Maryland
Department of
the Environment

Larry Hogan, Governor
Boyd K. Rutherford, Lt. Governor

Ben Grumbles, Secretary
Horacio Tablada, Deputy Secretary

State of Maryland
0.070 ppm 8-Hour Ozone
Reasonably Available Control Technology (RACT)
State Implementation Plan

SIP Number: 20-11

August 10, 2020

Prepared for:

U.S. Environmental Protection Agency

Prepared by:

Maryland Department of the Environment

This Page Left Intentionally Blank

Table of Contents

List of Figures

List of Tables

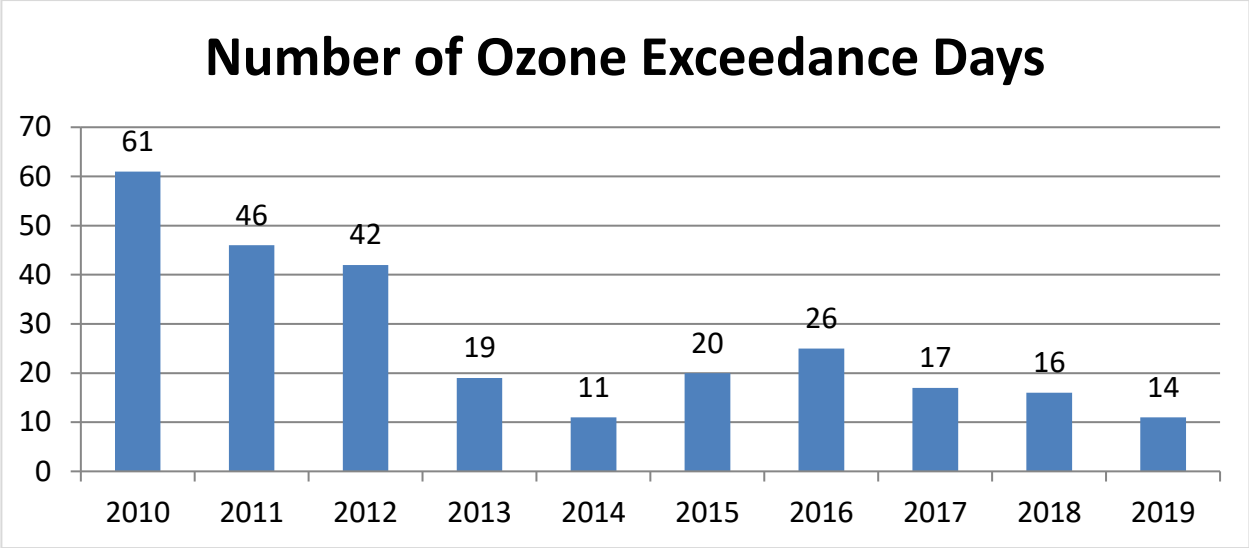
This Page Left Intentionally Blank

PROLOGUE

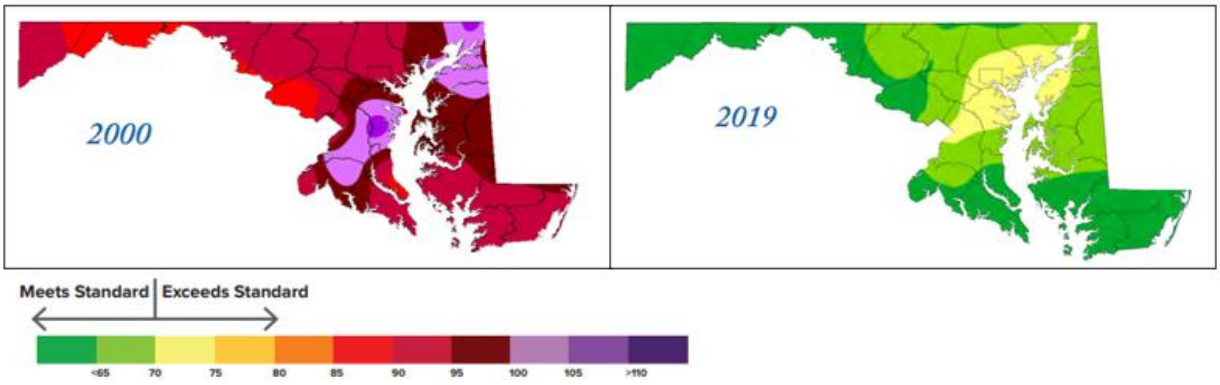
This prologue highlights Maryland's ozone precursor emission reductions, research activities, and regional contributions in abating the ozone problem and should not be considered as RACT. The activities strengthen Maryland's position in attaining and maintaining the ozone standard.

Since the 1970's Maryland has struggled to attain the ground level ozone standard. One of the major reasons the State has struggled is that research shows that on most bad ozone days, up to 70 percent of the ozone measured in Maryland originates in upwind states. For over 30 years, MDE has partnered with the University of Maryland College Park to study and analyze ozone transport or ozone that is carried by winds into the State. This research has used research airplanes, ozonesonde balloons, laser measurement techniques called LIDAR, ground level monitoring data and more to measure how much ozone is transported into Maryland from upwind areas.

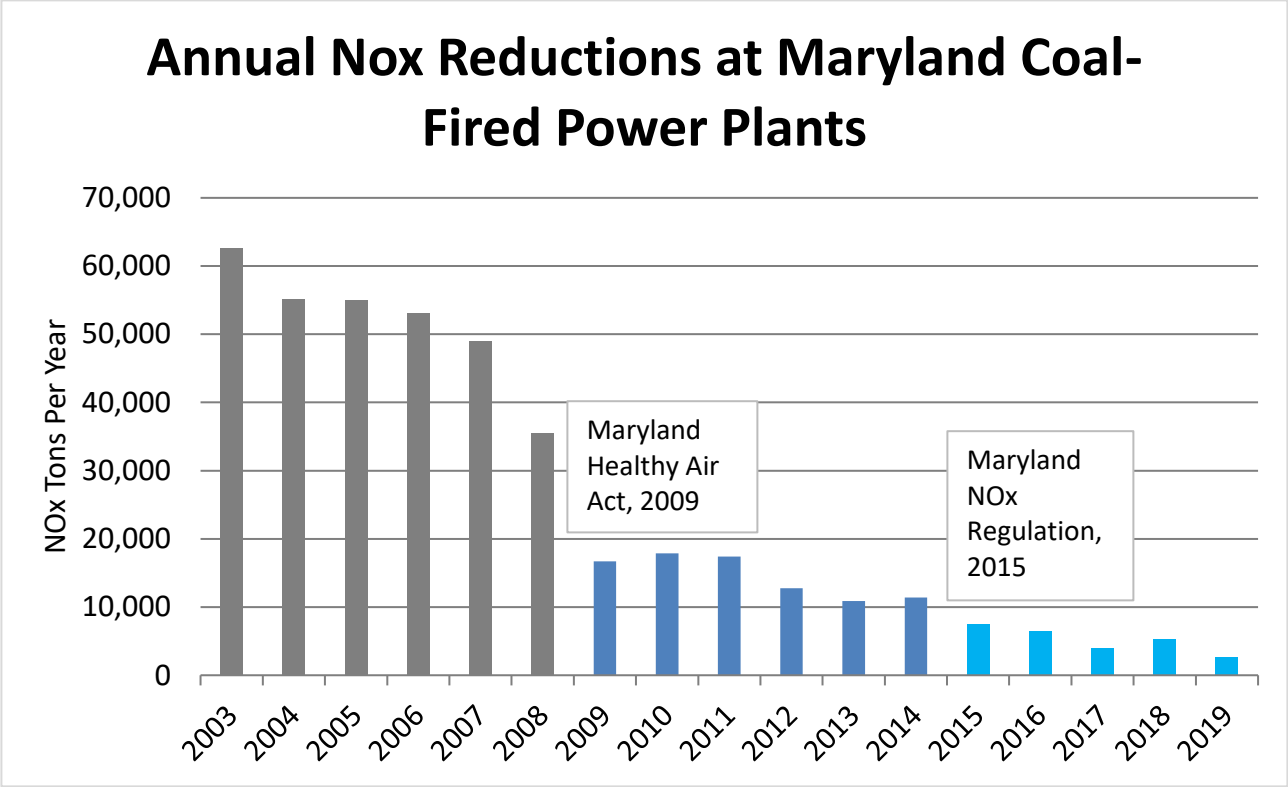
The State has made significant progress reducing ozone exposure across the State. The number of days where ozone is above the standard has dropped consistently over time.



The spatial extent of the State's ozone problem has also been reduced significantly. Over the past 30 years ozone levels across the State have improved appreciably. However, half of Maryland's jurisdictions and the majority of the population reside in nonattainment areas for the 2015 ozone standard.



Maryland has also adopted one of the Countries most aggressive set of VOC and NOx control programs in the Country. These include controls on mobile sources, area sources and large and small stationary sources. The most significant category of stationary sources in Maryland is coal-fired electric generating units. Through a series of regulatory actions, Maryland has dramatically reduced NOx emissions from coal-fired power plants.



A significant local source category contributing to Maryland's ozone problem is mobile sources. This includes smaller vehicles, like cars, as well as larger vehicles, like trucks and construction equipment. Separate from this SIP revision, Maryland has adopted, or is working on, very aggressive mobile source controls. Examples include recent actions on aftermarket catalysts, California cars and zero-emission vehicles for medium and heavy duty trucks. Reducing local mobile source NOx emissions is one of MDE's highest priorities for attaining the 2015 ozone standard. And while these programs have brought and continue to bring important emissions reductions, Maryland continues to struggle to attain the ozone standard. This underscores the importance of continuing to seek, not only aggressive in-state reductions, but also reductions from our upwind partners in order to achieve attainment.

MDE is also looking at achieving NOx and VOC reductions using our innovative nontraditional Peak Day Partnership Program. This program is an MDE voluntary initiative where we ask key energy sources to minimize NOx emissions on specific days during the summer based upon new research and enhancements to our ozone forecasting programs. Micro-scale meteorology, like winds around the Bay and emissions sources that are driven by the market to run at maximum levels is becoming a critical issue that needs to be addressed. The partnership is designed to begin a process to address this peak day issue as a low cost common sense approach. Additional options MDE is exploring include investigating additional control options at Municipal Waste Combustors, possible new reductions from the Baltimore Port Partnership, and potential episodic controls for emissions units that operate infrequently on an annual basis, but can emit NOx on peak zone days when an ozone exceedance is most likely. These non-traditional emissions reductions may not be considered RACT, but they may prove to be important for continuing to reduce ozone levels in Maryland.

While MDE continues to pursue aggressive emissions reductions, EPA's attainment modeling for 2023 continues to show Maryland struggling to attain and maintain the 2015 ozone NAAQS due, in part, to emissions from upwind states[1]. MDE is continuing to use all available tools provided under the Clean Air Act to push for more reductions in upwind States to reduce ozone transport. Examples of these actions include the State's Clean Air Act Section 126 Petition, the Ozone Transport Commission's Clean Air Act Section 184C recommendation based upon Maryland's 184C Petition and a series of legal challenges of federal rules like the Cross State Air Pollution Rule (CSAPR) Close-Out.

For more information on the actions discussed above and other actions being undertaken by MDE to reduce ozone exposure to Maryland's citizens see:

https://mde.maryland.gov/programs/Air/Pages/index.aspx

[1] EPA's modeling released in a March 2018 memo titled *Information on the Interstate Transport State Implementation Plan Submissions for the 2015 Ozone National Ambient Air Quality Standards under Clean Air Act Section 110(a)(2)(D)(i)(I)* shows that, using a standard methodology Maryland's Harford County monitor will be in nonattainment for the 2015 ozone NAAQS in 2023. Using an approach modified for monitors influenced by land-water interface issues, the monitor will have issues maintaining the NAAQS. A following memo released in August 2018 titled *Analysis of Contribution Thresholds for Use in Clean Air Act Section 110(a)(2)(D)(i)(I) Interstate Transport State Implementation Plan Submissions for the 2015 Ozone National Ambient Air Quality Standards* indicates that, for the modeled maintenance value of 70.9 ppb, 22.60 ppb comes from in-state sources while 25.88 ppb comes from out-of-state sources.

1.0 INTRODUCTION

On October 26, 2015, EPA promulgated a revised 8-hour ozone NAAQS[2] of 0.070 parts per million (ppm). This action revised the primary and secondary standards to a level of 0.070 parts per million (ppm) over an 8-hour period. The EPA's final rule *Implementation of the 2015 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements* set out the requirements for Reasonable Available Control Technology (RACT) State Implementation Plans[3].

This document consists of Maryland's State Implementation Plan (SIP) Revision developed for the purpose of meeting the RACT requirements set forth by the Clean Air Act (CAA), as the requirements apply to the 0.070 ppm 8-hour ozone National Ambient Air Quality Standard (NAAQS). This document is hereafter referred to as "Maryland's 8-hour Ozone RACT SIP", or simply as "the RACT SIP." This document is a revised and updated version of the NOx and VOC RACT SIPs that Maryland submitted in 2016 and 2018, respectively, in response to the 2008 0.075 ppm 8-hr ozone standard.

Background and requirements

Ground level ozone, one of the principal components of "smog," is a serious air pollutant that harms human health and the environment. High levels of ozone can damage the respiratory system and cause breathing problems, throat irritation, coughing, chest pains, and greater susceptibility to respiratory infection. High levels of ozone also cause serious damage to forests and agricultural crops, resulting in economic losses to logging and farming operations.

Ozone is generally not directly emitted to the atmosphere; rather it is formed in the atmosphere by photochemical reactions between volatile organic compounds (VOC) and oxides of nitrogen (NO_x) in the presence of sunlight. Consequently, in order to reduce ozone concentrations in the ambient air, the CAA requires all nonattainment areas to apply controls on VOC/NO_x emission sources to achieve emission reductions. This SIP discusses the controls applied to NOx emissions sources.

Maryland's Ozone Designation

On June 4, 2018, EPA designated three areas in Maryland as "nonattainment" under the 8-hour ozone NAAQS[4]. These nonattainment areas are; the Baltimore Nonattainment Area (classified as Marginal), the Washington D.C. Nonattainment Area (Marginal), and the Philadelphia Nonattainment Area (Marginal). All other remaining Maryland counties are part of the Ozone Transport Region (OTR). Please reference Table 1 below.

[2] 80 FR 65292, https://www.govinfo.gov/content/pkg/FR-2015-10-26/pdf/2015-26594.pdf

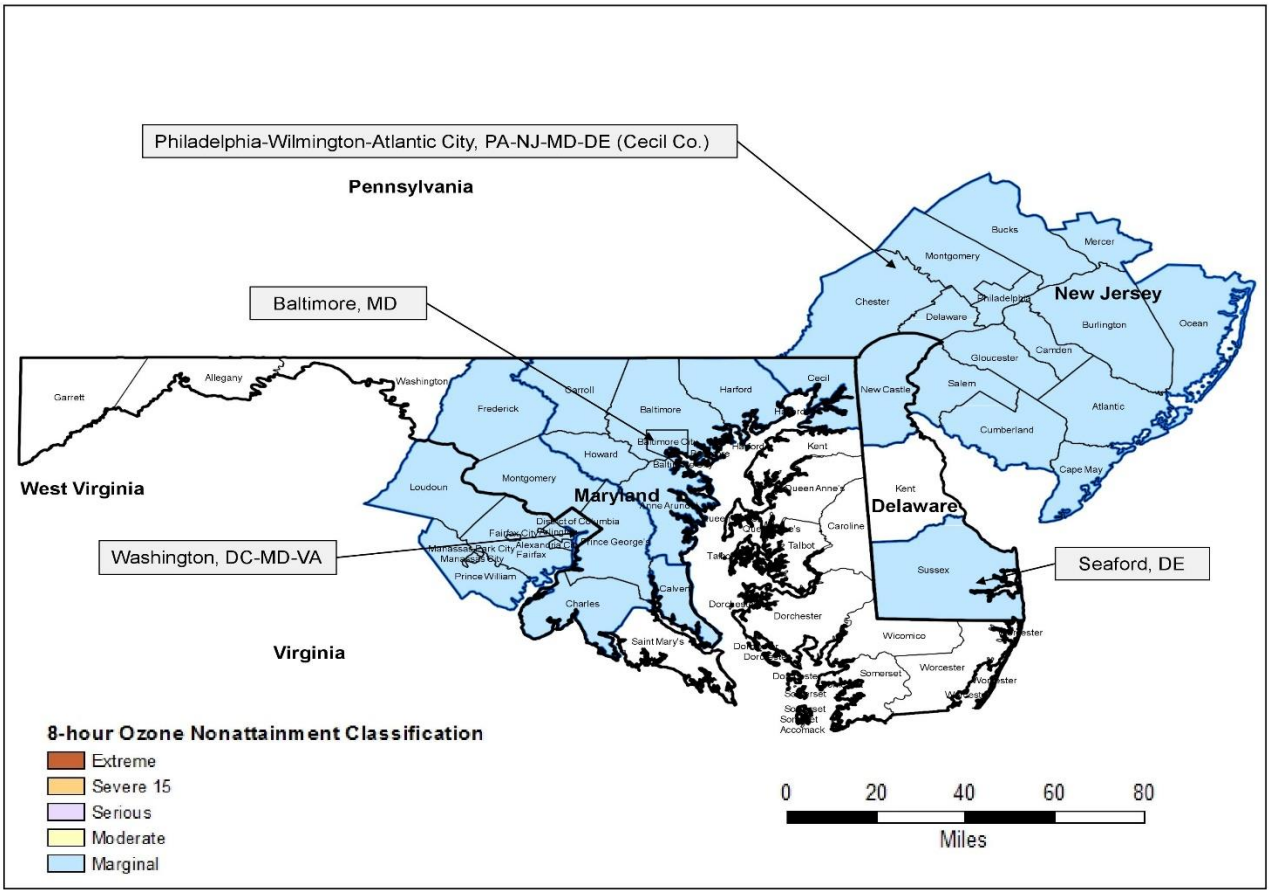
[3] 83 FR 62998, https://www.govinfo.gov/content/pkg/FR-2018-12-06/pdf/2018-25424.pdf

[4] 83 FR 25776, https://www.govinfo.gov/content/pkg/FR-2018-06-04/pdf/2018-11838.pdf

Table 1: Maryland's 2015 Ozone NAAQS Designations

Ozone Nonattainment Area Name	MD Counties	Area Classification
Baltimore, MD	Anne Arundel	Marginal
	Baltimore	
	Baltimore City	
	Carroll	
	Harford	
	Howard	
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD- DE	Cecil	Marginal
Washington, DC-MD-VA	Calvert	Marginal
	Charles	
	Frederick	
	Montgomery	
	Prince George's	

Figure 1: Maryland/Washington D.C./Virginia/Delaware 2015 8-hour Ozone Nonattainment Areas



CAA RACT Requirements

The U.S. Environmental Protection Agency (EPA) has defined RACT as "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility"[5]. Section 182(b)(2) of the CAA, applies RACT to VOC sources in moderate or worse ozone nonattainment areas around the country. Under CAA Section 184(b)(1)(B), requirements comparable to those established under Section 182(b)(2) are applicable to all areas in ozone transport regions. Under CAA Section 184(b)(2) any stationary source with a potential to emit at least 50 tons per year of VOCs is subject to RACT under CAA Section 182(b)(2)(C) if located in the following portions of ozone transport regions: those designated attainment; or, designated nonattainment and classified as either marginal or moderate nonattainment.[6] Under Section 182(f), the CAA establishes that Subpart 2 requirements applicable to major stationary sources of VOCs are also applicable to major stationary sources of NO_x. However, the threshold defining a major stationary source of NO_x within ozone transport

[5] 44 FR 53761 and 53762, September 17, 1979

[6] Nonattainment areas classified as serious or worse must implement RACT on stationary sources with a potential emit of at least 50 tons per year of VOCs irrespective of location within or outside an ozone transport region.

regions remains at a potential to emit at least 100 tons per year of NO_x in areas designated attainment and in nonattainment areas classified as marginal or moderate.[7]

Under Section 183 of the CAA, EPA was required to issue by certain timeframes several guidance documents that would help states meet the requirements of Section 182(b)(2). This requirement upon EPA includes developing Alternate Control Techniques (ACT) documents for controls of NO_x emissions from stationary sources.
Information in ACT documents is available to states to consider as they establish controls on relevant NO_x sources in their moderate or worse nonattainment areas. In areas with continuing nonattainment problems, such as the Baltimore Nonattainment Area, more stringent controls have been adopted as RACT or as beyond RACT.

Major Source Threshold Levels

Maryland is part of the Northeast Ozone Transport Region (OTR) and contains nonattainment areas classified as "moderate" or "marginal". For the purpose of the 2015 8-hour Ozone NAAQS, the threshold for what constitutes a major stationary source of VOCs or NO_x is that required any of the following criteria:

- Due to an area's nonattainment classification under the 2015 8-hour Ozone NAAQS
- Due to its presence in the ozone transport region due to regulations/requirements specified under previous SIP commitments.[8]

Sources in Maryland will continue to be subject to the applicability requirements of COMAR 26.11.09.08A. The regulation applies to a person who owns or operates an installation that causes emissions of NO_x and is located at premises that have total potential to emit:

a) 25 tons or more per year of NO_x and is located in Baltimore City, or Anne Arundel, Baltimore, Calvert, Carroll, Cecil, Charles, Frederick, Harford, Howard, Montgomery, or Prince George's counties
b) 100 tons or more per year of NO_x and is located in Allegany, Caroline, Dorchester, Garrett, Kent, Queen Anne's, St. Mary's, Somerset, Talbot, Washington, Wicomico, or Worcester counties
c) 25 tons or more per year of VOC and is located in Baltimore City, or Anne Arundel, Baltimore, Calvert, Carroll, Cecil, Charles, Frederick, Harford, Howard, Montgomery, or Prince George's counties
d) 50 tons or more per year of VOC and is located in Allegany, Caroline, Dorchester, Garrett, Kent, Queen Anne's, St. Mary's, Somerset, Talbot, Washington, Wicomico, or Worcester counties

Responsibilities

The agency with direct responsibility for preparing and submitting this document is the Maryland Department of the Environment (MDE), Air and Radiation Administration (ARA), Air Quality Planning Program, Managed by Mr. Brian J. Hug, Program Manager.

[7] 57 FR 55620 at 55622, November 25, 1992.
[8] Under anti-backsliding rules of 40 CFR 51.1105 stationary sources of NO_X below this 100 tons per year threshold remain subject to any applicable regulations for the control of NO_X.

2.0 NOX RACT SIP DETERMINATION

Certification of NO_x RACT

The Maryland Department of the Environment (MDE) has prepared this Reasonably Available Control Technology (RACT) analysis to demonstrate that the State has met its obligation relating to the 2015 8-hour ozone National Ambient Air Quality Standard (NAAQS). MDE is certifying that all RACT regulations adopted to the present date are RACT for the 2015 8-hour ozone NAAQS as they reflect the most current pollution control technologies and economic considerations. Based on the review of current technologies, MDE has found no data indicating that the existing levels of control for these source categories are no longer RACT.

Maryland is also certifying through this SIP submittal that Maryland meets the CAA RACT requirements for NOx sources with potential to emit 100 TPY or more.

This certification is based on the following supporting information: (1) a certification that previously adopted RACT controls in Maryland's SIP and that were approved by EPA under the 2008 8-hour ozone NAAQS are based on the current availability of technically and economically feasible controls and that they continue to represent RACT for 2015 8-hour NAAQS implementation purposes, and (2) the adoption of new or more stringent regulations that represent RACT control levels for certain source categories.

Maryland Small Source Requirement for NO_x

In regulation COMAR 26.11.02 "Permits, Approvals and Registration," Maryland has established a comprehensive review process for minor sources. By keeping the Maryland exemption threshold low, all other sources are included in the review process. The affected minor sources emit well below the major source. The requirements of COMAR 26.11.02 ensure that all major sources are controlled by RACT at a minimum.

Overview of COMAR Requirements

Code of Maryland Regulations (COMAR) 26.11.09.08 represent Maryland's NO_x RACT controls that have been implemented and were previously approved into the Maryland SIP under the 1-hour ozone NAAQS and 1997 8-hour ozone NAAQS. These regulations address NOx RACT for major NOx sources, including but not limited to: fuel burning equipment, space heaters, glass melting furnaces, and industrial furnaces. A full listing of the major (high impact) NOx sources in Maryland and the corresponding RACT regulate on is included in Appendix B.

Maryland also implemented additional NOx controls as part of its SIP necessary to meet other Federal and state requirements, and which as recently revised represent NOx RACT to date under the 2015 8-hour ozone NAAQS. Certain NOx requirements of COMAR 26.11.29 and 26.11.30 currently ensure that affected cement manufacturing facilities and natural gas compressor stations achieve RACT level reductions of at least a 30 percent and 82 percent reduction, respectively, from uncontrolled levels (70 FR at 71653, November 29, 2005).

Hospital, medical, and infectious waste incinerators (HMIWI) are subject to the RACT requirements under 26.11.08.08-2, small municipal waste combustors (MWC) are subject to the RACT requirements under 26.11.08.07 and large municipal waste combustors (MWC) are subject to the RACT requirements under 26.11.08.10 . Kraft pulp mills are subject to RACT requirements that were adopted under COMAR 26.11.14 & COMAR 26.11.40. Portions of COMAR 26.11.08.08-2 are being submitted for approval into the SIP. The largest coal-fired electric generating units are subject to SIP-approved NOx requirements that were adopted under COMAR under 26.11.38, some of which MDE is certifying represent NOx RACT to date.

Table 2: Maryland NOx RACT Regulations under the 2015 8-Hour Ozone NAAQS

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2015 Ozone NAAQS?
Fuel-Burning Equipment Located at Major Sources – General Requirements and Conditions	1. Summary of NO_x Control Technologies and their Extent of Application, USEPA February 1992; 2. State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990; 3. USEPA Memorandum Subject: De Minimis Values for NO_x RACT, from G.T. Helms, Ozone Policy and Strategies Group, dated 1/1/1995; and 4. Alternative Control Techniques (ACT) Document, NO_x Emissions from Industrial/Commercial /Institutional (ICI) Boilers (EPA-453/R-94-022).	26.11.09.08A&B MDE confirms that there are no additional sources at this time seeking alternative standards and that MDE continues to rely on any alternative standards that have been previously approved into the SIP.	NOx RACT standards apply to tangentially or wall-fired fuel-burning units, based on fuel: Gas only- 0.20 pounds of NO_x per Million Btu per hour (lb/MMBTU) Gas/Oil: 0.25 lb/MMBTU Coal (dry bottom): 0.38 lb/MMBTU/hr Coal (wet bottom): 1.0 lb/MMBTU/hr	3/28/2018, 83 FR 13192	11/24/2003	Yes. This provision fully implements NOx RACT controls over the targeted sources. It was approved by EPA as RACT under the 1997 ozone standard. After EPA's approval there has been no significant change in RACT control technology for the covered sources.

