



Louisville Metro Air Pollution Control District

Control Device Permit Application Form AP-300L

Thermal Oxidizer or Afterburner

Deliver application to:701 W. Ormsby Ave. Suite 303
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FAX: (502) 574-5137
www.louisvilleky.gov/apcd
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Plant Name:	Plant ID
Date of construction, modification, installation, or operation:	Process equipment associated with this control equipment:

Equipment Description		Control ID #
Manufacturer:		Model:
Oxidizer Type	<input type="checkbox"/> Catalytic oxidizer <input type="checkbox"/> Thermal Oxidizer <input type="checkbox"/> Other: <input type="checkbox"/> Afterburner <input type="checkbox"/> Regenerative Thermal Oxidizer	
Combustion chamber volume:	Combustion chamber operating temperature: °	
Airflow:	Residence time: sec	Draft: <input type="checkbox"/> Forced <input type="checkbox"/> Induced
<i>Attach a copy of the manufacturer's spec sheets for the oxidizer with this application</i>		
<i>List the contaminants in the waste stream that are removed by the reduction system:</i>		
Contaminant	CAS # (if applicable)	Destruction Efficiency
		%
		%
		%
		%
Describe how the destruction efficiency was determined: <i>(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)</i>		

Burner Description	
Manufacturer:	Model:
Fuel:	<input type="checkbox"/> Natural Gas <input type="checkbox"/> Propane Maximum Hourly Fuel Consumption: / hour <input type="checkbox"/> #2 fuel oil <input type="checkbox"/> Other: Nominal Annual Fuel Consumption: / year
Number of burners:	Design heat input per burner:
<i>Attach a copy of the manufacturer's spec sheets for the burners with this application</i>	

Instructions for Thermal Oxidizers

Form AP-300L

A thermal oxidizer operates by thermal (non-catalytic) and catalytic incineration and can oxidize hydrocarbons and some other toxic pollutants. High temperature and residence time must be sufficient to obtain the desired oxidation results.

General Information

Plant Name Enter the plant name.

Plant ID # This is the identification number assigned to the source by the District. If this application is for a new source for which an ID has not been assigned, leave this blank.

Equipment Description

Manufacturer Enter the name of the company that manufactures the oxidizer equipment.

Model # Enter the model number of the equipment to be installed.

Oxidizer type Check the box representing the type of oxidizer.

Chamber volume Enter the volume (magnitude and units) of the combustion chamber. **If there are more than one chamber, enter the volume of a single chamber.**

Chamber temperature Enter the nominal working temperature of the oxidizer. This should be the minimum temperature required to achieve the stated destruction efficiency. Circle F or C to indicate whether this temperature is Fahrenheit or Celsius degrees.

Airflow Enter the mean volumetric flow rate of the gas stream through the oxidizer in actual cubic feet per minute, measured at the chamber operating temperature.

Residence time Enter the time the exhaust gas is in the oxidizer chamber at the required oxidation temperature.

Draft Indicate whether the air flow through the oxidizer is by forced or induced draft.

Contaminant list List the pollutants that are in the exhaust stream that are controlled by this system. If a CAS registration number exists for the material, list that as well. List the typical concentration of the contaminant in the exhaust gas stream, and the expected destruction efficiency.

Efficiency determination Indicate how the destruction efficiency was determined. (e.g. manufacturer's specification, calculation, stack test, *etc.*) Include appropriate documentation to support destruction efficiency claims.

Burner Description

Manufacturer Enter the name of the company that manufactures the burners that supply heat to the oxidizer.

Model # Enter the model number of the equipment to be installed.

Fuel Check the box next to the fuel that is burned by the oxidizer burners.

Maximum consumption Enter the maximum amount of fuel that can be burned in a single burner. Include magnitude and units (e.g. 200 ft³/hr, 20 gal/hr)

Nominal consumption Indicate the amount of additional fuel required per burner to maintain operating temperature during steady-state operation.

Number of burners Indicate the total number of burners used by the oxidizer during normal operation.

Heat input Enter the design heat input of **each** burner.

RTO Design Information

- Number of chambers** Enter the number of separate oxidation chambers.
- Chamber switching rate** How often does the equipment switch the gas stream from one oxidation chamber to the next?
- Heat recovery** Describe the method of recovering heat from the exhaust stream.

Catalytic Oxidizer Design Information

- Catalyst used** Describe the catalyst used in the oxidizer.
- Bed volume** Enter the amount of catalyst used to fill the reaction bed.
- Operating life** Enter the expected lifetime of the bed before replacement or regeneration is required, assuming worst-case values of contaminants in the gas stream.
- Pressure Drop** Enter the gas stream pressure drop across the catalyst bed during normal operation.
- Temperature Rise** Enter the temperature rise across the catalyst bed during normal operation. Circle F or C to indicate whether this temperature is Fahrenheit or Celsius degrees.
- Regen/Disposal** Indicate whether an exhausted catalyst bed is regenerated or replaced, and the method of regeneration or disposal of the exhausted bed.