



Air Quality Registration Permit

Option D Audit Checklist Environmental Audits

Audit checklists are designed to assist businesses by providing a low cost way of reviewing compliance with Minnesota's environmental laws and rules. Because the laws and rules are numerous and often complicated, this checklist cannot be a complete guide to your legal obligations. You may have obligations that are not covered on this checklist. If you have questions about this checklist, or your obligations regarding evaluation of your business operations, please call the Small Business Environmental Assistance Program (SBEAP) at 651-282-6143 or 1-800-657-3938.

Answer each question unless specifically directed otherwise.

Emission Calculations

1. Have you included all significant air emissions when calculating your actual emissions?

Note: You do not need to include insignificant activities (Minn. R. 7007.1300, supb. 2 and 3) or conditionally insignificant activities (Minn. R. 7008.4100 and 7008.4110).

- ☐ **Yes**
☐ **No** You must meet this requirement.

2. Are your annual emissions or your 12-month rolling sum less than the limits listed below for each pollutant?

Note: At the date of this publication there were no non-attainment areas in Minnesota.

Pollutant	Ton
Volatile Organic Compound (VOC)	50
Carbon Monoxide (CO)	50
Nitrogen Oxides (NO _x)	50
Sulfur Dioxide (SO ₂)	50
Particulate Matter less than 10 microns in diameter (PM ₁₀)	50 (attainment areas) 25 (non-attainment areas)
Particulate Matter (PM)	50
Lead (Pb)	0.5

- ☐ **Yes**
☐ **No** You do not qualify for the Registration Option D permit.

3. Does your facility emit Hazardous Air Pollutants (HAPs)?

Note: A list of HAPs is available at www.epa.gov/ttn/atw/188polls.html.

- ☐ **Yes**
☐ **No** Skip to question #6.

4. Are all of your HAPs also VOCs, and is your annual or 12-month rolling sum VOC emissions less than 5 tons?

- ☐ **Yes** You are not required to calculate HAP emissions. Skip to question #6.
☐ **No**

5. Are your annual emissions or your 12-month rolling sum less than 5 tons for each HAP and 12.5 tons for the sum of all HAPs?

- ☐ **Yes**
☐ **No** You do not qualify for the Registration Option D permit.

6. Do you record either once per month or once per year, the amount of each VOC-containing and/or HAP-containing material purchased or used (whichever was stated in application), then recalculate and record a 12-month rolling sum of the emissions? Do you record the date the calculation was done?

Note: You may do this annually instead of monthly if you qualify as a low-emitting Option D source; see end of checklist for details.

- ☐ **Yes**
☐ **No** You must meet this requirement.
☐ **N/A** Do not have VOC or HAP containing materials.

7. Do you maintain material safety data sheet (MSDS) or a signed statement from the supplier stating the maximum VOC and HAP content for each VOC-containing and/or HAP-containing material?

- ☐ **Yes**
☐ **No** You must meet this requirement.
☐ **N/A** Do not have VOC or HAP containing materials.

8. Do you record for each unit type either once per month or once per year, the amount of each fuel purchased or used (whichever was stated in application), or the hours operated, and then recalculate and record a 12-month rolling sum? Do you record the date the calculation was done?

Note: You may do this annually instead of monthly if you qualify as a low-emitting source; see the end of checklist for details.

- ☐ **Yes**
☐ **No** You must meet this requirement.
☐ **N/A** Do not have fuel burning equipment.

9. Do you record either once per month or once per year, the quantity of material handled or throughput, or product produced if used to calculate air emissions? Do you then recalculate and record a 12 month rolling sum of the emissions? Do you record the date the calculation was done?

Note: You may do this annually instead of monthly if you qualify as a low-emitting Option D source; see the end of checklist for details.

- ☐ **Yes**
☐ **No** You must meet this requirement.
☐ **N/A** Do not use quantity of material handled or throughput, or product produced in air emission calculations.

10. If your facility releases more than five tons per year (tons/yr) SO₂ or PM₁₀, do you maintain the following records on your site for each emission unit venting SO₂ or PM₁₀:

- (1) location of the emission points;
(2) potential emissions (as defined in part 7007.0150, subpart 4) in lbs/hr of SO₂ and PM₁₀; and
(3) gas flow rate and temperature, stack height, and diameter?

- ☐ **Yes**
☐ **No** You must meet this requirement.
☐ **N/A** Emissions of SO₂ or PM₁₀ do not exceed five tons/yr.

