

The Dallas-Fort Worth Area Minor Source Rule: An Air Quality Rule for Equipment at Your Business

A Draft Document

Is My Stationary Engine Regulated under the Minor Source NO_x Rule, and if so, is it Partially Exempt, or Non-Exempt?

How can this guide help me?

This publication summarizes the Texas Commission on Environmental Quality's (TCEQ) air quality rules for controlling emissions of nitrogen oxides (NO_x) in the Dallas-Fort Worth (DFW) eight-hour ozone nonattainment area, produced by stationary, reciprocating internal combustion engines at any stationary source. This rule, designed to protect air quality and human health in the DFW area, applies only to businesses that qualify as minor sources.

This publication will lead you through the actions you need to take in order to operate your equipment in accordance with the rules contained in Title 30, Texas Administrative Code (30 TAC), Sections 117.2100 through 2145. Use this guide to determine whether, and how, the rule may apply to your business.

Keep in mind that this document does not contain the complete rules or all the information you may need to be in compliance.

See Note One for instructions on finding the text of this rule and other state environmental rules at the Secretary of State's Web site. You may keep up to date with efforts to improve air quality in the DFW area by signing up for the automated mailing list for Texas' State Implementation Plan (SIP), or subscribe to the TCEQ's e-mail update service at <tceq.state.tx.us> by clicking on the "sign up for e-mail updates" icon. To join the mailing list, send a blank e-mail with no subject or message to <join-sip@listserv.tceq.state.tx.us>. By doing so, you will be notified of stakeholder meetings, public hearings, and comment periods for draft rules and air quality plans.

See Note Two for instructions on how to locate compliance assistance information on calculating your emissions, and to determine emission factors, along with resources that can be used for record keeping and reporting.

Glossary

To assist in answering the questions in this document, you should refer to the following definitions, which paraphrase the specific definitions found in the TCEQ rules. Most of these definitions are contained in 30 TAC 117.10.

Annual Capacity Factor. The total annual fuel consumed by a unit divided by the fuel that could be consumed by the unit if operated at its maximum rated capacity for 8,760 hours per year.

Boiler. Any combustion equipment fired with solid, liquid, and/or gaseous fuel used to produce steam or to heat water. [30 TAC 117.10(6)]

CEMS. Abbreviation for ‘continuous emissions monitoring system.’

CO. Chemical symbol for carbon monoxide.

Diesel engine. A two- or four-stroke engine in which liquid fuel injected into the combustion chamber ignites when the air charge has been compressed to a temperature sufficiently high for auto-ignition.

ESAD. Abbreviation for ‘emission specification and attainment demonstration.’

Heat Input. The chemical heat released due to fuel combustion in a unit, using the higher heating value of the fuel. This does not include the sensible heat of the incoming combustion air. In the case of carbon monoxide boilers, the heat input includes the enthalpy of all regenerator off-gases and the heat of combustion of the incoming CO and of the auxiliary fuel. The enthalpy change of the fluid catalytic cracking unit regenerator off-gases refers to the total heat content of the gas at the temperature it enters the CO boiler, referring to the heat content at 60 degrees Fahrenheit, as being zero. [30 TAC 117.10(17)]

Lean-burn engine. A spark-ignited or compression-ignited, Otto cycle, diesel cycle, or two-stroke engine that is not capable of being operated with an exhaust stream oxygen concentration equal to or less than 0.5 percent by volume, as originally designed by the manufacturer.

Major Source. *For the purpose of this rule,* any stationary source or group of sources located within a contiguous area and under common control that emits or has the potential to emit at least 50 tons per year (tpy) of NO_x and is located in the Dallas-Fort Worth eight-hour ozone nonattainment area.

Maximum rated capacity. The maximum design heat input, usually expressed in million British thermal units per hour (MMBtu/hr. [30 TAC 117.10(30)], unless the unit is a stationary internal combustion engine in which case the manufacturer’s rated heat consumption at Diesel Equipment Manufacturer’s Association or International Organization for Standardization (ISO) conditions must be used as the maximum design rated capacity, unless limited by permit condition to a lesser heat input, in which case the limiting condition must be used as the *maximum* rated capacity. [30 TAC 117.10(30)]

NH₃. Chemical symbol for ammonia

Nonattainment area. A defined region within the state that is designated by the U.S. Environmental Protection Agency (EPA) as failing to meet the national ambient air quality standard for a pollutant for which a standard exists [30 TAC 101.1(70)]. The Dallas-Fort Worth (DFW) eight hour ozone nonattainment area consists of Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, and Tarrant Counties.

