been out of operation.
5. **Air Cleaning Device.** Device which may eliminate, reduce or control the emission of air contaminants into the atmosphere.
6. **SIC Code.** This is the Standard Industrial Classification code for the main activity at this site.
7. **Completion date.** Expected date that construction activity will be completed.
8. **Applicable Requirements.** Check all the appropriate regulation requirements box as described previously in II.
9. **Source description.** Fully describes the activity(ies) covered by this application, how this activity(ies) relates to larger project or operation, and the total acres involved in this project.

SECTION C - PERMIT COORDINATION

Multiple permits are often required for residential, commercial and industrial land development. this section is vital in determining if any other environmental permits are needed for your project. If you answer "YES" to any questions in this section of the application, you may need additional other environmental permits.

1. Question 1 to 9, contact the South East Regional Office of Pennsylvania Department of Environmental Protection, Lee Park Suite 6010, 555 North Lane, Conshohocken PA 19428-2233.
2. Question 3 , contact Thomas Healy, Philadelphia Water Department, Industrial waste Unit, Telephone 215-685-6233.
3. Question 10, contact the Local State Park Superintendent.

SECTION D - CERTIFICATION

A legally responsible agent of the applicant should complete and sign the certification. If this permit form was prepared by someone else, such as a consultant or contractor, that individual should complete and sign the certification.

SECTION E - OFFICIAL USE ONLY

Skip this section.

SECTION F - SOURCE INFORMATION

Use the applicable source sections and remove the other source section from the application.

1. F 1. General Source Information. For source that does not fall into F2 to F8.
2. F 2. Combustion Unit Information. For each combustion unit source greater than 50 mmBTU/hr.
3. F 3. Incinerators and Flares. For incinerators and flares.
4. F 4. Surface Coating Operations. For surface coating facility that has potential VOC emission greater than 8 tons per year.
5. F 5. Graphic Art (Rotogravure and Flexographic Operation) For graphic art facility.
6. F 6. Graphic Art (Web Offset Presses Operation). For graphic art facility.
7. F 7. Degreaser. For a degreaser in a facility.
8. F 8. Batch Asphalt plan.

SECTION F 1 GENERAL SOURCE INFORMATION

- 1A. Type Source: Specify equipment or components of the proposed source from where

air contaminants are emitted. The term “proposed” means new, modified, or reactivated source. For example: if proposed source is cement plant, the source type could be crusher, grinder, conveyor, screener, etc.

1B. Manufacturer of Source: Provide manufacturer name from the source’s name plate or manufacturers catalog.

1C. Model Number: If applicable, provide the name plate information.

1D. Rated Capacity: Provide the name plate rated capacity and specify unit. For example, mmBTU/hr, pounds of material used/hr, impressions/hr, square feet/hr, lbs (pounds)/ mmcf (million cubic feet), etc.

1E. Type of Materials Processed: List types of materials processed by the equipment or component of the proposed source. For example: aluminum can coating, telephone book printing, etc.

2A. Amount Processed/Year: Provide an annual production rate for equipment or component of the proposed source. For example, parts/year (yr), tons/yr, mmcf/yr, lbs/yr, gallons/yr, etc.

2B. Average hr/day: Provide average schedule hours per day for the source operation.

2C. Total hr/year: Provide maximum hours per year for the source operation. For example: if source will operate 24 hrs/day, 365 days/year, then total hours will be 8760 hours per year.

2D. % Throughput/Quarter: Indicate the percentage of manufactured products per quarter. For example, 1st quarter 25%, 2nd quarter 50 % and so on.

3A. Used in Unit: Write appropriate number associated with the equipment or component of the proposed source from “1A”.

3B. Type Fuel: Provide fuel type that will be burned by the equipment or component of the proposed source. For example, natural gas, oil number 2, propane, etc.

3C. Average Hourly Rate: Provide the average hourly rate of fuel in units such as pounds, gallons or cubic feet per hour.

