

## **EMISSION SOURCE (Fuel Combustion Source) Instructions for Form B2**

*Form B2 should be completed for all fuel combustion emission sources (e.g., generators, boilers, burn-off ovens, bake-on ovens, bakery ovens, process heaters). Make as many copies of the form as necessary. Attach all calculations and assumptions used in determining the numbers entered on this form.*

*Note: An **EMISSION SOURCE** is defined as any stationary article, machine, process equipment, or other contrivance, or combination thereof, from which air pollutants are emitted, either directly or indirectly. Groups of equipment that are interconnected as a single continuous process can be labeled as a single emission source (e.g., a chain of reaction vessels).*

**PRIMARY OR ALTERNATIVE OPERATING SCENARIO** – A Section B2 form must be submitted for each scenario that the emission source may operate under. In addition to operating under a primary operating scenario, an emission source may operate under one or more alternative operating scenarios. Examples of operating scenarios are as follows:

1. For boilers that combust different types of fuels, the combustion of each fuel is classified as an operating scenario. Many boilers combust both natural gas and No. 6 fuel oil. Each of these fuels constitutes a separate operating scenario.
2. For reaction vessels that produce different products from different formulations, production of each product is classified as an operating scenario.
3. For a storage silo that stores different materials, the storage of each material is classified as an operating scenario.
4. For control devices that are used to control emissions from different emission streams at separate times, each emission stream that is controlled is classified as an operating scenario.
5. A spray booth may coat wood furniture and be subject to MCAPCO Regulation 2.0958, but it may also coat metal furniture and be subject to NSPS Subpart EE.

*Note: Some emission sources that emit volatile organic compounds (VOCs) are considered unique in that only the product/solvent formulations that produce the worst-case VOC emissions need to be included in the permit application even though different solvents will be utilized at the emission source.*

**PRIMARY OPERATING SCENARIO** - Select this scenario if information is being entered for the conditions under which the emission source operates the majority of the time. A separate B2 form must be completed for each scenario.

**ALTERNATIVE OPERATING SCENARIO** - Select this scenario if information is being entered for any secondary conditions under which the emission source operates.

**AOS # (Alternative Operating Scenario ID No.)** – Include a unique ID No. for each alternative operating scenario. A separate B2 form must be completed for each scenario.

**EMISSION SOURCE DESCRIPTION** – Describe each emission source for which application is made. Emission source is defined as any stationary article, machine, process equipment, or other contrivance, or combination thereof, from which air pollutants emanate or are emitted, either directly or indirectly. Groups of equipment that are interconnected as a single continuous process can be labeled a single emission source (e.g., a chain of reaction vessels). However, this description should specify the number of individual pieces of equipment that make up this emission source.

**EMISSION SOURCE ID No.** - Enter the emission source ID No. for the emission source being described on this form. Fugitive emissions must also be assigned an ID No. (e.g., valves, pumps, compressors = ID No. F195).

*Note: The choice of ID Nos. is at the discretion of the applicant. It is recommended that each emission source ID No. start with ES\_\_\_, control device ID No. CD\_\_\_ and emission point ID No. EP\_\_\_.*

**CONTROL DEVICE ID No.** - Enter the ID No. for the control device associated with this emission source. For multiple control devices on the same emission source, list in series according to the exhaust air stream direction (i.e., from the emission source to the final emission point). For different emission sources with a common control device, use the same control device ID No. for each emission source.

**MANUFACTURER** - Enter the manufacturer of the emission source.

**MODEL No.** - Enter the model number of the emission source as defined by the manufacturer. If the source was custom designed, a PE seal may be required pursuant to MCAPCO 1.5233.

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**RELEASE POINT TYPE** – Enter or select one of the following stack/emission point release orientation: downward facing vent, fugitive, goose neck, horizontal, vertical or vertical with rain cap.

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**HEIGHT** – Enter the height of the stack in units of feet.

