



PERMIT APPLICATION - CONSTRUCT/OPERATE INCINERATORS

NORTH DAKOTA DEPARTMENT OF HEALTH

DIVISION OF AIR QUALITY

SFN 8522 (05-11)

GENERAL:

Name of Firm or Organization		Application Date		
Owner/Official to Contact	Title	Phone	Email	
Mailing Address	City	State	Zip Code	
Person Responsible for Operating Incinerator	Title	Phone	Email	
Incinerator Location (Street)	City	State		
Legal Description of Location	Section	Township	Range	

PURPOSE OF APPLICATION (Check all that apply)

<input type="checkbox"/> PERMIT TO CONSTRUCT <input type="checkbox"/> New Source <input type="checkbox"/> Existing Source <input type="checkbox"/> Modification, Alteration, Rebuilding <input type="checkbox"/> Repairing <input type="checkbox"/> Expansion <input type="checkbox"/> Change of Location		<input type="checkbox"/> PERMIT TO OPERATE <input type="checkbox"/> New Source <input type="checkbox"/> Existing Source <input type="checkbox"/> Initial Application <input type="checkbox"/> After Modification, Alteration, Rebuilding <input type="checkbox"/> After Repairing <input type="checkbox"/> After Expansion <input type="checkbox"/> After Change of Location <input type="checkbox"/> After Change of Ownership of Lessee		
COMPLETE THIS SECTION FOR PERMIT TO CONSTRUCT	Name of Installer		Phone	
	Mailing Address	City	State	Zip Code
	Actual or Planned Dates for Installation/Construction	Start Date	Completion Date	

EQUIPMENT:

Incinerator Manufacturer	Model No.	
Rated Capacity (lb/hour) Design Criteria	Type of Waste	Cost of Installation
Type of Incinerator <input type="checkbox"/> Single Chamber <input type="checkbox"/> Modified with Control Device (i.e., scrubber, fabric filter, etc.) Attach Gas Cleaning Equipment SFN 8532. <input type="checkbox"/> Multiple Chamber <input type="checkbox"/> Other - Specify		
Combustion Air (See Instructions) <input type="checkbox"/> Natural Draft <input type="checkbox"/> Induced Draft <input type="checkbox"/> Forced Draft <input type="checkbox"/> Starved Air <input type="checkbox"/> Other (Specify)		

Auxiliary Fuel Burners	Quantity	Fuel Type	Btu/Hr Rating		Make	Model
			Minimum	Maximum		
Primary Chamber						
Secondary Chamber						
Is temperature control provided for Secondary Chamber burner? <input type="checkbox"/> No <input type="checkbox"/> Yes			Maximum Temperature If Yes: °F		Minimum Temperature °F	
Average Operating Schedule	Hours Per Day	Time From To	Days Per Week	On (Circle Days) M T W T F S S	Weeks Per Year	

STACK DATA:

Inside Diameter		Ft.	Height Above Grade	Ft.	Equipped with Spark Arrestor? <input type="checkbox"/> YES <input type="checkbox"/> NO
Gas Temperature at Exit	Exit Gas Moisture Content	°F	%	Gas Velocity at Exit	FPS
				Gas Volume	SCFM
Basis of Estimate					
Nearest Residences or Buildings				Distance	Direction
Waste Feed Method <input type="checkbox"/> Flue Fed <input type="checkbox"/> Continuous Direct Fed <input type="checkbox"/> Batch Direct Fed <input type="checkbox"/> Other (Specify)					

AIR CONTAMINANTS EMITTED:

POLLUTANT	MAXIMUM EMISSION RATE (LB/HOUR)	BASIS OF ESTIMATE (If emission factors are used, identify factors and sources)
Particulate		
Carbon Monoxide		
Hydrocarbons		
Sulfur Oxides		
Greenhouse Gases (CO ₂ e)		
Other - Specify		

Check Which Applies Emission test is enclosed.
 Emission test data have previously been submitted for this model or model series.
 Incinerator will be source tested upon completion.

WASTE INFORMATION:

TYPE OF WASTE TO BE BURNED (See I.I.A. Waste Classification Chart)	QUANTITY	
	Pounds Per Hour	Tons Per Year
Type 0 Trash		
Type 1 Rubbish		
Type 2 Refuse		
Type 3 Garbage		
Type 4 Pathological Animal Solids and Organic Waste		
Type 5 Gaseous Liquid or Semi-Liquid Wastes*		
Type 6 Semi-Solid and Solid Wastes*		
Other Specify*		
Other Specify*		
TOTAL		

*Describe (include Origin, Description, and Chemical Composition)

Is this incinerator installation in compliance with all applicable State and local refuse burning, building, fire and other ordinances, codes and regulations?

YES NO - Explain

Applicant's Name	Phone	Email
Signature of Applicant	Date	

INSTRUCTIONS FOR COMPLETION OF PERMIT APPLICATION

SFN 8522

PERMIT TO CONSTRUCT AND/OR OPERATE INCINERATOR

GENERAL:

All new incinerators, regardless of size, type of waste, or use, are required to have a PERMIT TO CONSTRUCT and a PERMIT TO OPERATE prior to installation and operation. All existing incinerators are required to have a PERMIT TO OPERATE in order to continue operating.

