



MICHIGAN DEPARTMENT OF  
ENVIRONMENT, GREAT LAKES, AND ENERGY

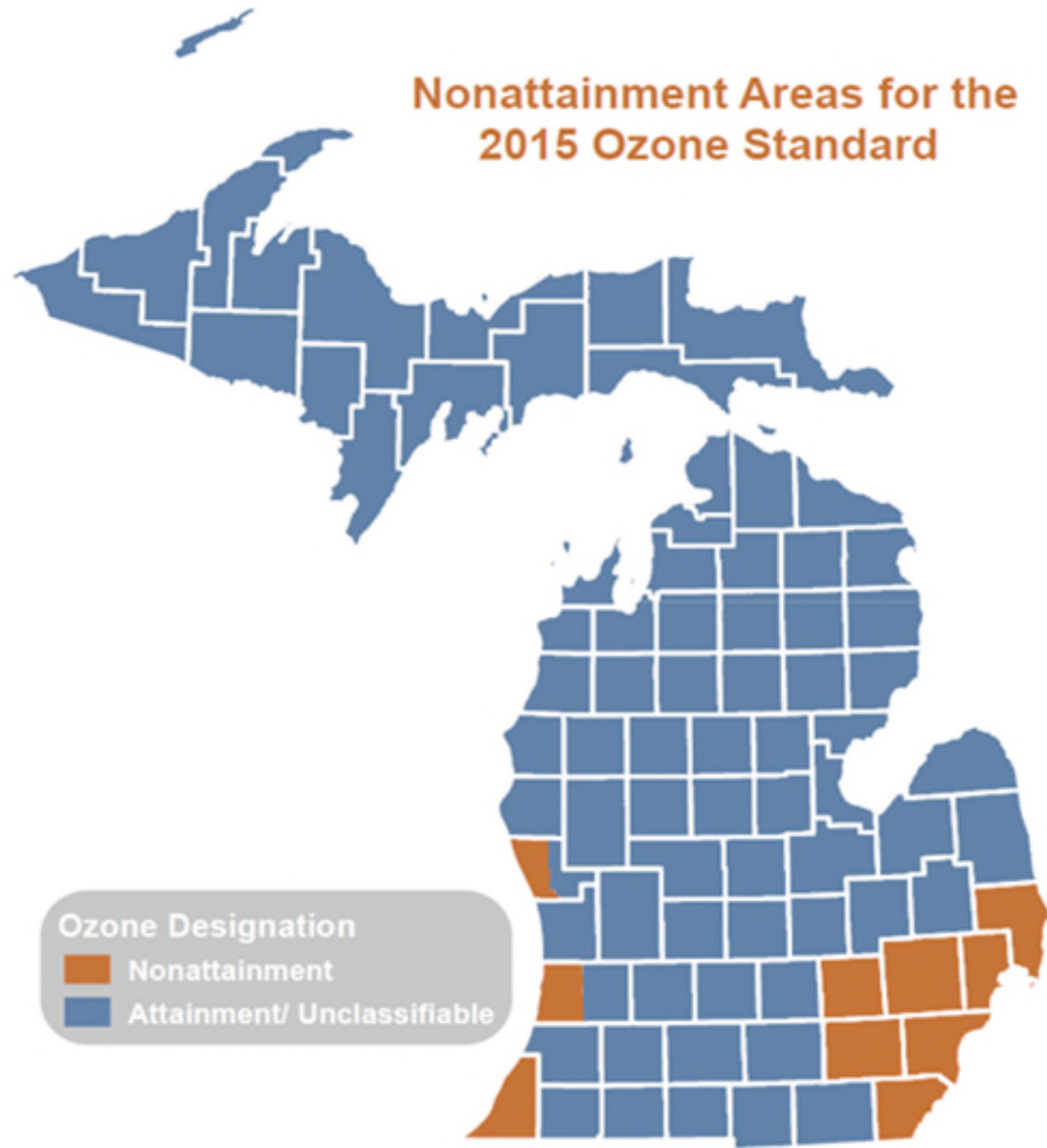
# Ozone Nonattainment Timeline, Requirements, and Rule Process