[9] Because SIP 15-04 was the last amend a Section of Regulation .08, the overall COMAR 26.11.09.08 Control of NOx Emissions from Major Sources approval date matches the approval of SIP 15-04

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2015 Ozone NAAQS?
Fuel-Burning Equipment with a Rated Heat Input Capacity of 250 MMBtu/hr or Greater	1. Summary of NO_x Control Technologies and their Extent of Application, USEPA February 1992; 2. State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990; 3. USEPA Memorandum Subject: De Minimis Values for NO_x RACT, from G.T. Helms, Ozone Policy and Strategies Group, dated 1/1/1995; and 4. Alternative Control Techniques (ACT) Document, NO_x Emissions from Industrial/Commercial /Institutional (ICI) Boilers (EPA-453/R-94-022).	26.11.09.08C	NOx standards applicable by type of unit and/or fuel. Coal Tangentially fired: 0.70 lb/MMBTU (for high heat release units); 0.45 lb/MMBTU (all other units) Cyclone: 0.70 lb/MMBTU/hr from May 1 to September 30, and 1.5 lb/MMBTU for the remainder of the year. Cell burner: 0.6 lb/MMBTU Wall fired: 0.80 lb/MMBTU (for high heat release units); 0.50 lb/MMBTU (all other units) Oil fired or gas/oil fired: 0.30 lb/MMBTU	3/28/2018, 83 FR 13192	3/3/2014	Yes. This provision fully implements NOx RACT controls over the targeted sources. It was approved by EPA as RACT under the 1997 ozone standard. After EPA's approval there has no significant change in RACT control technology for the covered sources. In addition, Maryland has adopted more stringent NOx emissions limits in COMAR 26.11.38 for several of the units in this category, which is also certifying as RACT. See Section 2.1.1 "Implementation of Non-CTG Specified NOx Controls" for more details.

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2015 Ozone NAAQS?
Fuel-Burning Equipment with a Rated Heat Input Capacity of Less than 250 MMBtu/hr and Greater than 100 MMBtu/hr	1. Summary of NO_x Control Technologies and their Extent of Application, USEPA February 1992; 2. State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990; 3. USEPA Memorandum Subject: De Minimis Values for NO_x RACT, from G.T. Helms, Ozone Policy and Strategies Group, dated 1/1/1995; and 4. Alternative Control Techniques (ACT) document, NO_x Emissions from Industrial/Commercial /Institutional (ICI) Boilers (EPA-453/R-94-022).	26.11.09.08D	For coal fired fuel-burning equipment: The installation and operation of the affected unit in accordance with the manufacturer's specifications, combustion modifications, or other technologies to meet an emission rate of 0.65 lb/MMBTU. For all other: compliance with 26.11.09.08B(1)(c).	3/28/2018, 83 FR 13192	11/11/2002	Yes. This provision fully implements RACT NOx controls over the targeted sources. It was approved by EPA as RACT under the 1997 ozone standard. After EPA's approval there has been no updated ACT and no significant change in RACT control technology for the covered sources.

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2015 Ozone NAAQS?
Fuel-Burning Equipment with a Rated Heat Input Capacity of 100 MMBtu/hr or Less	1. Summary of NO_x Control Technologies and their Extent of Application, USEPA February 1992; 2. State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990; 3. USEPA Memorandum Subject: De Minimis Values for NO_x RACT, from G.T. Helms, Ozone Policy and Strategies Group, dated 1/1/1995; and 4. Alternative Control Techniques (ACT) document, NO_x Emissions from Industrial/Commercial /Institutional (ICI) Boilers (EPA-453/R-94-022).	26.11.09.08E	Applicable NOx RACT standards include: Performing a combustion analysis for each installation at least once each year and optimizing combustion based on the analysis.	3/28/2018, 83 FR 13192	9/18/2000	Yes. This provision fully implements NOx RACT controls over the targeted sources. It was approved by EPA as RACT under the 1997 ozone standard. After EPA's approval there has been no significant change in RACT control technology for the covered sources.

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2015 Ozone NAAQS?
Space Heaters	1. Summary of NO_x Control Technologies and their Extent of Application, USEPA February 1992; 2. State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990; 3. USEPA Memorandum Subject: De Minimis Values for NO_x RACT, from G.T. Helms, Ozone Policy and Strategies Group, dated 1/1/1995; and 4. Alternative Control Techniques (ACT) document, NO_x Emissions from Industrial/Commercial /Institutional (ICI) Boilers (EPA-453/R-94-022).	26.11.09.08F	Applicable NOx RACT standards include: Developing an operating and maintenance plan to minimize NO_x emissions based on the recommendations of equipment vendors and other information including the source's operating and maintenance experience; implementing the operating and maintenance plan.	3/28/2018, 83 FR 13192	9/18/2000	Yes. This provision fully implements NOx RACT controls over the targeted sources. It was approved by EPA as RACT under the 1997 ozone standard. After EPA's approval there has been no significant change in RACT control technology for the covered sources.

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2015 Ozone NAAQS?
Fuel-Burning Equipment with a Capacity Factor of 15 Percent or Less	1. Alternative Control Techniques document: NOx Emissions from Industrial/Commercial/Institutional (ICI) Boilers, EPA-453/R-94-022, March 1994; 2. Alternative Control Techniques Document: NOx Emissions from Stationary Gas Turbines, US EPA, EPA-453/R-93-007, January 1993; 3. NESCAUM Stationary Source Committee Recommendation on NOx RACT for Industrial Boilers, Internal Combustion Engines and Combustion Turbines 9/18/1992; 40 4. NESCAUM Status Report on NOx Controls for Gas Turbines, Cement Kilns, Industrial Boilers, Internal Combustion Engines, December 2000; 5. USEPA Summary of NOx Control Technologies and their Availability and Extent of Application, February 1992; and 6. USEPA Summary of State/Local NOx Regulations for Stationary Sources, 2004.	26.11.09.08G(1)	Applicable NOx RACT standards include: Providing certification of the capacity factor of the equipment to the Department in writing; for fuel-burning equipment that operates more than 500 hours during a calendar year, performing a combustion analysis and optimize combustion at least once annually.	3/28/2018, 83 FR 13192	9/18/2000	Yes. This provision fully implements NOx RACT controls over the targeted sources. It was approved by EPA as RACT under the 1997 ozone standard. After EPA's approval there has been significant change in RACT control technology for the covered sources.

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2015 Ozone NAAQS?
Combustion Turbines with a Capacity Factor Greater than 15 Percent	1.Alternative Control Techniques document: NOx Emissions from Industrial/Commercial/Institutional (ICI) Boilers, EPA-453/R-94-022, March 1994; 2. Alternative Control Techniques Document: NOx Emissions from Stationary Gas Turbines, US EPA, EPA-453/R-93-007, January 1993; 3. NESCAUM Stationary Source Committee Recommendation on NOx RACT for Industrial Boilers, Internal Combustion Engines and Combustion Turbines 9/18/1992; 40 4. NESCAUM Status Report on NOx Controls for Gas Turbines, Cement Kilns, Industrial Boilers, Internal Combustion Engines, December 2000; 5. USEPA Summary o f NOx Control Technologies and their Availability and Extent of Application, February 1992; and 6. USEPA Summary of State/Local NOx Regulations for Stationary Sources, 2004.	26.11.09.08G(2)	To meet an hourly average NO_x emission rate of not more than 42 ppm when burning gas or 65 ppm when burning fuel oil (dry volume at 15 percent oxygen).	3/28/2018, 83 FR 13192	9/18/2000	Yes. This provision fully implements NOx RACT controls over the targeted sources. It was approved by EPA as RACT under the 1997 ozone standard. After EPA's approval there has been no significant change in RACT control technology for the covered sources.

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2015 Ozone NAAQS?
Hospital, Medical, and Infectious Waste Incinerators (HMIWI)	EPA's 2009 revision to 40 CFR Part 60, Subpart Ec, and "Standards of Performance for Hospital/Medical/Infectious/Waste Incinerators." EPA approved regulations on 11/28/2016 [81 FR 85457] (as part of 111(d)/State Plan)	26.11.08.01, 26.11.08.02, 26.11.08.08-2 (As redacted in Appendix D)	NO_x emissions from hospital, medical, and infectious waste incinerators as defined in COMAR 26.11.08.01B may not exceed NO_x emission standards in COMAR 26.11.08.08-2B(1) (190 ppm 24-hour average for small and medium HMIWIs and 140 ppm 24-hour average for large HMIWIs) as applicable.	This regulation was submitted to EPA for approval as part of the 2008 NOx RACT SIP. (See section 2.1.1)	4/2/2012	Yes. This provision fully implements NOx RACT controls over the targeted sources.

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2015 Ozone NAAQS?
Municipal Waste Combustors (MWC)	1.EPA's 2007 Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Large Municipal Waste Combustors 2. Federal Plan for Small Municipal Waste Combustion Units Constructed on or Before August 30, 1999, 40 CFR 62 Subpart JJJ EPA approved regulations on 12/26/2017 [82 FR 60872] (as part of 111(d)/State Plan)	26.11.08.10 all parts except E and J 26.11.08.07	1)As of 5/1/19 Wheelabrator must meet 150 ppmv NOx 24-hour block avg emission rate, MCRRF must meet rate of 140 ppmv 2)As of 5/1/20 Wheelabrator must meet 145 ppmv NOx 24-hour block avg emission rate, MCRRF must meet rate of 105 ppmv 3) D. Startup, Shutdown, and Warm-Up NOx Emission Limitations. 4)As of 5/1/19, facility-wide NOx emission limit of 202 lbs/hr timed average mass loading over a 24-hour period during periods of startup and shutdown for MCRRF 5)As of 5/1/19, facility-wide NOx emission limit of 252 lbs/hr timed average mass loading over a 24-hour period during periods of startup and shutdown for Wheelabrator 6)As of 5/1/19, on days when the unit is in startup, the NOx 24-hour block average emission rate under §B of this regulation will apply for the 24-hour period after startup is completed. 7)As of 5/1/19, on days when the unit is in shutdown, the NOx 24-hour block average emission rate under §B of this regulation	Sent to EPA as SIP Revision #20-10 on 7/16/2020	5/4/2020	Yes. This provision fully implements NOx RACT controls over the targeted sources.

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2015 Ozone NAAQS?
Glass Melting Furnaces	EPA's NSPS for Glass Plants (40 CFR 60, subpart CC) and NESHAP for area source Glass Plants (40 CFR 63, subpart SSSSSS)	26.11.09.08I	Optimization of combustion by performing daily oxygen tests and maintaining excess oxygen at 4.5 percent or less.	3/28/2018, 83 FR 13192	7/20/2015	Yes. This provision fully implements NOx RACT controls over the targeted sources. It was approved by EPA as RACT under the 1997 ozone standard. After EPA's approval there has been no significant change in RACT control technology for the covered sources.
Industrial Furnaces and Other Miscellaneous Installations that Cause Emissions of NO_x	Alternative Control Techniques document: NOx Emissions from Industrial/Commercial/Institutional (ICI) Boilers, EPA-453/R-94-022, March 1994	26.11.09.08J	NOx RACT standards for any installations other than fuel-burning equipment include: Maintaining good operating practices as recommended by the equipment vendor to minimize NO_x emissions; and burning only gas in each installation, where gas is available, during the period May 1 through September 30 of each year.	3/28/2018, 83 FR 13192	9/18/2000	Yes. This provision fully implements NOx RACT controls over the targeted sources. It was approved by EPA as RACT under the 1997 ozone standard. After EPA's approval there has been no significant change in RACT control technology for the covered sources.

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2015 Ozone NAAQS?
Kraft Pulp Mills (Prior to 3/3/2014 Kraft Pulp Mills NOx RACT was found under 26.11.09.08C(2)(h))	Federal standards for NOx emissions from boilers at pulp and paper facilities (Alternative Control Techniques document: NOx Emissions from Industrial/Commercial/Institutional (ICI) Boilers, EPA-453/R-94-022, March 1994)	26.11.14.01; 26.11.14.02; 26.11.14.07 & 26.11.40	NOx RACT standards applicable to any fuel burning equipment at Luke Kraft pulp mill. During the period May 1 through September 30 of each year: 0.70 lb/MMBTU and NOx ozone season emission cap of 656 tons. During the period October 1 through April 30 of each year: 0.99 lb/MMBTU, 30 day rolling average.	7/17/2017, 82 FR 32641 (26.11.14) SIP #18-03 for 26.11.40 & 26.11.14.07 was approved by EPA on 10/11/18, 83 FR 51366	26.11.14 - 5/9/2016 26.11.40 - 4/23/18	Yes. This provision fully implements NOx RACT controls over the targeted sources. The only MD source in this category, VERSO Luke Paper, is no longer operating. The VERSO corporation closed the Luke Paper Mill in May of 2019. Operations at the plant completely ceased in June of 2019. On May 7, 2020, the VERSO corporation relinquished their air permits required to operate the facility. The VERSO Corporation acknowledged in the letter that Verso or any potential new owner of the facility must apply for and obtain all new air quality permits in order for this facility to begin operations any time in the future (see Appendix C). It was approved by EPA as RACT under the 1997 ozone standard (as COMAR 26.11.09.08C(2)(h)) and although re-codified, the control requirements remain the same.. After EPA's approval there has been no significant change in RACT control technology for the covered sources. The new action in SIP #18-03 removes 95 NOx allowances under 26.11.14.07.

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2015 Ozone NAAQS?
Portland Cement Manufacturing Plants	EPA's 2004 Alternative Control Techniques (ACT) for NOx Emission from Cement Manufacturing	26.11.30.01, .02, .03, .07, and .08	NOx RACT standards applicable to a cement kiln at a Portland cement manufacturing plant: On or after April 1, 2017: For dry long kilns: 3.4 lb of NOx/ton of clinker For pre-calciner kilns: 2.4 lb of NOx/ton of clinker Both of Maryland's cement plants are now of the pre-calciner type kiln.	3/28/2018, 83 FR 13192	7/20/2015	Yes. This provision fully implements NOx RACT controls over the targeted sources. The original NOx control requirements were approved by EPA into the SIP and determined adequate as RACT under the 1997 ozone standard as COMAR 26.11.09.08H(1)&(2). Recent regulatory amendments reflect more stringent RACT level of control than previously adopted as RACT under 1997 ozone standard.
Natural Gas Compression Station Engines	EPA's 1993 Alternative Control Techniques for Stationary Reciprocating Internal Combustion Engines	26.11.29.02C(2) (Prior to 7/20/2015 Internal Combustion Engines at NG Pipeline Stations NOx RACT was found under 26.11.09.08I)	Applicable NOx RACT standards depend on the types and size of engine.	3/28/2018, 83 FR 13192	7/20/2015	Yes. This provision fully implements NOx controls over the targeted sources. The original NOx control requirements were approved by EPA into the SIP and determined adequate as RACT under the 1997 ozone standard as COMAR 26.11.09.08I and although re-codified, the control requirements remain the same. After EPA's approval there has been no significant change in RACT control technology for the covered sources.

Source Category	Basis for RACT Control	Code of Maryland Regulations (COMAR) Citation	Summary of Applicable RACT Standards	EPA Latest SIP Approval or MDE Latest SIP Revision[9]	State Effective Date	Requirements at least as stringent as RACT level for the 2015 Ozone NAAQS?
Additional NOx RACT requirements for Coal-Fired EGUs		26.11.38 EPA SIP-Approved Version See section 2.1.1		5/30/2017, 82 FR 24546	8/31/2015	Maryland has adopted more stringent NO_X limits for coal-fired electric generating units (EGUs) with a capacity greater than or equal to 25 MW. This subset of fuel-burning equipment is regulated under the SIP-approved version of COMAR 26.11.38. See Section 2.3.1 of this document for details. This regulation requires the lowest emission limitations that the covered sources are capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. The Department determines that these requirements satisfy the current RACT requirements under the 2015 ozone NAAQS.

2.1.1 Implementation of Non-CTG Specified NOx Controls

As indicated in Table 1 above, Maryland is certifying that the framework of the above regulations contain provisions implementing adequate NOx RACT controls under the 2015 ozone standard. The majority of the non-CTG specified rules were developed for meeting requirements of the CAA Section 182(b)(2), if not other, related federal regulations regulating NOx emissions.

Maryland has also developed COMAR regulations and other controls to implement additional NOx controls rules and requirements to aid in maintenance of the 1-hour standard and attainment of the 8-hour NAAQS.

EPA has defined RACT as the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility (44 FR 53762). This definition indicates that the RACT requirements must include compliance with the lowest emission levels that were achieved in the past, are achieved at present, or will be achieved in the future under facility's operational limitations (such as operational permits) and equipment standards that were previously applicable, are presently applicable, or will become applicable in the future, respectively. The MDE believes that the development of its non-CTG specified NOx rules reflects exactly the EPA's RACT definition, and MDE has determined that those rules are necessary for Maryland to attain the 2015 ozone NAAQS.

The non-CTG NOx rules are discussed in details below.

DETERMINATION OF CERTAIN PROVISIONS OF COMAR 26.11.38 "CONTROL OF NOX EMISSIONS FROM COAL-FIRED ELECTRIC GENERATING UNITS" AS RACT

COMAR 26.11.38 contains stringent NOx control requirements for certain coal-fired EGUs that MDE determined represents NOx RACT level of control. MDE is therefore certifying that the NOx control requirements in 26.11.38 of this regulation are adequate to meet RACT under the 2015 8-hour ozone standard. The regulation can be found at the location provided below and also in Appendix C.

https://www.epa.gov/sites/production/files/2017-07/documents/md_26.11.38.pdf

This regulation became effective as an emergency regulation on 5/1/2015 and was permanently adopted on 8/31/2015 to limit NOx emission rates of each affected electric generating unit to minimize NOx emissions by operating and optimizing the use of all installed pollution control technology and combustion controls consistent with technological limitations and combustion controls consistent with the technological limitations, manufacturers' specifications, good engineering and maintenance practices, and good air pollution control practices for minimizing emissions (as defined in 40 CFR §60.11(d)) for such equipment and the unit at all times the unit is in operation while burning any coal.

The following provisions adequately establish NOx RACT level reductions for affected units.

(1) As provided in 26.11.38.01, "Affected electric generating unit" means any one of the following coal-fired electric generating units:
    i. Brandon Shores Units 1 and 2;
    ii. C.P. Crane Units 1 and 2;
    iii. Chalk Point Units 1 and 2;
    iv. Dickerson Units 1, 2, and 3;
    v. H.A. Wagner Units 2 and 3;
    vi. Morgantown Units 1 and 2; and
    vii. Warrior Run.

(2) Under 26.11.38.03A(1), the regulation required the owner or operator of an affected electric generating unit (the unit) to submit a plan to the Department and EPA for approval that demonstrates how each affected electric generating unit will operate installed pollution control technology and combustion controls to meet the above optimization requirements. The plan must include a summary of the data that will be collected to demonstrate compliance with the regulation and must cover all modes of operation, including but not limited to normal operations, start-up, shut-down, and low load operations.

(3) As required by 26.11.38.03A(2), beginning on May 1, 2015, for each operating day during the ozone season, the owner or operator of an affected electric generating unit shall minimize NOx emissions by operating and optimizing the use of all installed pollution control technology and combustion controls consistent with the technological limitations, manufacturers' specifications, good engineering and maintenance practices, and good air pollution control practices for minimizing emissions (as defined in 40 CFR §60.11(d)) for such equipment and the unit at all times the unit is in operation while burning any coal.

(4) 26.11.38.03B sets up stringent NO_X emission rates:
    a. The owner or operator of an affected electric generating unit equipped with a fluidized bed combustor shall not exceed a NOx 24-hour block average emission rate of 0.10 lbs/MMBtu.

b. Rolling system-wide 30-day NOx emission rate of 0.15 lbs/MMBtu.

(5) As provided in 26.11.38.04, affected units must demonstrate compliance with the control requirement to minimize NO_X emissions in 26.11.38.03A(1)-(2) by operating the units at levels that are at or below the following 24-hour block average rates:

Affected Unit	24-Hour Block Average NO_x Emissions in lbs/MMBtu
Brandon Shores	
Unit 1	0.08
Unit 2 <650 MWg ≥650 MWg	 0.07 0.15
C.P. Crane	
Unit 1	0.30
Unit 2	0.28
Chalk Point	
Unit 1 only	0.07
Unit 2 only	0.33
Units 1 and 2 combined	0.20
Dickerson	
Unit 1 only	0.24
Unit 2 only	0.24
Unit 3 only	0.24
Two or more units combined	0.24
H.A. Wagner	
Unit 2	0.34
Unit 3	0.07
Morgantown	
Unit 1	0.07
Unit 2	0.07

If these emissions levels are exceeded, the facility shall submit a unit-specific report as specified in 26.11.38.04A(3).

(6) 26.11.38.04 establishes standards reporting requirements for the covered EGUs.

a. Reporting Schedule.

i. Beginning 30 days after the first month of the ozone season following the effective date of this chapter, each affected electric generating unit subject to the requirements of this chapter shall submit a monthly report to the Department detailing the status of compliance with this chapter during the ozone season.

ii. Each subsequent monthly report shall be submitted to the Department not later than 30 days following the end of the calendar month during the ozone season.

b. Monthly Reports During Ozone Season. Monthly reports during the ozone season shall include:
   i. Daily pass or fail of the NO_x emission rates under Regulation .04A(2) of this chapter;
   ii. The reporting information as required under Regulation .04A(3) of this chapter, and COMAR final text effective 8/31/15;
   iii. The 30-day system-wide rolling average emission rate for each affected electric generating unit to demonstrate compliance with Regulation .03B(1)of this chapter;

Affected Sources:

The 14 coal-fired electric generating units identified as affected sources in this regulation are the largest contributors of NO_X from major stationary sources in Maryland. The affected sources are equipped with either the best post-combustion NO_X control technology (SCR) or the second-best post combustion NO_X control technology (SNCR). Even with the application of advanced control technologies, this subset of major sources typically combine to emit more than 50% of the total NO_X mass from major stationary sources in Maryland.

Because the NO_X control devices are already installed on the units, the optimization of the control devices resulting in the NO_X rates set forth in the regulation allow for an economically feasible application of the controls and a high potential for NO_X reductions.

C.P. Crane

Under a settlement agreement signed May 23, 2018, C.P. Crane agreed to cease the burning of coal in Units 1 and 2 by no later than June 15, 2018. Since this date no coal has been combusted at the facility and the coal-fired boilers have been disabled.

The MDE incorporates hereby the following into this RACT SIP revision for the "affected generating units", listed in (1) above, to meet the RACT requirements under the 2015 ozone standard:

i. The definitions and applicability provisions of COMAR 26.11.38.01 and .02. as described in (1) above;
ii. The requirement to minimize NO_X emission by operating and optimizing the use of all installed pollution control technology and combustion controls in COMAR 26.11.38.03A, as summarized in (2) & (3) above;
iii. The NOx limits as specified in COMAR 26.11.38.03B, C & D as summarized in (4) above;
iv. The compliance demonstration requirements as specified in COMAR 26.11.04 and summarized in (5) above;
v. The reporting requirements as specified in COMAR 26.11.05 and summarized in (6) above.

DETERMINATION OF CERTAIN PROVISIONS OF COMAR 26.11.08.08-2 FOR HOSPITAL, MEDICAL, AND INFECTIOUS WASTE INCINERATORS (HMIWI) AS RACT

COMAR regulation 26.11.08.08-2 contains NOx control requirements for HMIWIs that achieve NOx RACT level reductions. MDE is therefore certifying that the NOx control requirement in 26.11.08.08-2 is adequate to meet RACT under the 2015 8-hour ozone standard. The provisions of this regulation, as shown in Appendix D, cover applicability, emissions limits, and compliance demonstration requirements.

Incinerators that burn hospital waste consisting of discards generated at a hospital, and medical/infectious waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research, or in the production or testing of biologicals are HMIWIs. Requirements for HMIWIs are divided into categories by size, location (rural/urban) and date of construction/modification.

U.S. Army Fort Detrick and Curtis Bay Energy are the two HMIWI facilities in Maryland. To the best of our ability, MDE has not identified any small rural HMIWI facilities in Maryland.

Actual Facility NO_X Emissions

NO_X Emissions (tpy)							
Year / Facility	2016	2015	2014	2013	2012	2011	2010
Curtis Bay Energy	39.60	42.89	42.89	41.35	50.33	50.33	47.14
Fort Detrick	0.401	0.440	0.208	0.840	0.672	0.534	2.073

U.S. Army Fort Detrick

US Army Fort Detrick operates two large HMIWI units, each rated at 1,000 lbs/hr each equipped with an emissions control system and a waste heat recovery boiler, located in Building 393.

The two HMIWI units are dual-burn incinerators with a primary and secondary chamber. These incinerators use natural gas as auxiliary fuel, with No. 2 fuel oil for backup, and are equipped with rotary atomizing (wet) scrubbers and cyclonic separators for air pollution control. Each incinerator has a primary stack and they both share a dump stack which will be used when the primary stacks are not operational or in the case of an emergency situation. The rotary atomizing scrubber, manufactured by Emcotek, Inc., is an emission control device that uses a water spray from a high velocity rotor (rotating at several hundred feet per second) to effect particulate and acid gas emissions control. The current drawn by the rotor motor is continuously monitored and is regarded as an operating parameter equivalent to pressure drop across a venturi scrubber.

As shown above the two HMIWI units have emitted less than one ton of NO_X on average per year over the last seven years making the installation of additional NO_X RACT control technologies infeasible.

Curtis Bay Energy

Curtis Bay Energy (formerly Phoenix Services) operates two large commercial HMIWI units with a permitted total combined capacity of 150 tons per day.

The HMIWI units are equipped with secondary and tertiary combustion chambers, heat recovery boiler, a dry injection acid gas scrubber, a powder activated carbon injection (PAC) system, a fabric filter with passive dioxins/furans emissions control and a selective non-catalytic reduction (SNCR) system for NOx.

