OIL & NATURAL GAS FACILITY

MINOR FACILITY INDIVIDUAL PERMIT APPLICATION FORMS & INSTRUCTIONS

OKLAHOMA Environmental Quality

AIR QUALITY DIVISION

707 N ROBINSON AVE., SUITE 4100
P.O. Box 1677
OKLAHOMA CITY, OK 73101-1677

PHONE: (405) 702-4100

DEQ FORM 100-100

Revised August 23, 2023

APPLICATION INSTRUCTIONS
MINOR FACILITY OIL & NATURAL GAS FACILITY

ASSISTANCE AVAILABLE
DEQ Customer Assistance: (800) 869-1400
Air Quality Division: (405) 702-4100

INTRODUCTION

This package contains the State of Oklahoma Air Quality Permit Application for an individual Minor Facility permit for an oil and natural gas facility (DEQ Form #100-100 and supporting forms). Please read all the directions carefully before you fill it out. Answer all questions by checking the appropriate box or filling in a response. Please note that delays in processing your application may occur if an incomplete application is submitted. It is the applicant's responsibility to submit a complete application well in advance of anticipated commencement of construction, startup dates, or the effective date of operating permit program requirements to allow sufficient time for proper application review and permit issuance.

BACKGROUND

Oklahoma operates a dual air quality permit system as defined in Oklahoma Administrative Code (OAC) 252:100. The permit issuance process is described in OAC 252:004. Except as provided in OAC 252:100-7-2(b)(5), a *construction permit* is required to commence construction or installation of a new facility or the modification of an existing facility. OAC 252:100-7-2(b)(5) addresses allowed construction activities after submission of a complete construction permit application but prior to issuance of a minor construction permit. After construction is completed, application for an *operating permit* must be submitted within 180 days after commencement of operation. Operating permits issued under Subchapter 7 and after September 15, 2021, are considered Federally Enforceable State Operating Permits, *FESOP*. If you are uncertain whether a permit is required, a request for an applicability determination may be submitted to DEQ and a written determination will be made based on the data submitted. An applicability determination can also be performed to determine whether a facility is a major or minor source.

DEFINITIONS

Affected Facility: An "Affected facility" is defined in 40 CFR §60.2 of the General Provisions to mean, with reference to a stationary source, any apparatus to which a standard is applicable. Each NSPS standard defines the applicability of the affected facility.

Affected Source: An "affected source" is defined in 40 CFR §63.2 of the General Provisions as the stationary source, the group of stationary sources, or the portion of a stationary source that is regulated by a relevant standard or other requirement established pursuant to Section 112 of the Clean Air Act. Each MACT standard defines the applicability of the affected source.

Appendix H Activities: Certain equipment or activities on the De Minimis Facilities list under OAC 252:100 Appendix H warrant inclusion in the facility's emissions calculations if located at a permitted facility. AQD evaluated the De Minimis Facilities list and determined the equipment or activities that need to be included for oil and natural gas facilities (Appendix F of this package).

Commencement of Operation *or* ***"commencing operation"*** *means the owner or operator of the stationary source has begun, or caused to begin, emitting a regulated air pollutant from any activity for which the stationary source is designed and/or permitted.* (OAC 252:100-1-3)

Maintenance, Startup, Shutdown (MSS) emissions**:** include air emissions resulting from the maintenance, startup, or shutdown of equipment or facilities at a site and may include activities such as routine maintenance and other activities such as equipment blowdowns, pipeline pigging, or tank de-gassing.

Major Source: A source that has the potential to emit more than 100 tons/year of any air pollutant subject to regulation, 25 tons/year of Hazardous Air Pollutants (HAP), or 10 tons/year of any single HAP.

Minor Facility: A facility that has the potential to emit less than 100 tons/year of a regulated air pollutant, less than 10 tons/year of any single HAP, and less than 25 tons/year total HAP in the aggregate. These facilities are classified as Tier I sources and follow the simplest type of application process.

Regulated Air Pollutant: Oxides of Nitrogen (NOx), Sulfur Dioxide (SO_2), Lead (Pb), Particulate Matter less than 10 microns (PM_{10}), Particulate Matter less than 2.5 microns ($PM_{2.5}$), Carbon Monoxide (CO), and Ozone emitted directly and (regulated as "volatile organic compound" or "VOC"). VOC means any organic compound that participates in atmospheric photochemical reactions resulting in the formation of tropospheric ozone. Among the listed HAPs, of interest for oil and natural gas facilities are n-Hexane, Benzene, Toluene, Ethylbenzene, Xylene, and Formaldehyde.

Synthetic Minor Facility: A facility which has the potential under maximum operating conditions to emit at the Major Source level, but which has a permit which restricts emissions to the minor facility level. Such restrictions may include any of the following: hours of operation, emission control devices, and throughput. Applications for minor facility permits are classified as Tier I unless an existing major source is requesting limits to become a synthetic minor, in which case the application would be processed as a Tier II.

PUBLIC PARTICIPATION

Requirement

- All Tier I processed construction permits are subject to a 30-day public comment period.

- All initial FESOPs are subject to a 30-day public comment period.
- For modifications of facilities under an existing FESOP which require a construction permit, the applicant may request a *traditional* or *enhanced* construction permit public review process on Form 100-884.
  - Under a *traditional* review of the construction permit, the subsequent operating permit will be subject to a separate 30-day public review.
  - Under an *enhanced* review of the construction permit the 30-day public review period of a draft construction permit is integrated with the review of the draft FESOP modification, and results in the issuance of a minor facility construction permit whose applicable FESOP implications have also been reviewed. Later, the requirements of the construction permit may be incorporated into a modified FESOP using the minor facility operating permit modification process, without further public or EPA review.
- Modifications of an existing FESOP that do not stem from a construction permit that went through enhanced review are subject to a 30-day public review period.
- More information on the public review process may be found here: https://www.deq.ok.gov/wp-content/uploads/air-division/PG_Tier_I_Public_Notice_Guidance.pdf.

Process

After AQD staff has prepared a draft permit based on a Tier I application, AQD will post the draft permit with pertinent facility information on the Department's public review web page: https://www.deq.ok.gov/permits-for-public-review/. The posting will identify the start and end dates for the 30-day public review period. AQD staff will respond to comments received, summarize substantive comments, and reply as appropriate. AQD staff will provide the applicant with a copy of any comments received and may seek information and input from the applicant as needed.

PERMIT FEES

For applicable fees, please complete Form 100-815, which is included in this packet.

A COMPLETE APPLICATION MUST INCLUDE:

1. DEQ Form # 100-810 (Landowner Affidavit)
2. DEQ Form # 100-884 (General Facility Info Form)
3. DEQ Form # 100-100 A through K (Emission Units info for each unit)
4. DEQ Form # 100-815 (AQ Application Classification Fees)
5. Fees or a DEQ issued receipt for fees paid
6. Facility Plot Plan & Process Flow Diagram
7. Supporting Application Documentation Identified on Form # 100-100-K.

