

## **Public Comments & DNR Response 2015 Approach to Dispersion Modeling for Permits**

The guidance titled, “2015 Approach to Dispersion Modeling for Permits” is intended for use by DNR permit writers and compliance staff, as well as environmental consultants and other individuals responsible for complying with applicable air pollution regulations. The feedback provided in the public comment period included comments on the proposed guidance, one set of comments from a corporation and another set from an industrial trade group. The comments are summarized below followed by the associated response. All comments received are attached.

The comment from Kohler Company requests language changes in certain sections so that all sections of the document are consistent.

**Comment 1:**

*Under the Attainment Area Sources section, the wording under the Minor Construction Permit, Baseline County is inconsistent with the wording under the other permit types. The wording should be corrected to be consistent with the other permit types.*

The majority of comments from Wisconsin Paper Council reference two other proposed WDNR guidance documents, “Air Dispersion Modeling Guidelines” and “Guidance for Including PM2.5 in Air Pollution Control Permit Applications.” This response is specific to the comments regarding “2015 Approach to Dispersion Modeling” which requests clarification of the language.

**Comment 2:**

*Some of the draft guidance enhancements are limited to permitting of minor sources and minor modifications. As a consequence, care must be taken to implement these policies in a manner that is equitable to larger PSD sources and consistent with the Congressional directive that PSD permitting programs ensure continued economic growth.*

As the two comments are similar, relating to consistency across sections of the guidance, the response pertains to both.

**Response:**

*WDNR will clarify the language in the Approach to Dispersion Modeling for Permits making sure that all sections are consistent.*

In addition, the document will be renamed, “2016 Approach to Dispersion Modeling for Permits”.

## Roth, John A - DNR

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**From:** Eckert Eric <Eric.Eckert@kohler.com>  
**Sent:** Monday, August 24, 2015 4:27 PM  
**To:** Roth, John A - DNR  
**Cc:** Eckert Eric  
**Subject:** DRAFT 2015 Approach to Dispersion Modeling for Permits (Kohler Co. Comments)

John,

This e-mail contains Kohler Co.'s comments on the document "Draft 2015 Approach to Dispersion Modeling for Permits" that the WDNR released for public comment.

Under the Attainment Area Sources section, the wording under the Minor Construction Permit, Baseline County is inconsistent with the wording under the other permit types. The wording should be corrected to be consistent with the other permit types. I have highlighted 3 examples of how the wording is inconsistent.

**Minor Construction Permit, Baseline County (including ATF, Portable Source Relocation, and Requested Exemption modeling)**

For PM10, NOx, SO2, CO, and Pb, the project may model below applicable SIL; *otherwise all increment sources plus single facility NAAQS should be modeled for all pollutants that have an ambient air quality standard promulgated in the Wisconsin Administrative Code*. Increment will not be considered until baselines are set for the pollutant

**Minor Construction Permit, Non-baseline County (including ATF, Portable Source Relocation, and Requested Exemption)**

For PM10, NOx, SO2, CO, and Pb, project may model below applicable SIL, *otherwise single facility NAAQS should be modeled*. If the SIL is not met in an analysis for a pollutant, the facility will have to model against the NAAQS.

**Part 70 or Non-Part 70 Operation Initial Permit Issuance**

Increment consumption and *full facility NAAQS modeling should be performed for PM10, NOx, SO2, CO, and Pb, where applicable*. The Department has concluded that direct, primary PM2.5 emissions will not cause or exacerbate a violation of the PM2.5 NAAQS {link}, and therefore no modeling is performed for PM2.5.

If there are any questions about my comments, please give me a call.

**Eric Eckert**

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**August 27, 2015**

Ms. Kristin Hart  
Mr. John Roth  
Wisconsin Department of Natural Resources  
101 South Webster Street  
Madison, WI 53703

Re: Comments on Draft Guidance Documents Concerning PM<sub>2.5</sub> and Air Dispersion Modeling

Dear Ms. Hart:

The Wisconsin Paper Council (WPC) submits these comments on the following draft WDNR guidance documents:

- 2015 Approach to Dispersion Modeling for Permits
- Air Dispersion Modeling Guidelines
- Guidance for Including PM<sub>2.5</sub> in Air Pollution Control Permit Applications

In summary, WPC believes there is a critical need for these new policies/guidance documents and strongly supports DNR's finalization and immediate implementation.

### **Background of WPC**

The WPC advocates for and represents the state's pulp and papermaking industry. Wisconsin is the #1 papermaking state in the United States and its members provide family supporting jobs for over 31,000 employees throughout Wisconsin. Papermakers are dedicated to providing well-paying jobs as well as being environmentally responsible community partners. Members of WPC continue to be key factors in our state's economic well-being.