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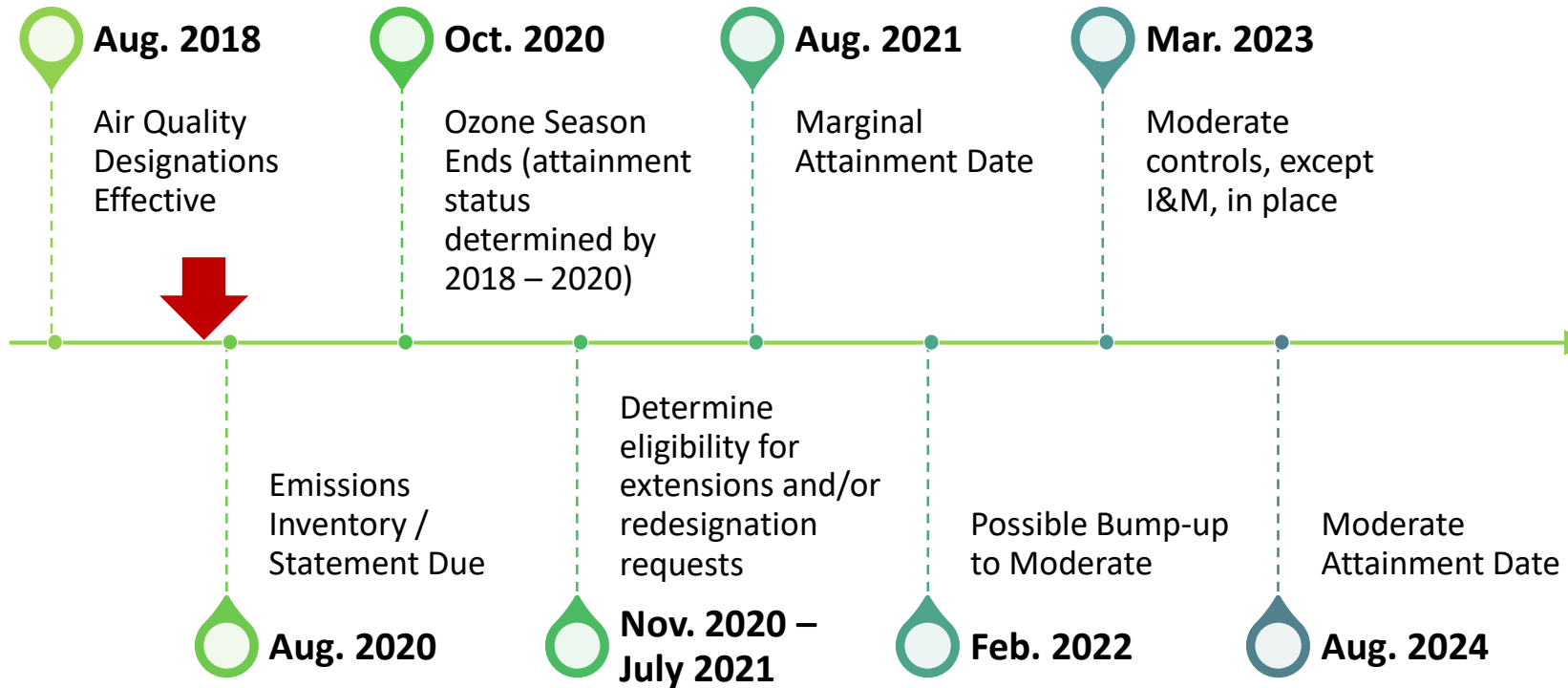
AQD RACT Workgroup

January 2020

## Nonattainment Areas for the 2015 Ozone Standard



# 2015 Ozone SIP Timeline



# Marginal vs Moderate Clean Air Act Requirements

Requirement	Marginal	Moderate	RACT Workgroup Impact
NSR Offsets	1.1 to 1	1.15 to 1	≠
Attainment Date	3 years (2021)	6 years (2024)	Yes
VOC and NOx RACT	No	Yes	Yes
15% VOC RFP Reductions	No	Yes	Yes
Basic I&M Program	No	Yes	≠

# EGLE Rule Process

- Multi-stage process
- Multiple stakeholder opportunities
- New stakeholder requirements
- New Environmental Rules Review Committee review
- Original public comment, review, and legislature review process
- Time frame = unknown



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# Overview of Current VOC/NOx RACT Analysis & Example Case of Rule Update

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January 29<sup>th</sup>, 2020

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# Overview

- RACT Requirements
- VOC RACT Analysis
  - Description
  - Results/Discussion
  - Future Work
- NOx RACT Analysis
- Example Case of RACT Rule Update

# RACT Requirements

	Non-Major Source	Major Source
CTG Source	Must Address *per CAA	Must Address *per CAA
Non-CTG Source	No Requirements	Must Address *per CAA



# VOC RACT Analysis – Description

- MAERS 2017 facility emission unit data
- Determined Renewable Operating Permit (ROP) status for each facility
- Assigned Source Classification Codes (SCCs) to CTG Categories

# VOC RACT Analysis – Results & Discussion

- Three ways to address CTG categories:
  1. Update current Michigan Air Pollution Control Rule,
  2. Create new rule to address a CTG category, or
  3. Submittal of a negative declaration.
- Further Analysis

# POTENTIAL UPDATE TO CURRENT RULES

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### *Potential Update to Current Rule: R 336.1610*

**CTG:** Automobile and Light-Duty Truck Assembly Coatings

**NAA Facility Count:** 22

**NAA Facility VOC Emissions (tpy):** 4,269.41

#### **Discussion:**

- New CTG has become available (2008)
  - analysis in relation to automobiles and light-duty trucks section of prior CTG for Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks (1977)
- Facilities within this category exceed the CTG's VOC applicability threshold of 15lbs/day before consideration of controls (or the equivalent of 2.7 tons per 12-month rolling period).

