



Particulate Matter Emission

Wisconsin's 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 will explain your responsibilities for minimizing particulate matter emissions in air as well as discharging to 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 would 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 industrial process 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) if you have any questions about whether you have 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, we have provided 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.
- If you **grind, sand, paint or weld** 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 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 your 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. Please 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. Do you have or are you considering adding operations that will generate dust, smoke or fumes of any kind?
2. Do you need to expand or move an operation that generates PM emissions?

If you can answer “Yes” to either question, you will need to evaluate the worst case (maximum theoretical) and normal (actual) emissions expected from these types of operations to determine if you need 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 and if you are not exempt, there are then multiple options for permits. In the event you are exempt from permits, the requirements to control PM still apply at all times.

Construction vs. Operation Permits

Any new activity, whether at a new facility or one that has been around for years, needs to be reviewed under DNR’s construction permit requirements. Some new activities may be exempt from construction permits. Existing facilities should also have an operation permit if they don’t meet certain exemptions. The DNR’s Permit Primer is a great tool to walk you through the exemptions and permit options that may apply to your new or existing operation.

Go to: <http://dnr.wi.gov/topic/SmallBusiness/Primer/> and click on “Air” in the navigation bar.

How do I apply for a construction permit?

If you are not exempt from the construction permit requirements, you then need to review the permit options. You must always have the final permit issued by DNR before beginning construction. There are currently three types of permits available to sources undergoing construction or expansion:

- **Registration Operation Permits** – These permits are for those who can limit emissions to less than 25% or 50% of the major source thresholds. And they allow you to construct without a construction permit as long as eligibility thresholds are met.
- **General Operation Permits** - This is only available for certain industries. Once issued to a site it allows construction without a permit if you meet the permit criteria.
- **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, review information on:

<http://dnr.wi.gov/topic/AirPermits/>.

You may contact a DNR staff member to get the permit application materials and instructions, or you can go online. If you have questions about how to complete the forms you can contact staff to arrange a pre-application meeting. Once you have completed the application, two copies should be submitted to the nearest DNR office with Air Program staff.

What are the permit review steps?

For Registration and General Permits, the application process is very simple.

Registration Permits have a simplified process and can be applied for online by answering fewer than 15 questions. To apply, use the Online Application System through DNR's Switchboard (<http://dnr.wi.gov/topic/AirPermits/Apply.html>). A few of the questions require some calculations or collecting information, and the program will time-out if stopped in the middle. It may save time to complete the appropriate Registration Permit Guide prior to starting the online application:

- For Type A ROP <http://dnr.wi.gov/files/PDF/pubs/am/AM539.pdf>
- For Type B ROP <http://dnr.wi.gov/files/PDF/pubs/am/AM546.pdf>

Once the application is completed, print out the final summary page, sign the form and mail to DNR. This process may change once DNR can accept electronic signatures.

General Permits also have simple application forms, but they are not yet available online. For more information, go to: <http://dnr.wi.gov/topic/AirPermits/Options.html> 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 goes 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 a local paper. The notice gives the public 30 days from the date the paper was published to comment on the proposed project. **This is also the facility's chance to review the permit and provide 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 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, DNR can issue the permit soon after the 30 days are up.

After completing construction and any demonstration of compliance required by the permit, an operation permit will be issued to the facility.

What if I only need an operation permit?

If you are exempt from needing a construction permit, you may still need an operation permit. The exemptions for the two permit types are similar, 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 the first page: form 4530-100. The timelines for an operation permit will be different, but continued operation of your facility is not hampered by the need to wait for the operation permit to be issued. Once you have submitted a complete application, you are shielded and allowed to operate so long as you meet any operational conditions laid out in the application.

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 to be held if appropriate, and then the final permit will be issued. Major source permits will also be proposed to and reviewed by USEPA Region 5 office in Chicago, IL.

Once you have a final permit, what's next?

DO NOT just file this away as your ticket to construct and/or operate. The final permit outlines all the conditions you will be required to meet during the term of the permit. Pay attention to all the little details; deadlines, records or logs required, etc. Also make sure you have a system in place that will allow you to show DNR, or anyone else inquiring, that you are meeting each condition in the permit. It is important to keep track of any deadlines in any permit. If you cannot meet a deadline, talk with your DNR compliance inspectors about extensions.

Demonstrate Compliance at All Times

Make sure you set up a process that allows you 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 you verified the information.
- Prepare required plans, whether in the permit or the rules that apply all times. This includes Fugitive Dust Control or Malfunction Prevention and Abatement plans 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 are 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. Be sure to 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 Department of Safety & Professional Services Safety & Buildings 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, you must 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.

Requirements beyond air pollution

There are other requirements from DNR in both the waste and water programs. Be sure you evaluate all your environmental requirements before starting an operation.

Water Discharge and Contamination:

There are regulations that include permit requirements and limitations, both on:

- The discharge of process wastewater (<http://dnr.wi.gov/topic/wastewater/>) and
- Storm water runoff (<http://dnr.wi.gov/topic/stormwater/industrial/>).

There is a combined general permit for these requirements. 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.

Air Monitoring

If your sand mining operation is above 2,000 tons per month, you may be required to set up, operate and report the results from a PM ambient air monitoring system. You may apply for a variance from this requirement from the DNR, but you must demonstrate to DNR 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 of the Wisconsin Administrative Code: https://docs.legis.wisconsin.gov/code/admin_code/nr/400/415/075.

Go to <http://dnr.wi.gov/topic/wastewater/GeneralPermits.html> for more information about the general permit.

Go to the mining page http://dnr.wi.gov/topic/Waterways/construction/nonmetallic_mining.html for more information. If the site is in or near a waterway or wetland, you need a permit to dredge, create a pond or grade in excess of 10,000 feet.

Waste Management for Mining

County and local zoning bodies are responsible for all mine siting requirements and regulation. County and local governments are also responsible for regulating mine operations other than reclamation activities.

Under ch. NR 135, Wis. Adm. Code (http://docs.legis.wisconsin.gov/code/admin_code/nr/100/135.pdf), DNR Nonmetallic Mining Program is responsible for ensuring uniform statewide implementation of nonmetallic mining reclamation requirements. It does this by overseeing county and local reclamation programs, known as regulatory authorities (RAs). The DNR provides technical assistance to these programs.

For easy access to those links, go to: http://dnr.wi.gov/topic/Waterways/construction/nonmetallic_mining.html.

County Regulations and Reclamation Requirements

Your county may also have zoning and reclamation requirements. Note that these are separate and distinct from the DNR requirements. Satisfying the County does not necessarily take care of your pollutant discharge and stream bank protection obligations with the State.

For the most part, operators of nonmetallic mining sites in Wisconsin deal directly with the local authorities on questions of zoning, operational requirements and the development and execution of reclamation plans. There are statewide guidelines regarding reclamation plans, and the DNR is available for technical assistance on reclamation issues.

To contact local reclamation program authorities directly, see a list of county and local regulatory authorities (RAs). To contact local zoning authorities, see: Wisconsin County Code Administrators (WCCA) (http://www.wccadm.com/directory_of_wisconsin_county_co.htm)

For information on registering land containing a nonmetallic mineral deposit, see the DNR's Frequently Asked Questions on this topic. <http://dnr.wi.gov/topic/mines/deposit.html>.

For direct access to these links and more details on Reclamation Permits, Reclamation Plans, and Fees, go to DNR's web page: <http://dnr.wi.gov/topic/mines/operators.html>.

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Publication AM-406 2017