The two HMIWI units comprise the vast majority of the facility emissions. As shown above the two HMIWI units emit approximately 45 tons of NO_X on average per year over the last seven years.

Because the NO_X control device is already installed on the units, the optimization of the control device resulting in the NO_X rates set forth in the regulation allow for an economically feasible application of the controls and a high potential for NO_X reductions.

U.S. Army Fort Detrick and Curtis Bay Energy are the two HMIWI facilities in Maryland with HMIWI unit installation dates of 1995 and 1991, respectively. To the best of our ability, MDE has not identified any small rural HMIWI facilities in Maryland.

The MDE incorporates hereby the following into this RACT SIP revision for the HMIWI, to meet the RACT requirements under the 2015 ozone standard:

COMAR regulation 26.11.08.08-2 as shown in Appendix D and
MDE certifies, to the best of our ability, that no small rural HMIWIs have been identified within Maryland.

3.0 VOC RACT SIP DETERMINATION

Certification of VOC RACT

The Maryland Department of the Environment (MDE) has prepared this Reasonably Available Control Technology (RACT) analysis to demonstrate that the State has met its obligation relating to the 2015 8-hour ozone National Ambient Air Quality Standard (NAAQS). MDE is certifying that all RACT regulations adopted to the present date are RACT for the 2015 8-hour ozone NAAQS as they reflect the most current pollution control technologies and economic considerations. Based on the review of current technologies, MDE has found no data indicating that the existing levels of control for these source categories are no longer RACT.

Maryland has retained its major source levels at 25 tons per year for VOC and NOx sources in the Baltimore, Washington, DC, and Philadelphia (Cecil County, Maryland) nonattainment areas. These major source thresholds are consistent with the areas that were classified as "severe" in the state although these areas are now classified as "moderate "or "marginal."

Major source levels remain at 50 tons per year for VOC and 100 tons per year for NOx in all remaining Maryland counties which are part of the Ozone transport Region (see Table 1.1).

Maryland is also certifying through this SIP that, except as provided for herein, Maryland meets the CAA RACT requirements for the 50 TPY non-CTG major VOC sources and for 100 TPY NOx sources, and that all CTG-covered categories are addressed at the cut-off level set in the CTG (or in "Issues Related to VOC Regulation Cutpoints, Deficiencies and Deviations, Clarification to Appendix D" (also known as the "Blue Book") for those CTG categories for which the original CTG set no cut-off)[10].

This certification is based on a combination of (1) certification that previously adopted RACT controls in Maryland's SIP that were approved by EPA under the 1997 8-hour ozone NAAQS are based on the current availability of technically and economically feasible controls and that they represent RACT for 8-hour implementation purposes, (2) the adoption of new or more stringent regulations that represent RACT control levels, or (3) a Negative Declaration for all such CTG categories for which there are no affected facilities in Maryland. The requirements in Table 3.1 and Table 3.2 are certified as RACT with respect to the 0.070 ppm 8-hour Ozone NAAQS.

3.1.1 Overview of COMAR Requirements

Code of Maryland Regulations (COMAR) 26.11.06, 26.11.10, 26.11.11, 26.11.13, 26.11.14, 26.11.19, and 26.11.24 represent Maryland's VOC RACT controls that were implemented and approved into the Maryland SIP under the 1997 8-hour ozone NAAQS. Maryland also uses COMAR 26.11.06.06 to achieve significant reductions from unique VOC sources.

[10] November 24, 1987 Federal Register," dated May 25, 1988

CTG Sources

EPA initially issued three sets of CTG documents establishing a "presumptive norm" for RACT for several VOC source categories. The initial three sets of CTGs were: Group I – issued before January 1978; Group II – issued in 1978; and Group III – issued in the early 1980's. Additional CTGs were later issued between December 1992 and September 2008. VOC ACT documents were issued between 1983 and 1994, while NOx ACT documents were issued between 1992 and 1995, along with September 2000 updates to the stationary internal combustion engine and cement kiln ACTs.

For sources for which a Control Technology Guidance (CTG) document has been published, RACT is addressed if a state imposes controls equivalent to the CTG for that source category. Table 2.1 lists the current CTG documents and identifies the corresponding regulations that Maryland has adopted to achieve emission reductions equivalent to the CTGs. As explained below, Maryland reasserts that these regulations are consistent with the CTGs, or where appropriate, recertifies that the source category does not exist within the state. Section 2.2.1 lists the CTGs that have not been adopted in Maryland because there are no sources of the CTG type.

Table 3.1: Control Technology Guideline RACT

CTG Category	CTG Document	Maryland Regulation	SIP # Date Adopted Date of EPA Approval	Comments
Aerospace	Control of Volatile Organic Compound Emissions from Coating Operations at Aerospace Manufacturing and Rework Operations, EPA-453/R-97-004, Dec. 1997. https://www3.epa.gov/airquality/ctg_act/199712_voc_epa453_r-97-004_aerospace_rework.pdf Aerospace (MACT) 59 FR-29216 6/06/94-1994/06. https://www3.epa.gov/airquality/ctg_act/59_FR_1994-06-06_29216.pdf	COMAR 26.11.19.13-1 Aerospace Coating Operations	SIP# 00-10 Adopted 9/11/2000 Approved 11/7/2001 SIP# 01-10 Adopted 9/25/2001 Approved 11/7/2001	Applies to aerospace coating operations that emit more than 20 lbs of VOC per day. Emission limits for coating types range from 1.3 to 3.5 pounds per gallon. For over 50 specialty coatings the standards go up to 10 lbs/gal.

CTG Category	CTG Document	Maryland Regulation	SIP # Date Adopted Date of EPA Approval	Comments
Automobile Coating	Control Techniques Guidelines for Automobile and Light-Duty Truck Assembly Coatings (PDF 44 pp, 2.64MB) EPA 453/R-08-006-2008/09. https://www3.epa.gov/airquality/ctg_act/200809_voc_epa453_r-08-006_auto_ldtruck_assembly_coating.pdf Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Primer-Surfacer and Topcoat Operations (PDF 129 pp, 450KB) EPA 453/R-08-002-2008/09. https://www3.epa.gov/airquality/ctg_act/200809_voc_epa453_r-08-002_auto_ldtruck_vocemisrate_protocol.pdf Control of Volatile Organic Emissions from Existing Stationary Sources, Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks, EPA-450/2-77-008, May 1977. https://www3.epa.gov/airquality/ctg_act/197705_voc_epa450_2-77-008_surface_coatings(v2).pdf	COMAR 26.11.19.03 is in place. However there are no longer any applicable sources in Maryland.	SIP # 83-03 Adopted 6/24/1983 Approved 9/10/1984 SIP # 98-01 Adopted 8/18/1997 Approved 11/5/1998 SIP # 15-03 Negative Declaration for Automobile Coating. EPA Approved 12/11/15[11]	All affected sources closed. GM Plant permanently shut down September 2005. COMAR 26.11.19.03 may be repealed in the future because MD no longer has any affected sources.

[11] MDE did not adopt a new regulation, so there is no MDE Adopted Date.

CTG Category	CTG Document	Maryland Regulation	SIP # Date Adopted Date of EPA Approval	Comments
Cutback Asphalt	Control of Volatile Organic Compounds from Use of Cutback Asphalt, EPA-450/2-77-037, December 1977 (Group I). https://www3.epa.gov/airquality/ctg_act/197712_voc_epa450_2-77-037_cutback_asphalt.pdf	COMAR 26.11.11.01 Control of Petroleum Products Installations, including Asphalt Paving and Asphalt Concrete Plants COMAR 26.11.11.02 B & C	SIP# 81-01 Adopted 4/8/81 Approved 5/11/82 SIP # 83-03 Adopted 6/24/1983 Approved 9/10/84 SIP # 93-05 Adopted 3/26/93 Approved 1/6/95	Applies to the manufacture, mixing, storage, use, and application of cutback and emulsified asphalts. Restricts cutback asphalt during the ozone season without approval. Extended applicability statewide.

CTG Category	CTG Document	Maryland Regulation	SIP # Date Adopted Date of EPA Approval	Comments
Dry Cleaning (Large Petroleum)	Control of Volatile Organic Compound Emissions from Large Petroleum Dry Cleaners, EPA-450/3-82-009, September 1982 (Group III). https://www3.epa.gov/airquality/ctg_act/198209_voc_epa450_3-82-009_large_dry_cleaners.pdf Control of Volatile Organic Emissions from Perchloroethylene Dry Cleaning Systems, EPA-450/2-78-050, Dec. 1978 (Group II). https://www3.epa.gov/airquality/ctg_act/197812_voc_epa450_2-78-050_pce_dry_cleaning.pdf	COMAR 26.11.19.12 Dry Cleaning Installations	SIP# 81-01 Adopted 4/8/1981 Approved 5/11/1982 SIP# 83-03 Adopted 6/24/1983 Approved 9/10/1984 SIP# 91-02 Adopted 4/21/1989 Approved 11/29/1994 SIP# 98-02 Adopted 8/18/1997 Approved 9/2/1998 SIP# 91-03 Adopted 7/24/1991 Approved 9/7/1994	Applies to petroleum dry cleaning facilities that consume 6000 gallons or more petroleum solvent per year. The rule establishes emission limits or reduction requirements for emissions, inspection, repair and reporting requirements for dryers, filtration systems, and other equipment.

CTG Category	CTG Document	Maryland Regulation	SIP # Date Adopted Date of EPA Approval	Comments
Fabric Coating and Paper, Film and Foil Coating	Control of Volatile Organic Emissions from Existing Stationary Sources, Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks, EPA-450/2-77-008, May 1977. https://www3.epa.gov/airquality/ctg_act/197705_voc_epa450_2-77-008_surface_coatings(v2).pdf Control Techniques Guidelines for Paper, Film, and Foil Coatings, EPA453/R-07-003, September 2007. https://www3.epa.gov/airquality/ctg_act/200709_voc_epa453_r-07-003_paper_film_coating.pdf	COMAR 26.11.19.07 Paper, Fabric, Film and Foil Coating	SIP# 83-03 Adopted 6/24/1983 Approved 9/10/1984 SIP# 91-02 Adopted 3/9/1991 Approved 11/29/1994 SIP# 91-03 Adopted 7/24/1991 Approved 9/7/1994 SIP# 93-02 Adopted 1/18/1993 Approved 9/7/1994 SIP# 95-11 Adopted 5/5/1995 Approved 9/2/1997 SIP# 95-17 Adopted 5/5/1995 Approved 9/2/1997 SIP# 99-04 Adopted 8/6/1997 & 8/4/1998 Approved 1/14/2000 SIP# 10-02 Adopted 3/21/2010 Approved 9/27/2010	Applies to any paper, fabric, film or foil coating unit. Establishes coating VOC content limits specific to operations.

CTG Category	CTG Document	Maryland Regulation	SIP # Date Adopted Date of EPA Approval	Comments
Fiberglass Boat	Control Techniques Guidelines for Fiberglass Boat Manufacturing Materials (PDF pp. 41, 336KB) EPA 453/R-08-004-2008/09. http://www.epa.gov/ttn/caaa/t1/ctg/fiberglassboat_ctg_093008.pdf	Fiberglass Boat Manufacturing	SIP# 15-07 Approved 12/23/16	New COMAR 26.11.19.26-1 is the location for the Fiberglass Boat regulation. (26.11.19.26 remains reinforced plastic manufacturing)
Flexible Package Printing	Control Techniques Guidelines for Flexible Package Printing (PDF 33 pp, 216KB) EPA-453/R-06-003-2006/09. https://www3.epa.gov/airquality/ctg_act/200609_voc_epa453_r-06-003_flexible_package_printing.pdf	COMAR 26.11.19.10-1 Flexible Package Printing	SIP# 10-04 Adopted 3/21/2010 Approved 9/27/2010	Applies to any flexible package printing operations.

CTG Category	CTG Document	Maryland Regulation	SIP # Date Adopted Date of EPA Approval	Comments
Bulk Gasoline Plants	Control of Volatile Organic Emissions from Bulk Gasoline Plants, EPA-450/2-77- 035, December 1977 (Group I). https://www3.epa.gov/airquality/ctg_act/197712_voc_epa450_2-77-035_bulk_gasoline_plants.pdf	COMAR 26.11.13.04 A Loading Operations – Bulk Gasoline Terminals COMAR 26.11.13.04 B Loading Operations – Bulk Gasoline Plants	SIP# 92-01 Adopted 3/9/1991 Approved 1/6/1995 SIP# 93-02 Adopted 1/18/1993 Approved 9/7/1994 SIP# 93-05 Adopted 3/26/1993 Approved 1/6/1995 SIP# 81-01 Adopted 4/8/1981 Approved 5/11/1982	Applies to all the loading racks at any bulk gasoline terminal that delivers liquid product into gasoline tank trucks. A vapor collection and control system designed to collect and destroy the organic compound liquids or vapors displaced from gasoline tank trucks during product loading is required and various other equipment and operational requirements are also included.

CTG Category	CTG Document	Maryland Regulation	SIP # Date Adopted Date of EPA Approval	Comments
Graphic Arts	Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VIII: Graphic Arts - Rotogravure and Flexography, EPA-450/2-78-033, December 1978 (Group II). https://www3.epa.gov/airquality/ctg_act/197812_voc_epa450_2-78-033_graphic_arts(v8).pdf	COMAR 26.11.19.10 Flexographic and Rotogravure	SIP# 81-01 Adopted 4/8/1981 Approved 5/11/1982 SIP# 83-03 Adopted 6/24/1983 Approved 9/10/1984 SIP# 91-02 Adopted 3/9/1991 Approved 11/29/1994 SIP# 93-05 Adopted 3/26/1993 Approved 1/6/1995 SIP# 95-11 Adopted 5/5/1995 Approved 9/2/1997	Applies to any packaging rotogravure, publication rotogravure, or flexographic printing process at a facility. The rule establishes the limits of VOC contents in coatings and inks used in the covered facilities, and specifies standards for control devices for various printing processes.

CTG Category	CTG Document	Maryland Regulation	SIP # Date Adopted Date of EPA Approval	Comments
Industrial Adhesives	Control Techniques Guidelines for Miscellaneous Industrial Adhesives (PDF 47 pp, 350KB) EPA 453/R-08-005-2008/09. https://www3.epa.gov/airquality/ctg_act/200809_voc_epa453_r-08-005_miscellaneous_industrial_adhesives.pdf	COMAR 26.11.35 Volatile Organic Compounds from Adhesives and Sealants	SIP # 09-01 Adopted 4/29/2009 Approved 10/18/2011 SIP # 08-02 Adopted 3/17/2008 Approved 10/18/2011	Applies to any person who uses or applies, for compensation or facilities maintenance, an adhesive, sealant, adhesive primer, or sealant primer within the State. This rule also applies to other products and conduct not covered by the CTG. These other categories area certain sealants and any person who sells, supplies, offers for sale, or manufactures for sale in the State an adhesive, sealant, adhesive primer, or sealant primer for use in the State. (COMAR 26.11.35 was born from the 2009 Ozone Transport Commission model rule on Adhesives and Sealants.)

CTG Category	CTG Document	Maryland Regulation	SIP # Date Adopted Date of EPA Approval	Comments
Large Appliances	Control Techniques Guidelines for Large Appliance Coatings (PDF 44 pp, 374KB) EPA 453/R-07-004-2007/09. http://www.epa.gov/ttn/caaa/t1/ctg/20070928_large_app_ctg.pdf Control of Volatile Organic Emissions from Existing Stationary Sources, Volume V: Surface Coating of Large Appliances, EPA-450/2-77-034, Dec. 1977 (Group I). https://www3.epa.gov/airquality/ctg_act/197712_voc_epa450_2-77-034_surface_coatings(v5).pdf	COMAR 26.11.19.06 Large Appliance Coating	SIP# 83-03 Adopted 6/24/1983 Approved 9/10/1984 SIP# 10-09 Adopted 9/24/2010 Approved 5/15/2011	A person who uses a large appliance coating installation: (a) May not cause or permit the discharge into the atmosphere of any VOC from a large appliance coating installation in excess of 2.3 pounds per gallon of coating applied (excluding water) (0.275 kilogram/liter of coating applied (excluding water)); or (b) Shall use control equipment to achieve an overall VOC emissions reduction of 90 percent or greater from the large appliance coating installation at the affected facility.

CTG Category	CTG Document	Maryland Regulation	SIP # Date Adopted Date of EPA Approval	Comments
Metal Coils, and, Metal Containers and Closures	Control of Volatile Organic Emissions from Existing Stationary Sources, Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks, EPA-450/2-77-008, May 1977. https://www3.epa.gov/airquality/ctg_act/197705_voc_epa450_2-77-008_surface_coatings(v2).pdf	COMAR 26.11.19.04 Can Coating COMAR 26.11.19.05 Coil Coating	SIP # 83-03 Adopted 6/24/1983 Approved 9/10/1984 SIP # 83-03 Adopted 6/24/1983 Approved 9/10/1984	Applies to any coil coating operation and required use of compliant coatings with a VOC content of 2.8 to 5.5 lbs/gal. Applies to any coil coating operation and required use of compliant coatings with a VOC content of less than or equal 2.6 lbs/gal.

CTG Category	CTG Document	Maryland Regulation	SIP # Date Adopted Date of EPA Approval	Comments
Metal Parts and Products - Drum and Pail Coating	Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings September 2008 (PDF 143 pp, 897KB) EPA 453/R-08-003-2008/09. http://www.epa.gov/ttn/caaa/t1/ctg/miscmetal_ctg093008.pdf Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VI: Surface Coating of Miscellaneous Metal Parts and Products, EPA-450/2-78-015, June 1978 (Group II). https://www3.epa.gov/airquality/ctg_act/197806_voc_epa450_2-78-015_surface_coatings(v6).pdf	COMAR 26.11.19.13 Drum and Pail Coating	SIP# 81-01 Adopted 4/8/1981 Approved 5/11/1982 SIP# 83-03 Adopted 6/24/1983 Approved 9/10/1984 SIP# 91-02 Adopted 3/9/1991 Approved 11/29/1994 SIP# 99-01 Adopted 6/5/1998 Approved 6/17/1999 SIP # 99-03 Adopted 8/4/1998 Approved 6/17/1999 SIP# 01-10 Adopted 9/25/2001 Approved 11/7/2001 SIP# 11-04 Adopted 4/14/2011 Approved 10/17/2011	This regulation applies to any drum or pail coating operations at a premises where the total VOC emissions exceed 15 pounds (6.8 kilograms) per day.

CTG Category	CTG Document	Maryland Regulation	SIP # Date Adopted Date of EPA Approval	Comments
Metal Parts and Products	Control Techniques Guidelines for Metal Furniture Coating. September 2007 (PDF 100 pp, 293KB) EPA 453/R-07-005-2007/09. https://www3.epa.gov/airquality/ctg_act/200709_voc_epa453_r-07-005_metal_furniture_coating.pdf Control of Volatile Organic Emissions from Existing Stationary Sources, Volume III: Surface Coating of Metal Furniture, EPA-450/2-77-032, Dec. 1977 (Group I). https://www3.epa.gov/airquality/ctg_act/197712_voc_epa450_2-77-032_surface_coatings(v3).pdf	COMAR 26.11.19.08 Metal Parts and Product Coating	SIP# 83-03 Adopted 6/24/1983 Approved 9/10/1984 SIP# 14-02 Adopted 4/29/2014 Approved 10/1/2015	This regulation applies to a person who owns or operates: (a) A metal furniture coating installation; or (b) A metal parts and products coating operation at a premises where the total VOC emissions from all metal parts and products surface coating operations (including emissions from related cleaning activities), exceed 15 pounds (6.8 kilograms) per day.

CTG Category	CTG Document	Maryland Regulation	SIP # Date Adopted Date of EPA Approval	Comments
Metal & Plastic Parts Coating – Pleasure Craft, Plastic Parts and Business Machine Coating, and Miscellaneous Metal Parts and Products	Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings (PDF 143 pp, 897KB) EPA 453/R-08-003-2008/09. http://www.epa.gov/ttn/caaa/t1/ctg/miscmetal_ctg093008.pdf Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VI: Surface Coating of Miscellaneous Metal Parts and Products, EPA-450/2-78-015, June 1978 (Group II). https://www3.epa.gov/airquality/ctg_act/197806_voc_epa450_2-78-015_surface_coatings(v6).pdf Control Techniques Guidelines for Metal Furniture Coating. September 2007 (PDF 100 pp, 293KB) EPA 453/R-07-005-2007/09. https://www3.epa.gov/airquality/ctg_act/200709_voc_epa453_r-07-005_metal_furniture_coating.pdf	COMAR 26.11.19.27-1 Pleasure Craft Coating Operations COMAR 26.11.19.07-1Solid Resin Decorative Surface Manufacturing COMAR 26.11.19.07-2 Plastic Parts and Business Machine Coating COMAR 26.11.19.08 Metal Parts and Product Coating	SIP# 12-08 Adopted 10/22/2012 Approved 9/26/2013 SIP# 99-02 Adopted 5/20/1998 Approved 6/17/1999 SIP# 11-03 Adopted 4/14/2011 Approved 10/17/2011 SIP # 83-03 Adopted 6/24/1983 Approved 9/10/1984 SIP# 14-02 Adopted 4/29/2014 Approved 10/01/2015.	Applies to pleasure craft coating operations. Applies to a person who owns or operates a solid resin decorative surface manufacturing facilities that is a major stationary source of VOC Applies to a person who owns or operates a metal furniture coating installation. Applies to a person who owns or operates a metal parts and products coating operation at a premises where the total VOC emission from all metal parts and products surface coating operations (including emission from related cleaning activities) exceed 15 lb/day.

CTG Category	CTG Document	Maryland Regulation	SIP # Date Adopted Date of EPA Approval	Comments
Marine Vessel Coating (Ships) Operations	Control Techniques Guidelines for Shipbuilding and Ship Repair Operations (Surface Coating), 61 FR-44050 8/27/96, August 1996. https://www3.epa.gov/airquality/ctg_act/199404_voc_epa453_r-94-032_shipbuilding_repair.pdf https://www3.epa.gov/airquality/ctg_act/61_FR_1996-08-27_44050.pdf	COMAR 26.11.19.27 Control of Volatile Organic Compounds from Marine Vessel Coating Operations	SIP #98-17 Adopted 9/12/1997 Approved 9/5/2001	This regulation applies to marine vessel coating operations at a premises where the total potential to emit VOC emissions equals or exceeds 25 tons (22.75 metric tons) per year or actual emissions of 20 pounds (9 kilograms) per day from all marine vessel coating operations at the premises.
Oil and Natural Gas Industry	Control Techniques Guidelines for the Oil and Natural Gas Industry, 81 FR 74798 https://www.epa.gov/sites/production/files/2016-10/documents/2016-ctg-oil-and-gas.pdf	N/A	Negative declaration submitted to EPA on 6/19/20, SIP #20-07	MDE determined no sources meet the criteria and/or existing natural gas compression stations do not meet storage tank standards, existing natural gas wells do not meet standards
Pharmaceutical Products	Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products, 450/2-78-029, December 1978 (Group II). https://www3.epa.gov/airquality/ctg_act/197812_voc_epa450_2-78-029_pharmaceutical_products.pdf	COMAR 26.11.19.14 Manufacture of Synthesized Pharmaceutical Products	SIP# 81-01 Adopted 4/8/1981 Approved 5/11/1982 SIP# 83-03 Adopted 6/24/1983 Approved 9/10/1984 SIP# 91-02 Adopted 3/9/1991 Approved 11/29/1994	Applies to control of emissions from reactor, distillation operation, crystallizer centrifuge and vacuum dryer, establishing a control efficiency of 90 percent or more. Vapor balance systems are also required.

CTG Category	CTG Document	Maryland Regulation	SIP # Date Adopted Date of EPA Approval	Comments
Printing Industries - offset lithographic and letterpress	Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing (PDF 52 pp, 349KB) EPA-453/R-06-002-2006/09. https://www3.epa.gov/airquality/ctg_act/200609_voc_epa453_r-06-002_litho_letterpress_printing.pdf Control of Volatile Organic Compound Emissions from Offset Lithographic Printing - Draft, September 1993. EPA-453/D-95-001-*1993/0.9* https://www3.epa.gov/airquality/ctg_act/199309_voc_epa453_d-95-001_offset_lithography_draft.pdf Alternative Control Techniques Document: Offset Lithographic Printing: November 8, 1993. https://www3.epa.gov/airquality/ctg_act/199406_voc_epa453_r-94-054_offset_lithography_act.pdf	COMAR 26.11.19.11 Lithographic Printing COMAR 26.11.19.18 Control of Volatile Organic Compound Emissions from Screen Printing and Digital Imaging.	SIP# 91-02 Adopted 3/9/1991 Approved 11/29/1994 SIP# 91-03 Adopted 7/24/1991 Approved 9/7/1994 SIP# 95-11 Adopted 5/5/1995 Approved 9/2/1997 SIP # 11-09 Adopted 10/04/2011 Approved 07/23/2011 SIP# 95-05 Adopted 10/14/1994 and 5/16/1995 Approved 10/15/1997 SIP# 99-05 Adopted 8/4/1998 Approved 6/17/1999 SIP# 02-04 Adopted 5/9/2002 Approved 1/15/2003	Applies to offset lithographic printing, including heatset and non-heatset web, non-heatset sheet-fed, and newspaper facilities. A 90 percent reduction of VOC emissions (by weight) from the press dryer exhaust vent of heatset printing operations, limits the alcohol content in fountain solutions, and establishes standards for cleaning printing equipment.