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**INSIDE DIAMETER** – Enter the inside diameter of the stack in units of feet.

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**EMISSION POINT (Stack) ID No.** - Enter the ID No. for the emission point (e.g. stack, vent, etc.) associated with this emission source. Emission sources with a common emission point will have the same emission point ID No. For fugitive emissions enter "FUGITIVE".

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**FENCE LINE DISTANCE** – Enter the distance to the fence line of the property

**X-Coordinate** – Enter the latitude coordinates

**Y-Coordinate** – Enter the longitude coordinates

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**EXIT GAS TEMPERATURE** – Enter the temperature of the gas exiting the stack in degrees Fahrenheit (°F).

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**EXIT GAS FLOW RATE** – Enter the flow rate of the gas exiting the stack in cubic feet per min (cfm).

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**EXIT GAS VELOCITY** – Enter the velocity of the gas exiting the stack in feet per seconds (ft/s).

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**SAMPLING PORTS, COMPLIANT WITH EPA METHOD 1** – Answer Yes or No. Additional information about EPA Method 1 can be found at the following website <http://www.epa.gov/ttn/emc/>

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**PROCESS DESCRIPTION** – check all that are applicable

**CONTINUOUS USE** – Source is intended to be used without interruption

**ELECTRICAL GENERATION** – Source for the generation of electrical power

**PROCESS HEAT** – Source used to produce heat for some type of process

**SPACE HEAT** – Source is used to produce heat for comfort or to maintain facility temperature above freezing

**STAND BY/EMERGENCY** – Source is only used for stand-by purposes (e.g. when electricity goes off or another boiler goes down). It is not used on a routine or regular basis and is not used to handle peak loads.

**OTHER** – Describe in comments.

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**MAXIMUM RATED HEAT INPUT (million Btu/hour)** - Enter the maximum designed firing rate of the fuel burning equipment.

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**HEATING MECHANISM** – check that which is applicable

**DIRECT-FIRED** – Select if the material being heated comes in contact with and/or adds substance to the products of combustion

**INDIRECT-FIRED** – Select Indirect-Fired if the material being heated is not contacted by and adds no substance to the products of combustion.

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**OIL/GAS-FIRED BURNER**

**TYPE OF BOILER** –

**UTILITY** – Source is used primarily for the generation of steam or electricity. The source would be greater than 100 million Btu/hour gross heat input.

**INDUSTRIAL** – Source is used primarily in an industrial operation. The source would be between 10 and 100 million Btu/hour gross heat input.

**COMMERCIAL** – Source is used primarily in a commercial operation. The source would be between 0.5 and 10 million Btu/hour gross heat input.

**RESIDENTIAL** – Source is used for residential type operation only. The source would be less than 0.5 million Btu/hour gross heat input.

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**TYPE OF FIRING** – Select the applicable option.

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**METHOD OF TUBE CLEANING** – List method of tube cleaning (e.g., lancing, tube blowing, etc.).

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**CLEANING SCHEDULE** – List frequency of cleaning (e.g., Daily at 8:00 a.m., once a year in June while the boiler is down).

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**COAL-FIRED BURNER****TYPE OF BOILER –****FLUIDIZED BED**

**Circulating** – A circulating fluidized bed boiler

**Recirculating** – A recirculating fluidized bed boiler

**PULVERIZED** – Any source utilizing coal which has been crushed to coal dust and is burned in suspension.

**Dry Bed** – Source in which the ash is removed in a solid dry form

**Wet Bed** – Source in which the ash is removed in a molten form

**OVERFED STOKER** – A source continually feeding the coal by distributing the coal on the upper side of the burning bed. This is done mechanically.

**Controlled** – A mechanical control device (multicyclone) which removes particulate from particulate laden gas streams.

**Uncontrolled** – Check if there is no boiler emissions control devices.

**UNDERFED STOKER** – A source continually feeding the coal from the under side of the burning bed. This is done mechanically.