SUBMIT A COMPLETED APPLICATION TO:

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
707 N. ROBINSON AVE., SUITE 4100
P.O. BOX 1677
OKLAHOMA CITY, OKLAHOMA 73101-1677

OR SUBMIT ONLINE TO:

https://www.deq.ok.gov/air-quality-division/air-permits/

DEQ LANDOWNER NOTIFICATION AFFIDAVIT

Tier I, II, or III permit applicants must provide notice to the landowner(s). The basis for this requirement is Title 27A of the Oklahoma Statutes, Supplement 1996, § 2-14-103(9), as described in OAC 252:4-7-13 (b).

Please note that you MUST fill out and return this affidavit even if you don't have to give any landowner notice.

A	NOTICE TO THE LANDOWNER(S) IS NOT REQUIRED because: (check one)
☐	My application does not involve any land.
☐	My application involves only land owned by me (or applicant business).
☐	I have a current lease given to accomplish the permitted purpose.
☐	I have a current easement given to accomplish the permitted purpose.

OR

B	NOTICE TO THE LANDOWNER(S) IS REQUIRED because the land is owned by someone other than myself or the applicant business AND I HAVE NOTIFIED the following (check one):		
☐	Landowner(s)	☐	Lessor or Administrator or Executor of the land
METHOD OF DELIVERY (check one):			
☐	Actual notice, for which I have a signed and dated receipt		
☐	Service by Sheriff or private process server, for which I have an affidavit		
☐	Service by certified mail, restricted delivery, for which I have a signed return receipt		
☐	Legal publication, for which I have an affidavit of publication from the newspaper, because the landowners could not be located through due diligence		

LANDOWNER AFFIDAVIT CERTIFICATION			
I, as the applicant or an authorized representative of the applicant, hereby certify that I own the real property, have a current lease or easement which is given to accomplish the permitted purpose (per Option A above), or have provided legal notice to the landowner(s) (per Option B above) about the permit application for the facility described below.			
Company Name		Facility Name	
Facility Address or Legal Description.			
Responsible Official (signature)		Date Signed	
Responsible Official (typed)		Title	

If the landowner notice applies to your application (Option B above) you can send the following form to them as your notice:

- -

NOTICE TO LANDOWNER OF FILING

Dear Landowner: (Name) ______________________________

(Applicant Name) ______________________________ has filed a permit application with the Oklahoma Department of Environmental Quality for (Facility Name)______________________________ facility.

This application involves the land owned by you located at:

Address or Legal Description: ______________________________

____

Signed: ______________________________ Date: ______________

AIR QUALITY PERMIT APPLICATION GENERAL FACILITY INFORMATION	APPLICATION NUMBER (AQD Use Only)	

1	COMPANY INFORMATION	Name						
Mailing Address		City		State		Zip		

2	APPLICATION TYPE	Applicability Determination	Construction Permit	Operating Permit			
	GP Authorization To Construct	GP Authorization To Operate	GP Name:				
	Renewal	Modification	Relocation	PBR	PBR Type:		
Permit Number(s) (If Applicable)							
Est. Date of Construction/Modification Start:		Operational Start-up:					
Construction Permit Public Review Process:		Traditional		Enhanced			

3	IS CONFIDENTIAL INFORMATION INCLUDED?	YES	NO
By including confidential information, Applicant acknowledges that such information may be shared with the U.S. Environmental Protection Agency for purposes consistent with the Federal Clean Air Act, 42 U.S.C. §§ 4201 et. seq.			

4	TIER CLASSIFICATION	Tier I	Tier II	Tier III	N/A – AD only		
FACILITY TYPE		Major	Minor	Synthetic Minor			

5	FEES SUBMITTED	$	Check #	Date	

6	TECHNICAL CONTACT	Name					
Phone		Email Address					
Company Name							
Street Address		City		State		Zip	

7	FACILITY INFORMATION	Name						
SIC Code(s)				NAICS Code(s)				
Contact Person		Title		Phone				
LEGAL DESCRIPTION	Sub Section		Section		Township		Range	
Physical Address or Driving Directions								
City or Nearest Town		Zip		County				

8	GEOGRAPHIC COORDINATES	Latitude (to 5 Decimals)		Longitude (to 5 Decimals)	
REFERENCE POINT		Facility Entrance Point or First Gate of Lease Property (preferred above all other options)			
	Center of Facility		Other (Specify):		

9	APPLICATION CERTIFICATION	**This application, including all attachments, has been submitted as required by OAC 252:100.**					
I certify that (a) I am the Responsible Official for this company as defined in OAC 252:100-1-3; and (b) based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate, and complete.							
Responsible Official (name)				Title			
Responsible Official (signature)				Date			
Phone		Email Address					
Street Address		City		State		Zip	

EMISSION UNITS – SUMMARY

- For each affected facility under an NSPS or affected source under a MACT standard, provide the information requested in the table below
- For any control equipment listed here, provide supporting documentation of the control efficiency relied upon.
- For each engine, storage tank, and dehydration unit subject of this application, complete an equipment description table.
- Refer to Appendix F for De Minimis Activities that should be addressed in the application.

Emission Unit ID	Description (Make/Model, Capacity, Contents, Size, etc.)	Manufacture or Modification Date	Installed Date	Control Equipment (if any)		Subject to NSPS or NESHAP?	Appendix H Activity?		Subject to this Permit Action?
				Type	Capture / Control Efficiency (%)	If Yes, Specify Subpart	Yes	No	
							☐	☐	☐
							☐	☐	☐
							☐	☐	☐
							☐	☐	☐
							☐	☐	☐
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							☐	☐	☐
							☐	☐	☐

EMISSION UNITS – ENGINES & TURBINES
MINOR FACILITY

- Provide applicable information for each engine or turbine.
- For each engine or turbine, establish a NO_X, CO, VOC, and formaldehyde short-term (lb/hr) emission rate. Applicant may rely upon the CO surrogate policy to demonstrate compliance with formaldehyde limits. The lb/hr emission rates established will be incorporated into the permit, as necessary.
- Provide documentation of the emission factors used to determine lb/hr emissions, unless relying upon AP-42.
- Note any inherent limitations on HP, such as limits associated with the equipment coupled to an engine.

