

# AIR MANAGEMENT PROGRAM FACT SHEET



## Particulate Matter Emissions and Pollution Requirements

April 2023

### Particulate matter emissions

The Wisconsin Department of Natural Resources (DNR) regulates sources of dust, smoke and fumes as particulate matter (PM) emissions under chapter NR 415, Wis. Adm. Code. Particulates are also regulated under water and waste rules. This summary explains a facility's responsibilities for minimizing particulate matter emissions into the air as well as discharging into water and as a waste product.

### Who is affected by this rule?

Any business creating enough dust, smoke, or fumes to be a noticeable source of air pollution must control those emissions. The following are examples of activities that create particulate matter (PM) emissions:

- large trucks transporting materials along unpaved roads
- grinding, sanding, painting, welding, sandblasting or other abrasive blasting activities, indoors or out
- piles of materials stored on site—like sand, gravel, coal, dirt, etc.
- unpaved parking lots
- dry materials used in an industrial process that are not collected any way—by baghouse, cyclone, wet scrubber, etc.

This is just a short list of the possible activities that create particulate matter emissions. Contact the Small Business Environmental Assistance Program (SBEAP) for questions about whether the facility has a PM emissions source.

### What are the requirements for controlling PM emissions?

Any business that creates PM emissions must do as much as possible to control those emissions and keep them from escaping into the environment. The following are a few suggestions based on the type of activity. In addition, there are some best management practices recommended by industry experts.

- For **roads or storage piles**, this may mean using water or chemicals to prevent dust plumes. Paving roads will reduce dust. Storage piles can be kept within a three-sided building to minimize emissions.
- When **grinding, sanding, painting or welding** outside, do so on low wind days and make sure residential areas are upwind of the activity. If indoors, use available methods to capture emissions from the activities.
- Mechanical collection devices (i.e., cyclones and dry filters) are effective, low-cost ways to control particulate matter emissions from **indoor processes**. Unfortunately, higher collection efficiency in any type of equipment can often mean higher costs. For example, a baghouse can be a very high efficiency control option but is slightly more expensive than the others.

## **Best Management Practices (BMP) to control outside sources of PM**

In 1998, in coordination with the Transportation Builders Association and Aggregate Producers Association, the DNR's Air Management Program developed ideal recommended practices for reducing PM from nonmetallic mining operations. These can be applied to similar material handling operations to reduce PM.

Depending on the moisture in the material, such as wet sand versus an operation drying sand, these practices may or may not be necessary to reduce the PM sufficiently to avoid being considered a nuisance to neighbors. Note: “**fugitive dust**” is a term used to describe any particulate matter released through any source other than a stack or duct of some kind.

### **Hauling**

- On-site vehicle speeds posted at 15 mph
- Paved travelled areas swept and/or watered as needed
- Fugitive dust emissions from travelled areas controlled on an as-needed basis by applying water, asphalt millings, calcium chloride, or other acceptable control methods

### **Material handling equipment (e.g., conveyors, loaders, blasting areas, etc.)**

- Use of spray bars
- Use of shrouds or other enclosures

### **Stockpiles**

- Water when dust emissions are seen or when dust emissions are felt by observer near stockpile
- Locate stockpiles below grade

## **PM sources and permits**

1. Does the facility have or is the facility considering adding operations that will generate dust, smoke or fumes of any kind?
2. Does the facility need to expand or move an operation that generates PM emissions?

If the answer is “Yes” to either question, evaluate the worst case (maximum theoretical) and normal (actual) emissions expected from these types of operations to determine if the facility is required to apply for one or more air pollution permits from the DNR. This can be a complex process. There are multiple ways to be exempt from needing a permit. If a facility is not exempt, there are multiple options for permits. In the event a facility is exempt from permits, the requirements to control PM still apply at all times.