3D. Maximum Hourly Rate: Provide the maximum hourly rate of fuel in units such as pounds, gallons or cubic feet per hour.

3E. Percent Sulfur: Indicate the percentage Sulfur content of fuel.

3F. Percent Ash: Indicate the percentage ash content of fuel.

3G. Heating Value: Indicate higher heating value of the fuel in BTUs per unit of fuel or any similar units.

4A. Annual Amounts: Provide maximum amount of fuel that will be used by the equipment or component of the proposed source in a year.

4B. Average hr/day: Indicate average hours per day that fuel will be used by the equipment or component of the proposed source.

4C. Total hr/yr: Provide the maximum hours per year that fuel will be used by the equipment or component of the proposed source.

4D. % Throughput/Quarter: Indicate the percentage of fuel that will be used by the equipment or component of the proposed source per quarter. For example, 1st quarter 25%, 2nd quarter 50% and so on.

5. Attach sketch or flow diagram of process as requested in the application.

6. Describe process information., specify air contamination source type. For example: two boilers, surface coating operation, spray booth, incinerator, graphic arts operation, etc. If your source type is descriptive, attach a separate sheet (s) of paper. Source is defined as air contamination source similarly to “unit” defined by the Federal Environmental Protection Agency (EPA).

7. Provide detailed list of monitoring and recording devices. For example: pressure, temperature, humidity, air flow rate, leaks detector, pH and conductivity measurement device or recorder. Also, show that the monitoring and record keeping devices are adequate.

8. Describe any equipment modifications to the process equipment.

9. Attach process equipment details or catalog of the manufacturer and nature of its emissions.

SECTION F 2 to SECTION F 8

Use the information from the vendor or manufacturer’s catalogue.

SECTION G - FLUE AND AIR CONTAMINANT EMISSION INFORMATION

1. Provide exhaustor (blower or fan) pressure drop in inch of water column (in.w.g.), horsepower and revolution per minute(RPM). Give detail for stack as indicated.

2. Potential process emissions(Outlet from process , before any control equipment)

2A. Provide outlet particulate loading in pounds per hr.(lbs/hr) or grains per dry standard cubic feet(gr/dscf), if applicable

2B. Provide specific gravity of particulate, if applicable

- 2C. Provide outlet particle size distribution, if applicable
- 2D. Provide concentration of gaseous pollutants before any control equipment in part per million (PPM) or in lbs/hr , if applicable
- 2E. If process vents through control device, check YES and continue the application ,otherwise skip to section I Miscellaneous Information.
- 2F. Describe the situation where the control device would be bypassed including any monitoring device.
- 3. Atmospheric emissions. Provide the emission information after the control device.

SECTION H - CONTROL EQUIPMENT

Use the applicable control equipment pages and remove the other control equipment pages from the application. The technical information can be found from the manufacturer catalog or from the vendor.

- 1. GAS CONDITIONER
- 2. SETTLING CHAMBER
- 3. CYCLONE
- 4. CATALYTIC OR THERMAL AFTERBURNER
- 5. SCRUBBER
- 6. FABRIC COLLECTOR
- 7. ELECTROSTATIC PRECIPITATOR
- 8. CONDENSER
- 9. ADSORPTION EQUIPMENT
- 10. ABSORPTION EQUIPMENT
- 11. OTHER

12A. Costs. Provide direct cost and indirect cost for all control equipment. This information is useful for permit reviewer to calculate economic feasibility. Direct cost includes cost of foundations and supports, erecting and handling the equipment. electrical work, piping, insulation and painting. Indirect cost includes engineering costs, construction and field expenses, contractor fees, legal fees, start up and performance test costs.

12B. Provide operating cost of control equipment such as labor cost, maintenance cost, replacement parts, taxes, utilities and insurance, etc.

If you have more than one control equipment, copy this page and list individual control equipment cost separately. Detailed cost examples can be found from the Federal Environmental Protection’s OAQPS Cost Control Manual.