ENGINE DESIGN	Engine ☐	Turbine ☐	Manufacture Date	
Emission Unit ID#		Serial Number		
Engine / Turbine Make		Model Number		
Fuel Type (NG, Diesel, etc.)		Equipped with Air Fuel Ratio Controller (AFRC)?	Yes ☐	No ☐
Type (check all that apply)	Lean-burn ☐	Rich-burn ☐	4-stroke ☐	2-stroke ☐
Control Equipment	None ☐	NSCR ☐	Oxidation Catalyst ☐	Other: (specify)

LB/HR CALCULATIONS	Maximum Rated HP		Btu/bhp-hr	
Pollutant	Factor (Units)	lb/hr	Source	
NO_X				
CO				
VOC				
Formaldehyde				
Comments:				

ENGINE DESIGN	Engine ☐	Turbine ☐	Manufacture Date	
Emission Unit ID#		Serial Number		
Engine / Turbine Make		Model Number		
Fuel Type (NG, Diesel, etc.)		Equipped with Air Fuel Ratio Controller (AFRC)?	Yes ☐	No ☐
Type (check all that apply)	Lean-burn ☐	Rich-burn ☐	4-stroke ☐	2-stroke ☐
Control Equipment	None ☐	NSCR ☐	Oxidation Catalyst ☐	Other: (specify)

LB/HR CALCULATIONS	Maximum Rated HP		Btu/bhp-hr	
Pollutant	Factor (Units)	lb/hr	Source	
NO_X				
CO				
VOC				
Formaldehyde				
Comments:				

EMISSION UNITS - STORAGE TANKS
MINOR FACILITY

- Tanks subject to this permit action identified in Form 100-100-A must submit supporting emission calculations or input and output files from emissions calculation software.
    - Working loss turnover (saturation) factor (K_N) should be set equal to 1 if the tanks are vapor balanced or have flashing emissions.
    - Flashing emissions from the produced water tanks may be calculated assuming 1% of the throughput is condensate or crude oil.
    - Capture efficiency is limited to 98%. Applicant may request a higher efficiency with additional monitoring and record keeping requirements to be established in the permit.
    - For floating roof storage tanks, please provide landing loss calculations.
    - Cleaning emissions are considered to be part of permitted tank emissions.
- Any new tank limits requested as part of this application are not in effect and may not be relied upon (e.g., for limiting applicability of 40 CFR Part 60, Subpart OOOOa requirements) until issuance of the corresponding permit. Please consult with a permit writer if you have questions or concerns after completing the enforceable limit eligibility review below.

Federally Enforceable Limits				
Eligibility Review				
Well Affected Facilities	Yes		No	
Are you requesting enforceable limits within 30 days after startup of production of the well(s)? If yes, please provide the startup date of well production	Yes		No	
Are you requesting enforceable limits for existing tanks with an initial PTE of less than 6 TPY as calculated based on the maximum average daily throughput as defined in §60.5430a.	Yes		No	
Are you requesting enforceable limits for a new tank at an existing facility where the installation of the tank is unrelated to the modification of a well site? If yes, the enforceable limit must be requested prior to startup of the new tank.	Yes		No	
Compressor Station or Gas Processing Plant	Yes		No	
Are you requesting enforceable limits prior to startup of the compressor station or onshore natural gas processing plant? If yes, please provide the startup date of the compressor station or onshore natural gas processing plant.	Yes		No	
Are you requesting enforceable limits for a tank after the startup of the compressor station or onshore natural gas processing plant? If yes, the enforceable limit must be requested prior to startup of the new tank.	Yes		No	
VRU Removal	Yes		No	
Are you requesting enforceable limits for tanks within 30 days of removal of the VRU from operation? If yes, please provide the date of removal from operation.	Yes		No	
If you answer no to the question applicable to your facility/situation, you may not be eligible for enforceable limits.				

Enforceable Limits Request	Tank Number(s)	Requested Limit (TPY)
The listed tanks and requested limits will be included in the permit.		

Tanks Not Requesting Federally Enforceable Limits	
	Emission Unit ID #
List tanks not requesting enforceable limits	

Fixed Roof

Parameter (Tank IDs) [1]		
Contents		
Throughput, gal/yr		
Working/Breathing Calculation Method/Tool		
Working/Breathing Emissions, TPY		
Flash Calculation Method/Tool		
Flashing Emissions, TPY		
Cleaning Calculation Method/Tool		
Cleaning Emissions, TPY		
Control Type, see Appendix D		
Capture Efficiency, %		
Control Efficiency, %		
Tank VOC Emitted at Tank, TPY		
Tank VOC Emitted at Flare, TPY		
Total VOC Emissions, TPY		
Benzene, TPY		
Toluene, TPY		
Ethylbenzene, TPY		
Xylene, TPY		
n-Hexane, TPY		
Total HAP, TPY		

[1] Multiple tanks may be grouped by liquid.

Internal/External Floating Roof

Parameter (Tank IDs)[1]		
Contents		
Vapor Pressure, psia		
Throughput, gal/yr		
Standing/Working Calculation Method/Tool		
Standing/Working Emissions, TPY		
Landing Calculation Method/Tool		
Landing Emissions, TPY		
Cleaning Calculation Method/Tool		

Parameter (Tank IDs)[1]		
Cleaning Emissions, TPY		
Control Type, see Appendix D		
Capture Efficiency, %		
Control Efficiency, %		
Tank VOC Emitted at Tank, TPY		
Tank VOC Emitted at Flare, TPY		
Total VOC Emissions, TPY		
Benzene, TPY		
Toluene, TPY		
Ethylbenzene, TPY		
Xylene, TPY		
n-Hexane, TPY		
Total HAP, TPY		

HEATERS/BOILERS/FLARES
MINOR FACILITY

- Provide applicable information for each heater, boiler, and/or flare.
- For each unit, an emission factor shall be established for the listed pollutants.
- Provide documentation of the emission factors used, unless AP-42 is used.

Emission Unit ID #	Heat Input (Units)	Fuel Burned

Emission Unit ID(s) #			
POLLUTANT	**Emission Factor (Unit)**	**Emission Factor Source**	**Comments**
NO_X			
CO			
VOC			
SO_2			
PM			

Emission Unit ID(s) #			
POLLUTANT	**Emission Factor (Unit)**	**Emission Factor Source**	**Comments**
NOx			
CO			
VOC			
SO_2			
PM			

DEHYDRATION UNIT
MINOR FACILITY

- Please include data for the reboiler in the Fuel Burning Section 100-D of the application forms.
- If the applicant relies on an outlet condenser temperature equal to or greater than 100 °F, then monitoring of the condenser outlet temperature is not required (See Appendix A).