### **Construction vs. operation permits**

Any new activity, whether at a new or existing facility, needs to be reviewed under the DNR's construction permit requirements. Some new activities may be exempt from construction permits. Existing facilities should also have an operation permit if they do not meet certain exemptions. The DNR's [Permit Primer](#) (to access, click on “Air” in the Additional Resources box on the right side of the page) is a great tool to walk through the exemptions and permit options that may apply to a new or existing operation.

## **How does a facility apply for a construction permit?**

If the facility is not exempt from the construction permit requirements, the next step is to review the permit options. The facility must have the final permit issued by the DNR before beginning construction. There are currently three types of permits available to sources undergoing construction or expansion:

- **Registration operation permits** – ROPs are for facilities that can limit emissions to less than 25% or 50% of the major source thresholds. The ROP allows the facility to construct without a construction permit as long as eligibility thresholds are met.
- **General operation permits** – GOPs are only available for rock crushing or asphalt plants. Once issued to a site it allows construction without a permit if the permit criteria are met.
- **Source-specific construction permits** - These permits are written specific to a facility’s operations and can be issued as major, synthetic minor, or minor permits.

For more information on these different types of permits, visit the [Air Permit Options](#) webpage.

Application checklists and all appropriate forms are found on the [Air Permit and Compliance Forms](#) webpage. For questions on how to complete the forms, contact staff to arrange a pre-application meeting. Once the application is completed, submit copies according to the instructions on the Forms page.

## What are the permit review steps?

For ROPs and GOPs, the application process is very simple.

Registration permits have a simplified process; the applications have just ten questions. Review the application guide and checklist provided on each of the ROP tabs on the [Registration Permit Options](#) webpage. The application guides explain what each question means and provides tips on things like calculating emissions.

General permits also have simple application forms, now available online. For more information, go to the [Air Permit Options](#) webpage and select the “General” tab.

Applying for a source-specific construction permit is a more extensive process. After a complete application has been submitted, DNR staff go through the review process, which can take from 20 to 60 days or more depending on the size of the project and the current queue of applications. When the review is completed, the DNR then prepares a preliminary decision to approve or deny the application and publishes a notice in the Wisconsin State Journal and posts it on the [Public Involvement](#) webpage. The notice gives the public 30 days to comment on the proposed project. This is also the facility’s chance to review the permit and provide the DNR with comments on elements in the permit.

If the public shows significant interest in the proposed project or specifically requests one, the DNR will schedule a public hearing within 60 days after the end of the public comment period. Then the DNR will issue or deny the construction permit within 60 days after the close of the public hearing. Note that this means a public hearing could add up to 120 days to the application process. If there is minimal interest during public comment, the DNR can issue the permit soon after the 30 days are up.

## What if only an operation permit is needed?

If the facility or project is exempt from needing a construction permit, an operation permit may still be required. The exemptions for the two permit types are similar but can differ for some operations enough that only one of the two is required.

The application process is very similar for construction and operation permits. Use the same forms but be sure to identify the correct permit type on form 4530-100. The timelines for an operation permit will be different, but continued operation of the facility is not hampered by the need to wait for the operation permit to be issued. Once a complete operation permit application is submitted, the facility is shielded and allowed to operate so long as any operational conditions laid out in the application are met.

An operation permit application will be reviewed, a preliminary determination issued for public comment, a 30-day public comment period with potential for public hearing will be held if appropriate, and then the final permit will be issued. Major source permits will also be reviewed by EPA Region 5 office in Chicago, IL.

## What happens after a final permit is issued?

Do not just file the final permit away. The permit is more than just a receipt that allows construction and/or operation. The final permit outlines all the conditions the facility is required to meet during the term of the permit. Pay attention to all the little details; deadlines, records or logs required, etc. Also ensure there is a system in place that allows the facility to demonstrate to the DNR, or anyone else inquiring, that each condition in the permit is being met at all times. It is important to keep track of any deadlines in the permit. If unable to meet a deadline, talk with the facility-assigned DNR compliance engineer about extensions.

### Demonstrate compliance at all times

Make sure to set up a process that allows the facility to demonstrate compliance to anyone at any time.