- 13. If control equipment is modified , describe
- 14. Describe plan to control fugitive emission.
- 15. to 18 . Attach information if applicable.

SECTION I - MISCELLANEOUS INFORMATION

- 1. Check the appropriate monitoring device and provide any technical specifications.
- 2. If a facility emits 100 tons per year or more of any single pollutant, it is required to submit an Air Pollution Episode Strategy Plan.
- 3. Facility subjected to 25 PA Subchapter E New Source Review
- 4. Attach calculations
- 5. List of attachments

APPENDIX - A

DEFINITION:

Absorption Equipment: A cleaning device in which one or more soluble component of a gas mixture are absorbed by contact with a liquid. Absorption equipment are such as spray scrubber, venturi scrubber, orifice scrubber, moving bed, or packed tower scrubber. Absorption equipment are used in removing both particulates and pollutant gases from the exhaust stream of many industrial processes. These devices usually use water to make small hard-to-collect particles easier to collect by incorporating them in larger water droplets. Gases can be absorbed by virtue of their solubility in water or by adding chemicals to the water.

Actual Emission: Air contaminant actually emitted into the atmosphere.

ACFM: Actual Cubic Feet per Minute. A measure of the volume of gas at operating temperatures and pressure.

Adsorption Equipment: It is an air cleaning device, where contaminated air stream is passed through a layer of solid particles referred to as the adsorbent bed. As the contaminated air stream passes through the adsorbent bed, the pollutant molecules absorb or stick to the surface of adsorbent bed. Several adsorbent materials are used commercially as adsorbing agents. The most common adsorbent types are activated carbon, silica gel, activated alumina, zeolites, or molecular sieves. Adsorber systems are used for the control of organic compounds from exhaust stream that are relatively free of particulate matter.

Afterburner: Afterburner uses one or more sets of burners in a chamber to convert combustible material (gases, vapors, or odors) to carbon dioxide and water. Afterburner is commonly referred to as Thermal Oxidizer.

Air Cleaning Device: An Air cleaning device is defined in 25 Pa. Code Section 121.1 as an article, chemical, machine, equipment or other contrivance, the use of which may eliminate, reduce or control the emission of air contaminants into the atmosphere. Examples of air cleaning devices include gas conditioner, settling chambers, cyclone, catalytic or thermal afterburner, fabric collector, scrubber, electrostatic precipitator, absorption equipment, adsorption equipment, low NOx burner, flare.

Air dilution: It is a method to dilute exhaust gas stream by adding ambient air.

Air Pollutant: Any substance in air which could, if in high enough concentration, harm man, other animals, vegetation, or materials. They may be in the form of solid particles, liquid droplets, gases, or in combination of these forms.

Air Pollution: An "air pollution" is defined in 25 Pa. Code section 121.1 as the presence in the outdoor atmosphere of any form of contaminant, including, but not limited to, the discharging from stacks, chimneys, buildings, structures, open fires, vehicles, processes or any other source of any smoke, soot, fly ash, dust, cinders, dirt, noxious or obnoxious acids, fumes, oxides, gases, vapors, odors, toxic, hazardous or radioactive substances, waste or other matter in a place, manner or concentration inimical or which may be inimical to public health, safety or welfare or which is or may be injurious to human, plant or animal life or to property or which unreasonably interferes with the comfortable enjoyment of life or property.

Air to Cloth Ratio: Air to cloth (A/C) ratio describes how much dirty gas passes through a given surface area of filter in a given time. It is usually expressed in terms of $(\text{ft}^3/\text{min})/\text{ft}^2$.

Atmospheric Emission: (see actual emission)

Breakthrough Capacity: The adsorption capacity of a packed bed where traces of pollutants begin to appear in the exit gas stream.

Breeching: A duct through which the products of combustion are transported from the furnace to the stack, usually applied in steam boiler.

CO: Carbon monoxide is a colorless, odorless, poisonous gas produced by incomplete fossil fuel combustion. When carbon monoxide is inhaled, it replaces oxygen in the blood and impairs vision, alertness, and other bodily functions. Sources of carbon monoxide include exhaust from motor vehicles, industrial processes and combustion.

Catalyst: It is a substance that cause or speeds a chemical reaction without undergoing a change itself.

Catalyst Afterburner: A control device which oxidizes volatile organic compounds by using a catalyst to promote the combustion process.

Concurrent flow: The flow of exhaust gas and liquid are in same direction in absorption equipment.

Construction: As defined in 25 Pa. Code Section 121.1, “to physically initiate assemblage, installation, erection or fabrication of an air contamination source or an air pollution control device including building supports and foundations and other support function.”

Contaminant: Any physical, chemical, biological, or radiological substance or matter that has an adverse effect on air, water, or soil.

Corona: The corona is a discharge phenomenon in which gaseous molecules are ionized by electron collisions in the region of a strong electric field.

Corona Power: The amount of power, or electric energy, supplied to the electrostatic precipitator to provide the desired corona voltage and current.

Corona Power Density: The amount of power per unit area in a radiated electromagnetic field, usually expressed in units of watts per square feet.

Countercurrent flow: The flow of exhaust gas and liquid are in opposite direction in absorption equipment.

Cross flow: In absorption equipment, liquid is sprayed from the top of a chamber, and the polluted gas flows horizontally across the chamber.

Cubic Feet Per Minute (CFM): A measure of the volume of a substance flowing through air within a fixed period of time.

Current Density: The current per unit cross-sectional area of a conductor, usually expressed in units of microampere per square ft.

Cyclone Collector: A control device used for collecting dust from polluted air. It is a cylindrical or conical chamber, where the dust-laden gas usually enters this chamber at the top, particles separate due to centrifugal forces and settle at the bottom, the cleaner gas exits from another opening at the top.

Density: The ratio of the mass of a specimen of a substance to the volume of the specimen. It is expressed in pounds per cubic foot.

Dew Point: The temperature and pressure at which a gas begins to condense to a liquid.

Dust Resistivity: A resistance of the collected dust layer to the flow of electric current. It is determined by measuring the leakage current through a dust layer to which a high voltage is applied using conductivity cells. Resistivity can be measured by a number of methods either analyzing dust samples in the laboratory or using in-situ resistivity probe in the field.

Electrostatic Precipitator (ESP): A control device used for separating dust particles and/or mist from a polluted air stream. An electrostatic field imparts an electrical charge to the particles, causing them to adhere to metal plates inside the precipitator. ESPs have been used in many industrial applications to collect particles and liquid aerosols at a very high collection efficiency.

Emission: As defined in 25 Pa. Code Section 121.1, pollution discharge into the atmosphere.

Fabric Collector: An air pollution control device used to trap particulate by filtering gas streams through large fabric bags. It is similar to a large vacuum cleaner. Various filter materials used are: glass fibers, teflon, nylon and cotton. It is also referred to as a baghouse.

Fabric Permeability: It is defined as the volume of air which can be passed through one square foot of filter medium with a pressure drop of no more than 0.5 inches of water.

Facility: Facility is defined in 25 Pa. Code Section 121.1 as a combination of air contamination sources located on one or more contiguous or adjacent properties and which is owned or operated by the same person or by persons under common control.

Felted Fabric: The randomly placed fibers compressed into a mat and attached to some loosely woven backing material.

Flue: A duct, pipe, stack, chimney or conduit permitting air contaminants to be emitted into the outdoor atmosphere.

Fugitive Air Contaminant: Fugitive air contaminant is defined in 25 Pa. Code Section 121.1 as an air contaminant of the outdoor atmosphere not emitted through a flue, including, but not limited to, industrial process losses, stock pile losses, re-entrained dust and construction/demolition activities.

Gas Conditioner: A device used to cool the process gas stream before the gas goes to the air cleaning device.

Grade elevation: The vertical distance from ground level to the stack exit point, usually expressed in feet.