#### **Future Analysis:**

- Determination of the impact of other standards (i.e., federal standards – NESHAP, NSPS, etc.) to identify if other standards are stricter than the content limits the CTG defines
- Potential revisions to emission limits

### *Potential Update to Current Rule: R 336.1610 (continued)*

**CTG:** Paper, Film, and Foil Coatings

**NAA Facility Count:** 6

**NAA Facility VOC Emissions (tpy):** 36.35

#### **Discussion:**

- New CTG has become available (2007)
  - analysis in relation to paper section of prior CTG for Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks (1977)
- Facilities within this category exceed the CTG's VOC applicability threshold of any facility who emits or has the potential to emit 25 tpy of VOCs

#### **Future Analysis:**

- Determination of the impact of other standards (i.e., federal standards – NESHAP, NSPS, etc.) to identify if other standards are stricter than the content limits the CTG defines
- Potential revisions to emission limits

### *Potential Update to Current Rule: R 336.1610 (continued)*

*OR Potential Submittal of a Negative Declaration*

**CTG:** Large Appliance Coatings **AND**  
Metal Furniture Coatings **AND**  
Surface Coating: Insulation of Magnet Wire

**NAA Facility Count:** 0

**NAA Facility VOC Emissions (tpy):** 0.00

#### **Discussion:**

- New CTG has become available (2007)
- No facilities for this category are located in the NAA

#### **Future Analysis:**

- None at this time

### *Potential Update to Current Rule: R 336.1610 (continued) OR Potential Submittal of a Negative Declaration*

**CTG:** Surface Coating of Cans, Coils, and Fabrics

**NAA Facility Count:** 4

**NAA Facility VOC Emissions (tpy):** 14.21

#### **Discussion:**

- Most recent CTG is from 1977
  - analysis in relation to cans, coils, and fabrics sections of the CTG for Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks (1977)
- Rules should reflect most recent CTG

#### **Future Analysis:**

- None at this time

## VOC RACT Analysis – Results & Discussion

### *Potential Update to Current Rule: R 336.1620*

**CTG:** Flatwood Paneling Coatings

**NAA Facility Count:** 1

**NAA Facility VOC Emissions (tpy):** 2.76

#### **Discussion:**

- New CTG has become available (2006)
- One facility for this category is located in the NAA
  - May exceed the VOC applicability threshold of 15lbs per day before consideration of controls since that would equal out to approximately 2.7 tons per 12-month rolling period

#### **Future Analysis:**

- Address current controls being used at this facility to determine if they would be applicable and if so, what kind of VOC reductions would potentially come from the new CTGs content limits, if any.
- Determination of the impact of other standards (i.e., federal standards – NESHAP, NSPS, etc.) to identify if other standards are stricter than the content limits the CTG defines
- Potential revisions to emission limits



### *Potential Update to Current Rule: R 336.1621 & R 336.1632*

**CTG:** Miscellaneous Metal and Plastic Parts Coatings

**NAA Facility Count:** 67

**NAA Facility VOC Emissions (tpy):** 730.80

#### **Discussion:**

- New CTG has become available (2008)
- Approximately 34 facilities in the NAA exceed the VOC applicability threshold of 15lbs per day before consideration of controls or an equivalent level of 2.7 tons per 12-month rolling period

#### **Future Analysis:**

- Determination of the impact of other standards (i.e., federal standards – NESHAP, NSPS, etc.) to identify if other standards are stricter than the content limits the CTG defines
- Potential revisions to emission limits

### *Potential Update to Current Rule: R 336.1624*

**CTG:** Flexible Package Printing

**NAA Facility Count:** 7

**NAA Facility VOC Emissions (tpy):** 35.75

#### **Discussion:**

- New CTGs have become available (2006)
- Several facilities in the NAA exceed the VOC applicability threshold of 15lbs per day before consideration of controls or an equivalent level of 3 tpy.