NO_x. Chemical symbol for nitrogen oxides, products of combustion that are air pollutants, which contribute to the production of smog.

O₂. Chemical symbol for oxygen.

PEMS. Abbreviation for ‘predictive emissions monitoring system.’

Process heater. Any combustion equipment fired with liquid or gaseous fuel (or both) and used to transfer heat from combustion gases to a process fluid, superheated steam, or water to heat the process fluid or cause a chemical reaction. [30 TAC 117.10(40)]

Rich-burn engine. A spark-ignited, Otto cycle, four-stroke, naturally aspirated or turbocharged engine that is capable of being operated with an exhaust stream oxygen concentration equal to or less than 0.5 percent by volume, as originally designed by the manufacturer.

Site. The total of all stationary sources located on one or more contiguous or adjacent properties, which are under common control of the same person (or persons under common control). Your business location is frequently the same as your site.

Source. A point of origin of air contaminants, whether privately or publicly owned or operated. [30 TAC 101.1(96)]

Stationary gas turbine. Any gas turbine system that is gas and/or liquid fuel fired with or without power augmentation and operated at a specific minor or major source for more than 90 days in any 12-month period. The equipment may be attached to a foundation or may be portable. Two or more gas turbines powering one shaft are treated as one unit. [30 TAC 117.10(45)]

Stationary internal combustion engine. A reciprocating engine that remains or will remain at a single site at a building, structure, facility, or installation for more than 12 consecutive months. This includes any engine that is part of any piece of portable equipment while the equipment is on-site. Portable engines or equipment are designed to be capable of being moved from one location to another. Indicators of portability include, but are not limited to, wheels, skids, carrying handles, a dolly, a trailer, or a platform. If an engine is replaced, the 12-month period does not start over; it begins from the date the initial engine was put in place. An engine is considered stationary if it is removed, then returned to the same location in an attempt to circumvent the 12-month requirement. Non-road engines, as defined in Title 40, Code of Federal Regulations (40 CFR), section 89.2, are not considered stationary for the purposes of these rules. [30 TAC 117.10(46)]

Eligibility

To find out if you have equipment that must comply with these NO_x rules, start by answering the questions below.

Question 1	<p>Is your equipment located in any of the counties listed below? <input checked="" type="checkbox"/> Check all that apply.</p> <p><input type="checkbox"/> Collin <input type="checkbox"/> Dallas <input type="checkbox"/> Denton <input type="checkbox"/> Ellis <input type="checkbox"/> Johnson <input type="checkbox"/> Kaufman <input type="checkbox"/> Parker <input type="checkbox"/> Rockwall <input type="checkbox"/> Tarrant</p> <p>YES ... Go to Question 2.</p> <p>NO ... This rule does not apply to you.</p>
Question 2	<p>Do you have a stationary, reciprocating internal combustion engine at your site?</p> <p>YES ... Go to Question 3.</p> <p>NO ... This rule does not apply to you.</p>
Question 3	<p>Is your site a <i>major source</i> of air contaminants?</p> <p>Don't know if you're a major source?</p> <p><i>For the purpose of this rule, a major source is any stationary source or group of sources located within a contiguous area and under common control that emits or has the potential to emit at least 50 tons per year (tpy) of NO_x and is located in the Dallas-Fort Worth eight-hour ozone nonattainment area.</i></p> <p>YES ... You are a <i>major source</i>. This rule does not apply to you. However, there are other TCEQ air quality requirements that apply to your site. Contact Air Quality Planning Section at 512-239-4900 for further information.</p> <p>NO ... Go to Question 4.</p>
Question 4	<p>YOU ARE A MINOR COMBUSTION SOURCE SUBJECT TO THIS COMBUSTION SOURCE RULE.</p> <p>Continue with this Fact Sheet</p>

Equipment-Profile Worksheet

You may complete this worksheet to profile *each piece* of equipment.. Copy the worksheet below and complete it for each piece of equipment. Keep this information with your other equipment records.