CTG Category	CTG Document	Maryland Regulation	SIP # Date Adopted Date of EPA Approval	Comments
Service Stations Stage I	Design Criteria for Stage I Vapor Control Systems - Gasoline Service Stations, November 1975 (Group I). https://www3.epa.gov/airquality/ctg_act/197511_voc_epa450_r-75-102_stage-1_service_stations.pdf	COMAR 26.11.13.04 C Loading Operations – Small Storage Tanks	SIP# 93-05 Adopted 3/26/1993 Approved 1/6/1995 SIP # 98-06 Adopted 7/18/1997 Approved 9/2/1998	Applies to storage tanks with capacity greater than 2000 gallons but less than 40,000 gallons and requires Stage I vapor recovery. Applies to gasoline storage tank capacity affected by Stage I vapor recovery from the previous 250 gallon capacity to greater than 2,000 gallons.
Solvent Cleaning	Control of Volatile Organic Emissions from Solvent Metal Cleaning, EPA-450/2-77-022, Nov. 1977 (Group I). https://www3.epa.gov/airquality/ctg_act/197711_voc_epa450_2-77-022_solvent_metal_cleaning.pdf Control Techniques Guidelines for Industrial Cleaning Solvents (PDF pp, 290, 7.6MB) EPA-453/R-06-001-2006/09. https://www3.epa.gov/airquality/ctg_act/200609_voc_epa453_r-06-001_ind_cleaning_solvents.pdf	COMAR 26.11.19.09-1 Industrial Solvent Cleaning Other Than Covered in 26.11.19.09 COMAR 26.11.19.02 Applicability, Determining Compliance, Reporting, and General Requirements COMAR 26.11.19.09 Control of VOC Emissions from Cold and Vapor Degreasing	SIP# 83-03 Adopted 6/24/1983 Approved 9/10/1984 SIP# 92-01 Adopted 1/20/1992 Approved 9/7/1994 SIP# 95-09 Adopted 5/12/1995 Approved 8/4/1997 SIP# 10-03 Adopted 3/21/2010 Approved 2/22/2011	Applies to emissions from cold and vapor degreasing, establishing coating VOC content limits specific to operations. COMAR 26.11.19.02 has the following provision that when this chapter establishes an emission standard for a specific installation which differs from the general emission standard in COMAR 26.11.06.01—09, COMAR 26.11.19.02 takes precedence.

CTG Category	CTG Document	Maryland Regulation	SIP # Date Adopted Date of EPA Approval	Comments
Synthetic Organic Chemical	Control of Volatile Organic Compound Emissions from Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industry, EPA-450/3-84-015, December 1984 (Group III). https://www3.epa.gov/airquality/ctg_act/198412_voc_epa450_3-84-015_air_oxidation_processes.pdf Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation and Reactor Processes CTG (EPA 450/4-91-031, August 1993). https://www3.epa.gov/airquality/ctg_act/199308_voc_epa450_4-91-031_reactor_distillation_socmi.pdf Control of Volatile Organic Compound Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment, EPA-450/3-83-006, March 1984 (Group III). https://www3.epa.gov/airquality/ctg_act/198403_voc_epa450_3-83-006_leaks_polymer_equipment.pdf	COMAR 26.11.19.30 Control of Volatile Organic Compound Emissions from Chemical Production and Polytetrafluoroethylene Installations	SIP# 01-03 Adopted 12/6/2000 Approved 7/20/2001 SIP# 01-15 Adopted 11/6/2001 Approved 6/3/2003 SIP# 02-07 Adopted 10/3/2002 Approved 6/3/2003 SIP# 08-02 Adopted 3/17/2008 Approved 10/18/2011	Section D of this regulation applies to a person who owns or operates an organic chemical production installation or an inorganic chemical production installation at a premises that, on any day, has actual uncontrolled VOC emissions of 20 pounds or more per day.

CTG Category	CTG Document	Maryland Regulation	SIP # Date Adopted Date of EPA Approval	Comments
Storage of Petroleum Liquids in Tanks	Control of Volatile Organic Emissions from Storage of Petroleum Liquids in Fixed Roof Tanks, EPA-450/2-77-036, December 1977 (Group I). https://www3.epa.gov/airquality/ctg_act/197712_voc_epa450_2-77-036_fixed_roof_tanks.pdf Control of Volatile Organic Emissions from Petroleum Liquid Storage in External Floating Roof Tanks, EPA-450/2-78-047, December 1978 (Group II). https://www3.epa.gov/airquality/ctg_act/197812_voc_epa450_2-78-047_petrol_roof_tanks.pdf	COMAR 26.11.13.03A & C Large Storage Tanks – Closed Top Tanks COMAR 26.11.13.03 B Large Storage Tanks – Open Top tanks	SIP# 81-01 Adopted 4/8/1981 Approved 5/11/1982 SIP# 91-02 Adopted 3/9/1991 Approved 11/29/1994 SIP# 83-03 Adopted 6/24/1983 Approved 9/10/1984	Applies to gasoline liquid storage tanks with fixed roofs and with capacity of 40,000 gallons or greater. Covers sealing standards for a covered storage tank, openings, connection between roof edge and tank wall, and vents.

CTG Category	CTG Document	Maryland Regulation	SIP # Date Adopted Date of EPA Approval	Comments
Tank Trucks, Petroleum Handling and Loading	Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals, EPA-450/2-77-026, December 1977 (Group I). https://www3.epa.gov/airquality/ctg_act/197710_voc_epa450_2-77-026_tank_truck_terminals.pdf Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems, EPA-450/2-78-051, December 1978 (Group II). https://www3.epa.gov/airquality/ctg_act/197812_voc_epa450_2-78-051_tank_trucks_vcs.pdf	COMAR 26.11.13.01.02, .04D, .05 Control of Gasoline and VOC Storage and Handling, Loading Operations COMAR 26.11.13.04A & E	SIP# 81-01 Adopted 4/8/1981 Approved 5/11/1982 SIP# 92-01 Adopted 3/9/1991 Approved 1/6/1995 SIP# 93-02 Adopted 1/18/1993 Approved 9/7/1994 SIP# 93-05 Adopted 3/26/1993 Approved 1/6/1995 SIP # 14-05 Adopted 7/21/2014 Approved 11/19/2014	Applies to all unloading, loading, and storage operations at bulk gasoline plants. Requires the use of vapor balance, and sets standards for equipment and work practices. MDE alternative transfer procedure.

CTG Category	CTG Document	Maryland Regulation	SIP # Date Adopted Date of EPA Approval	Comments
Flat Wood Paneling Coating	Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VII: Factory Surface Coating of Flat Wood Paneling, EPA-450/2-78-032 June 1978 (Group I). https://www3.epa.gov/airquality/ctg_act/197806_voc_epa450_2-78-032_surface_coatings(v7).pdf Control Techniques Guidelines for Flat Wood Paneling Coatings (PDF 27 pp, 212KB) EPA-453/R-06-004-2006/09. https://www3.epa.gov/airquality/ctg_act/200609_voc_epa453_r-06-004_wood_panel_coatings.pdf	COMAR 26.11.19.33 Flat Wood Paneling Coating	SIP# 10-05 Adopted 3/31/2010 Approved 1/26/2011	

3.1.2 Control Technique Guideline (CTG) Requirements Not Adopted in Maryland

These CTGs have not been adopted in Maryland because there are no sources of this type:

- Control of Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds, EPA-450/2-77-025, October 1977 (Group I).
- Control of Volatile Organic Compound Emissions from Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industry, EPA-450/3-84-015, December 1984 (Group III).
- Control of Volatile Organic Compound Emissions from Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins, EPA-450/3-83-008, November 1983 (Group III).
- Control of Volatile Organic Compound Emissions from Reactor Processes and Distillation Operations in Synthetic Organic Chemical Manufacturing Industry, EPA-450/4-91-031, August 1993.
- Control of Volatile Organic Compound Equipment Leaks from Natural Gas/Gasoline Processing Plants, EPA-450/2-83-007, December 1983 (Group III).
- Control of Volatile Organic Compound Leaks from Petroleum Refinery Equipment, EPA-450/2-78-036, June 1978 (Group II).
- Control of Volatile Organic Compound Leaks from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment, EPA-450/3-83-006, March 1984 (Group III).
- Control of Volatile Organic Emissions from Existing Stationary Sources, Volume IV: Surface Coating of Insulation of Magnet Wire, EPA-450/2-77-033, December 1977 (Group I).
- Control of Volatile Organic Emissions from Manufacture of Pneumatic Rubber Tires, EPA-450/2-78-030, December 1978. (Group II).
- Control Techniques Guidelines for Automobile and Light-Duty Truck Assembly Coatings, EPA 453/R-08-006-2008/09, September 2008, and Control of Volatile Organic Emissions from Existing Stationary Sources, Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks, EPA-450/2-77-008, May 1977. (Group I). COMAR 26.11.19.03. 03 Automotive and Light-Duty Truck Coating covers this category but all affected sources in Maryland closed in 2005. The GM Plant permanently shut down September 2005. A Negative Declaration hearing was announced in the MD Register on 12/1/2014. MD held a hearing on 12/7/2014. No sources came forward.
- Control of Volatile Organic Emissions from Existing Stationary Sources, Volume IV: Surface Coating for Insulation of Magnet Wire, EPA-450/2-77-033, December 1977 (Group I).
- Control of Volatile Organic Compound Equipment Leaks from Natural Gas/Gasoline Processing Plants, EPA-450/2-83-007, December 1983 (Group III).
- Control of Volatile Organic Compound Emissions from Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins, EPA-450/3-83-008, November 1983 (Group III).
- Control of Volatile Organic Compound Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment, EPA-450/3-83-006, March 1984 (Group III).
- Control of Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds, EPA-450/2-77-025, October 1977 (Group I).

- Control of Volatile Organic Emissions from Manufacture of Pneumatic Rubber Tires, EPA-450/2-78-030, December 1978 (Group II).

Other Area and Nonroad Mobile Sources Categories

EPA defines an "area source" as any stationary source that is not a major source. The Maryland Department of the Environment has considered controls on other sources of VOCs not covered by a CTG and adopted rules whenever deemed to be reasonably available controls. The Maryland Department of the Environment has examined information which became available in Alternative Control Techniques Documents and adopted rules or amended previously adopted rules for CTG categories whenever deemed to be reasonably available controls. In some cases such as COMAR 26.11.19.23 Control of VOC Emissions from Vehicle Refinishing, these rules apply to more than just the end user by also regulating the VOC content of products that are sold or offered for sale in the State of Maryland. In other cases, the rules regulate the VOC content of products that are sold or offered for sale to retail customers, or for use by the general public or small businesses; these include source categories like commercial and consumer products, and architectural surface coatings (paint). Maryland considers this RACT for these non-major sources as well as RACT for other area and onroad mobile source categories, which are not subject to a CTG. These sources are mostly area sources but also cover major courses included in Table 2.2 Other Area Source RACT.

Table 3.2: Other Area Source RACT

RACT "Area Source" and "Nonroad Mobile Source" Categories	ACT Document	Maryland Regulation	MDE Date Adopted Date of EPA Approval
Consumer Products Phase I Phase II Phase III		**COMAR 26.11.32** Control of Emission of Volatile Organic Compounds from Consumer Products	MDE Date Adopted 06/18/2007 Date of EPA Approval 12/10/2007
Architectural Coatings	Reduction of Volatile Organic Compound Emissions from the Application of Traffic Markings, EPA-450/3-88-007. https://www3.epa.gov/airquality/ctg_act/198808_voc_epa450_3-88-007_traffic_markings.pdf	**COMAR 26.11.33** Architectural Coatings	MDE Date Adopted 03/29/2004 Date of EPA Approval 05/12/2005
Portable Fuel Containers Phase I Phase II		**COMAR 26.11.13.07** Control of Gasoline and VOC Emissions from Portable Fuel Containers	MDE Date Adopted 06/18/2007 Date of EPA Approval 07/17/2008

RACT "Area Source" and "Nonroad Mobile Source" Categories	ACT Document	Maryland Regulation	MDE Date Adopted Date of EPA Approval
Vehicle Refinishing Motor Vehicle and Mobile Equipment Line Coating Operations	Reduction of Volatile Organic Compound Emissions from Automobile Refinishing, EPA-450/3-88-009, Oct. 1988. https://www3.epa.gov/airquality/ctg_act/198810_voc_epa450_3-88-009_automobile_refinishing.pdf Alternative Control Techniques Document: Automobile Refinishing, EPA-453/R-94-031, April 1994. https://www3.epa.gov/airquality/ctg_act/199404_voc_epa453_r-94-031_autobody_refinishing.pdf	**COMAR 26.11.19.23** Control of VOC Emissions from Vehicle Refinishing	MDE Date Adopted 04/16/2012 Date of EPA Approval 09/26/2012 Entire Regulation Revised SIP effective date 10/26/2012
Solvent Degreasing Cold Cleaning Degreasing	Alternative Control Techniques Document: Halogenated Solvent Cleaners, EPA-450/3-89-030, August 1989. https://www3.epa.gov/airquality/ctg_act/198908_voc_epa450_3-89-030_halogenated_solvent_cleaners.pdf Alternative Control Techniques Documents: Industrial Cleaning Solvents, EPA-453/R-94-015, February 1994. https://www3.epa.gov/airquality/ctg_act/199402_voc_epa453_r-94-015_indust_cleaning_solvent.pdf	**COMAR 26.11.19.09** Control of VOC Emissions from Cold and Vapor Degreasing **COMAR 26.11.19.09-1** Control of VOC Emissions from Industrial Solvent Cleaning Operations Other Than Cold and Vapor Degreasing	MDE Date Approved 06/05/1995 Date of EPA Approval 08/04/1994 MDE Date Approved 04/19/2010 Date of EPA Approval 02/22/2011

RACT "Area Source" and "Nonroad Mobile Source" Categories	ACT Document	Maryland Regulation	MDE Date Adopted Date of EPA Approval
Service Stations Stage II	CAA Section 182(b)(3) https://www.gpo.gov/fdsys/pkg/USCODE-2013-title42/html/USCODE-2013-title42-chap85-subchapI-partD-subpart2-sec7511b.htm Approval and Promulgation of Air Quality Implementation Plans: Maryland; Reasonably Available Control Technology for 1997 9-Hour Ozone National Ambient Air Quality Standard, EPA-R03-OAR-2012-0208-0002 http://www.regulations.gov/#!documentDetail;D=EPA-R03-OAR-2012-0208-0005	**COMAR 26.11.24** Stage II Vapor Recovery at Gasoline Dispensing Facilities	SIP# 93-01 Adopted 1/18/1993 Approved 6/9/1994 SIP# 95-18 Adopted 4/7/1995 Approved 8/4/1997 SIP# 02-03 Adopted 3/14/2002 Approved 5/7/2003
Marine Vessel Loading	Federal Standards for Marine Tank Vessel Loading Operations and National Emission Standards for Hazardous Air Pollutants for Marine Tank Vessel Loading Operations- Final Rule, 60 FR 48388, 9/19/1995 (40 CFR Parts 9 and 63) Maryland developed RACT as the EPA MACT threshold was not applicable.	**COMAR 26.11.13.08** Control of Gasoline and VOC Storage and Handling	SIP# 07-12 Adopted 07/18/2008 Approved 10/08/2007

Major Non-CTG Sources of and VOC

According to the Implementation Rule, the state is required to conduct a RACT analysis for each major stationary source of VOC and for each major stationary source of NO_X.[12] "Major stationary source" is defined in CAA Section 302, as modified by Sections 182(b), (c), (d) or (e) of the CAA, as applicable to the classification of the nonattainment areas in which a stationary source is located. Additionally, Maryland is in the OTR and subject to CAA Section 184.

Maryland has retained its major source levels at 25 tons per year for VOC and NO_X sources in the Baltimore, Washington, DC, and Philadelphia (Cecil County, Maryland) nonattainment areas. These major source thresholds are consistent with the areas that were classified as "severe" in the state although these areas are now classified as "moderate "or "marginal."

Major source levels remain at 50 tons per year for VOC and 100 tons per year for NO_X in all remaining Maryland counties which are part of the Ozone transport Region (see Table 1.1).

Due to EPA's anti-backsliding requirements, and Maryland's desire to come into attainment with the 8-hour ozone NAAQS as expeditiously as practical, the more stringent 25 and 50 tpy thresholds will not be relaxed for applicability and other requirements in existing rules even though the non-attainment area classification has changed.

In addition to RACT, individual sources may also be subject to more stringent technology control measures such as lowest achievable emissions rate (LAER), best available control technology (BACT) and maximum achievable control technology (MACT). LAER, applicable to new and modified major sources located in nonattainment areas, is the lowest achievable emission rate of the nonattainment pollutant that can be achieved by the source without respect to cost. BACT, or best available control technology, is applicable to new and modified sources located in attainment areas. BACT may be less stringent than LAER because consideration is given to energy, environmental and economic impacts, as well as other costs when evaluating the lowest emission rate. MACT, or maximum achievable control technology, is generally applicable to major sources of hazardous air pollutants. MACT is the control achieved by the best performing twelve percent of sources in a source group. For sources emitting volatile organic hazardous air pollutants subject to MACT, EPA has historically allowed states to rely on MACT standards for the purpose of showing that a source has met VOC RACT. BACT and LAER determinations are made prior to construction as part of the new source review (NSR) permitting process. Under the federal National Emissions Standards for Hazardous Air Pollutants, the requirement to implement MACT-based controls applies directly to owners of major sources of hazardous air pollutants. MDE has no specific sources for which it is relying on BACT or LAER limits for RACT purposes.

Each of these control requirements, LAER, BACT and MACT, at the time of review, would necessarily be more stringent than RACT. As these controls are generally more stringent, it is unlikely that any source that has recently undergone one of these control technology reviews would not meet RACT. Furthermore, to the extent that a source has undergone one of these reviews, it is generally unlikely that the marginal reductions achievable through further control measures will be cost effective, unless existing control equipment may be optimized to meet a lower emission limit that has become RACT since the installation of the control equipment. Otherwise, only in cases where the technology review is significantly outdated and the source has

[12] RACT for NOx will be the subject of a separate SIP revision(s).

sufficient actual emissions and useful life remaining, is it plausible that a reevaluation of RACT, the control measure with the least associated burden, will be warranted. Note, however, that such a source might still warrant controls as part of an attainment plan or through future, necessarily more stringent, BACT, LAER, or MACT determinations as may become applicable.

Many sources that are permitted as "Synthetic Minor" are not included on the major source list because the potential VOC emissions of synthetic minor sources are limited below 25 tons per year within Maryland's ozone nonattainment areas and 50 tons per year in Greater Maryland.

Table 2.3 lists the major sources of VOC located in Maryland. The list was obtained by reviewing permit applications and the emission certification reports supplied to MDE by the sources themselves.

Table 3.3: 2011 Major Source List

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
Luke Paper Company **Pulp and Paper Mill** **21001** **001-0011** ***Facility closed in 2019***	304.53	Recovery Boiler	26.11.14.06(B)(5)	Black Liquor Oxidation Unit and a Dry Bottom Precipitator (with a salt cake mix tank)
		Miscellaneous	26.11.14.06(C)	Screen Room Reject Drainer
		Wash Water (from brown stock washers)	26.11.14.06(B)(4)	Condensate Stripper
			26.11.14.06(B)(3)	Condensate Stream Stripper (or other control system)
		Non-Condensable gases (NCGs)	26.11.14.06(B)(2)	Condensate Stream Stripper
		Digester Blow Tank and Knotters	26.11.14.06(B)	Condensate Stream Stripper
		Off Gases		Limits amount of VOC to 2.9 lbs/gal of coating applied (minus water)
		Paper Machines and Coater Building	26.11.19.07(C)	-VOC degreasing material may not exceed a vapor pressure of 1 mm Hg at 20 degree Celsius -Maintain Good Operation Practices
		Degreasing Operations	26.11.19.09(D)	-Halogenated VOC for cold degreasing is prohibited

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
Naval Support Facilities **Fuel Burning** **Indian Head** **24017** **017-0040**	7.39	Gasoline Storage Vapor Degreasing Metal Surface Coating Operation Aerospace Coating General Operating Condition Explosives and Propellant Manufacturing Equipment	26.11.13.04 26.11.19.09(E) 26.11.19.13 26.11.19.13-1 26.11.19.02(I) 26.11.19.16 26.11.19.25(C)	Stage I Vapor Recovery Condenser or an air pollution control device Emissions standards specific coating types (high performance, clear coating, and standard) to lbs/gal of such coating applied (minus water) Store all waste materials, maintains lids, use enclosed containers or VOC recycling equipment Monitoring and recordkeeping Perform preventative maintenance on emissions control devices, vacuum condenser, carbon activated filters, and thermal oxidizer

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
Diageo Global Supply Relay Plant (Diageo North America) **Distilled Spirits/Liquor- Fugitive Emissions** **24005** **005-0146**	131.44	Distilled Spirits/Liquor- Fugitive Emissions Leak Detection and Repair	26.11.19.29C(1)(a) 26.11.19.29C(1)(b) 26.11.19.29C(1)(c) 26.11.19.29C(2) 26.11.19.29D 26.11.19.16	Barrel Emptying Product Filtering Bottle Filling Empty Barrel Storage Develop, maintain, and implement a good operating practices manual Monthly inspections
Schmidt Baking Company Fullerton Plant **Bakery Oven** **24005** **005-0236**	3.90	Natural Gas Oven	26.11.19.21D	Catalytic Oxidizer Operation within the indicator ranges
Games Lithographing Company, Inc. **Graphic Arts – Commercial Gravure Printing** **24005** **005-1149**	48.42	Rotogravure Press Flexographic Press Web fed Lithographic Press	26.11.19.10(C) 26.11.19.10(C) 26.11.19.11(B) and (D)	Catalytic Oxidizer Use water based inks Use low solvent materials with total VOC emissions less than 100 lb/day

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
Kraft Foods Group Inc. Bakery Oven 24011 011-0006	0.002	Bakery Oven	26.11.19.21(D)(1) and (2)	If the average production tonnage and Yt value of the finished bread from an oven in any 12-month period exceeds the limits (in permit), Kraft must install and operate a control device, discharge the VOC directly into the control device and achieve an 80% or more reduction in VOC emissions. (Not currently subject to the general requirements of 26.11.19.21(D) because the production tonnage of bread in the largest (highest VOC emission) oven at the facility is less than 28,000 tpy, and the Yt value is less than 5.0.
BP Products North America, Inc., Curtis Bay Terminal Bulk Petroleum Storage 24003 003-0309	45.73	Bulk Petroleum Storage	26.11.13.03A(1)(a) 26.11.13.03A(1)(b) 26.11.13.03A(2)(a) 26.11.13.03A(2)(b)	Requires that each tank's gauging and sampling devices be gas tight except when in use Well maintained internal floating roof equipped with a primary and secondary seal No visible holes, tears, or other openings in the seal or seal fabric Seal shall be intact and uniformly in pace around the circumference of the floating

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
				roof and the tank wall
			26.11.06.06B(1)(a)	Limit emission of VOC to not more than 200 lbs per day from installation constructed by May 12, 1972
			26.11.06.06B(1)(b)	Limit emission of VOC to not more than 20 lbs per day from installations constructer after May 12, 1972
			26.11.13.04A(1)(a)(i)	Emission from the vapor collection and control system shall be limited to 0.083 lbs of total organic compounds per 1,000 gallons of gasoline or VOC loaded
			26.11.13.05A and B	-Shall ensure that loadings of gasoline or VOC into tank trucks are limited to vapor-tight gasoline tank trucks by obtaining vapor tightness documentation for each gasoline or VOC tank truck that is to be loaded at the facility. - Shall verify that each gasoline tank truck loaded at the facility is a tank truck that has obtained the appropriate vapor tightness documentation within two (2) weeks after the tank truck is loaded.
			26.11.13.04A(1)(b)(i)	-Shall ensure that a nonvapor-tight tank truck will not be reloaded at the facility until vapor tightness documentation for that tank is obtained

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
			26.11.13.04A(1)(b)(ii) 26.11.13.04A(1)(c)	The exhaust gases from the loading rack shall vent through the VRU or the VCU prior to discharging the atmosphere During loading, the gasoline or VOC tank truck pressure does not exceed 18 inches of water, and vacuum does not exceed 6 inches of water No gasoline or VOC leaks in the system when tested by the method referenced in COMAR 26.11.13.04A(3)(a) during loading or unloading operations Maintain a top submerged or bottom loading system on the terminal's loading racks
US Coast Guard Yard (USCG Yard) **24003** **003-0316**	24.23	Engine Painting Surface Coating Operations VOC Equipment Leaks	26.11.19.27 NESHAP-Shipbuilding and Ship Repair 26.11.19.16(C) and (D)	Applies to marine vessel coating operations at a premises where the total potential to emit VOC equals or exceeds 25 tons per year or actual emission of 20 lbs per day from all marine vessel coating operations at the premises. The COMAR VOC coating standards reflect the NESHAP Volatile Organic HAP (VOHAP) Limits for Marine Coatings Control of VOC Leaks

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
Terumo Cardiovascular Systems Corporation **24027** **015-0212**	19.56	Medical Device Manufacturing	26.11.19.31 26.11.19.02 26.11.19.16	Requires impermeable covers on dip pots for manual bonding operations when not in use Regulation inspections Minimize leaks
GenOn – Chalk Point Generating Station **24033** **033-0014** **CT-3, CT-4, CT-5, CT-6**	30.65	Fuel Burning	Synthetic Minor Limitation	Prevents the units from being subject to major new source review, but does not prevent major source applicability. The 27.5 ton limitation was calculated based on the vendor guaranteed VOC emission rate for the 6000 hour annual operational limitation (See Appendix F)
Transcontinental Gas Pipe Line – Ellicott City **24027** **027-0223**	4.397	Natural Gas Transmission	26.11.06.06B	Limits emissions of VOC to not more than 200 pounds per day

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
Brown Station Road Sanitary Landfill **24033** **033-2084**	2011 – 58.10 2012 – 2.72 2013 – 9.384 2014 – 10.96 2018- 25.67	Area A: 148-acre area of closed and capped landfill, which incorporates a LFG collection system Area B: 140-acre area of landfill containing eleven planned cells Flare Station: Two enclosed flares (F1 and F2) each rated at 45 million Btu per hour Flare Station: F3: One (1) enclosed flare rated at 90 million Btu per hour 4.2 MW generating facility consisting of four engine generators that use LFG as primary fuel [PSC Case No. 8838, dated April 22, 2005]	Federal Regulations	40 CFR § 60.755 Because of the adoption of COMAR 11.26.19.20 MD no longer has any landfills that are over the 25 tpy of VOC. Also this is due to regulations approved in a separate 111d submittal. Additionally, Brown Station does have a Title V permit but it is no longer a major source. The emissions reports from the last several years reveal Brown Station to be well below the 25 tpy threshold. The landfill is equipped with a landfill gas collection system, flares and an on-site landfill gas power plant. Landfill Gas Collection System with a reported collection efficiency of 84.1% in 2014. The system reported a collection efficiency of 58.9% in 2011 which accounts for the increase in fugitive emissions from the site. VOC destruction efficiency of engines = 97.2%

