

**SUBJECT:**

Request adoption of Board Order AM-23-08, proposed rules affecting chs. NR 421 and 439, Wis. Adm. Code, pertaining to establishing VOC emission control requirements for synthetic organic chemical manufacturing industry facilities classified as major VOC sources in Wisconsin's ozone nonattainment areas.

**FOR: MARCH, 2009 BOARD MEETING**

**TO BE PRESENTED BY:** Larry Bruss, Chief, Regional Pollutants and Mobile Sources Section

**SUMMARY:**

EPA has notified Wisconsin that there are deficiencies in Wisconsin's rules to implement reasonably available control technology (RACT) emission limits for sources of volatile organic compounds (VOC). Wisconsin has not yet promulgated RACT rules to limit emissions from several source categories, including air oxidation, distillation and reactor operations at synthetic organic chemical manufacturing industry (SOCMI) facilities. The EPA further notified DNR that federal sanctions may be imposed in Wisconsin if the ozone State Implementation Plan (SIP) deficiencies are not fully rectified by mid-September, 2009.

In order to avoid sanctions, the Department is taking steps to remove these deficiencies from its ozone SIP. These steps include a proposed rule (s. NR 421.07, Wis. Adm. Code) to establish VOC RACT requirements for air oxidation, distillation and reactor operations at SOCMI facilities in Wisconsin's ozone nonattainment areas. Additionally, the Department proposes a minor modification to s. NR 439.075(2)(c)3.j., Wis. Adm. Code, to include the reactor VOC category to the other SOCMI source categories for determining control device control efficiencies as part of assessing rule compliance.

The proposed rules will reduce VOC emissions in Wisconsin's ozone nonattainment areas, which will help Wisconsin to attain the ozone ambient air quality standard. The rule will also help the Department's ozone SIP meet the requirements of the federal Clean Air Act.

This proposed rule adheres to EPA guidance on developing SOCMI VOC RACT limitations. There were no public comments received and no controversy is expected. The Board's last action on AM-23-08 (at its December 2008 meeting) was to authorize a public hearing.

**RECOMMENDATION:** That the Board adopt Order AM-23-08.

**LIST OF ATTACHED MATERIALS:**

- No  Fiscal Estimate Required
- No  Environmental Assessment or Impact Statement Required
- No  Background Memo

- Yes  Attached
- Yes  Attached
- Yes  Attached

**APPROVED:**

\_\_\_\_\_  
/s/  
Bureau Director, John H. Melby, Jr

\_\_\_\_\_  
3/4/09  
Date

\_\_\_\_\_  
/s/  
Administrator, Al Shea

\_\_\_\_\_  
3/4/09  
Date

\_\_\_\_\_  
/s/  
Secretary, Matthew J. Frank

\_\_\_\_\_  
3/9/09  
Date

DATE: March 4, 2009

FILE REF: 4503

TO: Natural Resources Board Members

FROM: Matthew J. Frank, Secretary

SUBJECT: Background memo on the request to adopt Order AM-23-08, proposed rules affecting chs. 421 and 439, Wis. Adm. Code, pertaining to establishing volatile organic compounds (VOC) emission control requirements for synthetic organic chemical manufacturing industry facilities that are major sources in Wisconsin's ozone nonattainment areas

### **1. Why is this rule being proposed?**

Section 182(b)(2) of the federal Clean Air Act [42USC7511a(b)(2)] requires implementation of reasonably available control technology (RACT) for major VOC emission source categories in areas classified as moderate or worse for nonattainment of the ozone national ambient air quality standard (NAAQS). The U.S. Environmental Protection Agency (EPA) has published Control Techniques Guidelines (CTGs) for many of these VOC RACT categories, including reactor, distillation and air oxidation processes at synthetic organic chemical manufacturing industry (SOCMI) facilities. The DNR has promulgated rules to establish VOC RACT emission limits for most of these CTG VOC source categories – applicable in Wisconsin's moderate and worse ozone nonattainment areas.