#### **Future Analysis:**

- Determination of the impact of other standards (i.e., federal standards – NESHAP, NSPS, etc.) to identify if other standards are stricter than the content limits the CTG defines
- Potential revisions to emission limits

# POTENTIAL NEW RULES

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## *Potential New Rule*

**CTG:** Fiberglass Boat Manufacturing Materials

**NAA Facility Count:** 2

**NAA Facility VOC Emissions (tpy):** 42.25

### **Discussion:**

- New CTG has become available (2008)
- Two facilities in the NAA exceed the VOC applicability threshold of 15lbs per day before consideration of controls or an equivalent level of 2.7 tons per 12-month rolling period
  - Susation Products in St. Clair County (3.11 tpy)
  - Tiara Yachts Division of S2 Yachts in Allegan County (39.14 tpy)

### **Future Analysis:**

- Determination of the impact of other standards (i.e., federal standards – NESHAP, NSPS, etc.) to identify if other standards are stricter than the content limits the CTG defines

## *Potential New Rule*

**CTG:** Wood Furniture Manufacturing Operations

**NAA Facility Count:** 4

**NAA Facility VOC Emissions (tpy):** 29.20

### **Discussion:**

- New CTG has become available (1996)
- VOC applicability threshold of a potential to emit or actual emissions of 25 tpy or more
  - None of the 3 facilities have actual reported emissions that exceed 25 tpy in 2017, however, Lafata Enterprises Inc. (Macomb County) reported 25.39 tpy for 2018 emissions which is consistent to their general increases from the year 2014 – 2018. The other three sources had actual emissions less than 3 tpy.

### **Future Analysis:**

- Determine PTE's for these four facilities

## Potential New Rule

<b>CTG:</b>	Industrial Cleaning Solvents	Miscellaneous Industrial Adhesives	Offset Lithographic Printing & Letterpress Printing
<b>NAA Facility Count:</b>	70	34	9
<b>NAA Facility VOC Emissions:</b>	119.71 tpy	463.35 tpy	67.72 tpy

### Discussion:

- New CTG has become available (2008)
- Facilities in the NAA exceed the VOC applicability threshold of 15lbs per day before consideration of controls or an equivalent level of 2.7 tons per 12-month rolling period

### Future Analysis:

- Determination of the impact of other standards (i.e., federal standards – NESHAP, NSPS, etc.) to identify if other standards are stricter than the content limits the CTG defines

# POTENTIAL SUBMITTAL OF NEGATIVE DECLARATIONS

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### *Potential Submittal of Negative Declarations*

**CTG:** Aerospace

Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industry

Pneumatic Rubber Tires

Surface Coating: Shipbuilding and Ship Repair Facilities

**NAA Facility Count:** 0

**NAA Facility VOC Emissions (tpy):** 0.00

#### **Discussion:**

- There are no facilities or emissions coming from any of these CTG Categories within our NAAs