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
H & S Bakery **24510** **510-0301**	81.10	Bakery Oven	26.11.19.21 26.11.19.21C(2) & D(1) 26.11.19.21D(2) 26.11.19.21C(5)	Exceeds the average annual production tonnage of finished bread, rolls, or other yeast-raised products for the corresponding Yt value listed below, then thereafter the operator shall be subject to COMAR 26.11.19.21D(2) • 10,000 tons with a Yt value of greater than 11.0; • 15,000 tons with a Yt value between 8.1 and 11.0; • 22,500 tons with a Yt value less between 5 and 8.0; • 28,000 tons with a Yt value less than 5. Any commercial bakery oven constructed on or after January 1, 1994 that satisfies the conditions in COMAR 26.11.19.21D(1) the operator shall comply with COMAR 26.11.19.21D(2)
Sunoco Partners Marketing & Terminals, L.P. (Baltimore Terminal) **24510** **510-0703**	42.85	Bulk Petroleum Storage	26.11.13.03A(1)(a) and (b) 26.11.13.03A(2)	-Each tank's gauging and sampling devices be gas tight except when in use -Each tank be equipped with one of the following properly installed, operating, and well maintained emission control systems (internal floating roof, pressure tank system, or a vapor control system) -There shall be no visible holes, tears, or other openings in the seal or seal fabric -Each seal shall be intact and uniformly in

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
				place around the circumference of the floating roof between the floating roof and the tank wall.
Petroleum Fuel and Terminal Company **24510** **510-1923**	37.82	Bulk Petroleum Storage (VOC emitted during transport tanker truck loading) - Loading Rack	26.11.13.04A(1)(a) 26.11.13.03A(1)(a) 26.11.13.03A(1)(b) 26.11.13.03A(2) 26.11.13.03A(2)(a) 26.11.13.03A(2)(b) 26.11.13.03A(2)(c) 26.11.13.03	Adsorption/Absorption Recovery Unit (VRU) Gauging and sampling devices be gas tight except when in use Each of the storage tanks shall be properly operated with a well maintained internal floating roof equipped with a primary and secondary seal -There shall be no visible holes, tears, or other openings in the seal or seal fabric - Each seal shall be intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank wall - Accumulated area of the gaps between the secondary seal and the tank wall and between the seal and other obstructions inside the tank (that is, ladder, roof supports) that are greater than 1/8 inch in width may not exceed 1.0 square inch per foot of tank diameter

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
			26.11.13.04A(1)(a) 26.11.13.04A(1)(a)(i) 26.11.13.05A	Specific methods and procedures for demonstrating compliance with the roof and seal requirement for each tank The vapor collection and control system controlling emissions from the loading system shall collect the total organic compounds vapors displaced from tank trucks during product loading emissions to the atmosphere from the vapor collection system due to the loading of liquid product into tank trucks at the loading rack may not exceed 0.29 pounds of VOC per 1,000 gallons (35 milligrams of total organic compounds per liter) of gasoline or VOC loaded -Shall ensure that loadings of liquid product into gasoline tank trucks are limited to vapor-tight gasoline tank trucks by obtaining vapor tightness documentation for each gasoline tank truck that is to be loaded at the facility - Shall verify that each gasoline tank truck loaded at the facility is a tank truck that has obtained the appropriate vapor tightness documentation within two (2) weeks after the tank truck is loaded -Shall ensure that the non-vapor-tight tank truck will not be reloaded at the facility until vapor tightness documentation for

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
				that tank is obtained. Alternate procedures for limiting gasoline tank truck loadings may be approved by the Department
Citgo Motiva Baltimore Terminal **24510** **510-0119**	53.93	Bulk Petroleum Storage	26.11.13.03A(1)(a) and (b)	(a) Each tank's gauging and sampling devices must be gas tight except when in use. (b) Each tank be equipped with one of the following properly installed, operating, and well maintained emission control systems: internal floating roof equipped with a primary and secondary seal or equivalent mechanical shoe seal; a pressure tank system that maintains a pressure at all times to prevent loss of vapors to the atmosphere; or a vapor control system capable of collecting the vapors from the tank and disposing of the vapors to prevent their emission to the atmosphere -There shall be no visible holes, tears, or other openings in the seal or seal fabric. -Each seal shall be intact and uniformly in

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
			26.11.13.03A(2)	place around the circumference of the floating roof between the floating roof and the tank wall. -The accumulated area of the gaps between the secondary seal and the tank wall and between the seal and other obstructions inside the tank (that is, ladder, roof supports) that are greater than 1/8 inch in width may not exceed 1.0 square inch per foot of tank diameter.
			26.11.06.06B(1)(a) 26.11.06.06B(1)(b)	Limit emissions of VOC to not more than 200 pounds per day from installations constructed before May 12, 1972 limit emissions of VOC to not more than 20 pounds per day from installations constructed after May 12, 1972
			26.11.13.04A(1)(a)	-Loading rack shall be equipped with a vapor collection and control system designed to collect the total organic compound vapors displaced from cargo tanks during product loading. -The vapor collection and control system shall control at least 90 percent of all vapors and emissions may not exceed 10 milligrams of VOC per liter of gasoline or VOC loaded into gasoline cargo tanks at the loading rack

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
			26.11.13.05A 26.11.13.04A(1)(b)	To load gasoline only into vapor tight gasoline cargo tanks that have been certified as capable of sustaining a pressure change of not more than 3 inches of water in 5 minutes when pressurized to a gauge pressure of 18 inches of water, or evacuated to a gauge pressure of 6 inches of water - Use a terminal automation system to prevent gasoline or VOC cargo tanks that do not have valid cargo tank vapor tightness documentation from loading -The gauge pressure in the delivery tank does not exceed 4,500 pascals. - No pressure-vacuum vent in the vapor collection and control system begins to open at a system pressure less than 4,500 pascals. - The gasoline or VOC cargo tank pressure does not exceed 18 inches of water, and vacuum does not exceed 6 inches of water. - There are no gasoline or VOC leaks in the system during loading or unloading operations. -Design and operate the vapor collection system to prevent any total organic compound vapors collected at one loading lane from passing through another loading

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
			26.11.13.04A(1)(c) 26.11.13.03	lane to the atmosphere. -Shall assure that loadings of gasoline or VOC cargo tanks are made only into tanks equipped with vapor collection equipment that is compatible with the facility's vapor collection system. -Assure that the facility's and the cargo tank's vapor collection systems are connected during each loading of a gasoline or VOC cargo tank. -Shall equip the facility's loading rack with a top submerged or bottom loading system. Requires Inspections/Gas-tight gauging Equipment loading system with vapor collection and control Limits VOC to 0.29 lbs/kgal Large Closed Top Storage Tanks A person may not place or store gasoline or VOC having a TVP between 1.5 psia (10.3 kilonewton /square meter) and 11 psia (75.6 kilonewton /square meter), inclusive, in any closed top tank with a capacity of 40,000 gallons (151,400 liters) or greater unless the: (a) Tank's gauging and sampling devices are gas tight except when in use; and

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
				(b) Tank is equipped with one of the following properly installed, operating, and well maintained emission control systems: (i) An internal floating roof equipped with a primary and secondary seal; (ii) A pressure tank system that maintains a pressure at all times to prevent loss of vapors to the atmosphere; or (iii) A vapor control system capable of collecting the vapors from the tank and disposing of these vapors to prevent their emission to the atmosphere.
Xerxes Corporation **24043** **043-0184**	116.82	Plastic Product Manufacturing	26.11.19.26 26.11.19.26C 26.11.19.26C(2)	Maintaining records of all resins, gelcoat, and clean-up materials used and their VOC contents, Xerxes demonstrates that the resin materials they use meet the applicable styrene monomer content limits and that the clean-up materials do not contain any VOC so that Xerxes will minimize VOC emissions from reinforced plastic manufacturing operations Implement a VOC leak detection and repair program designed to minimize unintended emissions of VOC from process equipment and components, e.g., in-process vessels, storage tanks, pumps, compressors, valves, flanges and other pipeline fittings, pressure relief valves, process drains, and open-ended pipes

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
			26.11.19.02I 26.11.19.16	Flow chopper non-atomized resin application technique Establish in writing and implement facility-wide "good operating practices" designed to minimize emissions of VOC -Shall conduct monthly VOC leak inspections of all equipment and their components that may cause leaks of VOC -Tag any leaks discovered and repair the leak within the guidelines specified in COMAR 26.11.19.16 (logs of the leak inspections must be kept and made available to the Department upon request.)
Motiva Enterprises, LLC – Baltimore Terminal Facility **24510** **510-0728**	65.16	Petroleum Bulk Station & Terminals	26.11.13.03A(1)	-Shall not place or store gasoline or VOC having a true vapor pressure (TVP) between 1.5 psia and 11 psia, inclusive, in any closed top tank with a capacity of 40,000 gallons or greater unless: (a) the tank's gauging and sampling devices are gas tight except when in use; and (b) the tank is equipped with one of the following properly installed, operating, and well maintained emissions control systems: - An internal floating roof equipped with a primary and secondary seal - A pressure tank system that maintains a pressure at all times to prevent loss of vapors to the atmosphere - A vapor control system capable of

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
				collecting the vapors from the tank and disposing of these vapors to prevent their emission to the atmosphere
			26.11.13.03A(2)	-Maintain each seal such that there are no visible holes, tears, or other openings in the seal or seal fabric -Maintain each seal intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank wall -Maintain the seals such that the accumulated area of the gaps between the secondary seal and the tank wall and between the seal and other obstructions inside the tank (e.g., ladder, roof supports) that are greater than 1/8 inch in width do not exceed 1.0 square inch per foot of tank diameter
			26.11.13.06	-Required to maintain records of all continuous monitoring data generated by the facility's CEMS -To perform an annual visual inspection of each tank's gauging and sampling devices
			26.11.13.04A(1)(a)	Equip each loading system with a vapor collection and control system designed to collect all vapors and control at least 90 percent of all vapors from the loading racks

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
			26.11.13.04A(1)(a)(i) 26.11.13.04A(1)(b) 26.11.13.04A(1)(c) 26.11.13.05A	Limit emissions from each vapor collection and control system associated with the facility's loading racks to not more than 0.29 pound of VOC per 1,000 gallons (35 milligrams per liter) of gasoline or VOC loaded -Gauge pressure in the delivery tank does not exceed 4,500 pascals -No pressure-vacuum vent in the vapor collection and control system begins to open at a system pressure less than 4,500 pascals -The gasoline or VOC tank truck pressure does not exceed 18 inches of water, and vacuum does not exceed 6 inches of water -There are no gasoline or VOC leaks in the system during loading or unloading operations Shall equip the terminal's loading racks with a top submerged or bottom loading system load gasoline or VOC only into tank trucks that are vapor-tight gasoline tank trucks determine the back pressure in the vapor collection system during the loading of gasoline tank trucks

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
				A person may not allow a gasoline tank truck to be filled or emptied unless the tank has been certified as capable of sustaining a pressure change of not more than 3 inches of water in 5 minutes when pressurized to a gauge pressure of 18 inches of water (4,479 kilonewtons/square meter), or evacuated to a gauge pressure of 6 inches of water (1,493 kilonewtons/square meter), during a test
Colonia Pipeline Company – Dorsey Junction **24013** **013-0056**	68.78	Refined Petroleum Pipeline Breakout Station petroleum product breakout tanks and fugitive emissions from piping components such as valves, pumps, and connectors	26.11.13.03A(1)(a) and (b) 26.11.13.03A(2)	-Each tank's gauging and sampling devices be gas tight except when in use -Each tank be equipped with one of the following properly installed, operating, and well maintained emission control systems: • An internal floating roof equipped with a primary and secondary seal • A pressure tank system that maintains a pressure at all times to prevent loss of vapors to the atmosphere • A vapor control system capable of collecting the vapors from the tank and disposing of the vapors to prevent their emission to the atmosphere -There shall be no visible holes, tears, or

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
			26.11.13.03 26.11.06.06	other openings in the seal or seal fabric -Each seal shall be intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank wall -The accumulated area of the gaps between the secondary seal and the tank wall and between the seal and other obstructions inside the tank (that is, ladder, roof supports) that are greater than 1/8 inch in width may not exceed 1.0 square inch per foot of tank diameter -Specific inspection methods and procedures for demonstrating compliance with the applicable roof and seal requirements for each storage tank -Limit emissions of VOC to not more than 20 pounds per day unless VOC emissions are reduced by 85 percent or more overall - Keep monthly records to document amounts, types, and composition of all materials loaded into the tank
Center Point Terminal Baltimore LLC **24510** **510-0730**	54.03	Bulk Petroleum Storage	26.11.13.03B(2)(a) 26.11.13. 03B(2)(b)	- External floating roof shall be equipped with a primary and secondary seal - Openings in the external floating roof, except for automatic bleeder vents, rim space vents, and leg sleeves, shall be equipped with a projection below the liquid

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
			26.11.13. 03B(2)(c) 26.11.13. 03B(2)(d) 26.11.13.03B(3)(a) 26.11.13.03B(3)(b) 26.11.13.03B(3)(c) 26.11.13.03B(4)(a) 26.11.13.03B(4)(b)	surface - Automatic bleeder vents shall be closed at all times except when the roof is resting on the roof supports - Roof drains shall be provided with a slotted membrane fabric or equivalent cover that encapsulates at least 90 percent of the area of the drain opening - Shall be no visible holes, tears, or other openings in the seal or seal fabric - Each seal shall be intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank wall -Accumulated area of the gaps between the secondary seal and the tank wall and between the seal and other obstructions inside the tank (that is, ladder, roof supports) that are greater than 1/8 inch in width may not exceed 1.0 square inch per foot of tank diameter - Perform semiannual visual inspections of the primary and secondary seals

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
			26.11.13.03B(4)(c)	- Keep records of the results of all inspections of floating roofs and seals and a record of all repairs or replacement of the seals, including the date and the action taken
			26.11.13.04A(1)(a)	- Notify the Department of an intended tank inspection at least 15 days before the proposed inspection date
			26.11.13.04A(1)(a)(i)	-Vapor collection and control system controlling emissions from the loading system shall collect the total organic compounds vapors displaced from tank trucks during product loading and shall control at least 90 percent of all vapors from the loading racks
			26.11.13.05A	-Emissions to the atmosphere from the vapor collection system due to the loading of liquid product into tank trucks at the loading rack may not exceed 0.29 pounds of VOC per 1,000 gallons (35 milligrams of total organic compounds per liter) of gasoline or VOC loaded - May not allow a gasoline or VOC tank truck to be filled or emptied unless the tank has been certified as capable of sustaining a pressure change of not more than three (3) inches of water in five (5) minutes

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
			26.11.13.04A(1)(b)(i) 26.11.13.04A(1)(b)(ii) 26.11.13.04A(1)(c)	when pressurized to a gauge pressure of 18 inches of water (4,479 kilonewtons/square meter), or evacuated to a gauge pressure of six (6) inches of water (1,493 kilonewtons/square meter), during a test, according to the procedure referenced in COMAR 26.11.13.05B(2) - During loading, the gasoline or VOC tank truck pressure does not exceed 18 inches of water and vacuum does not exceed 6 inches of water - There are no gasoline or VOC leaks in the system when tested by the method referenced in COMAR 26.11.13.04A(3)(a) during loading or unloading operations - Shall maintain a top submerged or bottom loading system on the terminal's loading racks Design and operate the vapor control system and the gasoline loading equipment so that there are no gasoline leaks in the system Bulk Gasoline Terminals must equip the loading rack with a top submerged or bottom loading system.
Hess Corporation –	57.79	Bulk Petroleum	26.11.13.03B(2)(a)-(d)	-External floating roof shall be equipped

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
Baltimore Terminal **24510** **510-0918**		Storage	26.11.13.03B(3)(a)-(c)	with a primary and secondary seal -Openings in the external floating roof, except for automatic bleeder vents, rim space vents, and leg sleeves, shall be equipped with a projection below the liquid surface. The opening with projections shall also be equipped with a cover, seal, or lid, which shall be maintained in a closed position at all times, except when the device is in actual use -Automatic bleeder vents shall be closed at all times except when the roof is resting on the roof supports. Rim vents shall be set to the open position when the roof is being floated off the leg supports or at the manufacturer's recommended setting -Roof drains shall be provided with a slotted membrane fabric or equivalent cover that encapsulates at least 90 percent of the area of the drain opening - There shall be no visible holes, tears, or other openings in a seal or seal fabric -Each seal shall be intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank wall -The accumulated area of the gaps between the secondary seal and the tank wall that are greater than 1/8 inch in width may not exceed 1.0 square inch per foot of tank

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
			26.11.13.03A(1)(a) and (b) 26.11.13.04A(1)(a) 26.11.13.04A(1)(a)(i) 26.11.13.04A(1)(a)(i)	diameter -Each tank's gauging and sampling devices shall be gas tight except when in use -Each tank shall be equipped with one of the following properly installed, operating, and well maintained emission control systems • An internal floating roof equipped with a primary and secondary seal • A pressure tank system that maintains a pressure at all times to prevent loss of vapors to the atmosphere • A vapor control system capable of collecting the vapors from the tank and disposing of the vapors to prevent their emission to the atmosphere. - To equip the loading system with a vapor collection and control system designed to collect all vapors and control at least 90 percent of all vapors from the loading racks -Limit emissions from the vapor collection and control system to 0.29 pounds of VOC per 1,000 gallons (35 milligrams per liter) of gasoline or VOC loaded. - Limits emissions from the vapor

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
			26.11.13.05A 26.11.13.04A(1)(b) 26.11.13.04A(1)(c)	collection and control system to 0.083 pounds of VOC per 1,000 gallons (10 milligrams per liter) of gasoline or VOC loaded -Loading of gasoline or VOC into tank trucks be limited to certified vapor tight tank trucks. The trucks shall be certified as capable of sustaining a pressure change of not more than 3 inches of water in 5 minutes when pressurized to a gauge pressure of 18 inches of water, or evacuated to a gauge pressure of 6 inches of water, during a test AND -Requires that loadings of gasoline or VOC be into only certified tank trucks capable of sustaining a pressure change of not more than 1 inch of water (equivalent to a fugitive emission rate of 9 milligrams per liter of gasoline or VOC loaded) in 5 minutes when pressurized to a gauge pressure of 18 inches of water, or evacuated to a gauge pressure of 6 inches of water, during a test -The gauge pressure in the delivery tank does not exceed 4,500 pascals -No pressure-vacuum vent in the vapor collection and control system begins to open at a system pressure less than 4,500

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
			26.11.02.02H	pascals -The gasoline or VOC tank truck pressure does not exceed 18 inches of water, and vacuum does not exceed 6 inches of water -There are no gasoline or VOC leaks in the system during loading or unloading operations. - Equip the loading rack with a top submerged or bottom loading system - VOC emissions from all marine vessel loading operations at the premises shall be less than 25 tons per calendar year unless the owner obtains an approval from the Department - shall maintain records of total VOC emissions from all marine vessel loading operations at the premises in tons per month and tons per calendar year - Shall report the total emissions of VOC from all marine loading operations at the premises in the Annual Emissions Certification Report that is due April 1 of each calendar year
Petroleum Fuel and Terminal Company **24510** **510-0677**	48.49	Bulk Petroleum Storage Rack Loading, Pre-	26.11.13.04A(1)(a) 26.11.13.03A(1)(a)	- John Zink Carbon Adsorption/Absorption Recovery Unit (VRU) - Requires that the tank's gauging and

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
		Control	26.11.13.03A(1)(b) 26.11.13.03A(2) 26.11.13.03A(1)(a) and (b) 26.11.13.03A(2) 26.11.13.03A(2)(a) 26.11.13.03A(2)(b) 26.11.13.03A(2)(c) 26.11.13.04A(1)(a)	sampling devices be gas tight except when in use - Each of the storage tanks shall be properly operated with a well maintained internal floating roof equipped with a primary and secondary seal -There shall be no visible holes, tears, or other openings in the seal or seal fabric -Each seal shall be intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank wall -The accumulated area of the gaps between the secondary seal and the tank wall and between the seal and other obstructions inside the tank (that is, ladder, roof supports) that are greater than 1/8 inch in width may not exceed 1.0 square inch per foot of tank diameter -Each tank's gauging and sampling devices shall be gas tight except when in use -Each of the storage tanks shall be operated with a well maintained internal floating roof equipped with a primary and secondary seal -There shall be no visible holes, tears, or other openings in the seal or seal fabric

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
			26.11.13.04A(1)(a)(i) 26.11.13.05A 26.11.13.04A(1)(b)(i) 26.11.13.04A(1)(b)(ii)	-Each seal shall be intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank wall -The accumulated area of the gaps between the secondary seal and the tank wall and between the seal and other obstructions inside the tank (that is, ladder, roof supports) that are greater than 1/8 inch in width may not exceed 1.0 square inch per foot of tank diameter -Vapor collection and control system controlling emissions from the loading system shall collect the total organic compounds vapors displaced from tank trucks during product loading and shall control at least 90 percent of all vapors from the loading racks - Emissions to the atmosphere from the vapor collection system due to the loading of liquid product into tank trucks at the loading rack may not exceed 0.29 pounds of VOC per 1,000 gallons (35 milligrams of total organic compounds per liter) of gasoline or VOC loaded - Not allow a gasoline or VOC tank truck

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
			26.11.13.04A(1)(c)	to be filled or emptied unless the tank has been certified as capable of sustaining a pressure change of not more than three (3) inches of water in five (5) minutes when pressurized to a gauge pressure of 18 inches of water (4,479 kilonewtons/square meter), or evacuated to a gauge pressure of six (6) inches of water (1,493 kilonewtons/square meter), during a test, according to the procedure referenced in COMAR 26.11.13.05B(2) -During loading, the gasoline or VOC tank truck pressure does not exceed 18 inches of water and vacuum does not exceed 6 inches of water - No gasoline or VOC leaks in the system when tested by the method referenced in COMAR 26.11.13.04A(3)(a) during loading or unloading operations - Maintain a top submerged or bottom loading system on the terminal's loading racks
Cato Inc. – Fitzwater Terminal **24045** **045-0099**	16.34	Bulk Gasoline Terminal with Gasoline Storage Tanks and a Loading Rack –	26.11.13.03A(1) 26.11.13.04A(1)(a)(ii)	Control of VOC emissions from storage vessels Limits VOC emissions from loading operations to 0.67 lbs VOC per kilogallon

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
		controlled by a VCU (Vapor Combustion Unit)	26.11.13.05A Synthetic Minor	of gasoline loaded -controlled by a VCU (Vapor Combustion Unit) Gasoline must be loaded into vapor tight tank trucks Premise wide VOC emissions must be less than 50 tons in any rolling 12-month period.
Texas Eastern Transmission **24023** **023-0081**	120.23	Natural Gas Compressor Station (natural gas-fired reciprocating stationary IC engines, to pump natural gas from the transmission pipeline) Equipment Leaks during VOC Storage and Transfer	26.11.29.05 26.11.13.04D	Emissions control and monitoring equipment -Loading connections on the vapor lines are equipped with fittings that have no leaks and that automatically and immediately close upon disconnection to prevent release of gasoline or VOC from these fittings -Equipment is maintained to prevent avoidable liquid leaks during loading and unloading operations
Canam Steel Corporation **24021** **021-0254**	96.54	Fabricated Structural Metal Manufacturing	26.11.19.02 I	-Provisions for training of operators on practices, procedures, and maintenance requirements that are consistent with the equipment manufacturers' recommendations and the source's

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
		Structural Steel Coating Operations	26.11.19.13-3 26.11.19.16	experience in operating the equipment, with the training to include proper procedures for maintenance of air pollution control equipment -Maintenance of covers on containers and other vessels that contain VOC and VOC-containing materials when not in use -As practical, scheduling of operations to minimize color or material changes when applying VOC coatings or other materials by spray gun -For spray gun applications of coatings, use of high volume low pressure (HVLP) or other high efficiency application methods where practical -As practical, mixing or blending materials containing VOC in closed containers and taking preventive measures to minimize emissions for products that contain VOC Coating Requirements • 3.9 pounds of VOC per gallon, as applied in a dip coating operation; or • 3.5 pounds of VOC per gallon, as applied by means other than a dip coating operation -Visually inspect all components on the premises for leaks at least once each calendar month.

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
				-Tag any leak immediately so that the tag is clearly visible. The tag shall be made of a material that will withstand any weather or corrosive conditions to which it may be normally exposed. The tag shall bear an identification number, the date the leak was discovered, and the name of the person who discovered the leak. The tag shall remain in place until the leak has been repaired -Take immediate action to repair all observed VOC leaks that can be repaired within 48 hours -Repair all other leaking components not later than 15 days after the leak is discovered. If a replacement part is needed, the part shall be ordered within 3 days after discovery of the leak, and the leak shall be repaired within 48 hours after receiving the part -Maintain a supply of components or component parts that are recognized by the source to wear or corrode, or that otherwise need to be routinely replaced, such as seals, gaskets, packing, and pipe fittings -Maintain a log that includes the name of the person conducting the inspection and the date on which leak inspections are made, the findings of the inspection, and a list of leaks by tag identification number.

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
				The log shall be made available to the Department upon request. Leak records shall be maintained for a period of not less than 2 years from the date of their occurrence
Raven Power Fort Smallwood Complex (Brandon Shores and H.A. Wagner Generating Stations) **24003** **003-0468**	70.59	Fuel Burning	26.11.13.04C(2) 26.11.24.07D(1) 26.11.13.04D	Operator of a stationary storage tank may not cause or permit gasoline to be loaded into a stationary tank unless the loading system is equipped with a vapor balance line that is properly installed, maintained, and used Operator of an existing gasoline dispensing facility with a monthly gasoline throughput of less than 10,000 gallons shall create and maintain records on gasoline throughput and tank sizes and make the records available to the Department on request -Not cause or permit gasoline or VOC having a TVP of 1.5 psia (10.3 kilonewtons/square meter) or greater to be loaded into any tank truck, railroad tank car, or other contrivance unless the: • Loading connections on the vapor lines are equipped with fittings that have no leaks and that automatically and immediately close upon disconnection to prevent release of gasoline or VOC from

<table>
<tr><th>Facility Name
County FIPS
Premise ID</th><th>2018 VOC (tpy)</th><th>Main Source of VOC Emissions</th><th>Applicable COMAR</th><th>RACT Technology and Limit</th></tr>
<tr><td></td><td></td><td>Shop Paint Booth

Coating Standards</td><td>26.11.19.08

26.11.19.08(D)</td><td>these fittings; and
• Equipment is maintained and operated in a manner to prevent avoidable liquid leaks during loading or unloading operations.