Parameter	
Calculation Method (GRI GLYCalc or Process Simulator)	
Type of Glycol	
Dry Gas Flow Rate, MMSCFD	
Inlet Gas H_2S Concentration, ppmv	
Glycol Pump Type	
Lean Glycol Pump Design Capacity, gpm	
Lean Glycol Recirculation Rate Input, gpm	
Regenerator Vent	
Condenser Outlet Temperature, °F	
Control Method, refer to Appendix A	
Overall Control Efficiency, %	
VOC Emissions, TPY	
Flash Tank	
Flash Tank Temperature, °F	
Flash Tank Pressure, psig	
Control Method, refer to Appendix A	
Overall Control Efficiency, %	
VOC Emissions, TPY	
Safety Factor, % (if used)	
Total Emissions	
VOC, TPY	
Benzene, TPY	
Toluene, TPY	
Ethylbenzene, TPY	
Xylene, TPY	
n-Hexane, TPY	
Total HAP, TPY	

LOADING EMISSIONS
MINOR FACILITY

- Emissions from loading condensate and produced water into tank trucks should be estimated using AP-42 (6/08), Section 5.2, Equation 1. Applicant should consult with AQD if proposing a different calculation method.
- Emissions routed to the tanks are distributed and represented at the tanks.
- Emissions from produced water loading may be calculated assuming 1% of the throughput is condensate or crude oil.

Liquids Loaded		
Throughput, gal/yr		
Saturation Factor		
Temp., °F		
TVP, psia		
MW, lb/lb-mol		
VOC, wt.%		
Emission Factor, lb/10^3 gal [(1)]		
Control Method Efficiency, see Appendix C		
Capture Efficiency, %		
VOC Emitted at Truck, TPY		
VOC Routed to Control, TPY		
VOC Routed to Tanks, TPY [(2)]		
Total VOC Emissions, TPY		
Benzene, TPY		
Toluene, TPY		
Ethylbenzene, TPY		
Xylene, TPY		
n-Hexane, TPY		
Total HAP, TPY		

(1) Final factor considering any VOC reduction stated for methane/ethane.

(2) For when emissions from loading are routed to a tank the emissions shall be included in determining compliance with the tank emission limits.

AMINE UNIT
MINOR FACILITY

- Please include data for the reboiler in the Fuel Burning Section 100-D of the application forms.
- If H_2S emissions are less than 0.3 lb/hr, unit is not subject to OAC 252:100-31-26(1), H_2S standards.
- Please refer to Appendix E for H_2S dispersion modeling requirements.

Parameter	Value
Calculation Method (AMINECalc or Process Simulator)	
Type of Amine	
Inlet Gas Flow Rate, MMSCFD	
Inlet Gas H_2S Concentration, ppmv	
Outlet Gas H_2S Concentration, ppmv	
Lean Amine Pump Design Capacity, gpm	
Lean Amine Recirculation Rate Input, gpm	
Inlet Gas Temperature, °F	
Inlet Gas Pressure, psig	
Amine Solution Concentration, wt. %	
Regenerator Vent	
Control Method	
VOC/H_2S Control Efficiency, %	
Flash Tank	
Temperature, °F	
Pressure, psig	
Control Method	
VOC/H_2S Control Efficiency, %	
Total Emissions	
VOC, TPY	
H_2S, lb/hr	
SO_2, TPY	
Benzene, TPY	
Toluene, TPY	
Ethylbenzene, TPY	
Xylene, TPY	
n-Hexane, TPY	
Total HAP, TPY	

FUGITIVE EMISSIONS
MINOR FACILITY

- Fugitive VOC emissions need to be included in the emissions calculations to determine major source status for any facility with a storage tank subject to, or grandfathered from, NSPS Subpart K or Ka.
- Separate tables may be necessary for controlled and uncontrolled sources or affected and unaffected sources under NSPS Subparts KKK, OOOO, OOOOa.
- The emission factors shown are the Oil and Gas Production Operations factors from the "Protocol for Equipment Leak Emission Estimates" EPA-453/R-95-017. Other factors may be used, if applicable.
- Any form or spreadsheet containing the same relevant information may be substituted for this form.

FUGITIVE EMISSION SOURCES			Emission Unit ID#				
Source Type	Service [1]	Number of Sources	Emissions Factor, lb/hr/source	Weight % VOC	VOC Emissions		Type of Control
					lb/hr	TPY	
Valves	Gas		0.00992				
	Light Oil		0.00551				
	Heavy Oil		0.00002				
	Water/Oil		0.00022				
Pump Seals	Gas		0.00529				
	Light Oil		0.02866				
	Heavy Oil [3]		0.01610				
	Water/Oil		0.00005				
Connectors	Gas		0.00044				
	Light Oil		0.00046				
	Heavy Oil		0.00002				
	Water/Oil		0.00024				
Flanges	Gas		0.00086				
	Light Oil		0.00024				
	Heavy Oil		0.00000				
	Water/Oil		0.00001				
Open-ended lines	Gas		0.00441				
	Light Oil		0.00309				
	Heavy Oil		0.00031				
	Water/Oil		0.00055				
Other [2]	Gas		0.01940				
	Light Oil		0.01653				
	Heavy Oil		0.00007				
	Water/Oil		0.03086				
					TOTAL		

Notes: 1. Heavy oil has an API gravity of less than 20°. Water/oil is any water stream in oil service with water content greater than 50% up to water content of 99%.

2. The "Other" equipment type includes compressors, pressure relief valves, relief valves, diaphragms, drains, dump arms, hatches, instruments, meters, polished rods, and vents. This "Other" equipment type should be applied for any equipment type other than connectors, flanges, open-ended lines, pumps, or valves.

3. No EF for pumps in heavy oil service was provided in the EPA document as no data was collected in the API study. This is a suggested factor from a June 2018, TCEQ memorandum without the estimated control efficiency for the TX LDAR program.

OTHER NSPS AFFECTED EQUIPMENT
MINOR FACILITY

Pneumatic Devices

Device Type	Number of Devices	Subject to NSPS (if not provide reason)
Continuous Bleed Natural Gas Driven Pneumatic Controller		
Natural Gas Driven Diaphragm Pumps		

Centrifugal Compressors Using Wet Seals

Manufacturer / Model	Serial Number or Unique Identifier	Compressor Rated HP	Manufacture Date	Subject to NSPS (if not provide reason)

Reciprocating Compressors

Manufacturer / Model	Serial Number or Unique Identifier	Compressor Rated HP	Manufacture Date	Subject to NSPS (if not provide reason)

MAINTENANCE, STARTUP, AND SHUTDOWN (MSS)
MINOR FACILITY

- MSS emissions are part of normal operation of a source and should be accounted for in planning, design, and implementation of operating procedures for process and control equipment. As such, MSS emissions should be included in Potential to Emit (PTE) calculations and are subject to applicable permitting requirements.
- Facility shall estimate MSS emissions to the extent that they are predictable and quantifiable. Please identify and explain "other" MSS emissions listed.

Parameter	Emissions (TPY)
Blowdown \ Venting Emissions or Activities	
VOC	
Other MSS Activities, Identify Each Activity	
NO_X	
CO	
VOC	
$PM_{2.5}$	
PM_{10}	
SO_2	
Other Pollutant	
Total Emissions	
VOC	
NO_X	
CO	
$PM_{2.5}$	
PM_{10}	
SO_2	
Other Pollutant	
Benzene	
Toluene	
Ethylbenzene	
Xylene	
n-Hexane	
Total HAP	

SUPPORTING DOCUMENTS AND EMISSION CALCULATIONS
MINOR FACILITY

- Please use this checklist to identify supporting documentation submitted for emission units and emissions calculations subject to this permitting action including any changes to existing equipment or emission.
- When relying on process emissions calculation software or process simulator the input (parameters and composition) and output or stream reports must be included.

Supporting Documents and Emission Calculations Attached	Yes	No
Amine Unit emission calculations	☐	☐
Glycol Dehydration Unit emission calculations	☐	☐
Tank emission calculations and include the following:	☐	☐
Flashing emissions	☐	☐
Working and breathing emissions	☐	☐
Landing emissions	☐	☐
Cleaning emissions	☐	☐
Loading emissions calculations	☐	☐
Fugitive emission calculations	☐	☐
MSS emission calculations	☐	☐
Appendix H Activities emission calculations (not otherwise addressed)	☐	☐
Process flow diagrams	☐	☐
Representative Sample Guidance Forms DEQ 100-702 and required sample reports	☐	☐
40 CFR Part 63 Subpart HH Facility Registration Form DEQ 100-401	☐	☐
EPA Engine Certification	☐	☐
Manufacturer Emission Data Sheet(s) for all engines and engine control equipment	☐	☐
H_2S content analysis of inlet gas stream for Amine Units	☐	☐
Site specific dispersion modeling if the facility cannot meet the criteria identified in Appendix E	☐	☐
Please indicate if this application is being used as notification under any applicable NSPS and NESHAP and attach information as required by the individual federal rule and general requirements under 40 CFR §60.7 (a).	☐	☐

AIR QUALITY DIVISION CLASSIFICATION OF AQ PERMIT APPLICATIONS & APPLICATION FEES	Received Stamp (DEQ Use Only)	Application Number (AQD Use Only)	

Company Name							
Facility Name							
Mailing Address		City		State		Zip	

This form is used to document both a preliminary determination of the Tier classification and any associated Application Fee.

Step 1: APPLICATION CLASSIFICATION AND TIER DETERMINATION

DEQ's "Uniform Permitting" system, under OAC 252:004, categorizes different types of applications as Tier I, II, or III, depending on their complexity and the amount of public interest. The main effect of a Tier classification is the amount of public review given the application. For Air Quality permits, Tier I basically includes minor facilities and most synthetic minor facilities. Tier II covers major sources, and Tier III covers only very large sources such as those requiring PSD review. Additional information to make a preliminary determination of the Tier classification is provided on the next page. This determination will be verified before permit issuance.

Note that all Tier II and III applications require public notice of the application in one newspaper local to the site or facility as soon after the filing date as possible. Other public participation requirements, such as notice of draft and proposed permit, and notice of public meeting may also be required. Contact our office for more information on these requirements.

TIER CLASSIFICATION	☐	Tier I	☐	Tier II	☐	Tier III	☐	N/A – AD only	
FACILITY TYPE	☐	Major	☐	Minor	☐	Synthetic Minor	Confirmed/Corrected by: (AQD Use Only)		

Step 2: APPLICATION TYPE & FEE

Application fee may be determined according to the following schedule. The emissions level is based on the single criteria pollutant with the highest emissions rate. Fees are subject to change – please refer to OAC 252:100-7-3 or 252:100-8-1.7 for the latest fee schedule.

	MAJOR SOURCE	Fee		MINOR OR SYNTHETIC MINOR FACILITY	Fee
☐	Applicability Determination (100734)	$500	☐	Applicability Determination (100922)	$500
☐	GP- Authorization to Construct (100778)	$900	☐	PBR – Construct (100985)	$250
☐	GP- Authorization to Operate (100788)	$900	☐	PBR – Operate (100989)	$100
☐	Part 70 Construction (100150)	$7,500	☐	GP – Authorization to Construct (100826)	$500
☐	Part 70 Construction Modification (100779)	$5,000	☐	GP – Authorization to Operate (100827)	$500
☐	Part 70 Operation (100733)	$7,500	☐	Construction (100829)	$2,000
☐	Part 70 Minor Modification (100781)	$3,000	☐	Permit Amendment – no emission increase (100830)	$500
☐	Part 70 Significant Modification (100786)	$6,000	☐	Operating Permit (100831)	$750
☐	Part 70 Renewal (100787)	$7,500	☐	Operating Permit Modification (100833)	$750
☐	Part 70 Relocation (100782)	$500	☐	Relocation (100834)	$250
	Application Type Confirmed – (AQD Use Only)				

GP or PBR Name (If Applicable):		Existing Permit Number (If Applicable)	

PAYMENT INFORMATION

Please choose one payment type and attach payment – payable to the Department of Environmental Quality (no cash can be accepted). Please reference the facility name (or existing permit or Authorization number) on the check or money order.

Payment Type	☐	Check	☐	Money order	Amount/ Receipt Confirmed by: (DEQ Use Only)		
Amount:	$	Check or Money Order Number:			Date:		

TIER DETERMINATION INFORMATION

OAC 252:004-7 categorizes different types of Air Quality applications as Tier I, II, or III, depending on their complexity and the amount of public interest under DEQ's "Uniform Permitting" system. The Tier classification affects the amount of public review given the application. Applicants may use the following as a checklist for determining Tier classification.

OAC 252:4-7-32. Air quality applications - Tier I

No Public Notice Requirement

☐ (1) Relocation permit for a minor facility.
☐ (2) Modification of an existing FESOP that is based on the operating conditions of a construction permit that was processed under Tier I and completed the web-based public notice requirement and does not differ from those construction permit conditions in any way considered significant. [FESOP Enhanced NSR]
☐ (3) Extension of expiration date of a minor facility construction permit.
☐ (4) Modification of any Part 70 source operating permit condition that is based on the operating conditions of a construction permit that was processed under Tier I (with web-based public notice), Tier II, or Tier III and OAC 252:100-8-8 and does not differ from those construction permit conditions in any way considered significant under OAC 252:100-8-7.2(b)(2). [Enhanced NSR]
☐ (5) Extension of expiration date of a Part 70 source's construction permit.
☐ (6) New, modified, and renewed individual authorizations under general permits for which a schedule of compliance is not required by OAC 252:100-8-5(e)(8)(B)(i).
☐ (7) Burn approvals.
☐ (8) Administrative amendments of all air quality permits and other authorizations.

No Public Notice Requirement, 45-Day EPA Review Requirement

☐ (1) Minor modification to a Part 70 source operating permit where the facility obtained a prior construction permit for the modification as required by OAC 252:100-8-4(a)(1)(B)(iv). [Traditional NSR]
☐ (2) Minor modification under OAC 252:100-8-7.2(b)(1) to a Part 70 source operating permit that did not trigger an NSR permitting action.

Web-based Public Notice Requirement

☐ (1) New minor NSR construction permit for a minor facility.
☐ (2) Initial operating permit for a new minor facility.
☐ (3) Modification of a construction permit for a minor facility.
☐ (4) Modification of an existing minor operating permit that was issued prior to September 15, 2021, and that will now become a FESOP.
☐ (5) Modification of a minor operating permit that did not undergo the *FESOP Enhanced NSR Process.* [Traditional NSR]
☐ (6) Construction permit for an existing Part 70 source as required by OAC 252:100-8-4(a)(1)(B)(iv).

OAC 252:4-7-33. Air quality applications - Tier II

☐ (1) A minor facility seeking a permit for a facility modification that when completed would turn it into a Part 70 source.
☐ (2) Any permit application for a Part 70 source that would result, on issuance, with the facility being covered by a FESOP (PBR, GP, or individual facility operating permit).
☐ (3) Construction permit for a new Part 70 source not classified under Tier III.
☐ (4) Construction permit for an existing Part 70 source for any facility change considered significant under OAC 252:100-8-7.2(b)(2) and which is not classified under Tier III.
☐ (5) Initial operating permit for a Part 70 source.
☐ (6) Acid rain permit that is independent of a Part 70 permit application.
☐ (7) Temporary source permit under OAC 252:100-8-6.2.
☐ (8) Significant modification, as described in OAC 252:100-8-7.2(b)(2), of a Part 70 operating permit or a modification of a Part 70 operating permit incorporating a Tier II construction permit that did not undergo the *Enhanced NSR Process*.
☐ (9) Modification of a Part 70 operating permit when the conditions proposed for modification differ from the underlying construction permit's operating conditions in any way considered significant under OAC 252:100-8-7.2(b)(2).
☐ (10) A construction permit modification considered significant under OAC 252:100-8-7.2(b)(2) and which is not classified under Tier III.
☐ (11) Renewals of operating permits for Part 70 sources.
☐ (12) New, modified, and renewed general permits.
☐ (13) Individual authorizations under any general permit for which a schedule of compliance is required by OAC 252:100-8-5(e)(8)(B)(i).
☐ (14) Plant-wide emission plan approval under OAC 252:100-37-25(b) or OAC 252:100-39-46(j).

OAC 252:4-7-34. Air quality applications - Tier III

(a) A construction permit for any new major stationary source listed in this subsection requires a Tier III application. For purposes of this section, "Major stationary source" means:

☐ (1) Any of the following sources of air pollutants which emits, or has the PTE, 100 TPY or more of any pollutant subject to regulation:

☐ (A) carbon black plants (furnace process),
☐ (B) charcoal production plants,
☐ (C) chemical process plants,
☐ (D) coal cleaning plants (with thermal dryers),
☐ (E) coke oven batteries,
☐ (F) fossil-fuel boilers (or combustion thereof), totaling more than 250 million BTU per hour heat input,
☐ (G) fossil fuel-fired steam electric plants of more than 250 million BTU per hour heat input,
☐ (H) fuel conversion plants,
☐ (I) glass fiber processing plants,
☐ (J) hydrofluoric, sulfuric or nitric acid plants,
☐ (K) iron and steel mill plants,
☐ (L) Kraft pulp mills,
☐ (M) lime plants,
☐ (N) incinerators, except where used exclusively as air pollution control devices,
☐ (O) petroleum refineries,
☐ (P) petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels,
☐ (Q) phosphate rock processing plant,
☐ (R) Portland cement plants,
☐ (S) primary aluminum ore reduction plants,
☐ (T) primary copper smelters,
☐ (U) primary lead smelters,
☐ (V) primary zinc smelters,
☐ (W) secondary metal production plants,
☐ (X) sintering plants,
☐ (Y) sulfur recovery plants, or
☐ (Z) taconite ore processing plants, and

☐ (2) Any other source not specified in paragraph (1) of this definition which emits, or has the PTE, 250 TPY or more of any pollutant subject to regulation.

(b) Existing incinerators. An application for any change in emissions or potential to emit, or any change in any permit condition, that would have caused an incinerator to be defined as a major stationary source when originally permitted shall require a Tier III application.

APPENDICES A THROUGH F

CONSTRUCTION, OPERATION, MAINTENANCE AND MONITORING REQUIREMENTS FOR CONTROL DEVICES

MODELING GUIDANCE FOR H_2S SOURCES

APPENDIX H ACTIVITIES LIST

Appendix A
Glycol Dehydration Units and Amine Units

Control Option	Maximum Allowed Control Efficiency	Associated Operation and Monitoring Requirements
Option A	**Control Device: Condenser Only**	
	≤90% for VOC's and HAP's	• Must be maintained and operated as specified by the manufactured or design specifications. • Unit must be equipped with a flash tank. • Constructed with a temperature sensor in the outlet. • The permittee shall inspect the condenser for proper operation and measure and record the condenser outlet temperature at least one day each month during daylight hours. • If the applicant relies on an outlet condenser temperature equal to or greater than 100 °F, then monitoring of the condenser temperature is not required. • Greater than 90% reduction may be applied if meeting the device requirements of additional controls as specified.
Option B	**Control Device: Recycled or Recompressed**	
	≤ 100% for VOC's and HAP's	• Have the flash tank stream pre-mixed with the primary fuel gas and used to fuel the device; or • Routed to the facility inlet.
Option C	**Control Device: Combustion device such as reboiler or heater**	
	≤50% for VOC's and HAP's	• Have still vent stream delivered to the flame zone/firebox.
	≤ 95 % for VOC's and HAP's	• Have still vent stream delivered to the flame zone/firebox when firing; and • Delivered to an in-stack igniter when the firebox is not firing. • In-stack igniter must be maintained and operated per manufacturer's specifications.
Option D	**Control Device: Condenser plus combustion device such as reboiler or heater**	
	≤ 95% for VOC's and HAP's	• Must meet requirements to claim 90% efficiency as described for a condenser; and • Have still vent stream delivered to the flame zone/firebox. • Installation of the temperature sensor and measuring and recording of the condenser outlet temperature is not required if the uncondensed vapors are burned in a combustion device.
	≤ 98% for VOC's and HAP's	• Must meet requirements to claim 90% efficiency as described for a condenser; • Have still vent stream delivered to the flame zone/firebox; and • Utilize an in-stack igniter which is maintained and operated per manufacturer's specifications. • Utilize an Enclosed Flare or Process Flare which is maintained and operated per manufacturer's specifications.
Option E	**Applicant Specified Control Efficiency, and Operation and Monitoring Requirements**	
Provide control efficiency, supporting documentation, and proposed monitoring and record keeping to support enforceability.		