**Controlled** – A mechanical control device (multicyclone) which removes particulate from particulate laden gas streams.

**Uncontrolled** – Check if there is no boiler emissions control devices.

**SPREADER STOKER** – A source continually spreads the coal on to a moving or stationary fuel bed.

Combustion occurs in suspension as well as on the bed. Spreading is done mechanically or pneumatically.

**Flyash Reinjection** – Boiler flyash is collected from a mechanical control device (multicyclone) and returned to the boiler combustion area to be burned a second time.

**No Flyash Reinjection** – Boiler flyash is collected from a mechanical control device (multicyclone) and is not returned to the boiler combustion area.

**Uncontrolled** – Check if there is no boiler emissions control devices.

**OTHER** – Describe

**METHOD OF LOADING –**

**Cyclone** – A source utilizing suspension firing of low ash fusion coal crushed to a four mesh size. Coal is fed tangentially, with primary air, to a horizontal cylindrical combustion chamber.

**Handfired** – A source where coal is manually spread over the burning bed.

**Traveling Grate** – A traveling grate is characterized by a coal bed three to five inches in depth and a high blast of underfired air at the rear or dumping end of the grate.

**Other** – Describe

**METHOD OF TUBE CLEANING** – List method of tube cleaning (e.g., lancing, tube blowing, etc.).

**CLEANING SCHEDULE** – List frequency of cleaning (e.g., Daily at 8:00 a.m., once a year in June while the boiler is down).

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**OTHER FUEL-FIRED BURNER****TYPE OF BOILER –**

**UTILITY** – Source is used primarily for the generation of steam or electricity. The source would be greater than 100 million Btu/hour gross heat input.

**INDUSTRIAL** – Source is used primarily in an industrial operation. The source would be between 10 and 100 million Btu/hour gross heat input.

**COMMERCIAL** – Source is used primarily in a commercial operation. The source would be between 0.5 and 10 million Btu/hour gross heat input.

**RESIDENTIAL** – Source is used for residential type operation only. The source would be less than 0.5 million Btu/hour gross heat input.

**TYPE OF FIRING** – List the applicable firing method

**TYPE OF CONTROL DEVICE** – List the applicable control device (if any)

**FUEL FEED METHOD** – List the applicable fuel feed method (if any)

**TYPE OF FUEL** – List the applicable fuel type

**PERCENT MOISTURE** – Enter the percent moisture of the stream

**METHOD OF TUBE CLEANING** – List method of tube cleaning (e.g., lancing, tube blowing, etc.)

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**CLEANING SCHEDULE** – List frequency of cleaning (e.g., Daily at 8:00 a.m., once a year in June while the boiler is down).

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**FUEL USAGE (INCLUDE STARTUP FUEL) -**

**FUEL TYPE** - List the fuel to be combusted and the startup fuel.

**UNITS** - List fuel units for the amounts listed (e.g., pounds, tons, gallons, cubic feet, etc.).

**MAXIMUM DESIGN CAPACITY (UNIT/HR)** - List the maximum amount of fuel capable of being burned per hour.

**FUEL CHARACTERISTICS (COMPLETE ALL THAT ARE APPLICABLE) -**

**BTU CONTENT** - List heat content of fuel expressed in Btu.

**UNITS** - List units for applicable fuel type (e.g., Btu per gallon-oil, Btu per pound-coal, Btu per cubic foot-natural gas).

**SULFUR CONTENT (% BY WEIGHT)** - Enter the sulfur content of both the start-up and operating fuel expressed as a percentage. *Note: Attach a Fuel Supplier Certification for this information.*

**ASH CONTENT (% BY WEIGHT)** - Enter the ash content of both the start-up and operating fuel expressed as a percentage.

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**DESCRIBE FUEL BURNING EQUIPMENT** - If fuel is consumed in the process, describe the fuel burning equipment (e.g., dryer, oven, process heater).