D. Emission Standards.
(1) A person subject to this regulation may not exceed the applicable VOC emission standards (expressed in terms of mass of VOC per volume of coating excluding water and exempt compounds, as applied) of the following table when applying a metal furniture coating:
<table>
<tr><td rowspan="2">Coating Type</td><td colspan="2">Baked</td><td colspan="2">Air-Dried</td></tr>
<tr><td>Lbs/gal</td><td>Kg/l</td><td>Lbs/gal</td><td>Kg/l</td></tr>
<tr><td>General, one-component</td><td>2.3</td><td>0.275</td><td>2.3</td><td>0.275</td></tr>
<tr><td>General, multi-component</td><td>2.3</td><td>0.275</td><td>2.8</td><td>0.340</td></tr>
<tr><td>Extreme performance</td><td>3.0</td><td>0.360</td><td>3.5</td><td>0.420</td></tr>
<tr><td>Metallic</td><td>3.5</td><td>0.420</td><td>3.5</td><td>0.420</td></tr>
<tr><td>Pretreatment</td><td>3.5</td><td>0.420</td><td>3.5</td><td>0.420</td></tr>
<tr><td>Solar absorbent</td><td>3.0</td><td>0.360</td><td>3.5</td><td>0.420</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Facility Name
County FIPS
Premise ID</th><th>2018 VOC (tpy)</th><th>Main Source of VOC Emissions</th><th>Applicable COMAR</th><th>RACT Technology and Limit</th></tr>
<tr><td></td><td></td><td></td><td></td><td>
<table>
<tr><td>Extreme high gloss</td><td>3.0</td><td>0.360</td><td>2.8</td><td>0.340</td></tr>
</table>
(2) A person subject to this regulation may not exceed the applicable VOC emission standards (expressed in terms of mass of VOC per volume of coating excluding water and exempt compounds, as applied) of the following table when applying a metal parts and products coating:
<table>
<tr><td rowspan="2">Coating Type</td><td colspan="2">Baked</td><td colspan="2">Air-Dried</td></tr>
<tr><td>Lbs/gal</td><td>Kg/l</td><td>Lbs/gal</td><td>Kg/l</td></tr>
<tr><td>General, one-component</td><td>2.3</td><td>0.275</td><td>2.8</td><td>0.340</td></tr>
<tr><td>General, multi-component</td><td>2.3</td><td>0.275</td><td>2.8</td><td>0.340</td></tr>
<tr><td>Adhesion promoter</td><td>4.0</td><td>0.479</td><td>4.0</td><td>0.479</td></tr>
<tr><td>Prefabricated architectural one component and multi-component</td><td>2.3</td><td>0.280</td><td>3.5</td><td>0.420</td></tr>
<tr><td>Military specification</td><td>2.3</td><td>0.280</td><td>2.8</td><td>0.340</td></tr>
<tr><td>Extreme</td><td>3.0</td><td>0.360</td><td>3.5</td><td>0.420</td></tr>
</table>
</td></tr>
</table>

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
				high-gloss; extreme performance; heat-resistant; high performance architectural; repair coating; solar absorbent; or touch up coating
				Camouflage, electric-insulating varnish; etching filler; high temperature; metallic; mold-seal; pan backing; pretreatment; silicone release and vacuum-metalizing: 3.5 | 0.420 | 2.8 | 0.420
NRG GenOn Mid-	34.27	Electric Generation	26.11.06.06B(2)(c)	Prohibits NRG from causing or permitting

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
Atlantic – Morgantown **24017** **017-0014**		Firing Bituminous coal Boilers Combustion turbines Fuel Storage and Handling Equipment		the discharge of VOC emissions from any installation in excess of 20 lb/day unless the discharge is reduce by 85 percent or more overall
C.P. Crane LLC (Subsidiary of Raven Power Holdings LLC) **24005** **005-0079**	1.325	Electric Generation - Firing Bituminous coal Boilers Combustion turbines	26.11.06.06B(2)(c)	Prohibits facility from causing or permitting the discharge of VOC emissions from any installation in excess of 20 lb/day unless the discharge is reduce by 85 percent or more overall
Crown Cork and Seal USA, Inc. (Crown Beverage Packaging) **24005** **005-1040**	2015-39.35 This source is currently inactive. Permit expires 4/30/2020.	Metal Can Manufacturing	26.11.19.04B 26.11.02.09A	• Limits the discharge of VOC from two-piece can interior body spray coating to 4.2 lbs per gallon of coating applied (minus water). • Limits the discharge of VOC from two-piece can exterior coating to 2.8 lbs per gallon of coating applied minus water. -Perform an inspection once a month to verify compliance with the requirement that clean up rags be stored, drained, and

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
				disposed of in closed containers and that containers of VOC containing materials be kept covered when not in use -Maintain a record of the results of the monthly VOC storage and disposal inspections and make these records available to the Department upon request -Calculate the monthly and rolling 12-month total VOC emissions at the end of each month and submit to the Department a quarterly report of the VOC emissions within 30 days following the end of each calendar quarter. -Maintain records of the quantity and types of fuel burned for at least 5 years and make these records available to the Department upon request. Implement good operating practices to minimize Volatile Organic Compound (VOC) emissions into the atmosphere To minimize leaks from VOC equipment and their components, including process equipment, storage tanks, pumps, compressors, valves, flanges and other pipeline fittings, pressure relief valves, process drains, and open-ended pipes
Plymouth Tube Company **24045**	21.06	Company manufactures stainless steel tubing for aerospace, high-	26.11.19.09E	Vapor degreasers (Each vapor degreaser has a condenser, utilizes an air pollution control device (carbon adsorption unit)

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
045-0121		tech electronic systems, and medical applications	26.11.19.16C	with an overall control efficiency of not less than 90 percent (i.e. efficiency of the carbon adsorption unit is 97 percent), and includes a separate enclosed chamber that allows draining of the parts being cleaned and which enables the capture of the vapors) Routinely identifies all leaks (actual or potential) and repairs them expeditiously. The units have been found to be air-tight, without any leaks, as was the case during the most recent inspection of October 16, 2008. There were no leak identification tags on process equipment and no odors were detected in the sump area near the degreaser
Sparrows Point, LLC **24005** **005-0147**	0.012	Fuel Burning Sinter Strand Scrubber System	26.11.10.06C(1) 26.11.10.06E	Emissions standard calculated on a daily average basis of 0.25 pound of VOC per ton of sinter produced AND -Maintain the 30-day rolling average oil content of the feedstock at or below 0.02 percent; or -Maintain the 30-day rolling average of volatile organic compound emissions from the windbox exhaust stream at or below 0.2 lb/ ton of sinter -Develop and maintain a good management practices plan for each installation

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
				-Implement the good management practices plan to reduce VOC emissions -Make the plan available to the Department upon request. - Good management practices plan for each Basic Oxygen Furnace installation to reduce VOC emissions -Maintain written or printable electronic copies of all good management practices plan for each Basic Oxygen Furnace installation to reduce VOC emissions -Make available to the Department upon request copies of good management practices plan for each Basic Oxygen furnace installation for VOC emission reduction
			26.11.10.06E(1)	
			26.11.10.06(B)	-Skim the oil and grease from the cooling water at the continuously casters. - Maintain a record of the continuous skimming of the oil and grease from the cooling water at the continuous casters. - Make available to the Department upon request the records of the continuous skimming of the oil and grease at the cooling water at the continuous caster
			26.11.10.06D	-Keep data sheets, that indicates the vapor pressure of the rolling oils and rust preventative oils that are used at the hot

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
		Hot Strip Rolling Mill (HSMRM) only	26.11.19.05(B)	rolling mill. These records shall be kept on site for at least five (5) years and shall be made available to the Department upon request. Not cause or permit the discharge into the atmosphere of any VOC from coil coating in excess of 2.6 pounds per gallon of coating applied (minus water) (0.31 kilogram/liter of coating applied (minus water)
Lehigh Cement Company LLC **24013** **013-0012**	48.97	Cement Plant	26.11.01.11C	Use continuous emission monitoring system (CEM) to monitor total hydrocarbon (THC) emissions from the main exhaust stack
Polystyrene Products Company, Inc. **24005** **005-2305**	33.34	expandable polystyrene operation (EPO) shape-molding facility expansion and molding of polystyrene	26.11.19.19 26.11.19.19C(2)(c) 26.11.19.19C(2)(d) 26.11.19.19C(3)	-Use polystyrene beads with a VOC content of not more than six (6) percent by weight for the manufacture of shape-molded products, including cups, other than “specialty products” as defined in COMAR 26.11.19.19B(2)(g) Use reduced VOC content beads (unexpanded polystyrene beads with a VOC content less than seven (7) percent by weight for the manufacture of “specialty products” as defined in COMAR 26.11.19.19B(2)(g))

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
			26.11.19.19C(4) 26.11.19.02I	Compliance with the limit for VOC content of beads used for "specialty products", and beads used for non-specialty products, shall be determined by comparison of the applicable standard with the daily average VOC content of the beads used for each type of product molded Collect spills of unexpanded polystyrene beads and place any spilled material in a closed container to prevent and suppress emissions Establish in writing and implement facility-wide "good operating practices" designed to minimize emissions of VOC: • Provisions for training operators on methods to minimize VOC emissions at the facility, and provisions for minimizing VOC emissions from clean-up and storage operations, including maintaining covers on containers; • VOC display the "good operating practices" documents in clear view for all operators that work with these types of VOC emitting process areas
Spartech FCD, LLC **24045** **045-0082**	17.35	manufactures semi-rigid/plasticized polyvinyl chloride	26.11.19.07C	Limits VOC emissions from vinyl printing or coating installations that emit more than 20 pounds of VOCs (Volatile Organic

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
		(PVC) and acrylonitrile butadiene styrene (ABS) film and sheet prints and coats plastic films and paper via rotogravure printing/coating processes lamination process	26.11.19.16C	Compounds) per day, to no more than 3.8 pounds per gallon (as applied minus water) of the VOC content of any ink or coating applied to a vinyl substrate -Visually inspect all components on the premises for leaks at least once each calendar month. -Tag any leak immediately so that the tag is clearly visible. The tag shall be made of a material that will withstand any weather or corrosive conditions to which it may be normally exposed. The tag shall bear an identification number, the date the leak was discovered, and the name of the person who discovered the leak. The tag shall remain in place until the leak has been repaired. -Take immediate action to repair all observed VOC leaks that can be repaired within 48 hours. -Repair all other leaking components not later than 15 days after the leak is discovered. If a replacement part is needed, the part shall be ordered within 3 days after discovery of the leak, and the leak shall be repaired within 48 hours after receiving the part. -Maintain a supply of components or component parts that are recognized to wear or corrode, or that otherwise need to be routinely replaced, such as seals,

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
			26.11.19.02B	gaskets, packing, and pipe fittings. -Applying low VOC coatings or adhesives that meet applicable standards; - Using a control device that, when tested by approved test methods: • Complies with applicable emission reduction requirements, or • Results in an emission reduction equal to or greater than the emission reduction that would have been achieved by complying with Section B(2)(a) of this regulation; -Complying with the operating conditions or equipment specifications established in the applicable regulation; -Reducing emissions by using water-based coatings, resins, inks, or similar products that contain less than 25 percent VOC by volume of the volatile portion of the product, for sources subject to VOC limits in coatings or inks or other similar products; or - Using an alternative method of assessing compliance if: • The alternative method is approved by the Department, • The resulting emissions are equal to or less than the emissions that would have been discharged by complying with emission standards,

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
				• Adequate records are maintained to ensure enforceability, and • The alternative compliance method is approved by the U.S. EPA as a revision to the State Implementation Plan. Regenerative Thermal Oxidizer: controls VOC emissions from the converting operation, which consists of ink/coating storage, an ink/coating mixing room, three rotogravure printing presses (limits emissions to 3.8 pounds of VOC per gallon of coating (as applied minus water) or an equivalent emissions reduction)
Complementary Coatings Corporations (DBA INSL-X) **24510** **510-1056**	2013-16.78 Plant closed in 2013.	paint manufacturing plant	26.11.19.15B 26.11.19.15B(6) 16.11.19.15B(4) and (6) 26.11.19.15B(7)	Equip all open top vessels or tanks used to mix paint, disperse pigment, or adjust the viscosity or color of a paint with covers. The covers shall be VOC impermeable and may be equipped with an opening not larger than necessary for safe clearance of the mixer shaft Not use any open top vessel or tank to mix paint, disperse pigment, or adjust the viscosity or color of a paint unless the vessel or tank opening is covered. The vessel or tank opening covered at all times except when operator access is necessary Shall clean all vessels and tanks used to

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
			26.11.19.15B(8)	manufacture paint with detergent, hot alkali, high pressure water, or use other reasonable precautions approved by the Department that minimize emissions of VOC
			26.11.33.04	Shall not transfer VOC into any tank or vessel used to manufacture paint unless submerged filling or a side diversion method (referred to as cascade filling) that forces the VOC to the sidewalls to prevent splashing is used. Quality control additions, of less than or equal to 55 gallons, are not subject to this requirement
			26.11.33.06A	VOC Emissions are minimized because solvent quantities added are minimized due to end product specifications, which prohibits the manufacture of architectural coatings for sale within the State, with a VOC content in excess of the corresponding limits specified in COMAR 26.11.33.05
			26.11.33.10	If anywhere on the container of an architectural coating, label or sticker affixed to the container, or in any sales, advertising, or technical literature supplied by a manufacturer or anyone acting on behalf of a manufacturer, any representation is made that indicates that

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
			26.11.19.02I 26.11.19.16C	the coating meets the definition of or is recommended for use for more than one of the coating categories listed in COMAR 26.11.33.05, then the most restrictive VOC content limit applies A coating that does not meet the definitions in COMAR 26.11.33.03 for the specialty coatings categories listed in COMAR 26.11.33.05 is subject to the VOC content limit for either a flat coating or a non-flat coating, based on its gloss as determined in COMAR 26.11.33.02 to implement good operating practices to minimize Volatile Organic Compound (VOC) emissions into the atmosphere. Minimize leaks from VOC equipment and their components, including process equipment, storage tanks, pumps, compressors, valves, flanges and other pipeline fittings, pressure relief valves, process drains, and open-ended pipes.

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
The Sherwin-Williams Company-Williamsport **24043** **043-0305**	21.77	Resin manufacturing facility Resin reactor Gas-fired boiler Gas-fired thermal-oil heating furnace Tank farm	26.11.19.02I 26.11.19.16 26.11.19.15B(7) 26.11.13.04D	Good operating practices (must include provisions for training operators concerning methods to minimize VOC emissions at the facility, and provisions for minimizing VOC emissions from clean-up and storage operations, including maintenance of covers on containers of VOC and VOC-bearing materials.) To implement a facility wide VOC leak detection and repair program Clean all resin reactors with detergent, hot alkali or high pressure water or use other reasonable methods that minimize missions of VOC and that are approved by the Department. Establishes that a person may not cause or permit gasoline or VOC having a TVP of 1.5 psia or greater to be loaded into any tank truck, railroad tank car, or other contrivance unless the: • Loading connections on the vapor lines are equipped with fittings that have no leaks and that automatically and immediately close upon disconnection to prevent release of gasoline or VOC from these fittings; and • Equipment is maintained and operated in a manner to prevent avoidable liquid leaks during loading or unloading operations.

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
Solo Cup Operating Corporation 24011 011-0044	11.73	Installation of one (1) natural gas fired, 5-color, 47-inch, Kidder flexographic printing press with integral oven.	General	This facility is a synthetic minor for VOC and HAP emissions. Limited to 50 tons of VOC emissions in any rolling 12-month period.
			26.11.19.02I	Implement good operating practices to minimize VOC emissions
			26.11.19.10C	Reduce emissions by using water-based inks that contain less than 25 percent VOC by volume of the volatile portion of the ink, or high solids inks that contain not less than 60 percent nonvolatiles; OR If compliance with the requirements of § C(1) of this regulation cannot be achieved, reduce the VOC content of each ink, or reduce the average VOC content of inks used at each press, as follows: (a) 60 percent reduction for flexographic presses, (b) 65 percent reduction for packaging rotogravure presses, and (c) 75 percent reduction for publication rotogravure presses."
			26.11.19.16C&D	Control of VOC Equipment Leaks
			26.11.19.02B(2)(d)	Use low VOC inks and coatings to meet the emissions limit and T-BACT requirements.

Facility Name County FIPS Premise ID	2018 VOC (tpy)	Main Source of VOC Emissions	Applicable COMAR	RACT Technology and Limit
Perdue Farms Incorporated – Salisbury **24045** **045-0042**	298.32	Hexane Extraction soybean oil extraction plant (SOEP)	26.11.01.05 26.11.19.16	Determine for the previous calendar year the ratio of gallons of VOC emissions from the soybean oil extraction plant (SOEP) to the tons of soybeans processed in the SOEP Visually inspect all equipment and components in VOC service for leaks at least once per calendar month
Bimbo Bakeries USA, Inc. **24021** **021-0234**	43.41	Bakery Oven	26.11.19.21 26.11.19.21C(2) & D(1) 26.11.19.21D(2) 26.11.19.21C(5)	Exceeds the average annual production tonnage of finished bread, rolls, or other yeast-raised products for the corresponding Yt value listed below, then thereafter the operator shall be subject to COMAR 26.11.19.21D(2) • 10,000 tons with a Yt value of greater than 11.0; • 15,000 tons with a Yt value between 8.1 and 11.0; • 22,500 tons with a Yt value less between 5 and 8.0; • 28,000 tons with a Yt value less than 5. Any commercial bakery oven constructed on or after January 1, 1994 that satisfies the conditions in COMAR 26.11.19.21D(1) the operator shall comply with COMAR 26.11.19.21D(2)

4.0 MDE INTERNAL CONSULTATION PROCESS AND EPA'S RACT/BACT CLEARINGHOUSE

Maryland has roughly 600 high impact facilities that have been permitted by MDE's Air and Radiation Administration (ARA) Permits Program. On an annual basis the MDE Air and Radiation Management Compliance Program performs approximately 2,000 inspections and audits. With the expertise of over 18,000 issued permits, a consultation process with ARMA's Permits and Compliance Programs was conducted during the development of this SIP, for information regarding the potential for RACT enhancement. There were no potential RACT enhancements identified during this consultation process.

As part of its comprehensive review process to assure that all relevant RACT standards have been addressed and met, MDE reviewed EPA's RACT/BACT Clearinghouse database. Through its review, MDE did not observe any discrepancies between the database and the information generated from within the department. Maryland chose several of its largest emission source categories and provided in Appendix A of this report, copies of the RACT/BACT Clearinghouse Data sheets for review.

5.0 REFERENCE DOCUMENTS

Control Techniques Guidelines (CTG), Alternative Control Techniques (ACT) Documents, and Additional Reference Documents

U.S. EPA's Control Techniques Guidelines documents, Alternative Control Techniques documents, and Additional Reference Documents, cited in this SIP Submittal for Determination of RACT Controls of VOC and NO_x Emissions from Stationary Sources, are listed below.

Control Technique Guidelines:

1. Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals, EPA-450/2-77-026, December 1977 (Group I).
2. Control of Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds, EPA-450/2-77-025, October 1977 (Group I).
3. Control of Volatile Organic Compound Emissions from Coating Operations at Aerospace Manufacturing and Rework Operations, EPA-453/R-97-004, December 1997.
4. Control of Volatile Organic Compound Emissions from Large Petroleum Dry Cleaners, EPA-450/3-82-009, September 1982 (Group III).
5. Control of Volatile Organic Compound Emissions from Offset Lithographic Printing (CTG Draft), EPA-453/D-95-001, September 1993.
6. Control of Volatile Organic Compound Emissions from Reactor Processes and Distillation Operations in SOCMI, EPA-450/4-91-031, August 1993.
7. Control of Volatile Organic Compound Equipment Leaks from Synthetic Organic Chemical Manufacturing and Polymer Manufacturing Equipment, EPA-450/3-83-006, Nov. 1983.
8. Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems, EPA-450/2-78-051, December 1978 (Group II).
9. Control of Volatile Organic Compound Leaks from Petroleum Refinery Equipment, EPA-450/2-78-036, June 1978 (Group II).

10. Control of Volatile Organic Compounds from Use of Cutback Asphalt, EPA-450/2-77-037, December 1977 (Group I).
11. Control of Volatile Organic Emissions from Bulk Gasoline Plants, EPA-450/2-77-035, December, 1977 (Group I).
12. Control of Volatile Organic Emissions from Existing Stationary Sources, Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks, EPA-450/2-77-008, May 1977 (Group I).
13. Control of Volatile Organic Emissions from Existing Stationary Sources, Volume III: Surface Coating of Metal Furniture, EPA-450/2-77-032, December 1977.
14. Control of Volatile Organic Emissions from Existing Stationary Sources, Volume V: Surface Coating of Large Appliances, EPA-450/2-77-034, December 1977 (Group I).
15. Control of Volatile Organic Emissions from Existing Stationary Sources, Volume IV: Surface Coating of Insulation of Magnet Wire, EPA-450/2-77-033, December 1977 (Group I).
16. Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VI: Surface Coating of Miscellaneous Metal Parts and Products, EPA-450/2-78-015, June 1978 (Group II).
17. Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VII: Factory Surface Coating of Flat Wood Paneling, EPA-450/2-78-032, June 1978 (Group II).
18. Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VIII: Graphic Arts-Rotogravure and Flexography, EPA-450/2-78-033, December 1978 (Group II).
19. Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products, EPA-450/2-78-029, December 1978 (Group II).
20. Control of Volatile Organic Emissions from Petroleum Liquid Storage in External Floating Roof Tanks, EPA-450-2/78-047, December 1978 (Group II).
21. Control of Volatile Organic Emissions from Solvent Metal Cleaning, EPA-450/2-77-022 November 1977 (Group I).
22. Control of Volatile Organic Emissions from Storage of Petroleum Liquids in Fixed Roof Tanks, EPA-450/2-77-036, December 1977 (Group I).
23. Control Techniques Guidelines for Shipbuilding and Ship Repair Operations (Surface Coating), 61 FR-44050 8/27/96, August 1996.
24. Design Criteria for Stage I Vapor Control Systems - Gasoline Service Stations, November 1975 (Group I).

Alternative Control Techniques Documents:

1. Alternative Control Techniques (ACT) document: Automobile Refinishing, EPA-453/R-94-031, April 1994.
2. Alternative Control Techniques (ACT) document: Control of Volatile Organic Compound Emissions from Batch Processes, EPA-453/R-93-017, February 1994.
3. Alternative Control Techniques (ACT) document: Halogenated Solvent Cleaners, EPA-450/3-89-030, August 1989.
4. Alternative Control Techniques (ACT) document: Industrial Cleaning Solvents, EPA-453/R-94-015, February 1994.
5. Alternative Control Techniques (ACT) document: NO_x Emissions from Process Heaters (Revised), EPA-453/R-93-034, September 1993.
6. Alternative Control Techniques (ACT) document: NO_x Emissions from Industrial/Commercial/Institutional (ICI) Boilers, EPA-453/R-94-022, March 1994.
7. Alternative Control Techniques (ACT) document: NO_x Emissions from Glass Manufacturing, EPA-453/R-94-037, June 1994.
8. Alternative Control Techniques (ACT) document: NO_x Emissions from Utility Boilers, EPA-453/R-94-023, March 1994.

9. Alternative Control Techniques (ACT) document: NO_x Emissions from Stationary Gas Turbines, EPA-453/R-93-007, January 1993.
10. Alternative Control Techniques (ACT) document: NO_x Emissions from Stationary Reciprocating Internal Combustion Engines, EPA-453/R-93-032, 1993.
11. Alternative Control Techniques (ACT) document: NO_x Emissions from Iron and Steel Mills, EPA-453/R-94-065, September 1994.
12. Alternative Control Techniques (ACT) document: Offset Lithographic Printing, EPA-453/R-94-054, June 1994.
13. Alternative Control Techniques (ACT) document: Reduction of Volatile Organic Compound Emissions from Automobile Refinishing, EPA-450/3-88-009, October 1988.
14. Alternative Control Techniques (ACT) document: Surface Coating of Automotive/Transportation and Business Machine Plastic Parts, EPA-453/R-94-017, February 1994.
15. Alternative Control Techniques (ACT) document: Volatile Organic Liquids Storage in Floating and Fixed Roof Tanks, EPA-453/R-94-001, February 1994.
16. NO_x Control Technologies for the Cement Industry: Final Report; EPA-457/R-00-002, September 2000. This document is an update to "Alternative Control Techniques Document—NO_x Emissions from Cement Manufacturing," EPA-453/R-94-004, March 1994.

Additional Reference Documents

1. 40 CFR 60 Subpart Ce, "Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators," Maximum Achievable Control Technology (MACT) determination for NOx," (62 FR 48379, September 15, 1997).
2. NESCAUM, Stationary Source Committee Recommendation on NO_x RACT for Utility Boilers, 8/12/1992.
3. NESCAUM, Stationary Source Committee Recommendation on NO_x RACT for Industrial Boilers, Internal Combustion Engines and Combustion Turbines, 9/18/1992.
4. NESCAUM, Status Report on NO_x Controls for Gas Turbines, Cement Kilns, Industrial Boilers, Internal Combustion Engines, December 2000.
5. "NO_x Policy Document for the Clean Air Act of 1990," EPA-452/R-96-005, March 1996.
6. Ozone Transport Commission. "Identification and Evaluation of Candidate Control Measures" Final Technical Support Document, prepared by MACTEC, February 28, 2007.
7. Sourcebook: NO_x Control Technology Data, USEPA, July 1991.
8. State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990, USEPA.
9. State Implementation Plans; Nitrogen Oxides Supplement to the General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990, USEPA, 10/27/1995.
10. Stationary Reciprocating Internal Combustion Engines – Updated Information on NO_x Emissions and Control Techniques – Revised Final Report, USEPA, 9/1/2000.
11. STAPPA/ALAPCO, Controlling Emissions of Nitrogen Oxides from Existing Utility Boilers Under Title I of the Clean Air Act: Options and Recommendations, 4/27/1992.
12. USEPA, Memorandum Subject: De Minimis Values for NO_x RACT, from G.T. Helms, Ozone Policy and Strategies Group, dated 1/1/1995.
13. USEPA, Memorandum Subject: Fuel Switching to Meet the Reasonably Available Control Technology (RACT) Requirements for Nitrogen Oxides (NOx), Michael H. Shapiro, EPA Office of Air and Radiation, 7/30/1993.