#### **Future Analysis:**

- None at this time



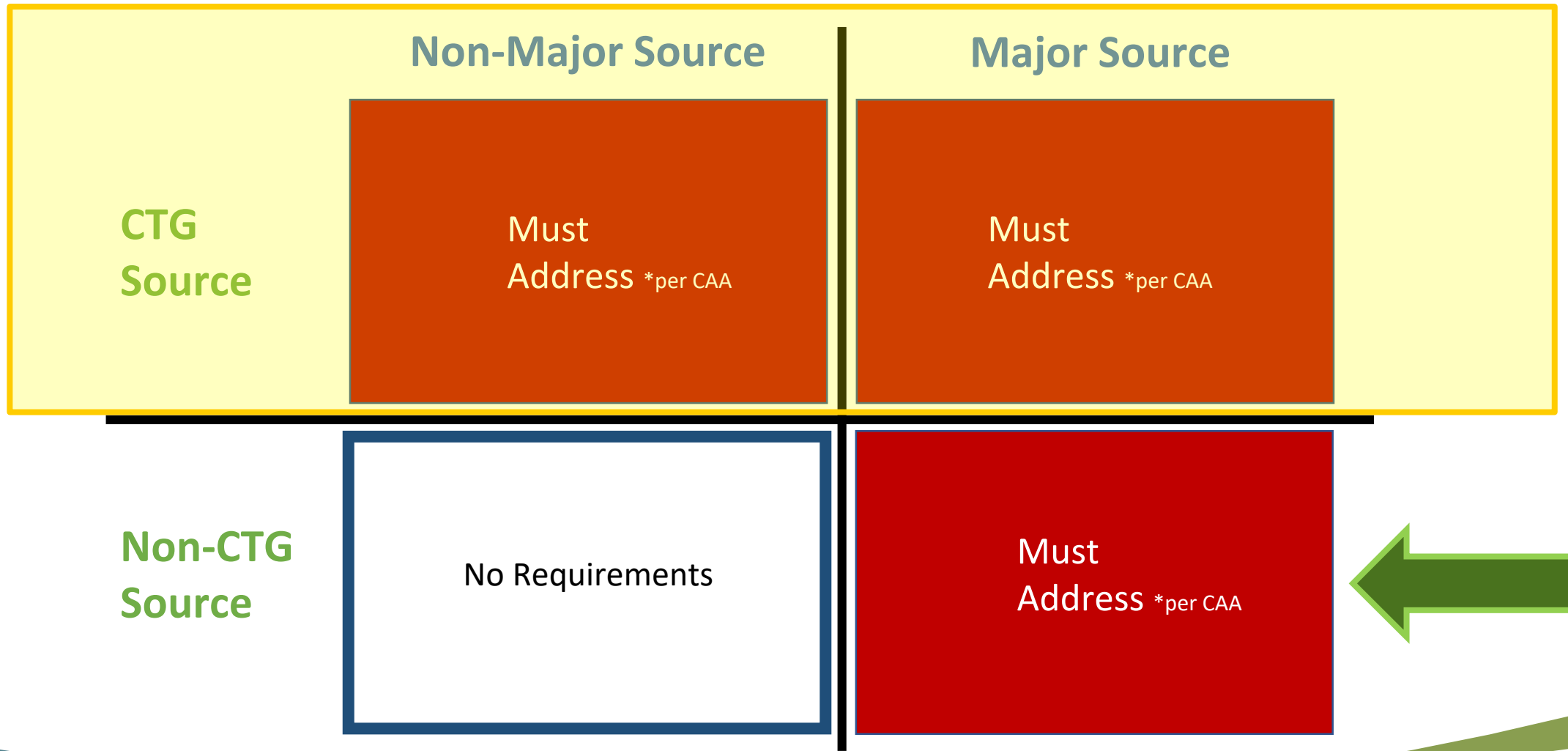
# FURTHER ANALYSIS

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## Further Analysis

<b>CTG Category</b>	<b>CTG General VOC Applicability Threshold</b>	<b>NAA Emissions (tpy)</b>	<b>NAA Facility Count</b>
<b>Hydrocarbons from Tank Truck Gasoline Loading Terminals</b>	Tank Truck Terminals with daily throughputs of greater than 76,000 liters of gasoline.	38.80	5
<b>Large Petroleum Dry Cleaners</b>	No specified applicability minimum threshold, see specific VOC content limits in CTG.	1.18	2
<b>Oil and Natural Gas Industry*</b>	Dependent on specific equipment, please see CTG.	2.42	12
<b>Reactor Processes and Distillation Operations in Synthetic Organic Chemical Manufacturing Industry</b>	No specified applicability minimum, see specific VOC content limits in CTG.	N/A	N/A

# RACT Requirements



## Major sources not covered by a CTG Category

SRN	FACILITY_NAME	COUNTY	Total lbs	Total tons	NAICS	NAICS Description	CTG_Ap plic	TitleV_VOC	TitleV_Notes
N6944	Pregis	SAINT CLAIR	267,200.00	133.60	326199	All Other Plastics Product Manufacturing	No	Yes	ROP for VOCs therefore subject to (40 CFR 70); minor source of HAPs
N7578	EAGLE INDUSTRIES INC	OAKLAND	188,742.00	94.37	326150	Urethane and Other Foam Product (except Polystyrene) Manufacturing	No	Yes	ROP for VOCs; minor source of HAPs; subject to (40 CFR 60, subparts A and JJJJ); subject to NESHAP (40 CFR 63, subparts A and ZZZZ - RICE MACT) (40 CFR 63, subparts A and OOOOOO)
N7707	Shelby Foam Systems, a Division of Magna Seating	MACOMB	140,017.70	70.01	326150	Urethane and Other Foam Product (except Polystyrene) Manufacturing	No	Yes	ROP for VOC; "synthetic minor" source of HAPs; subject to (40 CFR 60, subparts A and IIII); subject to NESHAP (40 CFR 63; subparts A and OOOOOO) (40 CFR 63, subparts A and ZZZZ - RICE MACT)
A7809	U S STEEL GREAT LAKES WORKS	WAYNE	103,421.48	51.71	331110	Iron and Steel Mills and Ferroalloy Manufacturing	No	Yes	ROP for CO, NOx, SO2, VOCs, and PM; exceeds PTE for HAPs; subject to PSD (40CFR52.21); subject to MACT (40CFR63 Suppart CCC, FFFFF, (RICE)ZZZZ, DDDDD); subject to NSPS (40CFR60 subpart Na and IIII); subject to CAM rule (40CFR64)
B2103	GLWA Water Resource Recovery Facility	WAYNE	26,015.00	13.01	221320	Sewage Treatment Facilities	No	Yes	ROP for all Criteria Pollutants; PTE of GHG is 100,000 tpy; subject to PSD (40CFR52.21 - Municipal LANDFILL); subject to NSPS (40CFR60 Supparts A and M MMM) (40CFR60 subparts A and Dc, IIII, JJJJ, (RICE)ZZZZ); subject to NESHAP for Hg and Be (40CFR61 subparts C and E); subject to Chemical Accident Prevention Provisions (40CFR68)
K1271	HENRY FORD HOSPITAL	WAYNE	2,615.50	1.31	622110	General Medical and Surgical Hospitals	No	Yes	ROP for ALL criteria pollutants; PTE of GHG is 100,000 tpy+
B2798	DTE Electric Company - Delray Power Plant	WAYNE	721.21	0.36	221112	Fossil Fuel Electric Power Generation	No	Yes	Considered "synthetic minor" source in regards to the PSD res (40CFR52.21) because the stationary source accepted legally enforceable permit conditions limiting the PTE of NOx and CO to less than 100 tpy; ROP for Federal Acid Rain Program (40CFR72)
B4243	EDW C LEVY CO PLANT 6	WAYNE	30.91	0.02	327992	Ground or Treated Mineral and Earth Manufacturing	No	Yes	EDW C LEVY CO PLANT 6 (B4243) determined by AQD to be aggregated into a single stationary source with AK Steel Dearborn Works (individual Title V permits); ROP for CO, NO, SO2, VOC, and PM; major source of HAPs.
B4364	EDW C LEVY CO PLANT 3	WAYNE	29.59	0.01	327992	Ground or Treated Mineral and Earth Manufacturing	No	Yes	EDW C LEVY CO PLANT 3 (B4364) determined by AQD to be aggregated into a single stationary source with United States Steel Great Lakes Works (individual Title V permits); ROP for CO, NOx, SO2, VOCs, and PM; PTE more than 10 tpy per single HAP and/or more than 25 tpy combined HAPs; subject to PSD, NESHAP (40 CFR 63, Subparts A and ZZZZ).