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**DIRECT-FIRED OR INDIRECT-FIRED** - Select Direct-Fired if the material being heated comes in contact with and/or adds substance to the products of combustion. Select Indirect-Fired if the material being heated is not contacted by and adds no substance to the products of combustion.

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**REGULATORY ANALYSIS -**

1. **FEDERAL REGULATIONS** -

a. Determine applicability or inapplicability of the emission source to each listed federal regulation. Provide explanation of determination.

Title V (MCAPCO 1.5500, 40 CFR 70)

NSPS = New Source Performance Standards (40 CFR 60, Specify Subpart)

NESHAP = National Emission Standards for Hazardous Air Pollutants (MCAPCO 2.1110, 40 CFR 61)

MACT/GACT = Maximum Achievable/Generally Available Control Technology (40 CFR 63, Specify Subpart)

PSD = Prevention of Significant Deterioration, Attainment Area (MCAPCO 2.0530, 40 CFR 51)

NSR = New Source Review, Non-attainment Area (MCAPCO 2.0531, 40 CFR 51)

b. List all other applicable federal regulations. Provide explanation of determination.

2. **LOCAL REGULATIONS** - List all applicable local regulations, including but not limited to MCAPCO Sections 2.0900, 1.5700, 2.0500, and 2.1100. Provide explanation of determination.

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**LIMIT(S) REQUEST** - List all locally and federally enforceable permit limits and/or any additional limits that currently exist or are requested by this application. By requesting a permit limit (i.e., hours of operation, material usage rates, emission rates) a facility may avoid applicability to certain regulations (i.e., Title V, Prevention of Significant Deterioration, etc.). List the motivating regulation for which applicability is to be avoided. Describe how these limits are or will be monitored and at what frequency.

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## SECTION B

## EMISSION SOURCE (FUEL COMBUSTION SOURCE)

B2

Operating Scenario: <input type="checkbox"/> Primary Operating Scenario <input type="checkbox"/> Alternative Operating Scenario		AOS #:				
Emission Source Description:		Emission Source ID No.:				
		Control Device ID No.:				
Manufacturer:		Model No.:				
<b>STACK PARAMETERS</b>						
Release Point Type:	Height:	Inside Diameter:	Emission Point (Stack) ID No.:			
Fence Line Distance:	X-Coordinate:	Y-Coordinate:				
Exit Gas Temperature:	Exit Gas Flow Rate:		Exit Gas Velocity:			
Sampling Ports, Compliant With EPA Method 1 Will Be Installed On The Stacks: <input type="checkbox"/> Yes <input type="checkbox"/> No						
<b>PROCESS DESCRIPTION</b>						
Describe Use: <input type="checkbox"/> Continuous Use <input type="checkbox"/> Electrical Generation <input type="checkbox"/> Process Heat <input type="checkbox"/> Space Heat <input type="checkbox"/> Stand By/Emergency <input type="checkbox"/> Other (Describe):						
Maximum Firing Rate (MMBtu/Hr):		Heating Mechanism: <input type="checkbox"/> Indirect <input type="checkbox"/> Direct				
<b>OIL/GAS-FIRED BURNER</b>						
Type of Boiler: <input type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Residential <input type="checkbox"/> Utility						
Type of Firing: <input type="checkbox"/> Low NO <sub>x</sub> Burner <input type="checkbox"/> No Low NO <sub>x</sub> Burner <input type="checkbox"/> Normal <input type="checkbox"/> Tangential						
Method of Tube Cleaning:		Cleaning Schedule:				
<b>COAL-FIRED BURNER</b>						
Type of Boiler	<input type="checkbox"/> Fluidized Bed <input type="checkbox"/> Circulating <input type="checkbox"/> Recirculating	<input type="checkbox"/> Pulverized <input type="checkbox"/> Dry Bed <input type="checkbox"/> Wet Bed	<input type="checkbox"/> Overfeed Stoker <input type="checkbox"/> Controlled <input type="checkbox"/> Uncontrolled			
	If Other Describe:		<input type="checkbox"/> Underfeed Stoker <input type="checkbox"/> Controlled <input type="checkbox"/> Uncontrolled			
<input type="checkbox"/> Spreader Stoker <input type="checkbox"/> Flyash Reinjection <input type="checkbox"/> No Flyash Reinjection <input type="checkbox"/> Uncontrolled						
Method of Loading: <input type="checkbox"/> Cyclone <input type="checkbox"/> Handfired <input type="checkbox"/> Traveling Grate <input type="checkbox"/> Other Describe:						
Method of Tube Cleaning:		Cleaning Schedule:				
<b>OTHER FUEL-FIRED BURNER</b>						
Type of Boiler: <input type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Residential <input type="checkbox"/> Utility						
Type of Firing:		Type of Control (if any):	Fuel Feed Method:			
Type of Fuel:		Percent Moisture:				
Method of Tube Cleaning:		Cleaning Schedule:				
<b>FUEL USAGE (Include Start-up/Back-up Fuels)</b>						
Fuel Type	Units	Maximum Design Capacity (Unit/Hr)	BTU Content	Units	Sulfur Content (% By Weight)	Ash Content (% By Weight)
Describe Fuel Burning Equipment:				Is The Fuel Burning Equipment: <input type="checkbox"/> Direct-Fired <input type="checkbox"/> Indirect-Fired		
Comments:						