14. USEPA, Memorandum Subject: Nitrogen Oxides (NOx) Questions from Ohio EPA, Tom Helms, Chief Ozone/Carbon Monoxide Programs Branch, (no date cited, references 11/30/1993 questions).
15. USEPA, NO_x Emissions from Stationary Internal Combustion Engines, October 2003.
16. USEPA, Summary of NO_x Control Technologies and their Availability and Extent of Application, February 1992.
17. USEPA, Summary of State/Local NO_x Regulations for Stationary Sources, 2004.

6.0 APPENDICES

Appendix A: RACT/BACT Clearinghouse Data Sheets

EPA INFORMATION ON INDUSTRIAL/COMMERCIAL/INSTITUTIONAL BOILERS & PROCESS HEATERS 100-250 MMBtu/hr

Regulation Details

ID/Regulation Name & Industry Sector: RUS-0248 INDUS./COMMER./INSTIT. BOILERS & PROCESS HEATERS

SIC: SEE NOTE
Basis: MACT
State: US
U.S. EPA Region: 0
Regulation Status: IN EFFECT
Entry Date: 02/18/2003
Last Update Date: 06/27/2005
Agency: OT002 EPA REGION I
Agency Contact: 1 Phone: (919) 541-0800

CFR Citation/Regulation No.: 40 CFR PART 63 SUBPART DDDDD

BID Ref.:
BID Title:
NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR INDUSTRIAL, COMMERCIAL, AND INSTITUTIONAL BOILERS AND PROCESS HEATERS, SUMMARY OF PUBLIC COMMENTS AND RESPONSES

On-Line Location of Regulation:

Regulation Effective Date Regulation Effective Legal Ref.

Tech Support Doc. Date: / /
Economic Analysis Date: / /
Risk Analysis Date: / /
Public Notice Date: / /
Regulation Propose Date: 01/13/2003 68 FR 1660
Promulgation Date: 09/13/2004 69 FR 55218
Regulation Effective Date:

RACT EPA INFORMATION FOR RECIPROCATING INTERNAL COMBUSTION ENGINES

Regulation Details

ID/Regulation Name & Industry Sector: RUS-0241 RECIPROCATING INTERNAL COMBUSTION ENGINES

SIC: 4911 Basis: MACT
State: US U.S. EPA Region: 0
Regulation Status: IN EFFECT
Entry Date: 12/20/2002 Last Update Date: 06/23/2005
Agency: OT002 EPA REGION I
Agency Contact: 1 Phone: (919) 541-0800

CFR Citation/Regulation No.: 40 CFR PART 63 SUBPART ZZZZ

BID Ref.:
BID Title:
NATIONAL EMISSION STANDARDS FOR STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES, SUMMARY OF PUBLIC COMMENTS AND RESPONSES

On-Line Location of Regulation:

Regulation Effective Date Regulation Effective Legal Ref.

Tech Support Doc. Date: / / Regulation Propose Date: 12/19/2002 67 FR 77830
Economic Analysis Date: 11/01/02 Promulgation Date: 06/15/2004 69 FR 33474
Risk Analysis Date: / / Regulation Effective Date:
Public Notice Date: / /
Hearing? No

RACT EPA INFORMATION ON LARGE MUNICIPAL WASTE COMBUSTORS

Process Details

Regulation Name/Industry Sector: LARGE MUNICIPAL WASTE COMBUSTORS (MWC)
RBLC ID: RUS-0189
Process Name/Description: MWC, MASS BURN WATERWALL AND REFRACTORY, EXISTING

Throughput / Throughput Unit:	**250 T/D (SEE PROCESS NOTE)**
Process Type Codes:	**21.400,21.900,21.999**

Pollutant List		
Pollutant	Primary Emission Limit	Basis
PM	**0 SEE P2 NOTE**	**FIPMACT**
NOx	**205 PPMV @ 7% OXYGEN**	**FIPMACT**
CO	**100 PPMV @ 7% OXYGEN**	**FIPMACT**
DIOXINS/FURANS	**60 NG/DSCM @ 7% OXYGEN**	**FIPMACT**
PM	**0.012 GR/DSCF @ 7% OXYGEN**	**FIPMACT**
OPACITY	**10 % OPACITY**	**FIPMACT**
CD	**18 GR/MMDSCF @ 7% OXYGEN**	**FIPMACT**
PB	**200 GR/MMDSCF @ 7% OXYGEN**	**FIPMACT**
HG	**35 GR/MMDSCF @ 7% OXYGEN**	**FIPMACT**
SO2	**29 PPMV @ 7% OXYGEN**	**FIPMACT**
HCL	**29 PPMV @ 7% OXYGEN**	**FIPMACT**

Process Notes:	**THE FED. PLAN APPLIES TO EXISTING MWC UNIT W/CAPACITIES TO COMBUSTS > 250T/D OF MSW UNLESS THE UNIT IS SUBJECT TO A SECTION 111(D)/129 STATE PLAN THAT AHS BEEN APPROVED BY EPA AND IS CURRENTLY EFFECTIVE. MASS BURN WATERW. IS A FIELD-ERECTED UNIT COMBUSTS MSW IN A WATERWALL FURN. MASS BURN REFRAC. IS A FIELD-EREC. UNIT COMB. MSW IN A REFRAC. WALL F.**

RACT EPA INFORMATION ON GAS FIRED 10-100 MMBtu/hr BOILERS

Regulation Details

ID/Regulation Name & Industry Sector: RUS-0070 SMALL INDUS-COMMER-INSTITU STEAM GEN UNITS

SIC: 3569
State: US
Regulation Status: IN EFFECT
Entry Date: 06/22/1994
Agency: OT002 EPA REGION I
Agency Contact: 1 Phone: (919) 541-0800

Basis: MACT
U.S. EPA Region: 0

Last Update Date: 06/14/2006

CFR Citation/Regulation No.: 40 CFR PART 60 SUBPART DC

BID Ref.:
BID Title:
On-Line Location of Regulation:
Regulation Effective Date

Regulation Effective Legal Ref.

Tech Support Doc. Date: / /
Economic Analysis Date: / /
Risk Analysis Date: / /
Public Notice Date: / /
Hearing? Yes

Regulation Propose Date: 06/09/1989
Promulgation Date: 09/12/1990 55 FR 37683
Regulation Effective Date:

40 CFR Part 60 Subpart Dc - Small Industrial-Commercial Institutional Steam Generating Units between 10 and 100 MMBtu/hr for which construction is commenced after 6/9/89. Amended 5/8/1996 (61 FR 20736) to exempt boilers during periods of combustion research. Amended 2/12/1999 (64 FR 7465) to reduce reporting/recordkeeping burden.

RACT EPA INFORMATION ON BOILERS GREATER THAN 250 MMBtu/hr

Regulation Details

ID/Regulation Name & Industry Sector: RUS-0251 COAL- OR OIL-FIRED ELEC. UTILITY STEAM GEN. UNITS

SIC: 4911 Basis: NESHAP
State: US U.S. EPA Region: 0
Regulation Status: PROPOSED
Entry Date: 03/03/2004 Last Update Date: 01/11/2005
Agency: OT002 EPA REGION I
Agency Contact: 1 Phone: (919) 541-0800

CFR Citation/Regulation No.: 40 CFR PART 63 SUBPART UUUUU

BID Ref.:
BID Title:
NO BID IS SPECIFIED.

On-Line Location of Regulation:

Regulation Effective Date Regulation Effective Legal Ref.

Tech Support Doc. Date: 02/27/2004 Regulation Propose Date: 01/30/2004 69 FR 4665
Economic Analysis Date: 01/28/2004 Promulgation Date:
Risk Analysis Date: / / Regulation Effective Date:
Public Notice Date: 02/02/2004
Hearing? Yes

RACT EPA INFORMATION ON KRAFT PULP MILLS

Regulation Name/Industry Sector: KRAFT PULP MILLS
RBLC ID: RUS-0013
Process Name/Description: FURNACE, RECOVERY

Throughput / Throughput Unit:	
Process Type Codes:	30.002,30.211,30.219

Pollutant List		
Pollutant	**Primary Emission Limit**	**Basis**
PM	0.044 GR/DSCF @ 8% O2	MACT
VE	35 % OPACITY	MACT
TRS	5 PPM @ 8% O2	MACT
TRS	25 PPM @ 8% O2	MACT

Process Notes:	CONTROL COSTS FOR ESP/DIRECT CONTACT RECOVERY FURNACE, PLANT CAPACITY 1000 TON/DAY AIR DRIED PULP. ANNUAL PRODUCT RECOVERY CREDIT $1,784,000

RACT EPA INFORMATION ON LARGE HOSPITAL MEDICAL WASTE INCINERATORS

Process Details

Regulation Name/Industry Sector: HOSPITAL/MEDICAL/INFECTIOUS WASTE INCINERATORS
RBLC ID: RUS-0190
Process Name/Description: HOSPITAL/MEDICAL/INFECTIOUS WASTE INCINE., LARGE

Throughput / Throughput Unit:	500 LB/H (SEE PROC NOTE)
Process Type Codes:	21.300

Pollutant List		
Pollutant	**Primary Emission Limit**	**Basis**
NO_X	250 PPMV @ 7% OXYGEN	FIPMACT
PB	1.2 MG/DSCM @ 7% OXYGEN	FIPMACT
CD	0.16 MG/DSCM @ 7% OXYGEN	FIPMACT
HG	0.55 MG/DSCM @ 7% OXYGEN	FIPMACT
SO2	55 PPMV @ 7% OXYGEN	FIPMACT
PM	34 MG/DSCM @ 7% OXYGEN	FIPMACT
OPACITY	10 % OPACITY	FIPMACT
CO	40 PPMV @ 7% OXYGEN	FIPMACT
DIOXINS/FURANS	125 NG/DSCM @ 7% OXYGEN	FIPMACT
HCL	100 PPMV @ 7% OXYGEN	FIPMACT

Process Notes:	HMIWI W/MAX DESIGN WASTE BURNING CAPACITY >50 LB/H; OR CONTINUOUS OR INTERMITTENT HMIWI W/MAX CHARGE RATE >500 LB/H; OR BATCH HMIWI W/MAX CHARGE RATE >4,000 LB/D ARE SUBJECTED TO THIS SUBPART. GOOD COMBUSTION PRACTICE (GCP) IS REQUIRED.

RACT EPA INFORMATION ON PAPER COATING

Regulation Name/Industry Sector: PAPER SURFACE COATING
RBLC ID: RUS-0141
Process Name/Description: PAPER COATING LINE

Throughput / Throughput Unit:	
Process Type Codes:	41.018

Pollutant List		
Pollutant	**Primary Emission Limit**	**Basis**
VOC	0.35 KG/L COATING MINUS WATER	CTG

Process Notes:	INCLUDES ALL COATINGS PUT ON PAPER, PRESSURE SENSITIVE TAPES REGARDLESS OF SUBSTRATE (INCL. PAPER, FABRIC OR PLASTIC FILM) AND RELATED WEB COATING PROCESSES ON PLASTIC FILM SUCH AS TYPEWRITER RIBBONS, PHOTOGRAPHIC FILM, AND MAGNETIC TAPE; DECORATIVE COATINGS ON METAL FOIL SUCH AS GIFT WRAP AND PACKAGING.

RACT EPA INFORMATION ON SOLVENT EXTRACTION FOR VEGETABLE OIL PRODUCTION

Regulation Name/Industry Sector: SOLVENT EXTRACTION FOR VEGETABLE OIL PRODUCTION
RBLC ID: RUS-0196
Process Name/Description: CORN GERM DRY MILLING (EXISTING & NEW)

Throughput /
Throughput Unit:
Process Type Codes: 70.300,70.320

Pollutant List		
Pollutant	**Primary Emission Limit**	**Basis**
HAP	1 COMPLIANCE RATIO	MACT

Process Notes:	CORN GERM DRY MILLING MEANS A SOURCE THAT PROCESSES CORN GERM THAT HAS BEEN SEPARATED FROM THE OTHER CORN COMPONENTS USING A DRY PROCESS OF MECHANICAL CHAFING AND AIR SIFTING. IF THE COMPLIANCE RATIO <= 1, THEN SOURCE WAS IN COMPLIANCE FOR THE PREVIOUS OPERATING MONTH. COMPLIANCE RATIO IS CALCULATED BY USING OILSEED SOLVENT LOSS FACTORS, THE WEIGHTED AVERAGE VOLUME FRACTION OF HAP IN SOLVENT AND THE TONS OF EACH TYPE OF LISTED OILSEED PROCESSED. OILSEED SOLVENT LOSS FACTOR FOR THIS PROCESS IS 0.7 GAL/T.

RACT EPA INFORMATION ON PORTLAND CEMENT PLANTS

Regulation Name/Industry Sector: PORTLAND CEMENT PLANTS
RBLC ID: RUS-0011
Process Name/Description: KILN

Throughput / Throughput Unit:	
Process Type Codes:	90.028

Pollutant List		
Pollutant	**Primary Emission Limit**	**Basis**
PM	0.3 LB/TON	NSPS
VE	20 % OPACITY	NSPS

Appendix B: Major Sources of NOx in Maryland and Applicable RACT Regulations

Premises ID	Agency Interest	Facility type	Example Applicable NOx RACT	NOx (tpy)
001-0011	Luke Paper Company	Fine paper & kraft pulp mill w/ fuel burning (gas/oil/coal) equipment	COMAR 26.11.14.07 & 26.11.40	2,695.78
001-0203	AES Warrior Run Inc	Electric cogeneration plant-fuel burning equipment	COMAR 26.11.09.08	552.18
003-0208	Baltimore Washington International Thurgood Marshall Airport	International airport	NOX SM 25 tpy	12.67
003-0247	Northrop Grumman Systems Corp	Electronic systems manufacturing plant	NOX SM 25 tpy	21.46
003-0310	Naval Support Activity Annapolis	U.S. naval academy	COMAR 26.11.09.08	11.79
003-0316	US Coast Guard Yard (USCG Yard	Ship fabricating, repair & assembling facility	COMAR 26.11.09.08	9.93
003-0317	National Security Agency	Metal reclamation furnaces & fuel burning (oil-fired) equipment	COMAR 26.11.09.08	34.13
003-0322	Fort George G. Meade, Dept. of the Army	Federal military facility w/ boilers-generators-other equip	COMAR 26.11.09.08	12.07
003-0468	Fort Smallwood Road Complex	Electric generating station-fuel burning (oil/coal) equipment	COMAR 26.11.09.08	3,638.12
003-1471	Millersville Landfill Gas to Electric Project	Landfill gas-to-energy	NOX SM 25 tpy	17.96
005-0002	University Of Maryland - Baltimore County	Fuel burning (oil-fired) equipment	COMAR 26.11.09.08	13.39
005-0039	Greater Baltimore Medical Center	Medical center	NOX SM 25 tpy	10.16
005-0076	Constellation Power - Notch Cliff	Electric generating station-fuel burning (nat. Gas) equipment	COMAR 26.11.09.08	31.17
005-0078	Constellation Power - Riverside Generating Station	Electric generating station-fuel burning (oil) equipment	COMAR 26.11.09.08	49.27
005-0079	C P Crane Generating Station	Electric generating station-fuel burning (oil/coal) equipment	COMAR 26.11.09.08 & 26.11.38-EPA SIP approved version	1,247.37
005-0812	Back River WWTP	Municipal wastewater treatment plant	NOX SM 25 tpy	25.12
005-2322	Ecca Calcium Products - Imerys	Calcium carbonate manufacturing facility	NOX SM 25 tpy	16.10

005-2581	Eastern Landfill Gas, LLC	Landfill	NOX SM 25 tpy	7.43
005-2589	Fritz Enterprises, Inc.	Scrap metal sales - hammermill, conveyor/feeders and slag plant	NOX SM 25 tpy	14.40
009-0012	Calvert Cliffs Nuclear Power Plant, LLC	Electric generating station-oil fired equipment	COMAR 26.11.09.08	14.04
009-0021	Dominion Cove Point LNG, LP	Liquefied natural gas facility	COMAR 26.11.09.08	36.37
013-0110	Maryland Paving - Finksburg	Asphalt paving contractor	NOX SM 25 tpy	9.10
013-0012	Lehigh Cement Company LLC	Portland cement manufacturing	COMAR 26.11.30.01, .02, .03, .07, and .08	2,901.83
013-0394	Harvest RGI, LLC	Concrete and asphalt pavement recycler	NOX SM 25 tpy	82.02
015-0202	Rock Springs Generation Facility	Natural gas fired electric generating station	COMAR 26.11.09.08	51.77
017-0014	NRG Morgantown Generating Station	Electric generating station-fuel burning (oil/coal) equipment	COMAR 26.11.09.08 & 26.11.38-EPA SIP approved version	1,322.98
017-0040	Naval Support Facility Indian Head	Fuel burning (no.6 oil/coal) equipment/420 gallon mixer facility	COMAR 26.11.09.08	91.75
017-0150	Aggregate Industries - Waldorf	Asphalt plant	NOX SM 25 tpy	12.48
019-0013	Vienna Power Station	Electric generating station-fuel burning (oil) equipment	COMAR 26.11.09.08	52.77
019-0029	Valley Protein	Poultry rendering plant	NOX SM 100 tpy	16.46
021-0027	Redland Brick, Inc. - Rocky Ridge	Molded brick manufacturer	NOX SM 25 tpy	5.39
021-0131	Fort Detrick	Medical waste combustor	COMAR 26.11.08.08-2	0.401
021-0131	Fort Detrick	Municipal waste combustor	COMAR 26.11.08.07	2.66
021-0444	Frederick National Laboratory for Cancer Research	Medical laboratory	NOX SM 25 tpy	8.69
021-0599	Fannie Mae UTC Data Center	Ten diesel generator sets (9-0192 thru 9-0201)	COMAR 26.11.09.08	1.10
021-0623	NIBC Fort Detrick	U.S. military base	NOX SM 25 tpy	4.61
023-0042	Mettiki Coal, LLC	Thermal coal dryer	COMAR 26.11.09.08	125.01
023-0081	Texas Eastern Transmission-3223	Natural gas pipeline compression station	COMAR 26.11.29 (excluding 26.11.29.04B(1)(b)	63.81
025-0005	J. M. Huber Corporation - Havre De Grace-2233	Inorganic pigment production plant	COMAR 26.11.09.08	13.12
025-0024	Constellation Power - Perryman Generating Station-3946	Electric generating station-fuel burning (nat. Gas/oil) equipment	COMAR 26.11.09.08	214.65
025-0081	APG-Aberdeen Area-26474	Military facility with fuel burning & misc equipment	COMAR 26.11.09.08	35.11
025-0082	APG-Edgewood Area-20603	Military facility with fuel burning & misc equipment	NOX SM 25 tpy	23.43
025-0434	Upper Chesapeake Medical Center-26625	Fuel-burning (nat. Gas/no. 2 oil) equipment	COMAR 26.11.09.08	7.51

027-0052	MD & VA Milk Producers Coop-112589	Milk spray drying process	COMAR 26.11.09.08	4.79
027-0223	Transcontinental Gas Pipe Line - Ellicott City-5546	Interstate natural gas transmission facility	COMAR 26.11.29 (excluding 26.11.29.04B(1)(b)	11.28
027-0535	Allan Myers Materials-Jessup Asphalt-26922	Hot mix asphalt crushing and screening plant	NOX SM 25 tpy	6.08
027-0612	Laurel Sand & Gravel, Inc.-84093	Asphalt contracting batch plant	NOX SM 25 tpy	3.38
029-0001	Eastman Specialties Corporation-2107	Polymeric plasticizers manufacturing plant	NOX SM 100 tpy	16.45
031-0019	NRG Dickerson Generating Station-46	Electric generating station-fuel burning (oil/coal) equipment	COMAR 26.11.09.08 & 26.11.38-EPA SIP approved version	1,688.18
031-0323	National Institute of Standards and Technology-13355	Federal facility with fuel burning equipment	COMAR 26.11.09.08	29.98
031-0324	National Institutes of Health	Biomedical Research – Fuel Burning Equipment	COMAR 26.11.19.08	79.17
031-0325	NIH Animal Center	Veterinary medicine research	NOX SM 25 tpy	11.79
031-1129	GSA Federal Research Center at White Oak	Government services	NOX SM 25 tpy	6.32
031-1505	Verizon Maryland Inc., Chesapeake Complex	Emergency power/peaking station	COMAR 26.11.09.08	1.44
031-1718	Montgomery Co. Resource Recovery Facility (MCRRF)	Municipal waste combustor / resource recovery facility (2-0132)	COMAR 26.11.08.08	441.17
031-1723	Oaks Landfill (Gas to Energy)	Landfill gas-to-energy	NOX SM 25 tpy	17.68
031-1875	IBM Corporation	Emergency diesel generators	COMAR 26.11.09.08	2.61
031-1951	Washington Gas - Rockville Station	Natural gas & propane peaking station & storage facility	COMAR 26.11.09.08	7.49
033-0002	Aggregate Industries - Kirby Road Asphalt Plant	Hot mix asphalt production facility	NOX SM 25 tpy	7.00
033-0010	University Of Maryland	Cogeneration central steam plant	COMAR 26.11.09.08	115.37
033-0011	Laurel Sand and Gravel, Inc	Hot mix asphalt production facility	NOX SM 25 tpy	7.73
033-0014	NRG Chalk Point Generating Station	Electric generating station-fuel burning (gas/oil/coal) equipment	COMAR 26.11.09.08 & 26.11.38-EPA SIP approved version	3,877.30
033-0655	Andrews Air Force Base	Boilers / diesel generators / paint booth / fuel storage & dispensing	COMAR 26.11.09.08	10.45
033-0675	NASA Goddard Space Flight Center	Laboratory research facility w/fuel burning & process equipment	COMAR 26.11.09.08	17.46
033-0883	U.S. Army - Adelphi Laboratory Center	U.S. Army Research Laboratory	COMAR 26.11.09.08	16.37
033-1522	Prince George's County Correctional Facility	Fuel burning	COMAR 26.11.09.08	21.30
033-2200	KMC Thermo-Brandywine Power Facility	Electric generating station - combined cycle facility	COMAR 26.11.09.08	117.96

033-2568	Gaylord Entertainment Company	National resort and convention center	NOX SM 25 tpy	16.67
033-2658	Aggregate Industries - Bladensburg Asphalt Division	Hot mix asphalt production facility	NOX SM 25 tpy	5.65
037-0017	Naval Air Station Patuxent River	Military facility with operations for naval aircrafts	COMAR 26.11.09.08	23.68
039-0017	Crisfield Energy Center	Electric generating station-fuel burning (oil) equipment	COMAR 26.11.09.08	38.28
039-0055	Eastern Correctional Institution	Co-generation plant, woodchip-fired boilers, wwtp	COMAR 26.11.09.08	36.10
039-0062	A & N Electric Cooperative	Electric generating station-fuel burning (oil) equipment	COMAR 26.11.09.08	3.36
041-0029	Easton Utilities - N. Washington Street	Electric generating station-fuel burning (nat. Gas/oil) equipment	COMAR 26.11.09.08	95.96
041-0069	Easton Utilities - Airport Park	Electric generating station-fuel burning (nat. Gas/oil) equipment	COMAR 26.11.09.08	100.21
043-0006	Mack Trucks, Inc	Truck engine & transmission manufacturing facility	COMAR 26.11.09.08	45.62
043-0008	Holcim (US), Inc	Portland cement manufacturing	COMAR 26.11.30.01, .02, .03, .07, and .08	1,173.03
043-0127	Maryland Correctional Institution - Hagerstown	Fuel burning (nat. Gas/oil-fired) equipment	COMAR 26.11.09.08	17.58
045-0042	Perdue AgriBusiness	Vegetable oil refining	COMAR 26.11.09.08	48.21
045-0287	Ingenco Wicomico Plant	Landfill gas-to-energy	NOX SM 100 tpy	40.39
047-0044	Berlin Town Power Plant	Electric generating station-fuel burning (oil) equipment	COMAR 26.11.09.08	1.77
510-0001	Johns Hopkins Hospital	Fuel burning (gas/oil) equipment	COMAR 26.11.09.08	78.43
510-0006	Constellation Power - Westport	Electric generating station-fuel burning (nat. Gas) equipment	COMAR 26.11.09.08	10.99
510-0007	Constellation Power - Gould Street Station	Electric generating station-fuel burning (nat. Gas) equipment	NOX SM 25 tpy	17.30
510-0076	W. R. Grace & Co. - Grace Davison - Curtis Bay	Silica, alumina based inorganic chemicals manufacturing	COMAR 26.11.09.08	74.45
510-0077	Johns Hopkins University - Charles Street	Fuel burning equipment	COMAR 26.11.09.08	34.21
510-0088	University of MD Medical Center Midtown Campus	Fuel Burning Equipment	NOX SM 25 tpy	7.69
510-0121	RELP Holabird, LLC	Soap and detergent production plant	COMAR 26.11.09.08	1.47
005-0167	Bluegrass Materials Company, LLC - Marriottsville Quarry	Limestone crushing and screening plant	NOX SM 25tpy	17.27
510-0233	National Gypsum Company	Gypsum board manufacturer		21.51

510-0265	Constellation Energy Group - Philadelphia Road	Electric generating station-fuel burning (oil) equipment	COMAR 26.11.09.08	66.34
005-0282	Social Security Administration	Fuel burning equipment	COMAR 26.11.09.08	11.30
510-0314	American Sugar Refining, Inc.	Fuel burning oil	COMAR 26.11.09.08	49.57
510-0651	Veolia Energy Baltimore Heating, LLP-Central Ave	Steam generating	COMAR 26.11.09.08	51.50
510-0660	Veolia Energy Baltimore Heating, LLP-Cherry Hill	Fuel burning (natural gas fired) equipment	COMAR 26.11.09.08	1.09
510-1045	Morgan State University	Fuel burning (oil-fired)	COMAR 26.11.09.08	3.62
510-1158	Johns Hopkins Bayview Medical Center	Fuel burning (oil-fired)	COMAR 26.11.09.08	12.25
510-1665	Philadelphia Quartz Corp	Sodium silicate glass manufacturing plant	COMAR 26.11..09.08	75.64
510-1886	Wheelabrator Baltimore, LP	Municipal waste combustor (rated at 15oo tpd)	COMAR 26.11.08.08	1,141.25
510-2796	Veolia Energy Baltimore Heating, LLP-Spring Gardens Plant	Fuel burning (oil-fired) equipment	COMAR 26.11.09.08	78.72
510-2975	Curtis Bay Energy, LP	Medical waste (regional) combustor	COMAR 26.11.08.08-2	39.60
510-3078	Veolia Energy Baltimore Heating, LLP-Saratoga Plant	Fuel-burning (oil/nat. Gas) equipment (5-1260,1261,1262,1263 & 1264)	COMAR 26.11.09.08	12.42
510-3237	Trigen Energy - Inner Harbor East	Fuel burning (natural gas) equipment	COMAR 26.11.09.08	1.42
510-3406	NIH Bayview Aquisition, LLC	Medical laboratory, offices, library	NOX SM 25 tpy	11.39

Appendix C: VERSO Luke Paper Title V Permit Termination

Verso Corporation
Luke Mill
Environmental Department
300 Pratt Street
Luke MD 21540

T 301 359 3311
F 301 359 2340
W versoco.com

CS-20-43

May 7, 2020

Ms. Suna Sariscak, Permit Program Administrator
Air & Radiation Management Administration
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, MD 21230

Dear Ms. Sariscak:

On behalf of Verso Corporation I would like to inform you that we have exhausted all possibilities of securing a company to purchase the Luke Mill Facilities and keep the Title V Operating Permit active. All of the required conditions within the permit have continued to be maintained since our announcement to close the Luke Mill.