- Develop tracking sheets to be used on the activity or operation to collect compliance records.
- Setup a compliance calendar, including reminders of regular inspections, reports, and other deadlines.
- Setup a folder for all compliance records. Collect all one-time records (e.g., physical stack parameters) and certify compliance. Sign and date all records to confirm that staff verified the information.
- Prepare required plans, whether in the permit or the rules that apply at all times. This includes Fugitive Dust Control plan, Malfunction Prevention and Abatement plan, and Standard Operating Procedures.

## Air monitoring and PM limits for sand mining operations

For industrial sand mining operations with production of at least 2,000 tons per month, on a 12-month rolling average, the following list includes specific PM requirements that apply. These requirements go beyond, or should be applied in addition to, the BMPs recommended previously.

- Use asphalt, water or chemicals on unpaved roads or areas used by haul trucks. Avoid creating additional pollution with that use.
- Post speed limits of 10 MPH for all areas used by haul trucks inside the property line.
- Use covers, treatment, or methods to secure materials in haul trucks prior to leaving the property.
- Use wet drilling or other means of control approved by the DNR.
- Use blast hole stemming materials approved by DNR or the Department of Safety & Professional Services – [Mine Safety program](#).
- Use methods proposed by the owner/operator and DNR accepted in permit or fugitive dust control plan.

In addition to dust control measures above, control fugitive dust from road or other areas travelled by haul trucks and from drilling so that visible emissions are not greater than 20% opacity at the source. Opacity is a measure of how thick the dust is, or how much it obscures objects from view.

If the sand mining operation is above 2,000 tons per month, the facility may also be required to set up, operate and report the results from a PM ambient air monitoring system. A facility may apply for a variance from this requirement from the DNR, but the request must demonstrate the following:

- The public will not be exposed to “significant levels” of PM.
- The source’s emissions units and processes are controlled to a level that meets all the requirements.

Even if approved, the DNR will review these variances every two years to determine if still allowable. Detailed requirements for a monitoring plan are laid out in [s. NR 415.075, Wis. Adm. Code](#).

## Requirements beyond air pollution

There are other requirements from the DNR in both the waste and water programs that impact PM emission sources. Evaluate all applicable environmental requirements before starting an operation.

### Water discharge and contamination:

There are regulations that include permit requirements and limitations related to:

- [Discharge of process wastewater](#)
- [Storm water runoff](#)
- [Waterways and wetlands](#)

There is a combined general permit for process wastewater and storm water. Effective Jan. 1, 2023, the revised general permit and its fact sheet are available:

- [\(Nonmetallic\) Mining and/or Processing General Permit, WPDES General Permit No. WI-0046515-07-0](#)
- [Fact sheet](#)

A permit fee is authorized under ch. NR 216, Wis. Adm. Code, for storm water runoff from non-metallic mining operations. If the mine is deemed to be internally drained, the annual permit fees may not be required.

If the site is in or near a waterway or wetland, a permit is needed to dredge, create a pond or grade in excess of 10,000 feet. Go to [the waterway mining page](#) for more information.

All water permits are submitted through the [ePermits portal](#). Before applying for a permit, the facility contact must obtain a Wisconsin User ID. Go to DNR's [Switchboard](#) to gain access.

### Reclamation requirements and regulatory authorities

County and local zoning bodies are responsible for all mine siting requirements and regulation, as well as all mine operations other than reclamation activities. Under [ch. NR 135](#), Wis. Adm. Code, the DNR [Nonmetallic Mining Program](#) is responsible for ensuring uniform statewide implementation of reclamation requirements. The DNR oversees county and local reclamation programs, known as regulatory authorities (RAs), and provides technical assistance.

To contact local zoning authorities, review the [Wisconsin County Code Administrators](#) (WCCA) directory. For more details on Reclamation Permits, Reclamation Plans, and Fees, visit the DNR's [Information for Operators of Nonmetallic Mines](#) webpage.

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