However, on March 17, 2008, EPA notified DNR that Wisconsin's state implementation plan (SIP) was deficient because DNR had not yet promulgated VOC RACT emission limits that are consistent with several EPA CTGs in Wisconsin's ozone nonattainment areas. The SOCMI air oxidation, distillation and reactor operations comprise three of these CTG VOC source categories for which the DNR has yet to promulgate mandated RACT rules.

The EPA further notified the DNR that federal sanctions may be imposed in Wisconsin if the ozone SIP deficiencies identified in the March 17, 2008 letter are not fully rectified by mid-September, 2009. These potential federal sanctions include withholding of federal highway funds, and implementation of a federal air quality management plan in place of State rules.

In order to avoid these sanctions, the DNR is taking steps to remove these deficiencies from its ozone SIP. These steps include a proposed rule to establish VOC RACT requirements for air oxidation, distillation and reactor operations at applicable SOCMI facilities in Wisconsin's ozone nonattainment areas.

### **2. Summary of the proposed rule**

The synthetic organic chemical manufacturing industry (SOCMI) refers to those facilities which produce man-made organic compounds that are created through industrial synthesis. Byproducts of these processes include VOC emissions that can be released to ambient air as precursors to ozone formation.

The proposed rule would require VOC RACT measures (recommended in EPA guidance) to effectively reduce VOC emissions from any applicable SOCMI facility's air oxidation or distillation and reactor operations in Wisconsin's ozone nonattainment areas. These control measures largely involve the destruction of VOC emissions by combustion devices such as boilers, incinerators or flares.

The US EPA has detailed the regulatory criteria that must be followed in developing, promulgating and enforcing VOC RACT rules for SOCOMI facilities that have air oxidation, distillation or reactor operations in ozone nonattainment areas. These requirements are contained in the following two US EPA Control Technique Guideline (CTG) documents:

- “Control of Volatile Organic Compounds from Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industry” (EPA-450/3-84-015), Dec. 1984.

- “Control of Volatile Organic Compounds from Reactor Processes and Distillation Processes in the Synthetic Organic Chemical Manufacturing Industry” (EPA-450/3-91-031), Aug., 1993.

More recently, the US EPA has updated the New Source Performance Standards (NSPS), including VOC emission controls for SOCOMI air oxidation, distillation and reactor operations. The Department recently adopted these NSPS requirements into ss. NR 440.675, 440.686 and 440.705, Wis. Adm. Code, respectively.

Many of the VOC RACT requirements for SOCOMI facilities that are contained in the above-listed CTG documents are the same as those requirements listed in the NSPS for SOCOMI operations. These similar requirements include control requirements, recommended control and recovery devices, monitoring and test methods, reporting and record keeping, equations to calculate emission rates and heating values, as well as many of the exemptions.

The CTGs and NSPS have essentially the same requirements for VOC controls for SOCOMI facilities. Consequently, the Department has drafted its proposed VOC RACT rule (s. NR 421.07, Wis. Adm. Code) to reference appropriate portions of the promulgated NSPS SOCOMI requirements (i.e., ss. NR 440.675, 440.686 and 440.705, Wis. Adm. Code).

### **3. How this proposal affects existing policy**

The proposed rule is necessary for DNR to meet the requirements under Section 182(b)(2) of the federal Clean Air Act. The proposed rule is consistent with existing policy, which is to adopt and enforce all requirements applicable to Wisconsin under the federal Clean Air Act.

### **4. Hearing Synopsis**

A public hearing was held on AM-23-08 at the DNR Southeast Regional Headquarters in Milwaukee on January 28, 2009. There were no appearances at the hearing. There was also a 30 day public comment period on the proposed rule revisions. There were no public comments received on Order AM-23-08.

The Legislative Council Rules Clearinghouse (LCRC) submitted a report on Order AM-23-08 (Clearinghouse Rule 08-114) on January 26, 2009. The LCRC had a few minor comments on the Order regarding citing statutes, consistency in phrasing and labeling paragraphs. The Order was revised to reflect these minor comments.

### **5. Environmental review for potential impact**

An environmental analysis of the impact of the proposed rule revisions is not needed because these changes are considered to be a Type III action under s. NR 150.03(3), Wis. Adm. Code. A Type III

action is one that normally does not 1) have the potential to cause significant environmental effects, 2) significantly affect energy usage and 3) involve unresolved conflicts in the use of available resources.