Unit ID:		Date:	
1.	Type of equipment as of December 31, 2000 ^a (check the one that applies)	<input type="checkbox"/>	Gas-fired stationary reciprocating internal combustion engine
		<input type="checkbox"/>	Dual-Fuel stationary reciprocating internal combustion engine
		<input type="checkbox"/>	Diesel stationary reciprocating internal combustion engine
2.	County where equipment is located as of the date this worksheet is completed for the first time		
3.	Date installed		
4.	Date of initial start of operation ^b		
5.	Date(s) of any modifications, reconstructions, or relocations ^c		
6.	Manufacturer		
7.	Unit classification for this equipment ^d		
8.	Averaging time applicable to this equipment ^d		
9.	Permit number for this equipment ^d		
10.	Date of the permit		
11.	Maximum rated capacity of this equipment ^d		
12.	Emission specification for this equipment ^d	A. NO _x —	
		B. CO —	
		C. NH ₃ --	
13.	Does this equipment have a CEMS or PEMS? ^e	<input type="checkbox"/>	Nitrogen oxides (NO _x)
		<input type="checkbox"/>	Carbon monoxide (CO)
		<input type="checkbox"/>	Ammonia (NH ₃)

^aEquipment classification can be changed. Please indicate the classification as it was on or before December 31, 2000.

^bThe date your facility assumed control of the equipment.

^cFor any relocation, record the address of each location and the length of time the equipment was at each location.

^dFor assistance with making this determination, visit <www.tceq.state.tx.us/goto/nox>. then click on *Dallas-Fort Worth Eight-Hour Ozone Nonattainment Area*, and continue to fact sheet *How Do I Calculate the Emissions from my Stationary Engine?*.

^eCEMS = continuous emissions monitoring system; PEMS = predictive emissions monitoring system.

Determine if any exemptions apply to your equipment.

A variety of equipment may be partially exempt from the *minor source* requirements. To determine if your equipment qualifies for any exemptions, consult Table 1.

Table 1. What part of the rule applies to my equipment?

Type of Equipment	Review the following
Stationary, reciprocating internal combustion engines (gas, diesel, or dual-fuel engines)	Is my engine exempt? Table 2

Is Your Equipment Partially Exempt or Non-Exempt?

Partially Exempt Equipment:

If your equipment meets one of the descriptions in Table 2, you are *partially exempt* and must comply with only the indicated requirements.

Non-Exempt Equipment:

If your equipment is not described in Table 2, you must comply with **all** requirements of the Minor Source Rule.

Instructions for Table 2:

1. Review engine descriptions in column 1 to determine if your engine fits one of the descriptions. If so, go to column 2. If not, your engine is not exempt—visit www.tceq.state.tx.us/goto/nox for help with meeting compliance requirements for non-exempt equipment.
2. If your engine is
 - diesel, columns 2 through 6 apply.
 - gas fired, columns 3 and 6 apply.
 - dual fuel, columns 2, 3, 5, and 6 apply.

Table 2: Partial Exemptions for Gas, Diesel, or Dual-Fuel Engines

✓=Required

Operating, Monitoring, Record Keeping, and Reporting Requirements					
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Engine Description (Find Your Equipment in this Column)	Diesel or dual-fuel engines may not be started for testing or maintenance between 6 a.m. and noon except to: <ul style="list-style-type: none"> •conduct manufacturer-recommended testing requiring an 18 hour running time •verify reliability of emergency equipment after unforeseen repairs (not following routine maintenance such as oil changes) •test firewater pumps used for emergency-response training from April through October 	All Engines Maintain written records of: <ul style="list-style-type: none"> •hours of engine operation per day •purpose of operation 	Diesel engines <ul style="list-style-type: none"> •Must use an elapsed-runtime meter to record hours of operation (Meters cannot be re-settable)	Diesel or dual-fuel engines operated for testing and maintenance must maintain written records identifying the engine and recording: <ul style="list-style-type: none"> •dates of operations •operation start and end times •monthly total hours of operation for the most recent 12 consecutive months 	All Engines Must maintain written records of: <ul style="list-style-type: none"> •type of emergencies (if any) •start and end times of operation •dates of any emergencies
Records must be kept for five years and be available upon request.					
The engine has a horsepower rating of less than 50 hp.	✓			✓	