Initially looked at southeast Michigan nonattainment areas but are working on expanding this to include west Michigan NAAs.

# Future Work

- Follow up on CTG documents
  - Looking more in-depth at specific VOC content limits as defined in the CTG for the four CTG categories listed in the Further Analysis section
  - Determining impacts of other standards that facilities are already required to adhere to
    - (i.e., federal standards – NESHAP, NSPS, etc.)
  - Determine PTEs for Wood Furniture Manufacturing Operations
  - Define SCCs for Reactor Processes and Distillation Operations in Synthetic Organic Chemical Manufacturing Industry
- Determine how to address non-CTG major sources
  - Expand to include west Michigan NAA sources
  - Look at other state's rules
  - Research potential control strategies for these categories
  - Determine applicability thresholds and content limits that would produce meaningful VOC reductions

# NO<sub>x</sub> RACT ANALYSIS

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# Overview

- For NO<sub>x</sub> RACT it is required by the CAA that major stationary sources be reviewed
  - ROP status was used to determine if a source was considered a major stationary source
- EPA has Alternative Control Technology (ACT) Documents which have been used by other states in order to determine NO<sub>x</sub> RACT categories
  - Used these documents to help determine appropriate SCC codes and further classify the NO<sub>x</sub> major sources

# NOx RACT – ACT Category Breakdown

<b>DATE</b>	<b>ACT Document</b>	<b>Statewide Facility Emissions</b>	<b>Statewide Facility Count</b>	<b>NAA Facility Emissions</b>	<b>NAA Facility Count</b>
1991	Nitric and Adipic Acid Manufacturing Plants	0.00	0	0.00	0
1993	Stationary Combustion Turbines	0.00	2	0.00	1
1993	Process Heaters	545.03	74	302.68	3
1993	Stationary Internal Combustion Engines	9,484.94	295	2,558.56	26
1994	Cement Manufacturing	4,988.05	3	6.50	1
1994	Industrial, Commercial, and Institutional Boilers	6,649.98	434	1,857.96	214
1994	Utility Boilers	33,89.87	48	21,791.24	15
1994	Glass Manufacturing	1,042.98	1	1,042.98	1
1994	Iron and Steel Mills	316.31	6	278.99	5



# Future Work

- Follow up on ACT documents
  - Looking more in-depth at specific NO<sub>x</sub> content limits as defined in the ACT
  - Determining impacts of other standards that facilities are already required to adhere to
    - (i.e., federal standards – NESHAP, NSPS, etc.)
- Determine non-ACT major sources and how to address them
  - Look at other state's rules
  - Research potential control strategies for these categories
  - Determine applicability thresholds and content limits that would produce meaningful NO<sub>x</sub> reductions

# EXAMPLE CASE OF A VOC RACT RULE UPDATE

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# Example Case of RACT Rule Update