#### **6. Final regulatory flexibility analysis**

The DNR does not believe that the proposed rule will have a significant economic impact on a substantial number of small businesses. Due to the 100 ton/year applicability threshold in the rule, it is highly unlikely that a small business, as defined under 227.114(1), Stats., would have a SOCFI operation that triggers the emission reduction requirements in the rule.

### Fiscal Estimate — 2008 Session

- Original       Updated  
 Corrected       Supplemental

LRB Number	Amendment Number if Applicable
Bill Number	Administrative Rule Number NR 421 and 439

Subject: Department proposal to establish volatile organic compound (VOC) emission control requirements for air oxidation, distillation and reactor operations at synthetic organic chemical manufacturing industry (SOCMI) facilities classified as major VOC sources in Wisconsin ozone nonattainment areas (i.e., s. NR 421.07, Wis. Adm. Code).

**Fiscal Effect**

- State:  No State Fiscal Effect  
 Indeterminate

Check columns below only if bill makes a direct appropriation or affects a sum sufficient appropriation.

- Increase Existing Appropriation       Increase Existing Revenues  
 Decrease Existing Appropriation       Decrease Existing Revenues  
 Create New Appropriation

- Increase Costs — May be possible to absorb within agency's budget.  
 Yes       No  
 Decrease Costs

- Local:  No Local Government Costs  
 Indeterminate

1.  Increase Costs  
 Permissive       Mandatory  
2.  Decrease Costs  
 Permissive       Mandatory

3.  Increase Revenues  
 Permissive       Mandatory  
4.  Decrease Revenues  
 Permissive       Mandatory

5. Types of Local Governmental Units Affected:  
 Towns       Villages       Cities  
 Counties       Others  
 School Districts       WTCS Districts

**Fund Sources Affected**

- GPR       FED       PRO       PRS       SEG       SEG-S

Affected Chapter 20 Appropriations  
 20.370 2(bg) and 2(bh)

**Assumptions Used in Arriving at Fiscal Estimate**

Rule summary: The Department proposes an administrative rule in ch. NR 421, Wis. Adm. Code, to establish reasonably available control technology (RACT) requirements for VOC emissions for air oxidation, distillation and reactor operations at SOCMI facilities classified as major VOC sources in Wisconsin's ozone nonattainment areas. A major SOCMI facility for VOC RACT purposes is defined as having maximum theoretical emissions of 100 tons or more of VOCs per year.

According to the US EPA's VOC RACT guidelines for these SOCMI categories (reactor and distillation: published in 1993, air oxidation: published in 1984) – the cost of installing, operating and maintaining control devices for VOC emissions (amortized over 10 years) would range between \$800 and \$4,000 per ton of VOC emissions reduced [Note: these cost estimates have not been adjusted for inflation since their original guideline publication dates].

In 2007 a Department investigation identified no facilities that would be subject to a proposed SOCMI VOC RACT rule for air oxidation, distillation, or reactor operations. Nevertheless, this rule is being proposed to avoid potential EPA action in the event that any SOCMI facilities are identified in Wisconsin's ozone nonattainment areas in the future.

No local governments currently process the VOC waste streams from SOCMI air oxidation, distillation and reactor operations. Consequently, there would be no local government costs associated with implementing the proposed SOCMI VOC RACT rule.

The Department is also proposing a minor change to s. NR 439.075(2)(c)3.j., Wis. Adm. Code, to reference s. NR 440.705, Wis. Adm. Code, to require compliance emission testing for VOCs at reactor operations.

**Long-Range Fiscal Implications**

None

Prepared By:	Telephone No.	Agency
Joe Polasek	266-2794	Department of Natural Resources
Authorized Signature	Telephone No.	Date (mm/dd/ccyy)
/S/ Joe Polasek	266-2794	11/05/2008

**Fiscal Estimate Worksheet — 2008 Session**  
 Detailed Estimate of Annual Fiscal Effect

Original       Updated  
 Corrected       Supplemental

LRB Number	Amendment Number if Applicable
Bill Number	Administrative Rule Number NR 421 and NR 439

Subject: Department proposal to establish VOC emission control requirements for air oxidation, distillation and reactor operations at SOCFI facilities classified as major VOC sources in Wisconsin ozone nonattainment areas (i.e., s. NR 421.07, Wis. Adm. Code).