11. If you use fuel sulfur content in your emission calculations, do you record, either once per month or once per year, the amount of sulfur in your fuel and calculate and record your SO₂ emissions for the previous 12 months? Do you record the date the calculation was done?

Note: You may do this annually instead of monthly if you qualify as a low-emitting Option D source; see the end of checklist for details.

- ☐ **Yes**
☐ **No** You must meet this requirement.
☐ **N/A** Do not use fuel sulfur data in emission calculations.

Control Equipment

12. Do you have control equipment?

- ☐ **Yes**
☐ **No** Skip to question #24.

13. Do you take into account the use of your control equipment when calculating emissions?

- ☐ Yes
☐ No Skip to question #24.

14. When you calculate emissions, do you use a control efficiency less than or equal to the one listed in the Control Equipment Rule, see Table A at the end of the checklist (Minn. R. 7011.0070 – 7011.0080)?

Note: Some of these control efficiencies changed in the fall of 2007, so check to be sure you are calculating correctly.

- ☐ Yes
☐ No You must meet this requirement, however it may be possible to use alternative control efficiency, see Minn. R. 7011.0070 for details.

15. Do you have a hood that has been certified, and do you take credit for it in your emission calculations?

- ☐ Yes
☐ No Skip to question #17.

16. Do you maintain the most current record of your hood evaluation, and measure the fan rotation speed, fan power draw, face velocity, or other comparable air flow indicator? Do you also maintain a yearly summary of these measurements for a minimum of five years?

- ☐ Yes
☐ No You must meet this requirement.

17. Do you always:

- Keep an inventory of spare parts as recommended by the manufacturer
- Train staff how to operate/maintain control equipment and respond to indicators of malfunction
- Maintain records of control equipment parts replaced, repaired, or modified for the previous five years
- Operate the control equipment whenever the process equipment is operating
- Operate the control equipment within the range established by the manufacturer's specifications or within the operating parameters set by the commissioner if more restrictive

Note: An alternative range to the manufacturers specifications for fabric filters may be allowed, see Minn. R. 7011.0075 for details.

- ☐ Yes
☐ No You must meet these requirements.

18. Do you *daily* or more frequently based on manufactures specifications:

- Check monitoring equipment

- ☐ Yes
☐ No You must meet these requirements.

19. Do you *monthly* or more frequently based on manufactures specifications:

- Check components subject to wear/plugging

- ☐ Yes
☐ No You must meet these requirements.

20. Do you *quarterly* or more frequently based on manufactures specifications:

- Inspect components not subject to wear/plugging

- ☐ Yes
☐ No You must meet these requirements.

21. Do you *annually* or more frequently based on manufactures specifications:

- Thoroughly inspect all control equipment
- Calibrate all monitoring equipment

- ☐ Yes
☐ No You must meet these requirements.

22. Do you monitor and record each parameter required for your type of control equipment, see Table B at the end of the checklist or Minn. R. 7011.0080?
- ☐ Yes
☐ No You must meet these requirements.
23. Do you maintain a record of activities conducted (listed above), the date the activity was completed, and any corrective actions taken?
- ☐ Yes
☐ No You must meet these requirements.

Breakdown/Shutdown

24. If you have a breakdown of control equipment or process equipment that results in an increase of emissions of any regulated air pollutant and lasts more than one hour, will you report it to the MPCA within 24 hours?
- Note: You may report either by mail, fax (651-296-8717) or online using the form located here:
www.pca.state.mn.us/air/emissionsnotice.html.*
- ☐ Yes
☐ No You must do this in the event of a breakdown.
25. If you have a shutdown of control equipment or process equipment that results in any increase of a regulated pollutant, do you submit notification at least 24 hours in advance of the planned shutdown or as soon as possible of an unplanned shutdown?
- Note: You may report either by mail, fax (651-296-8717) or online using the form located here:
www.pca.state.mn.us/air/emissionsnotice.html.*
- ☐ Yes
☐ No You must do this in the event of a shutdown.
26. Do you notify the MPCA when the shutdown or breakdown event is over?
- Note: You may report either by mail, fax (651-296-8717) or online using the form located here:
www.pca.state.mn.us/air/emissionsnotice.html.*
- ☐ Yes
☐ No You must do this in the event of a breakdown or shutdown.