### **General Comment**

WDNR may approve an air permit application after finding, among other things, that "[t]he source will not cause or exacerbate a violation of any ambient air quality standard or ambient air increment under s. 285.21(1) or (2)." Although not a requirement, air dispersion modeling has been the predominant mechanism for demonstrating compliance with this criterion. However, air modeling has its limitations and presents challenges.

For example, air modeling currently requires using very conservative emission rates, meteorological data and receptor assumptions that are developed independent of one another. This results in the modeling assessment analyzing a very conservative and highly improbable hypothetical situation.

This level of conservatism is becoming increasingly difficult to manage and inappropriate for regulatory decision making as ambient air standards are being lowered by EPA.

More stringent ambient air standards have also highlighted the policy shortcomings and technical limitations of air modeling techniques used for performing air quality assessments on a permit-by-permit basis. Over the last 30 years, stationary sources have greatly reduced their emissions resulting in a greater proportion of ambient pollution concentrations being attributable to area and mobile sources. Pollution control strategies imposed on individual stationary sources have little, if any, demonstrable effect on lowering overall pollution concentrations, particularly PM<sub>2.5</sub>. As a result, broader pollution control strategies are necessary to lower these concentrations while preserving equity and shared responsibility amongst all emission sectors (area, mobile, minor stationary and major stationary) in achieving air quality standards in Wisconsin.

WPC is aware of independent studies of PM<sub>2.5</sub> sources from the forest products sector and other industry<sup>1</sup> sectors that support WDNR's proposed guidance by confirming WDNR's principal findings that mechanical processes and material handling operations are negligible sources of fine particulate matter and have historically been significantly overestimated. In addition to WDNR's own assessment of emissions source profiles, emissions trends, ambient measurements of PM<sub>10</sub> and PM<sub>2.5</sub>, and the NCASI study on EPA performance test methods that WDNR cites in the draft Technical Support Document, more recent NCASI studies have reached the same conclusion: "the silt fractions for chip and bark samples collected in this study would indicate that PM<sub>2.5</sub> emissions from these solids handling operations would be negligible."<sup>2</sup> WPC understands that NCASI intends to provide WDNR with this report to substantiate these conclusions as part of its review of the draft guidance documents.

WPC thanks WDNR for taking the initiative to address these issues. The policies set forth in the draft guidance documents have the potential to mitigate these shortcomings and improve the air quality assessment process associated with issuing air permits in Wisconsin, which, in turn, will help Wisconsin remain competitive with other states by eliminating or mitigating certain permitting requirements that may be preventing prompt permitting for worthwhile and environmentally benign economic projects.

### **General Comment on Equity**

WPC member companies generally operate large stationary sources, many of which are subject to the PSD program. Some of the draft guidance enhancements are limited to permitting of minor sources and minor modifications (*i.e.*, permits that do not trigger PSD obligations). As a consequence, care must be taken to implement these policies in a manner that is equitable to larger PSD sources and consistent with the Congressional directive that PSD permitting programs ensure continued economic growth. See, 42 U.S.C. § 7470(3).

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<sup>1</sup> Richards, J. and T. Brozell. Assessment of Community Exposure to Ambient Respirable Crystalline Silica near Frac Sand Processing Facilities. *Atmosphere* 2015, 6, 960-982.

<sup>2</sup> National Council for Air and Stream Improvement, Inc. Estimating the Potential for PM<sub>2.5</sub> Emissions from Wood and Bark Handling. Special Report No. 15-01, January 2015.

## **Draft “2015 Approach to Dispersion Modeling for Permits” Guidance**

- WDNR should clarify that when issuing or renewing operation permits (Part 70 and Non-Part 70 Sources), modeling will be limited to NAAQS that have been promulgated as a state rule in accordance with Wis. Stat. ch. 227.
- WDNR has concluded that no PM<sub>2.5</sub> modeling is required for minor construction permits because direct, primary PM<sub>2.5</sub> emissions do not cause or exacerbate exceedances of the applicable NAAQS. WDNR should clarify that this conclusion also applies to minor modifications or sources that would insignificantly increase precursors to the secondary formation of PM<sub>2.5</sub>.
- WDNR should clarify that no PM<sub>2.5</sub> modeling is required if a project which itself has significant PM<sub>2.5</sub>, NO<sub>2</sub>, or SO<sub>2</sub> emissions, nonetheless nets out of PSD review. In these circumstances, the net emissions increases are of a similar magnitude as a minor construction permit project and therefore should be treated in a similar fashion.