One-time Costs or Revenue Impacts for State and/or Local Government (do not include in annualized fiscal effect):

Annualized Costs:		Annualized Fiscal Impact on State Funds from:	
		Increased Costs	Decreased Costs
<b>A. State Costs by Category</b>			
State Operations — Salaries and Fringes		\$	\$ -
(FTE Position Changes)		(                      FTE )	(-                      FTE )
State Operations — Other Costs			-
Local Assistance			-
Aids to Individuals or Organizations			-
<b>Total State Costs by Category</b>		\$                      0	\$ -                      0
<b>B. State Costs by Source of Funds</b>		Increased Costs	Decreased Costs
GPR		\$	\$ -
FED			-
PRO/PRS			-
SEG/SEG-S			-
State Revenues	Complete this only when proposal will increase or decrease state revenues (e.g., tax increase, decrease in license fee, etc.)	Increased Revenue	Decreased Revenue
GPR Taxes		\$	\$ -
GPR Earned			-
FED			-
PRO/PRS			-
SEG/SEG-S			-
<b>Total State Revenues</b>		\$                      0	\$ -                      0

**Net Annualized Fiscal Impact**

	<u>State</u>	<u>Local</u>
Net Change in Costs	\$                      0	\$                      0
Net Change in Revenues	\$                      0	\$                      0

Prepared By: Joe Polasek	Telephone No. 266-2794	Agency Department of Natural Resources
Authorized Signature /S/ Joe Polasek	Telephone No. 266-2794	Date (mm/dd/ccyy) 11/05/2008

ORDER OF THE STATE OF WISCONSIN NATURAL RESOURCES BOARD  
AMENDING AND CREATING RULES

The Wisconsin Natural Resources Board adopts an order to **amend** NR 439.075(2)(c)3.j. and to **create** NR 421.07 relating to the application of reasonably available control technology for volatile organic compound emissions from certain operations within the synthetic organic chemical manufacturing industry.

**AM-23-08**

**Analysis Prepared by the Department of Natural Resources**

**1. Statutes interpreted:** Sections 227.11(2)(a), 285.11(1) and (6), Stats. The State Implementation Plan developed under s. 285.11(6), Stats., is revised.

**2. Statutory authority:** Sections 227.11(2)(a) and 285.11(1) and (6), Stats.

**3. Explanation of agency authority:** Section 227.11(2)(a), Stats., gives state agencies general rulemaking authority. Section 285.11(1), Stats., gives the Department authority to promulgate rules consistent with ch. 285, Stats. Section 285.11 (6), Stats., requires the Department to develop a plan for the prevention, abatement and control of air pollution. With limited exceptions, the rules or control strategies for ozone control must conform to the federal Clean Air Act.

**4. Related statute or rules:** Several sections of the proposed rule references similar federal requirements for the same emission source categories for New Source Performance Standards (NSPS, adopted by the Department in ss. NR 440.675, 440.868 and 440.705, Wis. Adm. Code). These references are used because many of the federal control requirements necessary in the proposed rule are identical to the NSPS requirements.

**5. Plain language analysis:** Section 182(b)(2) of Clean Air Act requires implementation of reasonably available control technology (RACT) for sources of volatile organic compounds (VOC) emissions in moderate and worse ozone nonattainment areas, for which EPA has published Control Technology Guidelines (CTGs – “guidance”).

These requirements include that Wisconsin promulgate VOC RACT rules which are based on EPA guidance for facilities classified as synthetic organic chemical manufacturing industry (SOCMI) that have air oxidation or distillation and reactor processes. The DNR is proposing a VOC RACT rule that would regulate these SOCMI VOC emission categories in Wisconsin’s ozone nonattainment areas. Several sections of the proposed rule reference identical federal requirements contained in the NSPS for these source categories, which the Department has already adopted into ch. NR 440, Wis. Adm. Code.

**6. Summary of, and comparison with, existing or proposed federal regulation:** The proposed rule will modify the Department’s ozone state implementation plan (SIP) to meet the requirements of the federal Clean Air Act and to clarify other state requirements. Portions of the proposed rule references similar federal requirements contained in the NSPS for these source categories, which the Department has adopted in ch. NR 440, Wis. Adm. Code.

**7. Comparison with similar rules in adjacent states (Illinois, Iowa, Michigan and Minnesota):** The proposed rule is based on requirements established in the federal Clean Air Act for states that have ozone nonattainment areas. Iowa and Minnesota have no ozone nonattainment areas. Illinois’ requirements are similar to the proposed rule. Michigan has adopted the NSPS for SOCMI source categories into its own regulations.

**8. Summary of factual data and analytical methodologies used and how any related findings support the regulatory approach chosen:** The DNR has already adopted federal regulations that

establish VOC emission control requirements for NSPS facilities classified as SOCMI air oxidation, distillation and reactor operations. Much of the EPA guidance that the DNR must follow in its proposed VOC RACT rulemaking for SOCMI facilities is identical to these federal regulations. Consequently, appropriate portions of the proposed SOCMI VOC RACT rule references those portions of Ch. NR 440, Wis. Adm. Code that are identical to EPA RACT guidance.

**9. Analysis and supporting documents used to determine the effect on small business or in preparation of an economic impact report:** EPA's guidance for the SOCMI VOC controls does not include any discussion on the regulations potential impact on small business. An economic impact report was not requested for the proposed rule.

**10. Effect on small business:** Any SOCMI facility would require a minimum of 100 tons VOC emissions per year (maximum theoretical) in order to be subject to the proposed rule. Any small business that is classified a SOCMI facility would likely not meet this relatively high emissions total criteria. Consequently, the proposed rule will likely have no effect on small businesses.

**11. Agency contact person:** Bill Adamski (608) 266-2660, [William.Adamski@wisconsin.gov](mailto:William.Adamski@wisconsin.gov)

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SECTION 1. NR 421.07 is created to read:

NR 421.07 **Synthetic organic chemical manufacturing industry.** (1) APPLICABILITY. (a) This section applies to the owner or operator of any facility that is located in the county of Milwaukee, Waukesha, Washington, Ozaukee, Racine, Kenosha or Sheboygan, and that has maximum theoretical emissions of VOCs greater than or equal to 100 tons per year from air oxidation unit processes or from distillation operations and reactor processes, as those activities are defined in ss. NR 440.675(2)(c), 440.686(2)(e) and 440.705(2)(o), respectively.

(b) For purposes of this section, any references to total organic compounds or TOC in ss. NR 440.675, 440.686 or 440.705 shall be considered to be volatile organic compounds as defined in s. NR 400.02(162).

(2) AIR OXIDATION UNIT PROCESSES. (a) Unless exempt under par. (b), the owner or operator of a facility operating air oxidation unit processes subject to this section shall comply with the requirements of s. NR 440.675, subject to the following exceptions:

1. Notwithstanding s. NR 440.675(1)(b)(intro.), for purposes of this section, an affected facility shall be one that is described by the criteria in s. NR 440.675(1)(b)1. to 3., without consideration of the specific date of the construction, modification or reconstruction of the facility.

2. Notwithstanding s. NR 440.675(3)(intro.), for purposes of this section, the owner or operator of an affected facility shall comply with s. NR 440.675(3)(a), (b) or (c) no later than 12 months after the

effective date of this section ...[LRB insert date].

3. Notwithstanding s. NR 440.675(6)(a), each owner or operator subject to this section shall notify the department how the facility will comply with the specific provisions of s. NR 440.675(3) no later than 10 months after the effective date of this section...[LRB insert date] or no later than 60 days after becoming subject to this section, whichever is later.

4. Section NR 440.675(7) does not apply.

(b) Exemptions listed in s. NR 440.675(1)(c) shall apply to an owner or operator subject to this subsection.

(3) DISTILLATION OPERATIONS. (a) Unless exempt under par. (b), the owner or operator of a facility with distillation operations subject to this section shall comply with the requirements of s. NR 440.686, subject to the following exceptions:

1. Notwithstanding s. NR 440.686(1)(b)(intro.), for purposes of this section, an affected facility shall be one that is described by the criteria in s. NR 440.686(1)(b)1. to 3., without consideration of the specific date of the construction, modification or reconstruction of the facility.

2. Notwithstanding s. NR 440.686(3)(intro.), for purposes of this section, the owner or operator of an affected facility shall comply with s. NR 440.686(3)(a), (b) or (c) no later than 12 months after the effective date of this section ... [LRB insert date].

3. Notwithstanding s. NR 440.686(6)(a), each owner or operator subject to this section shall notify the department how the facility will comply with the specific provisions of s. NR 440.686(3) no later than 10 months after the effective date of this section...[LRB insert date] or no later than 60 days after becoming subject to this section, whichever is later.

4. Section NR 440.686(7) does not apply.

(b) Exemptions listed in s. NR 440.686(1)(c) shall apply to an owner or operator subject to this subsection.

(4) REACTOR PROCESSES. (a) Unless exempt under par. (b), the owner or operator of a facility with reactor processes subject to this section shall comply with the requirements of s. NR 440.705, subject to the following exceptions:

1. Notwithstanding s. NR 440.705(1)(b)(intro.), for purposes of this section, an affected facility

shall be one that is described by the criteria in s. NR 440.686(1)(b)1. to 3., without consideration of the specific date of the construction, modification or reconstruction of the facility.

2. Notwithstanding s. NR 440.705(3)(intro.), for purposes of this section, the owner or operator of an affected facility shall comply with s. NR 440.705(3)(a), (b) or (c) no later than 12 months after the effective date of this section ... [LRB insert date].

3. Notwithstanding s. NR 440.705(6)(a), each owner or operator subject to this section shall notify the department how the facility will comply with the specific provisions of s. NR 440.705(3) no later than 10 months after the effective date of this section...[LRB insert date] or no later than 60 days after becoming subject to this section, whichever is later.

4. Section NR 440.705(7) does not apply.

(b) Exemptions listed in s. NR 440.705(1)(c) shall apply to an owner or operator subject to this subsection.

(5) COMPLIANCE EMISSION TESTING. The owner or operator of a facility subject to this section shall conduct compliance emission testing in accordance with s. NR 439.075(2)(c)3.j.

(6) DELAYED COMPLIANCE. If the owner or operator of a facility employs a VOC emission control device that, on the effective date of this section...[LRB insert date] does not achieve compliance with an emission limitation in s. NR 440.675(3), 440.686(3) or 440.705(3), applicable under this section, the owner or operator is not required to comply with the emission limitation until the control device is replaced for reasons other than compliance, including normal maintenance, malfunction, accident, and obsolescence. A control device is considered to be replaced when either of the following occur:

(a) All of the control device is replaced.

(b) The cost of repair of the control device or the cost of replacement of part of the control device exceeds 50% of the cost of replacing the entire control device with a control device that is capable of complying with the respective requirement of s. NR 440.675(3), NR 440.686(3) or NR 440.705(3),

SECTION 2. NR 439.075(2)(c)3.j. is amended to read:

NR 439.075(2)(c)3.j. Control devices at synthetic organic chemical manufacturing facilities subject to the requirements of s. NR 440.675 ~~or~~ 440.686 or 440.705.

SECTION 3. EFFECTIVE DATE. This rule shall take effect on the first day of the month following publication in the Wisconsin administrative register as provided in s. 227.22 (2) (intro.), Stats.

SECTION 4. BOARD ADOPTION. This rule was approved and adopted by the State of Wisconsin Natural Resources Board on \_\_\_\_\_.

Dated at Madison, Wisconsin \_\_\_\_\_.

STATE OF WISCONSIN  
DEPARTMENT OF NATURAL RESOURCES

By \_\_\_\_\_  
Matthew J. Frank, Secretary

(SEAL)