Heel Percent: A percentage of the contaminant that will remain in an adsorbent bed during the regeneration cycle.

Inlet Concentration: Gas stream concentration at inlet of control device, usually expressed in gr/dscf or lbs/hr.

Moisture: The total water substance (gaseous, liquid, and solid) present in a given volume of air.

Modification: A physical change in a source or a change in the method of operation of a source which would increase the amount of an air contaminant emitted by the previously emitted, except that routine maintenance, repair and replacement are not considered physical changes.

Monitoring: Periodic or continuous surveillance or testing to determine the level of compliance with statutory requirements and/or pollutant levels in various media or in humans, animals, and other living things.

Mass Transfer Zone. (MTZ): The mass transfer zone of an adsorbent bed where the concentration gradient is present. It exists between the location where the concentration is saturated and a value approaching zero. The MTZ is dependent on the adsorbent, packing size, bed depth, gas velocity, temperature, and total pressure of the gas stream.

New Source: A stationary air contamination source which:

- (i) Was constructed and commenced operation on or after July 1, 1972.
- (ii) Was modified, irrespective of a change in the amount or kind of air contaminants emitted, so that the fixed capital cost of new components exceeds 50% of the fixed capital cost that would be required to construct a comparable entirely new source.

NOx: Nitric Oxides. All the oxides of nitrogen, except nitrous.

Opacity: The degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

Outlet Concentration: Gas stream concentration at outlet of control device, usually expressed in gr/dscf.

Overall Efficiency: The percentage reduction in pollutant concentration between the inlet and outlet of the air cleaning device.

pH: A term used to describe the hydrogen ion activity of a system. A solution of pH 0 to 7 is acid, pH of 7 is neutral, and pH over 7 to 14 is alkaline.

PPM: Parts per million. A way of expressing concentration of pollutants in air, water and soil.

Particulate Loading: The weight of solid particulate suspended in an air stream, usually expressed in terms of grains per cubic foot.

Pressure Drop: A resistance to the flow of gas across a system. It is determined by measuring the difference in total pressure at two points, usually the inlet and outlet of air cleaning device.

Radiation and Convection Cooling: The use of long uninsulated ducts that allows the process gas stream to cool as heat is released by convection and radiation from the duct.

Rectifier: It is used in electrostatic precipitators for converting alternating current into direct current.

Regeneration: Any process that accomplishes a partial or complete separation of an adsorbed substance from an adsorbent.

Retention Time: Time is measured from the time the waste gas stream reaches the systems operating temperature until the time the waste gas leaves the combustion chamber.

DSCFM: Dry Standard Cubic Feet Per Minute. It is the air flow rate at standard pressure and temperature.

Settling Chamber: It is an expansion chamber in which particle velocity is reduced, thus allowing the particle to settle out under the action of gravity.

SOx: Sulfur Oxides, Sulfur dioxide and Sulfur trioxide are the dominant oxides of sulfur present in the atmosphere. Sulfur dioxide is a heavy, pungent, colorless, gaseous air pollutant formed primarily by industrial fossil fuel combustion process.

Specific Gravity: The ratio of two densities, that of the substance of interest to that of a reference substance. The reference substance is normally water.

Stack: A vertical duct or conduit that discharges exhaust gases into the atmosphere.

Velocity: The rate at which a fluid is flowing in a given direction. Gas velocity is normally stated in feet per minute or feet per second.

VOC: (Volatile Organic Compound) An organic compound which participates in atmospheric photochemical reactions; that is, an organic compound other than those which the Administrator of the EPA designates as having negligible photochemical reactivity.

Water Quenching: It is also called evaporative cooling. It is accomplished by injecting fine water droplets into gas stream. The water droplets absorb heat from the a gas stream as they evaporate.

Working Capacity of Adsorbent: The actual adsorbing capacity of the bed under operating condition.

Woven Fabric: The yarn is woven over and under with definite repeated pattern.