## **Draft “Air Dispersion Modeling Guidelines” Guidelines**

- Pages 8, 23 and 24 suggest that modeling should capture “all possible” emission load scenarios. Yet, this is an infinite set of possibilities. WDNR should consider limiting this to modeling only the worst case emission load scenario under all permitted alternative operating scenarios.
- Pages 8, 9 and 24 – WDNR suggests that fugitive emissions must now be included in modeling analyses if the emissions are either “considered in the permit” or “affected by the permit.” Although unclear, this appears to be a significant departure from current permitting and modeling policy which provides WDNR with discretion on when and how to model fugitive emissions. Discretion is necessary given the uncertainty surrounding the emission rates associated with most fugitive sources, as well as the inherent inaccuracies with modeling such emissions.
- Regardless of WDNR’s general policy with respect to fugitive emissions, WDNR should exempt from modeling fugitive emissions associated with wood handling and processing operations (e.g., chipping debarking, material handling). The aforementioned NCASI Special Report demonstrates that the silt content of wood/bark/bark residues (a reliable surrogate for fugitive PM<sub>2.5</sub> emissions) are three orders of magnitude below those for aggregates and other materials.
- Pages 9 and 24 – The guidance suggest that a modeling analysis must include structures that are over 4’ in height for purposes of building downwash considerations. This could include a large garbage dumpster and other ubiquitous structures. WPC suggest that the guidance increase this height to something less onerous and/or define “structure” so as to clarify that it only applies to higher, permanent buildings.

Pages 10 and 25 – The guidance suggest that an onsite parking lot (inside a facility’s fence line) is considered ambient air. Onsite parking lots are not generally available to the public and therefore should not be considered ambient air for purposes of modeling compliance with AAQS. Moreover, the guidance should clarify that air quality assessments need only focus on locations where the public might reasonably be exposed to a pollutant for time periods that are consistent with the ambient standard for which the analysis is performed. In this regard, ambient air standards are based upon assumed long-term exposure periods at constant air pollution concentrations. Predicted short term exposure to ambient concentrations of a pollutant above a standard is not necessarily harmful. This approach is memorialized in NR 406.09 which states that, “The air quality impact of a proposed stationary source will be determined at such locations where members of the public might reasonably be exposed for time periods consistent with the ambient air quality standards for the pollutants for which analysis is carried out.” Many of the areas identified by the guidance as “ambient air” fall outside of the areas defined by NR 406.09 for demonstrating compliance with AAQS. The guidance should be amended to define ambient air in a manner that is consistent with this directive. As such, modeling analyses should exclude receptor locations that fall on roadways, rail lines, easements which limit access, areas between fence and private property lines, cemeteries, waterways, and other generally inaccessible or uninhabited areas. Many other state modeling guidelines (e.g., Texas and South Carolina) have implemented this approach simply by relying on a facility’s *property* line, rather than *fence* line, to determine the ambient air boundary for non-PSD modeling analyses. WPC encourages WDNR to make determinations about ambient air boundaries that reflect locations “to which the general public has *access*,” interpreted as *legal* access, such that applicants are not obligated to presume illegal activity or access (e.g., forced entry, trespassing, or loitering) to reasonably marked private property.

Pages 11 and 13 – The guidance states that where credit is taken for permanent shutdown emissions, it should be shown that credited emissions from the shutdown would not have solely caused a modeled exceedance. This is unclear and should be clarified as only applying to a SIL analysis. The language inappropriately suggests that if a stationary source would have modeled above an AAQS and is then shut down, the source cannot take credit or otherwise recognize the emission reductions in a modeling analysis. The guidance should clarify that a regulated source should be allowed to shut down older, high-emitting emission units and use those reductions for modeling compliance, without first proving that the source would not have modeled above any AAQS.

Page 28 - The guidance should clarify that modeling above the SIL does not, in turn, require modeling for the 1-hour SO<sub>2</sub>, 1-hour NO<sub>2</sub>, or PM<sub>2.5</sub> AAQS.

Page 33 – The guidance states that applicants for an operation permit do not need to submit modeling results. However, any modeling that is submitted by the applicant must be consistent with the guidance and Appendix W. This statement seems to conflict with the other draft guidance. Operation permit application should comply with the new state guidance documents and Appendix W to the extent they do not conflict. If there is a conflict with Appendix W, an operation permit applicant should follow the state guidance.