Column 1 Engine Description	Column 2 Diesel or dual-fuel engines	Column 3 All Engines	Column 4 Diesel engines	Column 5 Diesel or dual-fuel engines	Column 6 All Engines
The engine is used in research and testing only.	✓			✓	
The engine is used for performance verification and testing only.	✓			✓	
The engine is used solely to power other engines or gas turbines during startups.	✓			✓	
The engine is used during response to any officially declared disaster or state of emergency.	✓			✓	
The engine is used exclusively by agricultural operations for growing crops or raising fowl or animals.	✓			✓	
<p>The engine is operated only in emergency situations and:</p> <ol style="list-style-type: none"> 1. testing or maintenance operation is less than or equal to 100 hr/yr, based on a rolling 12-month average 2. if a diesel emergency engine placed into service before June 1, 2007, has not been modified^a after June 1, 2007. 	✓	✓	✓	✓	✓

Column 1 Engine Description	Column 2 Diesel or dual-fuel engines	Column 3 All Engines	Column 4 Diesel engines	Column 5 Diesel or dual-fuel engines	Column 6 All Engines
<p>Diesel engine meets all of the following conditions:</p> <ol style="list-style-type: none"> 1. placed into service before June 1, 2007 2. operates less than 100 hr/yr (based on a rolling 12-month average) 3. has not been modified, reconstructed, or relocated^a on or after June 1, 2007. 	✓	✓	✓	✓	
<p>Diesel engine meets all of the following conditions:</p> <ol style="list-style-type: none"> 1. placed into service on or after June 1, 2007 2. new, modified, reconstructed, or relocated^a stationary engine 3. operates less than 100 hr/yr in non-emergency situations, based on a rolling 12-month average 4. meets emission standards for non-road engines^b in effect at the time of installation, modification, reconstruction, or relocation. 	✓	✓	✓	✓	

“Modification” and “reconstruction” have the meanings defined in 30 TAC 116.10 and 40 CFR 60.15 (December 16, 1975), respectively, and “relocate” means to newly install at an account, as defined in 30 TAC 101.1, a used engine from anywhere outside the account.

^bApplicable emission standards are contained in 40 CFR 89.112(a), Table 1 (Oct. 23, 1998). (See Note One for directions on how to find 40 CFR on the Web.)

The following sample logs are available to assist you with recordkeeping at www.tceq.state.tx.us/goto/nox :

1. Emergency Engine Operation
2. Diesel or Dual-fuel engine Testing and Maintenance Operation
3. Daily Engine Operations

If your equipment is not described in Table 2, it is non-exempt and you must comply with all requirements of this rule. See Note Two below for instructions on locating compliance assistance tools for this rule.

Note One: How to Locate TCEQ and EPA Rules

This guide explains sections of Texas' Minor Source Rule (30 TAC 117.2100 through 2145).

To find the text of this rule, follow these steps:

1. Go to <<http://www.sos.state.tx.us/tac/index.shtml>>.
2. Click <[http://info.sos.state.tx.us/pls/pub/readtac\\$ext.viewtac](http://info.sos.state.tx.us/pls/pub/readtac$ext.viewtac)> at the bottom of the page.
3. Click *Title 30 Environmental Quality*.
4. Click *Part 1 Texas Commission on Environmental Quality*.
5. Click *Chapter 117 Control of Air Pollution from Nitrogen Compounds*.
6. Click *Subchapter D Combustion Control at Minor Sources in Ozone Nonattainment Areas*.
7. Click *Division 2 DFW Eight-Hour Ozone Nonattainment Area Minor Sources*

You can find the text of other state environmental rules by following steps 1 through 4 and then clicking on the appropriate chapter and subsequent links.

Federal environmental rules from the EPA are in Title 40 of the Code of Federal Regulations (CFR). The CFR can be found at <www.gpoaccess.gov/cfr/index.html>. There are multiple versions reflecting various amendments over the years. You should check the current version unless otherwise specified.

Note Two: How to Locate Compliance Assistance Information for the Minor Source NO_x Rule

For information that will assist you with emission calculations and specifications, along with operating requirements, record keeping and reporting, visit <www.tceq.state.tx.us/goto/nox>.

If you are unable to visit the Web site, call TCEQ Publications at 512-239-0028 to request copies, or you can view or print publications and forms at <www.tceq.state.tx.us/publications>.