Notifications/Submittals

27. If you have a deviation, do you submit a semi-annual deviation report?
- Note: You are only required to submit a semi-annual deviation report if a deviation occurred during the reporting period. An example of a deviation for a baghouse would be a pressure drop that is outside the range recommended by the manufacturer.*
- ☐ Yes
☐ No You must do this.
28. Do you maintain the previous five years records, calculations and any receipts, invoices, or similar documents including recycling records used in your calculations?
- Note: The current calendar year records must be kept on-site.*
- ☐ Yes
☐ No You must meet this requirement.
29. By April 1st each year do you complete and return the Emissions Inventory Report (sent to you in December)?
- ☐ Yes
☐ No You must meet this requirement.

30. Do you pay the annual Air Emission Fee within 60 days of the invoice date (sent to you each March)?

- ☐ Yes
☐ No You must meet this requirement.

Other Rules

31. Do you meet all appropriate requirements of any New Source Performance Standard (NSPS) also known as Standards of Performance for New Stationary Sources that applies to your facility?

Note: Facilities subject only to the notification and record-keeping requirements of a NSPS, or NSPS specifically listed in Minn. R. 7007.1110, subp. 2. C. are eligible to receive a Registration Permit. Facilities that are subject to a NSPS not listed and are required to do more than notification and record-keeping must receive another type of air emissions permit.

Note: NSPS are found in the Code of Federal Regulations Chapter 40 Part 60.

- ☐ Yes
☐ No You must meet NSPS requirements.
☐ N/A Your facility is not subject to a NSPS.

32. Do you meet all appropriate requirements of any National Emission Standard for Hazardous Air Pollutants (NESHAP) that applies to your facility?

Note: NESHAPs are found in the Code of Federal Regulations Chapter 40 Part 61 and Part 63.

- ☐ Yes
☐ No You must meet NESHAP requirements.
☐ N/A Your facility is not subject to a NESHAP.

You have completed the questions for this checklist.

Minnesota rules may be found at: <http://ros.leg.mn/arule/index.numeric>.

Federal regulations may be found at: www.gpoaccess.gov/ecfr.

Low-Emitting Option D Sources – If your annual emissions are less than 50 percent of the Option D permit thresholds your facility is a low-emitting source and qualifies for reduced recordkeeping. Facilities may calculate emissions annually instead of monthly if they qualify for reduced recordkeeping. However if your emissions become greater than half of the limit, then you no longer qualify as a low-emitting source and thus do not qualify for reduced recordkeeping. You may qualify again if you demonstrate emissions less than half of the permit limits for two consecutive calendar years.

Table A

Section 1 – Equipment Designed Primarily for Particulate Matter Control

Control Equipment Description	Pollutant	Control Efficiency		
		Total Enclosure	Hood - Certified	Hood – Not Certified
PM Control Category – Cyclones				
means a device where airflow is forced to spin in a vortex through a tube.				
Centrifugal Collector (cyclone) - high efficiency - see rule for details	PM	90%	72%	54%
	PM ₁₀	78%	62%	46%
Centrifugal Collector (cyclone) - medium efficiency - see rule for details	PM	80%	64%	48%
	PM ₁₀	60%	48%	36%
Centrifugal Collector (cyclone) - low efficiency - see rule for details	PM, PM ₁₀	25%	20%	15%
Multiple Cyclone without Fly Ash Re-injection - a cyclonic device with more than one tube where fly ash isn't reinjected	PM	90%	72%	54%
	PM ₁₀	72%	58%	43%
Wet Cyclone Separator or Cyclonic Scrubbers - a cyclonic device that sprays water into a cyclone.	PM, PM ₁₀	84%	68%	51%
PM Control Category – Electrostatic Precipitators				
Control devices in which incoming particulate matter receives an electrical charge and is then collected on a surface with the opposite electrical charge.				
Electrostatic Precipitators - assumed efficiency for boiler fly ash control	PM ₁₀	40%	NA	NA
Electrostatic Precipitators - assumed efficiency for other applications	PM	98%	78%	59%
	PM ₁₀	94%	75%	56%
PM Control Category - Other Controls				
Fabric Filter - the incoming gas stream to the filter passes through a porous fabric filter forming a dust cake	PM	99%	79%	59%
	PM ₁₀	93%	74%	56%
Spray Tower - the incoming gas stream to the tower passes through a chamber in which it contacts a liquid spray	PM	85%	68%	51%
	PM ₁₀	84%	68%	51%
Venturi Scrubber - the incoming gas stream to the scrubber passes though a venturi into which low pressure liquid is introduced	PM	94%	76%	57%
	PM ₁₀	84%	68%	51%
Impingement Plate Scrubber - the incoming gas stream to the scrubber passes a liquid spray and is then directed at high velocity into a plate	PM, PM ₁₀	77%	62%	46%
Mechanically Aided Separator – a device that relies on inertia for separating particles from the gas stream	PM	64%	52%	39%
	PM ₁₀	5%	4%	3%
Wall or Panel Filters - removable panels for cleaning and replacement, or liquid curtains for particulate removal that provide little resistance to air flow	PM, PM ₁₀	85%	68%	51%