PRINT OR TYPE YOUR ANSWERS ON THE FORM:

If an item does not apply, place "NA" in the appropriate space. If you have any questions about completing this form, or are unsure whether the incinerator complies with the North Dakota Air Pollution Control Rules, contact the Department of Health by mail or by telephone.

PURPOSE OF APPLICATION:

You may apply for a **PERMIT TO CONSTRUCT** and a **PERMIT TO OPERATE** on this form (SFN 8522) at the same time. After construction is completed and the incinerator is inspected by the Department of Health, a **PERMIT TO OPERATE** may be issued by the Department.

EQUIPMENT:

Design Criteria for Incinerator Rating can be obtained from the manufacturer or from the incinerator name plate. The name plate is usually in a conspicuous place on the incinerator.

The "Type of Waste" is from the Incinerator Institute of America Waste Classification Chart, which is attached. For "Type 0" wastes containing more than 1 percent plastic and/or rubber, "Type 5" wastes, "Type 6" wastes, and "Other" wastes, the origin, a description of the waste and the chemical composition of the waste must be noted.

COMBUSTION AIR DRAFT:

The pressure difference existing between the incinerator or any component part and the atmosphere, which cause a continuous flow of air and products of combustion through the gas passages of the incinerator to the atmosphere.

- A. **Forced Draft** - the pressure difference created by the action of a fan, blower, or ejector, which supplied the primary combustion air above atmospheric pressure.
- B. **Induced Draft** - the pressure difference created by the action of a fan, blower, or ejector, which is

located between the incinerator and the stack, or the stack exit.

- C. **Natural Draft** - the pressure difference created by the stack or chimney due to its height and the temperature difference between the flue gases and the atmosphere.
- D. **Starved Air** - an incinerator process based on the combustibility of smoke and gases generated by burning organic materials under controlled conditions. The burning or cooking in the absence of sufficient oxygen molecules (starved air) generates quantities of carbon monoxide and water vapor which then mix to produce a highly combustible gas. This process is maintained at a slight negative pressure in the main combustion chamber eliminating the blowing of fly ash into the stack or atmosphere. Once the gases have been produced they rise into a secondary combustion chamber where they are mixed with preheated air and complete combustion occurs.

Information on **Burner Ratings** can be found on the name plate of the burner and/or from the manufacturer or installer.

Stack Data can be obtained from the plans for the incinerator installation and/or from the manufacturer or installer.

Air Contaminant Emitted can be obtained from emission test data and/or from the manufacturer. Emission Test Data must be submitted with this application unless: (1) results have previously been submitted to the Department for this model or model series, or (2) the incinerator will be source tested upon completion.

The **maximum emission rate estimate** should be based on a representative emission test or on a compilation of air pollution factors (i.e. AP-42).

SEND YOUR APPLICATION TO:

North Dakota Department of Health
 Division of Air Quality
 918 E Divide, 2nd Floor
 Bismarck, ND 58501-1947

Telephone: (701)328-5188

CLASSIFICATION OF WASTES TO BE INCINERATED

Classification of Wastes Type Description	Principal Components	Approximate Composition % By Weight	Moisture Content %	Incombustible Solids %	Btu Value/Lb of Refuse As Fired	Btu of Auxiliary Fuel Per Pound of Waste To Be Included in Combustion Calculations	Recommended Minimum Btu/Hr Burner Input Per Pound of Waste
*0 Trash	Highly combustible waste, paper, wood, cardboard cartons, including up to 10% treated papers, plastic or rubber scraps; commercial and industrial source.	Trash 100%	10%	5%	8500	0	0
*1 Rubbish	Combustible waste, paper, cartons, rags, wood scraps, combustible floor sweepings; domestic, commercial, and industrial sources.	Rubbish 80% Garbage 20%	25%	10%	6500	0	0
*2 Refuse	Rubbish and garbage; residential sources	Rubbish 50% Garbage 50%	50%	7%	4300	0	1500
*3 Garbage	Animal and vegetable wastes, restaurants, hotels, markets; institutional, commercial, and club sources.	Garbage 65% Rubbish 35%	70%	5%	2500	1500	3000
4 Animal Solids and Organic Wastes	Carcasses, organs, solid organic wastes; hospital, laboratory, abattoirs, animal pounds, and similar sources.	100% Animal and Human Tissue	85%	5%	1000	3000	8000 5000 Primary 3000 Secondary
5 Gaseous Liquid or Semi-Liquid Wastes	Industrial process wastes.	Variable	Dependent Upon Predominant Components	Variable According to Wastes Survey	Variable According to Wastes Survey	Variable According to Wastes Survey	Variable According to Wastes Survey
6 Semi-Solid and Solid Wastes	Combustibles requiring hearth, retort, or grate burning equipment.	Variable	Dependent Upon Predominant Components	Variable According to Wastes Survey	Variable According to Wastes Survey	Variable According to Wastes Survey	Variable According to Wastes Survey

* The above figures on moisture content, ash, and Btu as fired have been determined by analysis of many samples. They are recommended for use in computing heat release, burning rate, velocity, and other details of incinerator designs. Any design based on these calculations can accommodate minor variations.