- Michigan Air Pollution Control Rules

[https://dtmb.state.mi.us/ARS\\_Public/AdminCode/DeptBureauAdminCode?Department=Environment%2C%20Great%20Lakes%20and%20Energy&Bureau=Air%20Quality%20Division](https://dtmb.state.mi.us/ARS_Public/AdminCode/DeptBureauAdminCode?Department=Environment%2C%20Great%20Lakes%20and%20Energy&Bureau=Air%20Quality%20Division)

- EPA Control Techniques Guidelines (VOCs) and Alternative Control Techniques Documents (NOx)

<https://www.epa.gov/ground-level-ozone-pollution/control-techniques-guidelines-and-alternative-control-techniques>

# Example: Rule 632

- **R 336.1632 Emission of volatile organic compounds from existing automobile, truck, and business machine plastic part coating lines**
- **Corresponding CTG: Miscellaneous Metal and Plastic Parts Coatings**

(20) Table 66 reads  
Table 66

## Michigan Rule 632



Volatile organic compound emission limitations for existing automobile and truck plastic parts coating lines after 12/31/92

Coating category	Pounds of volatile organic compounds allowed to be emitted per gallon of coating (minus water) as applied
1. High bake coating--exterior and interior parts <sup>1,2</sup>	
(a) Prime	
(i) Flexible coating	4.5
(ii) Nonflexible coating	3.5
(b) Topcoat	
(i) Basecoat	4.3
(ii) Clearcoat	4.0
(iii) Non-basecoat/clearcoat	4.3
2. Air-dried coating--exterior parts <sup>1,3</sup>	
(a) Prime	4.8
(b) Topcoat	
(i) Basecoat	5.0
(ii) Clearcoat	4.5
(iii) Non-basecoat/clearcoat	5.0
3. Air-dried coating--interior parts <sup>1,3</sup>	5.0
4. Touch-up and repair <sup>3</sup>	5.2

<sup>1</sup>For red and black coatings, the emission limitation shall be determined by multiplying the appropriate limit in this table by 1.15.

<sup>2</sup>When 40 C.F.R. Part 60, Appendix A, Method 24 is used to determine the volatile organic compound content of a coating, the applicable emission limitation shall be determined by adding 0.5 to the appropriate limit in this table.

<sup>3</sup>When 40 C.F.R. Part 60, Appendix A, Method 24 is used to determine the volatile organic compound content of a coating, the applicable emission limitation shall be determined by adding 0.1 to the appropriate limit in this table.

Extreme Performance	0.42 (2 peak coatings)	3.5 (2 peak coatings)
Optical Coatings	0.80	6.7
Vacuum-Metalizing	0.80	6.7

## CTG: Misc. Metal and Plastic Parts Coating

**Table 4. Automotive/Transportation and Business Machine Plastic Parts VOC Content Limits**

Coating Category	kg VOC/liter coating	lbs VOC/gal coating
<b>Automotive/Transportation Coatings<sup>1</sup></b>		
<b>I. High Bake Coatings – Interior and Exterior Parts</b>		
Flexible Primer	0.54	4.5
Non-flexible Primer	0.42	3.5
Base Coats	0.52	4.3
Clear Coat	0.48	4.0
Non-basecoat/clear coat	0.52	4.3
<b>II. Low Bake/Air Dried Coatings – Exterior Parts</b>		
Primers	0.58	4.8
Basecoat	0.60	5.0
Clearcoats:	0.54	4.5
Non-basecoat/clearcoat	0.60	5.0
<b>III. Low Bake/Air Dried Coatings – Interior Parts</b>		
	0.60	5.0
<b>IV. Touchup and Repair Coatings</b>		
	0.62	5.2
<b>Business Machine Coatings</b>		
I. Primers	0.35	2.9
II. Topcoat	0.35	2.9
III. Texture Coat	0.35	2.9
IV. Fog Coat	0.26	2.2
V. Touchup and repair	0.35	2.9

<sup>1</sup>For red, yellow, and black automotive coatings, except touch up and repair coatings, the recommended limit is determined by multiplying the appropriate limit in this table by 1.15.

# Example Rule: 632

- Key sections within the CTG:
  - Applicability
  - Process Description and Sources of VOC Emissions
  - Recommended Control Options
- Takeaways:
  - This sort of analysis will help determine if the facilities for the CTG categories are meeting the specific VOC content limits already and be able to give us a better idea of if those limits are going to have an impact on VOC emissions reductions

# QUESTIONS?

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# Discussion of Consumer Products, AIM Coating Rules and Boiler Tune-Up

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January 29<sup>th</sup>, 2020

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# Consumer Products

- Part of 15% Reasonable Further Progress
- Rules 660 and 661
- Based on model rules from the Ozone Transport Commission
  - Our rules based on 2006 version
  - Updated in 2012
- Preliminary research shows may have little effect
- Hard part - quantifying impact of an update