Attach Additional Sheets As Necessary

**SECTION B**  
**EMISSION SOURCE (FUEL COMBUSTION)**

**B2**

**REGULATORY ANALYSIS:**  
Identify all federal and local (MCAPCO) regulations (including, but not limited to, the six regulations already listed below) to which the process may be subject, and provide an explanation of applicability.

	Regulation Name (MCAPCO & CFR citations, as applicable)	Applicable?		Explanation of Applicability (provide an explanation of applicability or inapplicability)
<i>Examples:</i>	MCAPCO Reg. 2.0515 – “Particles from Miscellaneous Industrial Processes”	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	This regulation is applicable to this particulate emission source (no other particulate emission standards apply).
	MCAPCO Reg. 2.0958 – “Work Practices for Sources of Volatile Organic Compounds”	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	This regulation is applicable to this volatile organic compound emission source (no NSPS, NESHAP, MACT/GACT, RACT, or other volatile organic compound emission standards apply).

**Federal Regulations:**

Title V	MCAPCO Section 1.5500, 40 CFR 70	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
NSPS	40 CFR 60 (specify Subpart)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Subpart:
NESHAP	MCAPCO Reg. 2.1110, 40 CFR 61	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
MACT/GACT	40 CFR 63 (specify Subpart)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Subpart:
PSD	MCAPCO Reg. 2.0530, 40 CFR 51	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
NSR	MCAPCO Reg. 2.0531, 40 CFR 51	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
		<input type="checkbox"/> Yes	<input type="checkbox"/> No	
		<input type="checkbox"/> Yes	<input type="checkbox"/> No	
		<input type="checkbox"/> Yes	<input type="checkbox"/> No	
		<input type="checkbox"/> Yes	<input type="checkbox"/> No	
		<input type="checkbox"/> Yes	<input type="checkbox"/> No	

**Local Regulations:**

MCAPCO Reg.	-	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
MCAPCO Reg.	-	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
MCAPCO Reg.	-	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
MCAPCO Reg.	-	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
MCAPCO Reg.	-	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
MCAPCO Reg.	-	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
MCAPCO Reg.	-	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

**LIMIT(S) REQUEST:**  
Indicate all existing and requested local and federally enforceable limits (e.g., hours of operation, material usage, emission rates, etc.) and describe how these limits are or will be monitored and at what frequency).

Existing or Requested Limit	Motivating Regulation	Monitoring Method (parameters, method, frequency)

Comments: