

STATE OF MICHIGAN

Rick Snyder, Governor



DEPARTMENT OF ENVIRONMENTAL QUALITY

AIR QUALITY DIVISION

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PUBLIC PARTICIPATION DOCUMENTS
For

Waterfront Petroleum Terminal Company
Dearborn, Michigan – Permit Application No. 181-10

Marathon Petroleum Company LLC
Detroit, Michigan – Permit Application No. 197-10

McCoig Materials, LLC
Detroit, Michigan – Permit Application No. 242-10

June 15, 2011

FACT SHEET

June 15, 2011

Purpose and Summary

The Michigan Department of Environmental Quality (MDEQ), Air Quality Division (AQD), is proposing to act on three Permit to Install (PTI) applications, listed below.

Application Number	Company	Proposed equipment or change
181-10	Waterfront Petroleum Terminal Company	Two loading racks and three storage tanks
197-10	Marathon Petroleum Company LLC	Truck loading rack for asphalt cement
242-10	McCoig Materials, LLC	Increase production above levels allowed by permit exemption

The proposed projects are all subject to permitting requirements of the Department's Rules for Air Pollution Control. Prior to acting on these applications, the AQD is holding a public comment period and a public hearing to allow all interested parties the opportunity to comment on the proposed PTIs. All relevant information received during the comment period and hearing will be considered by the decision maker prior to taking final action on the applications.

Background Information

All three facilities: Due to past public interest concerning air pollution sources in the area near these facilities, the AQD is providing a joint public comment period for these three PTI applications.

Waterfront: Waterfront Petroleum Terminal Company (Waterfront) is a storage and transfer facility that handles distillate fuel, heavy oil fuel, and asphalt cement. It is located at 1071 Miller Road, Dearborn, on the Rouge River between West Fort Street and Dix Avenue. Following an AQD inspection, it was determined that some of the equipment at the facility should have a permit but did not. Waterfront is addressing this by applying for a PTI.

Marathon: Marathon Petroleum Company LLC (Marathon) operates a refinery in the area along with storage and transfer operations. Marathon's Rouge Asphalt facility receives and stores asphalt cement from the refinery and also transfers the material to trucks and barges. The Rouge Asphalt facility is located at 301 South Fort Street, Detroit, on the Rouge River between West Fort Street and I-75. While preparing to renew Marathon's Renewable Operating Permit, the AQD determined that the truck loading rack at the Rouge Asphalt facility had apparently never been permitted and was not exempt from the requirement to obtain a PTI. Marathon has applied for a PTI in response to the AQD's request.

McCoig: McCoig Materials, LLC (McCoig) is an existing concrete batch plant currently operating as exempt under Rule 336.1289 (Rule 289). The facility is located at 1441 Springwells Court, Detroit, Michigan. McCoig has submitted this application in order to produce concrete at greater than the 200,000 cubic yard limit in the Rule 289 permit exemption.

Proposed Facility and Present Air Quality

All three facilities: The three facilities are located in an area that is meeting all of the National Ambient Air Quality Standards (NAAQS) except for particulate matter less than 2.5 microns in diameter (PM_{2.5}). The area is considered to be a “nonattainment area” for PM_{2.5} and an “attainment” area for the other pollutants with NAAQS.

Waterfront: The Waterfront facility consists of storage tanks and two loading racks, with heaters for the asphalt cement and heavy fuel oil storage tanks. Many of the storage tanks are exempt from the requirement to obtain a Permit to Install. Two of the tanks were installed before the PTI requirement existed. These two tanks are “grandfathered” and do not require a PTI. Three of the tanks and the two loading racks need a PTI. The three tanks can store asphalt cement and heavy fuel oil. The loading racks handle asphalt cement, heavy fuel oil, and distillate oil. PTI application No. 181-10 covers the three storage tanks and the two loading racks.

Marathon: Marathon’s Rouge Asphalt facility includes storage tanks for asphalt cement, storage tanks for asphalt polymer mix, loading racks to load barges and trucks, and natural gas-fired asphalt heaters. PTI application Number 197-10 covers the truck loading rack, which can serve eight trucks at once. Other equipment at the facility, except for the barge loading rack, either is grandfathered from the PTI requirement or has been permitted.

McCoig: McCoig currently operates an existing concrete batch plant as exempt under Rule 289. Rule 289 exempts concrete batch plants from Rule 336.1201 (Rule 201) permitting requirements if the plant implements a minimum standard of operations which include: restrict production to less than 200,000 cubic yards per year; install and operate specific pollution control equipment; and has an equipment setback distance of greater than 250 feet from any residential or commercial establishment or place of public assembly unless all of the cement handling operations, excluding the cement silo storage and loading operations, are enclosed within at least a 3-sided structure. McCoig has enclosed concrete handling operations pursuant to the Rule 289 requirements, has installed fabric filters on loading operations, and has maintained the site as dictated by the fugitive dust control plan.

Key Permit Review Issues – Waterfront

Staff evaluated the proposed project to identify all state rules and federal regulations which are, or may be, applicable. The tables in Appendix 1 summarize these rules and regulations.

- **Scope of Review** – This facility and review differ in some key ways from the Marathon application discussed below and from the recent Great Lakes Petroleum reviews (Permit to Install Nos. 153-09 and 153-09A). The differences affect the equipment and emissions that are subject to review. As noted above, the Waterfront facility stores and transfers asphalt cement, heavy fuel oil, and distillate fuel. Only the two loading racks and three of the storage tanks are subject to permit review. The three storage tanks subject to permit review can store asphalt cement or heavy fuel oil but are not intended to store distillate fuel. Therefore, the review considered loading emissions for all three materials, along with emissions of asphalt cement and heavy fuel oil from the storage tanks. Since no distillate fuel storage tanks are subject to review, the review did not consider distillate fuel emissions from any storage tanks.
- **Rule 224 T-BACT Analysis** – Nearly all of the toxic air contaminants (TACs) emitted from the source are also volatile organic compounds (VOCs). Rule 224 exempts from T-BACT

any TACs that are also VOCs, if the process provides BACT. As noted below in the Rule 702 discussion, the process provides best available control technology (BACT) for VOCs under Rule 702(a). Therefore, T-BACT does not apply to the TACs that are also VOCs. The facility also emits acetone and methylene chloride (dichloromethane), which are not considered VOCs under state and federal regulations. The emission rates of these two TACs are very low. Based on AQD experience, add-on emission control for these compounds would not be cost-effective. Therefore, the facility as proposed, with no add-on emission control, provides T-BACT for acetone and methylene chloride.

- **Rule 225 Toxics Analysis** – The MDEQ Rules for Air Pollution Control require that the ambient air concentration of TACs be compared against health-based screening levels. As allowed in Rule 227(1)(a), Waterfront used Table 21, the Allowable Emission Rate (AER) table, for this purpose. Table 21 presents the maximum allowable emission rate of a pollutant, based on its screening level. AQD staff identified the TACs exempted from the Rule 225 requirement per Rule 226(a) and then reviewed Waterfront’s AER analysis for the remaining TACs. The AQD review found that the emissions of all the remaining TACs meet their respective AERs, which are derived from the established health-based screening levels. Therefore, the emissions will comply with the requirements of Rule 225. See Tables A1, A2, and A3 for a summary of the Rule 225 analysis for the Waterfront facility. Together, these tables list all of the TACs reviewed for the Waterfront application.
- **Rule 702 VOC Emissions** – This rule requires the AQD to evaluate four items to determine which will provide the lowest maximum allowable emission rate of VOCs:
 - a. BACT or a limit listed by the department on its own initiative
 - b. New Source Performance Standards (NSPS)
 - c. VOC emission rate specified in another permit
 - d. VOC emission rate specified in the Part 6 rules for existing sources

The AQD evaluated these four items and determined that a VOC BACT limit (702(a)) would dictate the lowest maximum allowable emission rate of VOC from the loading racks and storage tanks. This is because there is no NSPS or Part 6 rule that applies, and no other permit emission rate fits this situation. The AQD’s experience is that the cost to install and operate add-on control for the emissions of these relatively low volatility pollutants would be unreasonably high. Therefore, the AQD concluded that no add-on control would be required under Rule 702(a).

- **Odors** – The AQD has received no complaints of odors from this facility and has not identified any violation concerning odors. The draft permit conditions do not allow any increase in throughput that would increase the possibility of odors from the facility. Therefore, the AQD considers that no additional action is needed to properly address the matter of odors.

Key Permit Review Issues – Marathon

Staff evaluated the proposed project to identify all state rules and federal regulations which are, or may be, applicable. The tables in Appendix 1 summarize these rules and regulations.

- **Scope of Review** – This facility and review differ in some key ways from the Waterfront application discussed above and from the recent Great Lakes Petroleum reviews (Permit to

Install Nos. 153-09 and 153-09A). The differences affect the equipment and emissions that are subject to review. As noted above, the Marathon asphalt terminal stores and transfers asphalt cement. Only the truck loading rack is subject to permit review in this application. Therefore, the review only considered loading emissions for asphalt cement. All of the storage tanks have been previously permitted or do not need to obtain a Permit to Install because they are grandfathered or exempt.

- **Rule 224 T-BACT Analysis** – Nearly all of the toxic air contaminants (TACs) emitted from the source are also volatile organic compounds (VOCs). Rule 224 exempts from T-BACT any TACs that are also VOCs, if the process provides BACT. As noted below in the Rule 702 discussion, the process provides best available control technology (BACT) for VOCs under Rule 702(a). Therefore, T-BACT does not apply to the TACs that are also VOCs. The loading rack operations also emit acetone, which state and federal regulations do not regulate as a VOC. The emission rate of this TAC is very low. Based on AQD experience, add-on emission control for this compound would not be cost-effective. Therefore, the facility as proposed, with no add-on emission control, provides T-BACT for acetone.
- **Rule 225 Toxics Analysis** – The MDEQ Rules for Air Pollution Control require that the ambient air concentration of toxic air contaminants (TACs) be compared against health-based screening levels. Marathon used dispersion modeling for this purpose. AQD staff reviewed Marathon's air quality modeling and evaluation of TAC impacts. The review found that Marathon's air quality modeling was acceptable and that all TACs will comply with the requirements of Rule 225. AQD staff also identified the TACs exempted from the Rule 225 requirement per Rule 226(a). All of the remaining TACs show impacts less than the established health-based screening levels. See Tables B1, B2, and B3 for a summary of the Rule 225 analysis for the Marathon facility. Together, these tables list all the TACs reviewed for the Marathon application.
- **Rule 702 VOC Emissions** – This rule requires an evaluation of the following four items to determine which will provide the lowest maximum allowable emission rate of VOCs:
 - a. BACT or a limit listed by the department on its own initiative
 - b. New Source Performance Standards (NSPS)
 - c. VOC emission rate specified in another permit
 - d. VOC emission rate specified in the Part 6 rules for existing sources

The AQD evaluated these four items and determined that a VOC BACT limit (702(a)) would dictate the lowest maximum allowable emission rate of VOC from the loading racks and storage tanks. This is because there is no NSPS or Part 6 rule that applies, and no other permit emission rate fits this situation. Marathon submitted an analysis of the cost of VOC emission control. The AQD reviewed Marathon's analysis and agreed with the conclusion that the cost to install and operate add-on control would be unreasonably high. Therefore, the AQD concluded that no add-on control would be required under Rule 702(a).

- **Odors** – The AQD has not identified any violation at the asphalt terminal concerning odors. The draft permit conditions do not allow any increase in throughput that would increase the possibility of odors from the facility. Therefore, the AQD considers that no additional action is needed to properly address the matter of odors.

- **Emission Control** – As noted above in the discussions on Rule 225, Rule 702, and odors, these regulatory concerns do not require Marathon to install any emission control equipment. However, Marathon has installed an emission control system for the truck loading rack. The control system includes a hose placed into the open hatch of the truck to capture emissions and convey them to the control device. The control device is a carbon adsorber. Marathon’s emission estimates and Rule 225 analysis did not claim any emission reductions due to the emission control system.

Key Permit Review Issues - McCoig

- **Rule 224 TBACT Analysis** – As all of the quantified air toxics are emitted in particulate form, TBACT is satisfied by the existing baghouse control devices.
- **Rule 225 Toxics Analysis** –The MDEQ Rules for Air Pollution Control require the ambient air concentration of toxic air contaminants (TACs) be compared against health-based screening levels. AQD staff reviewed McCoig Concrete LLC’s evaluation of TAC impacts. As many of the estimated TAC levels are very low, compliance with the health-based screening levels is shown through the Rule 226 *de minimus* exemption. The remaining TACs, selenium and manganese, utilized the Rule 227 compliance method to show compliance with the associated health-based screening level.

Key Aspects of Draft Permit Conditions – Waterfront

- **Emission Limits (VOC)** – The draft permit includes VOC emission limits for the equipment being permitted: the loading racks and the three storage tanks. As noted above, the draft permit includes no add-on emission control.
- **Throughput Limits** – The draft permit includes limits on the throughput of each material handled at the facility: asphalt cement, light fuel oil (also known as distillate fuel), and heavy fuel oil (also known as residual oil). The draft permit applies these throughput limits at the loading racks. The draft permit limits each material’s throughput on a monthly basis. The draft permit also limits annual throughput of light fuel oil to reflect the Rule 702(a) determination that no add-on control is required.
- **Testing & Monitoring Requirements** – The draft permit includes the following requirements that Waterfront must meet for the loading racks and three storage tanks:
 - Monitor and record monthly throughput at the loading rack of asphalt cement, of light fuel oil, and of heavy fuel oil.
 - Monitor and record annual throughput at the loading rack of light fuel oil.
 - Monitor and record the temperature of the asphalt cement stored in each of the three storage tanks.
 - Each month, determine the VOC emission rate for the 12-month period that ends that month.

Key Aspects of Draft Permit Conditions – Marathon

- **Emission Limits (VOC)** – The draft permit includes VOC emission limits for the equipment being permitted: the truck loading rack. As noted above, the draft permit includes no add-on emission control.
- **Throughput Limits** - The draft permit includes limits on the throughput of asphalt cement.
- **Process/Operational Restrictions** – The draft permit requires that Marathon implement and maintain a malfunction abatement plan (MAP) for operating the truck loading rack and carbon adsorption system.
- **Emission Control Device Requirements** – As noted above, there is no regulatory requirement that Marathon install an emission control system. However, Michigan’s Rules for Air Pollution Control require that any emission control device present must be installed, maintained, and operated in a satisfactory manner. The draft permit includes this requirement. Following the MAP is part of operating and maintaining the carbon adsorption system in a satisfactory manner. The carbon adsorption system’s purpose is to reduce emissions of volatile organic compounds and odorous compounds from the truck loading rack.
- **Testing & Monitoring Requirements** – The draft permit includes the following requirements that Marathon must meet for the truck loading rack:
 - Monitor and record monthly throughput of asphalt cement.
 - Each month, determine the asphalt throughput and the VOC emission rate for the 12-month period that ends that month.
 - Keep a record showing the maximum pumping rate for the pumps that transfer asphalt cement at the rack.

Key Aspects of Draft Permit Conditions - McCoig

- **Usage Limits** - The draft permit restricts the facility to no more than 430,400 cubic yards of material per 12-month rolling time period.
- **Process/Operational Restrictions** – The draft permit requires the facility to operate under the terms of a Fugitive Dust Control Plan. The Fugitive Dust Control Plan covers all plant roadways, the plant yard, all material storage piles, and all material handling operations
- **Emission Control Device Requirements** – The draft permit includes emission control device requirements. There are three baghouse-style fabric filters associated with this facility: the cement weigh hopper and the truck loading portions are controlled by Baghouse1; cement bins 1, 2, 4, and 5 are controlled by Baghouse2; and cement bins 3 and 6 are controlled by Baghouse3. Each baghouse is rated at 5,000 actual cubic feet per minute (acfm). All are designed for 99.9% removal of particles greater than 1 micron in diameter. Each is equipped with a pressure drop gauge that alarms if the pressure drop exceeds 6 inches of water column.

Conclusion

Based on the analyses conducted to date, staff concludes that the proposed projects would comply with all applicable state and federal air quality requirements. Staff also concludes that these projects, as proposed, would not violate the federal National Ambient Air Quality Standards or the state and federal PSD increments.

Based on these conclusions, staff has developed draft permit terms and conditions that would ensure that the proposed facility design and operation are enforceable for each facility and that sufficient monitoring, recordkeeping, and reporting would be performed by the applicants to determine compliance with these terms and conditions. If the permit applications are deemed approvable, the delegated decision maker may determine a need for additional or revised conditions to address issues raised during the public participation process.

If you would like additional information about any of these proposals, please contact the appropriate engineer listed below.

- | | | |
|------------------------------------------|------------------|--------------|
| • Waterfront | Paul Schleusener | 517-335-6828 |
| • Marathon | Paul Schleusener | 517-335-6828 |
| • McCoig | Matthew Hall | 517-241-2144 |
| • Matters involving all three facilities | Paul Schleusener | 517-335-6828 |

Table A1
Waterfront: Toxic Air Contaminants Exempted from Rule 225 Analysis by Rule 226(a)¹

Toxic Air Contaminant	CAS Number ²	Emission Rate (lb/hr)
Acenaphthene	83-32-9	4.70×10^{-4}
Acenaphthylene	208-96-8	3.72×10^{-5}
Acetone	67-64-1	0.0026
Anthracene	120-12-7	1.29×10^{-4}
Benzo(e)pyrene	192-97-2	1.06×10^{-5}
Benzo(g,h,i)perylene	191-24-2	2.54×10^{-6}
2-Butanone	78-93-3	0.0019
Carbon disulfide	75-15-0	7.83×10^{-4}
Chloroethane	75-00-3	1.92×10^{-4}
Fluoranthene	206-44-0	1.49×10^{-4}
Fluorene	86-73-7	0.0010
n-Hexane	110-54-3	0.0047
Isooctane	540-84-1	2.94×10^{-5}
2-Methylnaphthalene	91-57-6	0.0051
Perylene	198-55-0	2.98×10^{-5}
Phenanthrene	85-01-8	0.0018
Phenol	108-95-2	0.0016
Pyrene	129-00-0	4.31×10^{-4}
Toluene	108-88-3	0.0034
Trichlorofluoromethane	75-69-4	2.11×10^{-5}
Xylenes	1330-20-7	0.0121

Table A2
Waterfront: Toxic Air Contaminants with Emissions Less Than 5% of All Applicable AERs

Toxic Air Contaminant	CAS Number
Benzene	71-43-2
Bromomethane	74-83-9
Chloromethane	74-87-3
Cumene	98-82-8
Ethylbenzene	100-41-4
Ethylene	74-85-1
Methylene chloride	75-09-2
Styrene	100-42-5
Tetrachloroethene	127-18-4

¹ Rule 226(a) provides that the Rule 225 requirement does not apply to emissions of a toxic air contaminant (TAC) if all of the statements below are true. They are all true for each TAC listed in Table A1.

- a) Its emissions are less than 10 pounds per month and less than 0.14 pound per hour.
- b) The TAC is not a carcinogen.
- c) The TAC is not listed in Table 20 in Rule 226 ("List of High Concern Toxic Air Contaminants").

² The Chemical Abstracts Service Registry Number (CAS Number) uniquely identifies a specific chemical substance.

**Table A3
 Waterfront: Toxic Air Contaminants and Allowable Emission Rates (AERs)**

Toxic Air Contaminant and CAS Number	ITSL or IRSL ($\mu\text{g}/\text{m}^3$)	Averaging Time	Potential Emission Rate (lb/hr)	AER Emission Rate (lb) ³	AER (lb)	AER Time Period ⁴	% of AER
Formaldehyde (50-00-0)	0.08	Annual	0.033	0.033	0.0432	One hour	76.1%
				3.2	3.2	Month	100.0%
Naphthalene (91-20-3)	0.08	Annual	0.0018	0.0018	0.0432	One hour	4.2%
				0.18	3.2	Month	5.5%
	3	24-hour		0.0018	0.15	One hour	1.2%
				0.0432	0.36	24 hours	12.0%
Total PAH ⁵ (no CAS number)	5×10^{-4}	Annual	1.04×10^{-5}	1.04×10^{-5}	2.7×10^{-4}	One hour	3.8%
				0.0010	0.02	Month	5.0%
Distillate oil ["light fuel oil"] (68334-30-5)	70	Annual	6.92	6.92	37.8	One hour	18.3%
				2799	2800	Month	100.0%
Residual oil ⁶ ["heavy fuel oil"] (no CAS number)	2	Annual	0.43	0.43	1.08	One hour	39.9%
				79.9	80	Month	99.8%

³ "AER Emission Rate (lb)" is the maximum emissions, in pounds, that the permit conditions allow over the AER time period. "AER (lb)" is the maximum allowed emissions, in pounds, over the AER time period, as determined from Table 21, the Allowable Emission Rate (AER) Table.

⁴ For each screening level that applies to a TAC, the AER Table requires that emissions meet a one-hour time period test based on the screening level. If the screening level has an 8-hour, 24-hour, or annual averaging time, the AER Table also requires a second test over another time period, as listed below. See Rule 227(1)(a) and Table 21 for more details.
<http://www.deq.state.mi.us/apcrats/Rules%20Collapse/deq-aqd-air-rules-apc-PART2.htm#R227>

AER Table: Screening Level Averaging Times and AER Time Periods		
Screening Level Averaging Time	First AER Time Period	Second AER Time Period
Annual	One hour	Month
24-hour	One hour	24 hours
8-hour	One hour	8 hours
1-hour	One hour	-----

⁵ PAH refers to "polycyclic aromatic hydrocarbon." "Total PAH" includes the following compounds. To calculate "total PAH," each compound is weighted by its carcinogenic potency relative to benzo(a)pyrene: benz(a)anthracene (CAS No. 56-55-3); benzo(a)pyrene (50-32-8); benzo(b)fluoranthene (205-99-2); benzo(k)fluoranthene (207-08-9); chrysene (218-01-9); dibenzo(a,h)anthracene (53-70-3); and indeno(1,2,3cd)pyrene (193-39-5).

⁶ The AQD has not published a screening level for residual oil. However, the Toxic Unit of the AQD provided the ITSL for residual oil shown in Table A3 as a "surrogate ITSL" that would be suitable for use with Rule 227(1)(a).

Table B1
Marathon: Toxic Air Contaminants Exempted from Rule 225 Analysis by Rule 226(a)⁷

Toxic Air Contaminant	CAS Number	Emission Rate (lb/hr)
Acenaphthene	83-32-9	7.43×10^{-4}
Acenaphthylene	208-96-8	7.93×10^{-5}
Acetone	67-64-1	0.0016
Anthracene	120-12-7	2.00×10^{-4}
Benzo(e)pyrene	192-97-2	2.26×10^{-5}
Benzo(g,h,i)perylene	191-24-2	5.43×10^{-6}
2-Butanone	78-93-3	0.0017
Carbon disulfide	75-15-0	4.51×10^{-4}
Chloroethane	75-00-3	7.27×10^{-6}
Fluoranthene	206-44-0	1.42×10^{-4}
Fluorene	86-73-7	0.0022
n-Hexane	110-54-3	0.0052
Isooctane	540-84-1	6.26×10^{-5}
2-Methylnaphthalene	91-57-6	0.0068
Perylene	198-55-0	6.26×10^{-5}
Phenanthrene	85-01-8	0.0023
Phenol	108-95-2	0.0033
Pyrene	129-00-0	4.26×10^{-4}
Toluene	108-88-3	0.0073
Trichlorofluoromethane	75-69-4	4.51×10^{-5}

Table B2
Marathon: Toxic Air Contaminants with Impacts Less Than 5% of All Applicable Screening Levels

Toxic Air Contaminant	CAS Number
Bromomethane	74-83-9
Chloromethane	74-87-3
Ethylbenzene	100-41-4
Ethylene	74-85-1
Styrene	100-42-5
Tetrachloroethene	127-18-4

⁷ Rule 226(a) provides that the Rule 225 requirement does not apply to emissions of a toxic air contaminant (TAC) if all of the statements below are true. They are all true for each TAC listed in Table B1.

- a) Its emissions are less than 10 pounds per month and less than 0.14 pound per hour.
- b) The TAC is not a carcinogen.
- c) The TAC is not listed in Table 20 in Rule 226 (“List of High Concern Toxic Air Contaminants”).

Table B3
Marathon: Toxic Air Contaminant Impacts Compared to Screening Levels

CAS No.	Toxic Air Contaminant	Potential Emission Rate (lb/hr)	Pollutant Impact ($\mu\text{g}/\text{m}^3$)	ITSL or IRSL ($\mu\text{g}/\text{m}^3$)	Averaging Time	% of ITSL or IRSL
71-43-2	Benzene	0.0018	0.0255	0.1	Annual	25.5%
			0.692	30	24-hour	2.3%
98-82-8	Cumene	0.0038	0.0532	0.1	Annual	53.2%
			1.45	400	24-hour	0.4%
50-00-0	Formaldehyde	0.0031	0.0428	0.08	Annual	53.5%
91-20-3	Naphthalene	0.0036	0.0498	0.08	Annual	62.2%
			1.35	3	24-hour	45.1%
None	Total PAH	1.57×10^{-5}	2.17×10^{-4}	5×10^{-4}	Annual	43.5%
1330-20-7	Xylenes	0.017	6.39	100	24-hour	6.4%

**Appendix 1
 STATE AIR REGULATIONS**

State Rule	Description of State Air Regulations
R 336.1201	Requires an Air Use Permit for new or modified equipment that emits, or could emit, an air pollutant or contaminant. However, there are other rules that allow smaller emission sources to be installed without a permit (see Rules 336.1279 through 336.1290 below). Rule 336.1201 also states that the Department can add conditions to a permit to assure the air laws are met.
R 336.1205	Outlines the permit conditions that are required by the federal Prevention of Significant Deterioration (PSD) Regulations and/or Section 112 of the Clean Air Act. Also, the same types of conditions are added to their permit when a plant is limiting their air emissions to legally avoid these federal requirements. (See the Federal Regulations table for more details on PSD.)
R 336.1224	New or modified equipment that emits toxic air contaminants must use the Best Available Control Technology for Toxics (T-BACT). The T-BACT review determines what control technology must be applied to the equipment. A T-BACT review considers energy needs, environmental and economic impacts, and other costs. T-BACT may include a change in the raw materials used, the design of the process, or add-on air pollution control equipment. This rule also includes a list of instances where other regulations apply and T-BACT is not required.
R 336.1225 to R 336.1232	The ambient air concentration of each toxic air contaminant emitted from the project must not exceed health-based screening levels. Initial Risk Screening Levels (IRSL) apply to cancer-causing effects of air contaminants and Initial Threshold Screening Levels (ITSL) apply to non-cancer effects of air contaminants. These screening levels, designed to protect public health and the environment, are developed by Air Quality Division toxicologists following methods in the rules and U.S. EPA risk assessment guidance.
R 336.1279 to R 336.1290	These rules list equipment to processes that have very low emissions and do not need to get an Air Use permit. However, these sources must meet all requirements identified in the specific rule and other rules that apply.
R 336.1299(2)(b)	Adopts by reference the provisions of 40 CFR 63.40 to 63.44 (2002) and 40 CFR 63.50 to 63.56 (2002), the federal hazardous air pollutant regulations governing constructed or reconstructed major sources.
R 336.1301	Limits how air emissions are allowed to look at the end of a stack. The color and intensity of the color of the emissions is called opacity.
R 336.1331	The particulate emission limits for certain sources are listed. These limits apply to both new and existing equipment.
R 336.1370	Material collected by air pollution control equipment, such as dust, must be disposed of in a manner, which does not cause more air emissions.
R 336.1401 and R 336.1402	Limit the sulfur dioxide emissions from power plants and other fuel burning equipment.
R 336.1601 to R 336.1651	Volatile organic compounds (VOCs) are a group of chemicals found in such things as paint solvents, degreasing materials, and gasoline. VOCs contribute to the formation of smog. The rules set VOC limits or work practice standards for existing equipment. The limits are based upon Reasonably Available Control Technology (RACT). RACT is required for all equipment listed in Rules 336.1601 through 336.1651.
R 336.1702	New equipment that emits VOCs is required to install the Best Available Control Technology (BACT). The technology is reviewed on a case-by-case basis. The VOC limits and/or work practice standards set for a particular piece of new equipment cannot be less restrictive than the Reasonably Available Control Technology limits for existing equipment outlined in Rules 336.1601 through 336.1651.
R 336.1801	Nitrogen oxide emission limits for larger boilers and stationary internal combustion engines are listed.
R 336.1901	Prohibits the emission of an air contaminant in quantities that cause injurious effects to human health and welfare, or prevent the comfortable enjoyment of life and property. As an example, a violation may be cited if excessive amounts of odor emissions were found to be preventing residents from enjoying outdoor activities.

STATE AIR REGULATIONS

State Rule	Description of State Air Regulations
R 336.1910	Air pollution control equipment must be installed, maintained, and operated properly.
R 336.1911	When requested by the Department, a facility must develop and submit a malfunction abatement plan (MAP). This plan is to prevent, detect, and correct malfunctions and equipment failures.
R 336.1912	A facility is required to notify the Department if a condition arises which causes emissions that exceed the allowable emission rate in a rule and/or permit.
R 336.2001 to R 336.2060	Allow the Department to request that a facility test its emissions and to approve the protocol used for these tests.
R 336.2501 to R 336.2514	Regulates mercury emissions from any stationary coal-fired electric generating unit (EGU) serving a generator with a nameplate capacity of more than 25 megawatts producing electricity for sale. The program begins January 1, 2015 and contains provisions for existing and new EGUs. Mercury program eligibility provisions and prohibitions, demonstration plans, testing, monitoring, record keeping, and reporting are all part of the rule.
R 336.2801 to R 336.2804 Prevention of Significant Deterioration (PSD) Regulations Best Available Control Technology (BACT)	<p>The PSD rules allow the installation and operation of large, new sources and the modification of existing large sources in areas that are meeting the National Ambient Air Quality Standards (NAAQS). The regulations define what is considered a large or significant source, or modification.</p> <p>In order to assure that the area will continue to meet the NAAQS, the permit applicant must demonstrate that it is installing the BACT. By law, BACT must consider the economic, environmental, and energy impacts of each installation on a case-by-case basis. As a result, BACT can be different for similar facilities.</p> <p>In its permit application, the applicant identifies all air pollution control options available, the feasibility of these options, the effectiveness of each option, and why the option proposed represents BACT. As part of its evaluation, the Air Quality Division verifies the applicant's determination and reviews BACT determinations made for similar facilities in Michigan and throughout the nation.</p>
R 336.2901 to R 336.2903 and R 336.2908	<p>Applies to new "major stationary sources" and "major modifications" as defined in R 336.2901. These rules contain the permitting requirements for sources located in nonattainment areas that have the potential to emit large amounts of air pollutants. To help the area meet the NAAQS, the applicant must install equipment that achieves the Lowest Achievable Emission Rate (LAER). LAER is the lowest emission rate required by a federal rule, state rule, or by a previously issued construction permit. The applicant must also provide emission offsets, which means the applicant must remove more pollutants from the air than the proposed equipment will emit. This can be done by reducing emissions at other existing facilities.</p> <p>As part of its evaluation, the AQD verifies that no other similar equipment throughout the nation is required to meet a lower emission rate and verifies that proposed emission offsets are permanent and enforceable.</p>

FEDERAL AIR REGULATIONS

Citation	Description of Federal Air Regulations or Requirements
Section 109 of the Clean Air Act – National Ambient Air Quality Standards (NAAQS)	The United States Environmental Protection Agency has set maximum permissible levels for seven pollutants. These NAAQS are designed to protect the public health of everyone, including the most susceptible individuals, children, the elderly, and those with chronic respiratory ailments. The seven pollutants, called the criteria pollutants, are carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter less than 10 microns (PM10), particulate matter less than 2.5 microns (PM2.5), and sulfur dioxide. Portions of Michigan are currently non-attainment for either ozone or PM2.5. Further, in Michigan, State Rules 336.1225 to 336.1232 are used to ensure the public health is protected from other compounds.

FEDERAL AIR REGULATIONS

Citation	Description of Federal Air Regulations or Requirements
40 CFR 51 Appendix S Emission Offset Interpretive Ruling	Appendix S applies during the interim period between nonattainment designation and EPA approval of a SIP that satisfies nonattainment requirements specified in Part D of the Clean Air Act. Appendix S would apply in nonattainment areas where either no nonattainment permit rules apply or where the existing state rules are less stringent than Appendix S.
40 CFR 52.21 – Prevention of Significant Deterioration (PSD) Regulations Best Available Control Technology (BACT)	<p>The PSD regulations allow the installation and operation of large, new sources and the modification of existing large sources in areas that are meeting the NAAQS. The regulations define what is considered a large or significant source, or modification.</p> <p>In order to assure that the area will continue to meet the NAAQS, the permit applicant must demonstrate that it is installing BACT. By law, BACT must consider the economic, environmental, and energy impacts of each installation on a case-by-case basis. As a result, BACT can be different for similar facilities.</p> <p>In its permit application, the applicant identifies all air pollution control options available, the feasibility of these options, the effectiveness of each option, and why the option proposed represents BACT. As part of its evaluation, the Air Quality Division verifies the applicant's determination and reviews BACT determinations made for similar facilities in Michigan and throughout the nation.</p>
40 CFR 60 – New Source Performance Standards (NSPS)	The United States Environmental Protection Agency has set national standards for specific sources of pollutants. These New Source Performance Standards (NSPS) apply to new or modified equipment in a particular industrial category. These NSPS set emission limits or work practice standards for over 60 categories of sources.
40 CFR 63— National Emissions Standards for Hazardous Air Pollutants (NESHAP)	The United States Environmental Protection Agency has set national standards for specific sources of pollutants. The National Emissions Standards for Hazardous Air Pollutants (NESHAP) (a.k.a. Maximum Achievable Control Technology (MACT) standards) apply to new or modified equipment in a particular industrial category. These NESHAPs set emission limits or work practice standards for over 100 categories of sources.
Section 112 of the Clean Air Act Maximum Achievable Control Technology (MACT) Section 112g	<p>In the Clean Air Act, Congress listed 189 compounds as Hazardous Air Pollutants (HAPS). For facilities which emit, or could emit, HAPS above a certain level, one of the following two requirements must be met:</p> <ol style="list-style-type: none"> 1) The United States Environmental Protection Agency has established standards for specific types of sources. These Maximum Achievable Control Technology (MACT) standards are based upon the best-demonstrated control technology or practices found in similar sources. 2) For sources where a MACT standard has not been established, the level of control technology required is determined on a case-by-case basis.

Notes: An "Air Use Permit," sometimes called a "Permit to Install," provides permission to emit air contaminants up to certain specified levels. These levels are set by state and federal law, and are set to protect health and welfare. By staying within the levels set by the permit, a facility is operating lawfully, and public health and air quality are protected.

The Air Quality Division does not have the authority to regulate noise, local zoning, property values, off-site truck traffic, or lighting.

These tables list the most frequently applied state and federal regulations. Not all regulations listed may be applicable in each case. Please refer to the draft permit conditions provided to determine which regulations apply.