# AIM coatings

- Part of 15% Reasonable Further Progress
- Architectural and Industrial Maintenance coatings
  - Stains, sealers, primers, flat, non-flat, gloss, etc.
- 2002 or 2010 rule models
- I think 2002 is more widely adopted
- Patterned after a CARB rule
- Consider: Sell through dates & 1 liter exemption
- Hard part is quantifying impact of new rules

# Other OTC Rules

- Spreadsheet at:

[https://otcair.org/upload/Documents/Model%20Rules/OTC\\_SA\\_S\\_MobileSources\\_Rules\\_Adoption\\_Tracking\\_07172019.xlsx](https://otcair.org/upload/Documents/Model%20Rules/OTC_SA_S_MobileSources_Rules_Adoption_Tracking_07172019.xlsx)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1		STATUS OF OTC STATE EFFORTS TO PROMULGATE SAS REGULATIONS BASED ON OTC MODEL RULES,													
2		REGULATORY AND TECHNICAL GUIDELINES AND JUNE 7, 2006 RACT RESOLUTION (AS AMENDED 11/15/2006)													
3		Updated as of 7/17/19													
4		See Notes and Instructions at Bottom of Page													
5		CP Phase I 2001	CP Phase II 2006	CP Phase III 2010	CP Phase IV 2012/2013	CP Phase V 2018 (RTG)	AIM Phase I 2001	AIM Phase II 2011	Asphalt Paving 6/7/06	PFCs Phase I 2001	PFCs Phase II 2006	MERR Phase I 2001	MERR Phase II 2009/2011	Solvent Degreasing Phase I 2001	Solvent Degreasing Phase 2012
6		VOC	VOC	VOC	VOC	VOC	VOC	VOC	VOC	VOC	VOC	VOC	VOC	VOC	VOC
7		Area	Area	Area	Area	Area	Area	Area	Area	Area	Area	Mostly Area,	Mostly Area,	Area and Point	Mostly Area,
8	CT	Effective	Effective	Effective	Effective		Effective	Effective	Effective	Federal	Federal	Effective		Effective	
9	DC	Effective	Effective 1/1/12				Effective			Effective	Effective, Compliance Date 1/1/2012	Effective	Effective 12/9/16	Effective	
10	DE	Effective	Effective, Compliance Date 4/11/09	Effective, Compliance Date 1/1/17	Effective, Compliance Date 1/1/17		Effective	Effective, Compliance Date 3/1/17	Effective Similar Rule	Federal	Federal	Effective	Effective, Compliance Date 1/1/12	Effective	
11	MA	Effective 10/19/07, Compliance Date 1/1/09	Effective 10/19/07, Compliance Date 1/1/09				Effective 10/19/2007, Compliance Date 1/1/09			Federal	Federal	Effective Similar Rule		Effective 3/06/2009, Compliance Date 9/06/09	
	MD	Effective	Effective, Compliance Date	Effective 10/9/17, Compliance	Effective 10/9/17, Compliance		Effective	Effective 04/25/16, Compliance Date		Effective, Compliance Date	Effective, Compliance Date	Effective Similar Rule	Effective 4/16/12, Compliance Date	Effective Similar Rule	

# NO<sub>x</sub> RACT

- No CTG's, just ACT's
- In the past, we claimed we were VOC limited
- Also, transport programs (mostly for EGU's) were considered enough
- Now we might be more "balanced" between VOC and NO<sub>x</sub>
- Part 8 rules are being "updated" to deal with CSAPR/CAIR and NO<sub>x</sub> SIP Call

# Boiler Tune-up

- MACT standards include tune-up requirements
  - Applicability/Effectiveness
  - Source for methods
- Boiler Tune-ups
  - Formaldehyde workgroup looking at NOx relationship
  - Other states: New Jersey, Ohio, Wisconsin, New Hampshire, etc.
  - Quantifying impact



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# Formaldehyde

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# HCNO - The latest

- We combined the groups
- Look at improving a smaller dataset for modeling purposes - look at data in a radius around monitors
- Be prepared to rely more on (...and less on MAERS)
  - CO molar ratio
  - stack test data
  - Other sources of information

# HCNO - Next

- Look at all sources within a 20 km radius of our monitors
- Gather stack test data from our database/testing unit, and any other sources we can find
- Call New Jersey staff, appears to be recent changes there
- Research mobile sources (EPA in Ann Arbor?)
- Houston formaldehyde emissions data



# HCNO - Assistance

Look for:

- Formaldehyde:CO ratio research/papers/data
- Mobile source data
- Stack test data / Decent emission factors
- Continue to keep an eye out for control information
- NOx variations with CO research/papers/etc.
- Connections between landfills and formaldehyde  
(flares and engines)