Control Equipment Description	Pollutant	Control Efficiency		
		Total Enclosure	Hood - Certified	Hood – Not Certified
HEPA Filter or ULPA Filter – a high efficiency wall or panel filter designed for collection of sub-micron particles	PM, PM ₁₀	99.98%	80%	60%
Charged Scrubber – electric power is used to precharge particulate matter in the gas stream as a means of increasing the scrubber's collection efficiency for fine particles.	PM PM ₁₀	94% 84%	76% 68%	57% 51%
Condensation Scrubber – a device in which steam is injected into a wet scrubber to create supersaturated conditions and promote condensation of water on fine particulate matter in the gas stream.	PM PM ₁₀	94% 84%	76% 68%	57% 51%

Section 2 – Equipment Designed for VOC Control
(includes efficiencies for pollutants where there is a co-benefit of control)

Control Equipment Description	Pollutant	Control Efficiency		
		Total Enclosure	Hood - Certified	Hood – Not Certified
VOC Control Category				
Catalytic Afterburners (catalytic oxidation) – a device used to reduce VOCs to the products of combustion through catalytic (use of a catalyst) oxidation in a combustion chamber.	VOC	94%	76%	57%
	PM	62%	50%	37%
	PM ₁₀	62%	50%	38%
	CO	94%	76%	57%
Thermal Afterburners (thermal oxidation) – a device used to reduce VOCs to the products of combustion through thermal (high temperature) oxidation in a combustion chamber.	VOC	97%	78%	58%
	PM, PM ₁₀	62%	50%	37%
	CO	97%	78%	58%
Flaring or Direct Combustor - a device in which air, combustible organic waste gases, and supplementary fuel (if needed) react in the flame zone (e.g., at the flare tip) to destroy the VOCs	VOC	98%	79%	59%
	PM, PM ₁₀	61%	50%	37%
	CO	98%	79%	59%

Table B

Pollution Control Equipment Type	Monitoring Parameters	Recordkeeping Requirement
Centrifugal Collector (Cyclone)	Pressure drop	Record pressure drop every 24 hours if in operation.
Electrostatic Precipitator	Voltage, Secondary current, and, if used, conditioning agent flow rate	Continuous readout of voltage, and secondary current. If used, daily record of conditioning agent flow rate.
Fabric Filter (Baghouse) - high or medium temperature (≥ 180 °F)	Pressure drop	Record pressure drop every 24 hours if in operation.
Fabric Filter (Baghouse) – low temperature (< 180 °F)	Pressure drop or visible emission observations from filter outlet during an entire cleaning cycle (unless one or the other is specified by the MPCA)	Record pressure drop every 24 hours if in operation, or record whether visible emissions are observed and the time period of observation (every 24 hours if in operation), or record both if both parameters are required by the MPCA.
Spray Tower	Liquid flow rate and pressure drop	Record each parameter every 24 hours if in operation.
Venturi or Impingement Plate Scrubber	Pressure drop and liquid flow rate	Record each parameter every 24 hours if in operation.
Mechanically aided separator	Pressure drop	Record pressure drop every 24 hours if in operation.
HEPA & Other Wall Filters	Condition of the filters including, but not limited to, alignment; saturation; and tears and holes	Record of filter(s) condition every 24 hours if in operation.
Wet Cyclone Separator	Pressure drop; and water pressure	Record each parameter every 24 hours if in operation.
Charged Scrubber	Pressure drop and liquid flow rate	Record each parameter every 24 hours if in operation.
Condensation scrubber	Pressure drop and either steam supply rate or blowdown rate	Record each parameter every 24 hours if in operation.
Thermal afterburner	Combustion temperature or inlet and outlet temperatures	Record temperatures at least once every 15 minutes.
Catalytic afterburner	Inlet and outlet temperatures; and catalyst bed reactivity as per manufacturer's specifications	Record temperatures or manual readings at least once every 15 minutes; and results of catalyst bed reactivity.
Flaring	Temperature indicating presence of a flame	Record temperatures at least once every 15 minutes.