Appendix B

Non-Selective Catalytic Reduction (NSCR)

Maximum Allowed Control Efficiency	Requirements
Manufacturer's guarantee	• Must be maintained and operated as specified by the manufactured or design specifications. • Be constructed with an Air-to-Fuel Ratio Controller (AFRC) that operates on exhaust oxygen sensor control. • Use a portable analyzer to monitor NO_x and CO emissions in the exhaust stream of the control device. ▪ The portable analyzer shall be operated in accordance with the requirements of the latest AQD "Portable Analyzer Guidance" document or an equivalent method approved by the AQD. ▪ Testing shall be performed semi-annually.

Oxidation Catalyst

Maximum Allowed Control Efficiency	Requirements
Manufacturer's guarantee	• Meet requirements listed above for NSCR except for AFRC.
Formaldehyde reduction ≤ CO reduction	

Appendix C
Vapor Collection and Control for Loading

Maximum Allowed Control Efficiency	Requirements
Vapor Collection Systems	
n/a	• The tank trucks shall be bottom loaded with hatches closed (vapor tight) and the storage tank hatches and atmospheric vents shall be closed (vapor tight). • A vapor collection line shall be connected from the tank truck to the vapor collection system and shall route all vapors generated during loading to the vapor collection system. • All loading and vapor lines shall be equipped with fittings that make vapor-tight connections and which must be closed when disconnected or which close automatically when disconnected. • A means shall be provided to prevent VOC drainage from the loading device when it is removed from any tank truck or trailer, or to accomplish complete drainage before removal. • Vapor collection system shall be routed to either a vapor balancing or vapor control.
Vapor Balancing (Collection Efficiency)	
≤ 70% for VOC's and HAP's	• In addition to the requirements above, the tanks shall be equipped with a vapor pressure-vacuum vent valve that maintains a positive pressure setting during tank truck loading operations. • Loading loss emissions routed to the storage tanks shall be added to the storage tank emissions. In lieu of adding loading loss emissions to storage tanks, working loss emissions from the storage tanks being unloaded shall be calculated using a turnover factor (K_N) of 1.
Vapor Control W/Flare (Control Efficiency & Requirements)	
≤ 98% for VOC's and HAP's	• Meet requirements of vapor collection system and • Control percentage only applies to vapors collected in vapor collection system and • The vapor collection system shall route all vapors to a flare. Flares must meet requirements described in the flares or enclosed combustion device table.
Vapor Recovery (Collection and Control Efficiency & Requirements)	
100 % for VOC's and HAP's	• Control percentage only applies to vapors collected in vapor balancing and • Routed to the process stream or sales line.

Appendix D
Flares or enclosed combustion devices

Maximum Allowed Control Efficiency	Requirements
≤ 98% for VOC's, HAP's and H_2S	• Flares must meet 40 CFR §60.18 requirements for minimum heating value and maximum flare tip velocities. • Flares and enclosed combustion devices must always be operated with a flame present by having a continuous pilot flame or have an automatic ignition system. ▪ Presence of a pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame; and ▪ Records of the pilot flame(s) outages and/or downtime shall be maintained. • Pilot flame monitors and/or automatic ignition systems must be installed, operated, and calibrated in accordance with manufacturer's specifications.

APPENDIX E

The following facilities may not rely on the H_2S modeling conducted in support of the Oil and Gas General Permit (2022) and are required to submit site specific air dispersion modeling to demonstrate compliance with OAC 252:100-31-7:

1. Facilities with multiple amine units.

2. Facilities with combustion equipment fired with fuels other than liquid petroleum gas (LPG) or natural gas with a maximum total sulfur content greater than 162 ppmv; or stationary reciprocating engines burning liquid fuels other than gasoline, diesel fuel, or No. 2 fuel oil with a total sulfur content greater than 0.05% by weight.

3. Facilities storing/distributing crude oil that cannot demonstrate a maximum H_2S concentration of 6 ppmw for all categories of crude oil stored at the facility. Such demonstration must be documented using the methods outlined in Appendix B of Oil Gas General Permit (2022).

4. Facilities with glycol dehydration units that process natural gas with an H_2S content greater than 4 ppmv.

5. Facilities with amine units under the following conditions: (1) that process natural gas with an H_2S content greater than 4 ppmv; or (2) that do not control emissions from the rich amine flash tank and amine regeneration vent. To be considered controlled, the rich amine flash tank may either be routed to the inlet, fuel gas system, or a flare. The amine regeneration still vent must be routed to a flare meeting the requirements of OAC 252:100-31-26. Facilities with amine units that process natural gas with an H_2S content greater than 4 ppmv, or that do not control emissions from the rich amine flash tank and amine regeneration vent, require a site-specific determination of compliance with the H_2S ambient concentration limit of OAC 252:100-31-7.

6. Facilities with amine units that process more than 0.1276 long ton per day (LTPD) of sulfur. Facilities with amine units without sulfur recovery that process more than 0.1276 LTPD of sulfur would be a major source for SO_2.

APPENDIX F
Appendix H Activities

Storage Tanks

- Fuel/VOC storage tanks with less than 400 gallons capacity, or fuel/VOC storage tanks with less than 10,567 gallons capacity built after July 23, 1984, or tanks storing fuel/VOC that has a true vapor pressure at storage conditions less than 1.5 psia. This includes Fuel Oils Nos. 2 - 6, Nos. 2-GO - 4-GO, Diesel Fuel Oils Nos. 2-D - 4-D, and Kerosene.
- Tanks containing separated water produced from oil and gas operations.
- Emergency use equipment, unless utilized in excess of 500 hours per year, and associated fuel storage tankage.

Blowdowns

- Blowdown of compressors or other vessels containing natural gas or liquid hydrocarbons for maintenance due to emergency circumstances.

Combustion Equipment

- Space heaters and boilers less than 10 MMBTU/hr heat input.
- Emissions from non-natural gas fueled stationary internal combustion engines rated less than 50 hp output.
- Emissions from gas turbines with less than 215 kilowatt rating of electric output.
- Natural gas fueled internal combustion engines rated <150 hp and <20 years old.
- Emergency use equipment, unless utilized in excess of 500 hours per year, and associated fuel storage tankage.

Fugitive Emission Sources

- Pneumatic starters on reciprocating engines, turbines, compressors, or other equipment.
- Instrument systems utilizing air or natural gas.

MSS

- Pipeline maintenance pigging activities.
- General maintenance, upkeep, and replacement activities, including those which do not alter the capacity of process, combustion or control equipment nor increase regulated pollutant emissions, unless subject to NESHAP or NSPS.
- Crude oil tank bottom reclaiming.

Miscellaneous

- Vent emissions from gas streams used as buffer or seal gas in rotating pump and compressor seals.
- Engine crankcase vents and equipment lubricating sumps.

Department of Environmental Quality (DEQ)
Air Quality Division (AQD)
Acronym List
9-10-21

ACFM	Actual Cubic Feet per Minute
AD	Applicability Determination
AFRC	Air-to-Fuel Ratio Controller
API	American Petroleum Institute
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
BAE	Baseline Actual Emissions
BBL	Barrel(s)
BHP	Brake Horsepower (bhp)
BTU	British thermal unit (Btu)
C&E	Compliance and Enforcement
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CAS	Chemical Abstract Service
CAAA	Clean Air Act Amendments
CC	Catalytic Converter
CCR	Continuous Catalyst Regeneration
CD	Consent Decree
CEM	Continuous Emission Monitor
CFC	Chlorofluorocarbon
CFR	Code of Federal Regulations
CI	Compression Ignition
CNG	Compressed Natural Gas
CO	Carbon Monoxide or Consent Order
COA	Capable of Accommodating
COM	Continuous Opacity Monitor
D	Day
DEF	Diesel Exhaust Fluid
DG	Demand Growth
DSCF	Dry Standard (At Standard Conditions) Cubic Foot (Feet)
EGU	Electric Generating Unit
EI	Emissions Inventory
EPA	Environmental Protection Agency
ESP	Electrostatic Precipitator
EUG	Emissions Unit Group
EUSGU	Electric Utility Steam Generating Unit
FCE	Full Compliance Evaluation
FCCU	Fluid Catalytic Cracking Unit
FEL	Federally Enforceable Limit(s)
FESOP	Federally Enforceable State Operating Permit
FIP	Federal Implementation Plan
FR	Federal Register
GACT	Generally Achievable Control Technology
GAL	Gallon (gal)
GDF	Gasoline Dispensing Facility
GEP	Good Engineering Practice
GHG	Greenhouse Gases
GR	Grain(s) (gr)
H_2CO	Formaldehyde
H_2S	Hydrogen Sulfide
HAP	Hazardous Air Pollutants
HC	Hydrocarbon
HCFC	Hydrochlorofluorocarbon
HFR	Horizontal Fixed Roof
HON	Hazardous Organic NESHAP
HP	Horsepower (hp)
HR	Hour (hr)
I&M	Inspection and Maintenance
IBR	Incorporation by Reference
ICE	Internal Combustion Engine
LAER	Lowest Achievable Emission Rate
LB	Pound(s) [Mass] (lb, lbs, lbm)
LB/HR	Pound(s) per Hour (lb/hr)
LDAR	Leak Detection and Repair
LNG	Liquefied Natural Gas
LT	Long Ton(s) (metric)
M	Thousand (Roman Numeral)
MAAC	Maximum Acceptable Ambient Concentration
MACT	Maximum Achievable Control Technology
MM	Prefix used for Million (Thousand-Thousand)
MMBTU	Million British Thermal Units (MMBtu)
MMBTUH	Million British Thermal Units per Hour (MMBtu/hr)
MMSCF	Million Standard Cubic Feet (MMscf)
MMSCFD	Million Standard Cubic Feet per Day
MSDS	Material Safety Data Sheet
MWC	Municipal Waste Combustor
MWe	Megawatt Electrical
NA	Nonattainment
NAAQS	National Ambient Air Quality Standards
NAICS	North American Industry Classification System
NESHAP	National Emission Standards for Hazardous Air Pollutants
NH_3	Ammonia
NMHC	Non-methane Hydrocarbon
NGL	Natural Gas Liquids
NO_2	Nitrogen Dioxide
NOx	Nitrogen Oxides
NOI	Notice of Intent

NSCR	Non-Selective Catalytic Reduction
NSPS	New Source Performance Standards
NSR	New Source Review
O_3	Ozone
O&G	Oil and Gas
O&M	Operation and Maintenance
O&NG	Oil and Natural Gas
OAC	Oklahoma Administrative Code
OC	Oxidation Catalyst
PAH	Polycyclic Aromatic Hydrocarbons
PAE	Projected Actual Emissions
PAL	Plant-wide Applicability Limit
Pb	Lead
PBR	Permit by Rule
PCB	Polychlorinated Biphenyls
PCE	Partial Compliance Evaluation
PEA	Portable Emissions Analyzer
PFAS	Per- and Polyfluoroalkyl Substance
PM	Particulate Matter
$PM_{2.5}$	Particulate Matter with an Aerodynamic Diameter <= 2.5 Micrometers
PM_{10}	Particulate Matter with an Aerodynamic Diameter <= 10 Micrometers
POM	Particulate Organic Matter or Polycyclic Organic Matter
ppb	Parts per Billion
ppm	Parts per Million
ppmv	Parts per Million Volume
ppmvd	Parts per Million Dry Volume
PSD	Prevention of Significant Deterioration
psi	Pounds per Square Inch
psia	Pounds per Square Inch Absolute
psig	Pounds per Square Inch Gage
RACT	Reasonably Available Control Technology
RATA	Relative Accuracy Test Audit
RAP	Regulated Air Pollutant or Reclaimed Asphalt Pavement
RFG	Refinery Fuel Gas
RICE	Reciprocating Internal Combustion Engine
RO	Responsible Official
ROAT	Regional Office at Tulsa
RVP	Reid Vapor Pressure
SCC	Source Classification Code
SCF	Standard Cubic Foot
SCFD	Standard Cubic Feet per Day
SCFM	Standard Cubic Feet per Minute
SCR	Selective Catalytic Reduction
SER	Significant Emission Rate
SI	Spark Ignition
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SNCR	Selective Non-Catalytic Reduction
SO_2	Sulfur Dioxide
SOx	Sulfur Oxides
SOP	Standard Operating Procedure
SRU	Sulfur Recovery Unit
T	Tons
TAC	Toxic Air Contaminant
TEG	Triethylene Glycol
THC	Total Hydrocarbons
TPY	Tons per Year
TRS	Total Reduced Sulfur
TSP	Total Suspended Particulates
TV	Title V of the Federal Clean Air Act
$\mu g/m^3$	Micrograms per Cubic Meter
US EPA	U. S. Environmental Protection Agency
VFR	Vertical Fixed Roof
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
VOL	Volatile Organic Liquid
VRT	Vapor Recovery Tower
VRU	Vapor Recovery Unit
YR	Year
2SLB	2-Stroke Lean Burn
4SLB	4-Stroke Lean Burn
4SRB	4-Stroke Rich Burn