- WPC offers the same comments on the operation permit section of the guidance as is discussed above for construction permits (e.g., fugitives, downwash, ambient air, etc.).
- As mentioned, modeling has historically required using very conservative emission rates, meteorological data and receptor assumptions. This results in the assessment analyzing a very conservative and highly improbable, hypothetical situation. WDNR might consider providing options for using more realistic and less conservative assumptions in the dispersion modeling analysis. Assumptions could be developed based on statistical probabilities that consider the relative likelihood that all of the assumed conservative conditions would occur at the same time. Emission rates used in the model could be established based on anticipated frequency determined from historic emission data, such as CEMS. Under this approach, an air impact assessment could focus on determining whether proposed permit limitations protect an ambient air standard to a predetermined range of certainty and/or frequency. The assumptions and data used in the assessment could be established at levels that are consistent with that range. WDNR might also consider allowing the use of a robust statistical technique - such as EMVAP - to estimate an upper limit design value that provides an acceptable degree of confidence in the results, yet avoids the level of conservatism that exists in the current approach to modeling. This approach might also be extended to off-site emission sources that make up the ambient background assumptions.
- WPC is aware – and assumes WDNR is also aware – that EPA has recently proposed substantial revisions to the federal *Guideline on Air Quality Models* (40 CFR Part 51, Appendix W) and hosted the 11<sup>th</sup> Conference on Air Quality Models<sup>3</sup> to discuss changes to prevailing federal modeling guidelines. Several of these changes in the federal guidance (e.g., tiered modeling approaches for NO<sub>2</sub> modeling) would affect aspects of WDNR’s guidance. Recognizing that the federal modeling guidelines will not likely be finalized and effective for approximately one year (i.e., approximately July 2016), it is appropriate to proceed with necessary changes as proposed in the draft WDNR guidance at this time. We anticipate continuing to work closely with WDNR in 2016 to revise Wisconsin’s modeling guidelines, as appropriate, to incorporate relevant aspects of revised federal guidance. In the meantime, WPC encourages WDNR to exercise flexibility and discretion to approve and implement improved modeling techniques that can be shown to be applicable on a case-by-case basis.
- WDNR should consider allowing for the use of seasonal, if not monthly, monitor values as the background concentration used in an air quality assessment. At a minimum, memorialize the permit applicant’s ability to focus on the five-year average eighth highest reading for purposes of PM<sub>2.5</sub> analyses. EPA has already provided guidance indicating the appropriate application of seasonally variable background concentrations for PM<sub>2.5</sub> and seasonal/hour-of-day variable background concentrations for 1-hour SO<sub>2</sub> and NO<sub>2</sub>.
- WDNR should allow for the subtraction of the field train blank from PM<sub>2.5</sub> test results for all PM<sub>2.5</sub> emissions analyses as allowed by EPA guidance.<sup>4</sup>

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<sup>3</sup> Proposed guideline revisions, technical presentations, and public hearing transcripts are available at <http://www.epa.gov/ttn/scram/11thmodconf.htm>.

<sup>4</sup> EPA Memorandum, “Interim Guidance on the Treatment of Condensable Particulate Matter Test Results in the Prevention of Significant Deterioration and Nonattainment New Source Review Programs,” April 8, 2014. <http://www.epa.gov/ttn/emc/methods/psdnsrinterimcprmemo4814.pdf>.

- WDNR should explicitly exempt sources with wet control devices from having to model because of the current absence of a method to measure FPM<sub>2.5</sub>. Forcing sources to assume that all FPM is FPM<sub>2.5</sub> grossly overestimates emissions.

### **Guidance for Including PM<sub>2.5</sub> in Permit Applications**

- The guidance concludes that stationary sources do not emit significant levels of PM<sub>2.5</sub> emissions, with the possible exception of combustion and high temperature industrial units. As such, we understand that permit applicants for a typical low temperature source can exclude emission calculations and regulatory analyses related to PM<sub>2.5</sub> (e.g., netting, BACT).
- The Department should clarify that if PM<sub>2.5</sub> modeling is required for an application (i.e., a major PSD permit), only direct PM<sub>2.5</sub> from combustion and high temperature industrial sources need be modeled. This is the only circumstance in which condensable PM would be quantified as part of the direct PM<sub>2.5</sub> emission rate and included in the assessment of ambient PM<sub>2.5</sub> concentrations.
- The guidance should more clearly indicate that sources can eliminate limitations that had been previously accepted to avoid causing or exacerbating a modeled exceedance of a PM<sub>2.5</sub> AAQS.
- WDNR has concluded that no PM<sub>2.5</sub> modeling is required for minor construction permits because direct, primary PM<sub>2.5</sub> do not cause or exacerbate exceedances of the applicable NAAQS. WDNR should clarify that this conclusion also applies to minor modifications or sources that would insignificantly increase precursors to the secondary formation of PM<sub>2.5</sub>.
- Page 4 – The guidance should be clarified. It states that that PM<sub>2.5</sub> modeling is never required for minor construction permits, even if the emissions units are “significant” sources of PM<sub>2.5</sub>. Please clarify that no PM<sub>2.5</sub> modeling would be required of project which nets out of PSD and is therefore a minor permit application.

WPC thanks WDNR for its efforts to improve the air permitting process in Wisconsin and specifically the draft guidance documents regarding modeling and the treatment of PM<sub>2.5</sub> in air permit application.

Sincerely,



Scott Suder

cc: Mr. Todd E. Palmer, Esq., Michael Best and Friedrich LLP