Calculating 12-month rolling sums

Your air permit may require you to track a "12-month rolling sum." This fact sheet explains the 12-month rolling sum and how to calculate it.

Understanding rolling sums

The 12-month rolling sum is the total amount from the past 12 months. As the 12-month period "rolls" forward each month, the amount from the latest month is added and the one-year-old amount is subtracted. The result is a 12-month sum that has rolled forward to the new month. Below as an example demonstrated with visual and mathematical.

In the example, the business began operations in January 2023. The monthly emissions are totaled each month until the twelfth month of operations — December 2023. The 12-month sum of emissions for December 2023 is 34 tons. To calculate the 12-month rolling sum for January 2024, add the four tons emitted in January 2024 and subtract the two tons emitted a year ago in January 2023. Continue to do this each month and check that the total is below permit limits.

Tons of volatile organic compounds (VOC) emitted by month

	2023												**2024**		
Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Tons	2	4	3	2	4	1	3	2	4	2	4	3	4	3	1

12-month rolling total is January to December = **34 tons VOC**

12-month rolling total is February to January = **36 tons VOC**

12-month rolling total is March to February = **35 tons VOC**

12-month rolling total is March to February = **33 tons VOC**

For the 12-month period	Example calculation	
	December 2023 12-month rolling sum =	**34 tons VOC**
February 2023 to January 2024	+ January 2024 monthly total	+ 4 tons VOC
	- January 20223 monthly total	- 2 tons VOC
	January 2024 12-month rolling sum =	**36 tons VOC**
March 2023 to February 2024	+ February 2024 monthly total	+ 3 tons VOC
	- February 2023 monthly total	- 4 tons VOC
	February 2024 12-month rolling sum =	**35 tons VOC**
April 2023 to March 2024	+ March 2024 monthly total	+ 1 tons VOC
	- March 2023 monthly total	- 3 tons VOC
	March 2024 12-month rolling sum =	**33 tons VOC**

Requirements

Each month your records must include the 12-month rolling sum, the date the calculations were made, and the calculations themselves. Read your permit to find out when you need to complete your monthly calculations –

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usually by the middle or end of the following month. Option C and Option D registration permit holders are required to calculate the 12-month rolling sum by the last day of the following month. Keep records on file for five years. Consider compiling all the information in a tracking log.

Information to gather for calculations

Your permit will tell you if you need to use the 12-month rolling sum for tracking emissions, production limits, or operational limits. Track what is specified in your permit or what you designated in your permit application.

Pollutants, materials, and emission sources

If your permit requires you to track the 12-month rolling sum for air emissions, you will need to know which pollutants are emitted, the materials and processes that create those emissions, the amounts used each month, and the maximum pollutant content of each material. The pollutant content is listed in the material safety data sheet (MSDS). If an MSDS is not available, you may use a signed statement from the supplier stating the maximum pollutant content.

You may have to complete 12-month rolling sums for multiple pollutants, and you may have multiple sources for each pollutant. For example, VOC emissions from a painting line and from the solvents used for cleanup should be added together and recorded as a single monthly total for VOCs. At the same shop, particulate matter (PM) emissions from milling and painting lines should be added together and recorded as a single monthly total for PM. Remember to include sources of non-process emission sources, such as boilers.

Insignificant activities

Do not include emissions from insignificant activities. Lists of insignificant activities can be found in the following rules: Minn. R. 7007.1300 and Minn. R. 7008.

Control equipment

If you are complying with the control equipment rule, account for the allowable control efficiencies for your equipment, such as scrubbers or filters.

- Common control equipment is listed in the Minnesota Pollution Control Agency's (MPCA) air quality fact sheet aq4-07, "Facts about control equipment performance standards" found at https://www.pca.state.mn.us/sites/default/files/aq4-07.pdf.
- For more information on complying with the control equipment rule (Minn. R. 7011.0060 – 7011.0080), the types of air pollution control equipment, and options for businesses with air permits see the online training at https://www.pca.state.mn.us/business-with-us/general-environmental-requirements.

Benefits

Calculating your 12-month rolling sum each month will keep you aware of how close you are to your permit limits. This will greatly reduce the risk of being out of compliance, and you can plan ahead for months with heavy production schedules to ensure you remain below your limits. If you exceed your permit limits, you will be in violation of your permit and will need to apply for a larger permit that is likely to be more complicated and more expensive. You may also receive an enforcement action, including monetary penalties.

Where to get help

The MPCA Small Business Environmental Assistance Program (SBEAP) offers technical assistance to independently owned businesses with fewer than 100 employees. Call 651-282-6143 or 800-657-3938, email smallbizhelp.pca@state.mn.us, or go to the SBEAP's website at http://www.pca.state.mn.us/sbeap. The website has spreadsheet-based calculators to help you calculate emissions at https://www.pca.state.mn.us/business-with-us/air-emissions-calculators.

If you are approaching your emissions limits, explore opportunities to reduce your emissions. The Minnesota Technical Assistance Program (MnTAP) can help you. Call MnTAP at 612-624-1300 or 800-247-0015, or go to their website at http://www.mntap.umn.edu.