Please accept this letter as our official notification that Verso Luke LLC is requesting a complete closure of the Luke Mill Facility and termination of all associated air quality permits as of the date of this letter. Furthermore, we acknowledge that Verso or any potential new owner of the facility must apply for and obtain all new air quality permits in order for this facility to begin operations any time in the future.

Thank you for your immediate attention to this notification. Please contact me if you require any additional information.

Sincerely

Glen Gilbert
Facility Manager

LAJ:laj

Appendix D: COMAR 26.11.38 (EPA Approved Version)

Title 26 DEPARTMENT OF THE ENVIRONMENT

Subtitle 11 AIR QUALITY

Chapter 38 Control of NO_x Emissions from Coal-Fired Electric Generating Units

Authority: Environment Article, §§1-404, 2-103, and 2-301—2-303, Annotated Code of Maryland

.01 Definitions.

A. In this chapter, the following terms have the meanings indicated.

B. Terms Defined.

(1) "Affected electric generating unit" means any one of the following coal-fired electric generating units:

(a) Brandon Shores Units 1 and 2;

(b) C.P. Crane Units 1 and 2;

(c) Chalk Point Units 1 and 2;

(d) Dickerson Units 1, 2, and 3;

(e) H.A. Wagner Units 2 and 3;

(f) Morgantown Units 1 and 2; and

(g) Warrior Run.

(2) "Operating day" means a 24-hour period beginning midnight of one day and ending the following midnight, or an alternative 24-hour period approved by the Department, during which time an installation is operating, consuming fuel, or causing emissions.

(3) "Ozone season" means the period beginning May 1 of any given year and ending September 30 of the same year.

(4) System.

(a) "System" means all affected electric generating units within the State of Maryland subject to this chapter that are owned, operated, or controlled by the same person and are located:

(i) In the same ozone nonattainment area as specified in 40 CFR Part 81; or

(ii) Outside any designated ozone nonattainment area as specified in 40 CFR Part 81.

(b) "System" includes at least two affected electric generating units.

(5) "System operating day" means any day in which an electric generating unit in a system operates.

(6) "30-day systemwide rolling average emission rate" means a value in lbs/MMBtu calculated by:

(a) Summing the total pounds of pollutant emitted from the system during the current system operating day and the previous 29 system operating days;

(b) Summing the total heat input to the system in MM Btu during the current system operating day and the previous 29 system operating days; and COMAR Final text Effective 8/31/15

(c) Dividing the total number of pounds of pollutant emitted during the 30 system operating days by the total heat input during the 30 system operating days.

(7) "24-hour block average emission rate" means a value in lbs/MMBtu calculated by:

(a) Summing the total pounds of pollutant emitted from the unit during 24 hours between midnight of one day and ending the following midnight;

(b) Summing the total heat input to the unit in MMBtu during 24 hours between midnight of one day and ending the following midnight; and

(c) Dividing the total number of pounds of pollutant emitted during 24 hours between midnight of one day and ending the following midnight by the total heat input during 24 hours between midnight of one day and ending the following midnight.

.02 Applicability.

The provisions of this chapter apply to an affected electric generating unit as that term is defined in Regulation .01B of this chapter.

.03 2015 NO_x Emission Control Requirements.

A. Daily NOx Reduction Requirements During the Ozone Season.

(1) Not later than 45 days after the effective date of this regulation, the owner or operator of an affected electric generating unit (the unit) shall submit a plan to the Department and EPA for approval that demonstrates how each affected electric generating unit will operate installed pollution control technology and combustion controls to meet the requirements of §A(2) of this regulation. The plan shall summarize the data that will be collected to demonstrate compliance with §A(2) of this regulation. The plan shall cover all modes of operation, including but not limited to normal operations, start-up, shut-down, and low load operations.

(2) Beginning on May 1, 2015, for each operating day during the ozone season, the owner or operator of an affected electric generating unit shall minimize NOx emissions by operating and optimizing the use of all installed pollution control technology and combustion controls consistent with the technological limitations, manufacturers 'specifications, good engineering and maintenance practices, and good air pollution control practices for minimizing emissions (as defined in 40 CFR §60.11(d)) for such equipment and the unit at all times the unit is in operation while burning any coal.

B. Ozone Season NO_x Reduction Requirements.

(1) Except as provided in §8(3) of this regulation, the owner or operator of an affected electric generating unit shall not exceed a NOx 30-day systemwide rolling average emission rate of 0.15 lbs/MMBtu during the ozone season.

(2) The owner or operator of an affected electric generating unit subject to the provisions of this regulation shall continue to meet the ozone season NOx reduction requirements in COMAR 26.11.27.

(3) Ownership of Single Electric Generating Facility.

(a) An affected electric generating unit is not subject to §8(1) of this regulation if the unit is located at an electric generating facility that is the only facility in Maryland directly or indirectly owned, operated, or controlled by the owner, operator, or controller of the facility.

(b) For the purposes of this subsection, the owner includes parent companies, affiliates, and subsidiaries of the owner.

C. Annual NO_X Reduction Requirements. The owner or operator of an affected electric generating unit subject to the provisions of this regulation shall continue to meet the annual NOx reduction requirements in COMAR 26.11.27.

D. NO_X Emission Requirements for Affected Electric Generating Units Equipped with Fluidized Bed Combustors. COMAR Final text Effective 8/31/15

(1) The owner or operator of an affected electric generating unit equipped with a fluidized bed combustor is not subject to the requirements of §§A, 8(1) and (2), and C of this regulation.

(2) The owner or operator of an affected electric generating unit equipped with a fluidized bed combustor shall not exceed a NOx24-hour block average emission rate of 0.10 lbs/MMBtu.

.04 Compliance Demonstration Requirements.

A. Procedures for Demonstrating Compliance with Regulation .03A of this Chapter.

(1) An affected electric generating unit shall demonstrate, to the Department's satisfaction, compliance with Regulation .03A(2) of this chapter, using the information collected and maintained in accordance with Regulation .03A(1) of this chapter and any additional documentation available to and maintained by the affected electric generating unit.

(2) An affected electric generating unit shall not be required to submit a unit-specific report consistent with §A(3) of this regulation when the unit emits at levels that are at or below the following rates:

Affected Unit	24-Hour Block Average NO_x Emissions in lbs/MMBtu
Brandon Shores	
Unit 1	0.08
Unit 2 <650 MWg ≥650 MWg	0.07 0.15
C.P. Crane	
Unit 1	0.30
Unit 2	0.28
Chalk Point	
Unit 1 only	0.07
Unit 2 only	0.33
Units 1 and 2 combined	0.20

Dickerson	
Unit 1 only	0.24
Unit 2 only	0.24
Unit 3 only	0.24
Two or more units combined	0.24
H.A. Wagner	
Unit 2	0.34
Unit 3	0.07
Morgantown	
Unit 1	0.07
Unit 2	0.07

(3) The owner or operator of an affected electric generating unit subject to Regulation .03A(2) of this chapter shall submit a unit-specific report for each day the unit exceeds its NO_x emission rate under §A(2) of this regulation, which shall include the following information for the entire operating day:

(a) Hours of operation for the unit;

(b) Hourly averages of operating temperature of installed pollution control technology;

(c) Hourly averages of heat input (MMBtu/hr);

(d) Hourly averages of output (MWh);

(e) Hourly averages of ammonia or urea flow rates;

(f) Hourly averages of NO_x emissions data (lbs/MMBtu and tons);

(g) Malfunction data;

(h) The technical and operational reason the rate was exceeded, such as:

(i) Operator error;

(ii) Technical events beyond the control of the owner or operator (e.g. acts of God, malfunctions); or

(iii) Dispatch requirements that mandate unplanned operation (e.g. start-ups and shut-downs, idling, and operation at low voltage or low load);

(i) A written narrative describing any actions taken to reduce emission rates; and

(j) Other information that the Department determines is necessary to evaluate the data or to ensure that compliance is achieved.

(4) An exceedance of the emissions rate under §A(2) of this regulation as a result of factors including but not limited to start-up, shut-down, days when the unit was directed by the electric grid operator to operate

at low load or to operate pursuant to any emergency generation operations required by the electric grid operator, including necessary testing for such emergency operations, or which otherwise occurred during operations which are deemed consistent with the unit's technological limitations, manufacturers' specifications, good engineering and maintenance practices, and good air pollution control practices for minimizing emissions, shall not be considered a violation of Regulation .03A(2) of this chapter provided that the provisions of the approved plan as required in Regulation .03A(1) of this chapter are met.

B. Procedures for Demonstrating Compliance with NO_x Emission Rates under this Chapter.

(1) Compliance with the NO_x emission rate limitations in Regulations .03B(1) and D(2) and .04A(2) of this chapter shall be demonstrated with a continuous emission monitoring system that is installed, operated, and certified in accordance with 40 CFR Part 75.

(2) For Regulations .03B(1) of this chapter, in order to calculate the 30-day systemwide rolling average emission rates, if 29 system operating days are not available from the current ozone season, system operating days from the previous ozone season shall be used.

.05 Reporting Requirements.

A. Reporting Schedule.

(1) Beginning 30 days after the first month of the ozone season following the effective date of this chapter, each affected electric generating unit subject to the requirements of this chapter shall submit a monthly report to the Department detailing the status of compliance with this chapter during the ozone season.

(2) Each subsequent monthly report shall be submitted to the Department not later than 30 days following the end of the calendar month during the ozone season.

B. Monthly Reports During Ozone Season. Monthly reports during the ozone season shall include:

(1) Daily pass or fail of the NO_x emission rates under Regulation .04A(2) of this chapter;

(2) The reporting information as required under Regulation .04A(3) of this chapter;

(3) The 30-day systemwide rolling average emission rate for each affected electric generating unit to demonstrate compliance with Regulation .03B(1) of this chapter;

Appendix E: COMAR 26.11.08.08-2 HMIWI REGULATION

ENVIRONMENT
Subtitle 11 AIR QUALITY
Chapter 08 Control of Incinerators

Authority: Environment Article, §§1-101, 1-404, 2-101—2-103, 2-301—2-303, 2-406, 10-102, and 10-103, Annotated Code of Maryland

.01 Definitions.

A. In this chapter, the following terms have the meanings indicated.

B. Terms Defined.

(1) Bag Leak Detection System.

(a) “Bag leak detection system” means an instrument that is capable of monitoring PM loadings in the exhaust of a fabric filter in order to detect bag failures.

(b) “Bag leak detection system” includes, but is not limited to, an instrument that operates on triboelectric, light scattering, light-transmittance, or other effects to monitor relative PM loadings.

(1-1) "Batch HMIWI" means an HMIWI that is designed so that neither waste charging nor ash removal can occur during combustion.

[redacted]

(5) "Bypass stack" means a device used for discharging combustion gases to avoid severe damage to the air pollution control device or other equipment.

[redacted]

(7-1) “Commercial HMIWI” means a HMIWI which offers incineration services for hospital/medical/infectious waste generated off site by firms unrelated to the firm that owns the HMIWI.

(8) "Continuous emission monitoring (CEMS)" means a monitoring system for continuously measuring and recording the emissions of a pollutant from an affected facility.

[redacted]

[redacted]

(16) "High-air phase" means the stage of the batch operating cycle when the primary chamber reaches and maintains maximum operating temperatures.

(17) "Hospital" is defined at 40 CFR §60.51c.

(18) "Hospital, medical and infectious waste incinerator (HMIWI)" means a special medical waste incinerator that combusts any amount of hospital, medical, and infectious waste.

(19) Hospital waste.

(a) "Hospital waste" means discards generated at a hospital, except unused items returned to the manufacturer.

(b) "Hospital waste" does not include human corpses, remains, and anatomical parts that are intended for interment or cremation.

(20) Incinerator.

(a) "Incinerator" means a furnace or combustion unit that uses controlled flame combustion for the thermal destruction of municipal solid waste, [redacted]

(b) "Incinerator" does not mean a hazardous waste incinerator.

(c) “Incinerator” does not mean any unit owned or operated by a government agency to destroy illegal or prohibited goods. The exclusion does not apply to items either confiscated or incinerated by private, industrial, or commercial entities.

(21) "Incinerator operator" means:

(a) For a municipal waste combustor (MWC), the facility manager (chief facility operator), shift foreman (supervisor), and incinerator control room personnel;

(b) For any other incinerator, the person who controls the waste feed and performs the necessary equipment adjustments to ensure efficient performance.

[redacted]

(24) "Intermittent HMIWI" means an HMIWI that is designed to allow waste charging, but not ash removal, during combustion.

(25) Large HMIWI.

(a) "Large HMIWI" means:

(i) an HMIWI that has a maximum design waste burning capacity of more than 500 pounds per hour;

(ii) A continuous or intermittent HMIWI that has a maximum charge rate of more than 500 pounds per hour; or

(iii) A batch HMIWI that has a maximum charge rate of more than 4,000 pounds per day.

(b) "Large HMIWI" does not mean:

(i) A continuous or intermittent HMIWI that has a maximum charge rate of less than or equal to 500 pounds per hour; or

(ii) A batch HMIWI that has a maximum charge rate of less than or equal to 4,000 pounds per day.

[redacted]

(29) "Maximum charge rate" means:

(a) For a continuous and intermittent HMIWI, 110 percent of the lowest 3-hour average charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limits; or

(b) For a batch HMIWI, 110 percent of the lowest daily charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limits.

(30) "Maximum design waste burning capacity" means:

(a) For an intermittent and continuous HMIWI, the waste burning capacity as determined by the following formula:

C = PV × 15,000/8,500 where:

(i) C = HMIWI capacity, pounds/hour

(ii) PV = primary chamber volume, cubic feet

(iii) 15,000 = primary chamber heat release rate factor, Btu/cubic foot/hour

(iv) 8,500 = standard waste heating value, Btu/pound;

(b) For a batch HMIWI, the waste burning capacity as determined by the following formula: C = PV × 4.5/8 where:

(i) C = HMIWI capacity, pounds/hour

(ii) PV = primary chamber volume, cubic feet

(iii) 4.5 = waste density, pounds/cubic foot

(iv) 8 = typical hours of operation of a batch HMIWI, hours.

[redacted]

(33) "Medical, infectious waste" is defined at 40 CFR Part 60.51c, Subpart Ec.

(34) Medium HMIWI.

(a) "Medium HMIWI" means:

(i) An HMIWI that has a maximum design waste burning capacity of more than 200 pounds per hour, but less than or equal to 500 pounds per hour;

(ii) A continuous or intermittent HMIWI that has a maximum charge rate more than 200 pounds per hour, but less than or equal to 500 pounds per hour; or

(iii) A batch HMIWI that has a maximum charge rate more than 1,600 pounds per day, but less than or equal to 4,000 pounds per day.

(b) "Medium HMIWI" does not mean:

(i) A continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 200 pounds per hour or more than 500 pounds per hour; or

(ii) A batch HMIWI that has a maximum charge rate more than 4,000 pounds per day or less than or equal to 1,600 pounds per day.

[redacted]

(43) "Modification or modified HMIWI" is defined at 40 CFR §60.51c.

[redacted]

[redacted]

(46) "Operating day" means a 24-hour period between 12 midnight and the following midnight during which any amount of hospital waste or medical/infectious waste is combusted at any time in the HMIWI.

(47) "Operation" means the period during which waste is combusted in the incinerator excluding periods of startup or shutdown.

[redacted]

(50) "Primary chamber" means the chamber in an HMIWI that receives waste material, in which the waste is ignited, and from which ash is removed.

[redacted]

(52) "Secondary chamber" means a component of the HMIWI that receives combustion gases from the primary chamber and in which the combustion process is completed.

[redacted]

(54) Shutdown.

(a) "Shutdown" means the period of time after all waste has been combusted in the primary chamber.

(b) "Shutdown" for a continuous HMIWI commences not less than 2 hours after the last charge to the incinerator.

(c) "Shutdown" for an intermittent HMIWI commences not less than 4 hours after the last charge to the incinerator.

(d) "Shutdown" for a batch HMIWI commences not less than 5 hours after the high-air phase of combustion has been completed.

(55) Small HMIWI.

(a) "Small HMIWI" means:

(i) An HMIWI that has a maximum design waste burning capacity less than or equal to 200 pounds per hour;

(ii) A continuous or intermittent HMIWI that has a maximum charge rate less than or equal to 200 pounds per hour; or

(iii) A batch HMIWI that has a maximum charge rate less than or equal to 1,600 pounds per day.

(b) "Small HMIWI" does not mean:

(i) A continuous or intermittent HMIWI that has a maximum charge rate more than 200 pounds per hour; or

(ii) A batch HMIWI that has a maximum charge rate more than 1,600 pounds per day.

(56) "Small rural area HMIWI" means a small HMIWI that is located more than 50 miles from the boundary of the nearest standard metropolitan statistical area and which burns less than 2,000 pounds per week of hospital, medical, and infectious waste (excluding those wastes burned during performance tests).

(57) Special medical waste.

(a) "Special medical waste" means:

(i) Any combination of organic and inorganic liquid or solid waste as defined in COMAR 26.13.11; or

(ii) Hospital general waste, when burned in conjunction with special medical waste generated at that hospital.

(b) "Special medical waste" includes hospital, medical, and infectious waste.

[redacted]

(59) "Standard metropolitan statistical area (SMSA)" means any area listed in OMB Bulletin No. 93-17 entitled "Revised Statistical Definitions for Metropolitan Areas" dated June 30, 1993.

(60) Startup.

(a) "Startup" means the period of time between the activation of the system and the first charge to the unit.

(b) "Startup" for a batch HMIWI means the period of time between activation of the system and ignition of the waste.

[redacted]

.02 Applicability.

A. Any source which is subject to the provisions of this chapter is also subject to the provisions of any other chapter. However, when this chapter establishes an emission standard for a specific installation which differs from the general emission standards in COMAR 26.11.06.01—.09, this chapter takes precedence.

[redacted]

[redacted]

.03 Prohibition of Certain Incinerators in Areas III and IV.

[redacted]

.04 Visible Emissions.

[redacted]

[redacted]

.05 Particulate Matter.

[redacted]

[redacted]

.06 Prohibition of Unapproved Hazardous Waste Incinerators.

[redacted]

.07 Requirements for Municipal Waste Combustors with a Capacity of 35 tons or greater per day and less than or equal to 250 Tons Per Day.

[redacted]

.08 Requirements for an Existing Large MWC with a Capacity Greater Than 250 Tons Per Day.

[redacted]

[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]

[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]

[redacted]

[redacted]

.08-1 Emission Standards and Requirements for HMIWIs.

[redacted]

[redacted]

[redacted]

[redacted]

		[redacted]		
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
		[redacted]		
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

[redacted]

[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]

[redacted]

[redacted]

[redacted]

.08-2 Emission Standards and Requirements for HMIWIs Under 40 CFR 60 Subpart Ce as Revised October 6, 2009.

A. Applicability and Emission Standards. The emission standards and requirements of §B(1)—(7) and §C(1)—(6) of this regulation apply to a person who owns or operates an HMIWI subject to 40 CFR Part 60, Subpart Ce, as revised, October 6, 2009.

B. Emission Limits and Requirements for Small, Medium, and Large HMIWIs.

(1) A person who owns or operates a small, medium, or large HMIWI for which construction was commenced on or before June 20, 1996 or for which modification commenced on or before March 16, 1998 shall comply with the following emission limits.

Pollutant	Units (7 percent oxygen, dry basis)	Emission limits			Test Method	Averaging Time[1]
		Small	Medium	Large		
[redacted]						

Pollutant	Units (7 percent oxygen, dry basis)	Emission limits			Test Method	Averaging Time[1]
		Small	Medium	Large		
						[redacted]
Nitrogen oxides	Parts per million by volume	190	190	140	EPA Reference Method 7 or 7E of Appendix A-4 of 40 CFR Part 60	3 run average (1 hr minimum sample time per run)
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

[redacted]

[redacted]

Pollutant	Units (7 percent oxygen, dry basis)	Emission limits HMIWI size			Test Method	Averaging Time[1]
		Small	Medium	Large		
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Pollutant	Units (7 percent oxygen, dry basis)	Emission limits HMIWI size			Test Method	Averaging Time[1]
		Small	Medium	Large		
[redacted]						

[redacted]

(4) Compliance and Performance Testing.

(a) A person who owns or operates an HMIWI subject to §B of this regulation shall complete the initial and subsequent tests which meet the conditions and requirements using test methods and procedures listed under 40 CFR §§60.56c(b)(1) to (b)(6) and (b)(9) to (b)(14), [redacted]

(b) In addition to the specified test method, compliance with the emissions limits in §B may be demonstrated by use of CEMS or any approved alternative non-EPA test methods allowed under 40 CFR §60.56c(b).

(5) Monitoring Requirements. A person who owns or operates an HMIWI subject to §B of this regulation shall comply with the monitoring requirements under 40 CFR §60.57c.

(a) Exemptions. A person may elect to use the exemptions listed under 40 CFR §§60.56c(c)(5)(ii) through (v), (c)(6), (c)(7), (e)(6) through (10), (f)(7) through (10), (g)(6) through (10), and (h) for HMIWI units subject to .08-2B(1).

[redacted]

(6) Reporting and Record-Keeping Requirements. A person who owns or operates an HMIWI subject to §B of this regulation shall report to the Department and EPA and maintain records in accordance with the requirements listed in 40 CFR Part 60.58c(b)through (g), excluding 40 CFR §§60.58c(b)(2)(viii) and (b)(2)(xvii),(b)(2)(xviii) and (b)(2)(xix).

[redacted]

Pollutant	Units (7 percent oxygen, dry basis)	HMIWI Emission limits	Test Method	Averaging Time[1]
[redacted]				

Pollutant	Units (7 percent oxygen, dry basis)	HMIWI Emission limits	Test Method	Averaging Time[1]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

[redacted]

[redacted]

Pollutant	Units (7 percent oxygen, dry basis)	HMIWI Emission limits	Test Method	Averaging Time[1]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Pollutant	Units (7 percent oxygen, dry basis)	HMIWI Emission limits	Test Method	Averaging Time[1]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

[redacted]

[redacted]

E. Compliance Schedules.

(1) A person who owns or operates a HMIWI subject to this regulation shall:

(a) Comply with all the requirements of §E of this regulation and related 40 CFR Part 62, Subpart V revision requirements by June 15, 2012 or as expeditiously as practicable; or

(b) Submit to the Department and the EPA for approval, a compliance plan by December 15, 2011 that includes the following increments of progress:

(i) Award contracts for control systems or process modifications or orders for purchase of components no later than June 15, 2012;

(ii) Initiate on-site construction or installation of the air pollution control device(s) or process changes no later than December 15, 2012;

(iii) Complete on-site construction or installation of control equipment or process changes by no later than December 15, 2013;

(iv) Comply with the requirements of this regulation and related 40 CFR Part 62, Subpart V revision as expeditiously as practicable, but no later than October 6, 2014; and

(v) Complete the compliance testing within 180 days after the final compliance date.

(2) A person who anticipates an inability to comply with the interim compliance dates described in §E(1)(b)(i)—(iii) of this regulation may submit to the Department and the EPA an alternative compliance plan designed to achieve compliance with §E(1)(b)(iv)—(v) of this regulation, and shall be bound by such plan upon the Department's and the EPA's approval.

F. Compliance Based on Previous Test Results. A person who owns or operates an HMIWI [redacted] subject to this regulation may use previous emissions tests to demonstrate compliance with the requirements of this regulation provided:

(1) The test was conducted using the applicable procedures and test methods listed in 40 CFR §60.56c(b) or EPA-accepted voluntary consensus standards;

(2) The HMIWI is to be operated in a manner (e.g., with charge rate, secondary chamber temperature, etc.) that would be expected to result in the same or lower emissions than observed during the previous emissions test(s);

(3) The HMIWI has not been modified such that emissions would be expected to exceed (notwithstanding normal test-to-test variability) the results from previous emissions test(s); and

(4) The previous emissions test(s) were conducted in 1996 or later.

Appendix F: Chalk Point CPCN #8228

Chalk CT

3 4 5+6

APPENDIX A

The following conditions are included in the Certificate of Public Convenience and Necessity:

1. [redacted]

2. [redacted]

3. [redacted]

4. [redacted]

5. The four combustion turbines shall not operate more than 6000 hours in the aggregate in any calendar year during normal conditions and no more than an additional 2000 hours in the aggregate in any calendar year during emergency conditions. At no time shall any one combustion turbine operate more than 2500 hours in any calendar year, inclusive of emergency conditions. The total annual emission rates from the four combustion turbines under non-emergency conditions shall not exceed the following, expressed in tons per year:

[redacted]

Volatile organic compounds 27.5

[redacted]

6. [redacted]

7. [redacted]

8. [redacted]

9. [redacted]

[redacted]

10. [redacted]

11. [redacted]

12. [redacted]

13. [redacted]

14. [redacted]

15. [redacted]

16. [redacted]

17. [redacted]

18. [redacted]

19. [redacted]

[redacted]

20. [redacted]

21. [redacted]

22. [redacted]

23. [redacted]

24. [redacted]

25. [redacted]

[redacted]

26. [redacted]

27. [redacted]

7.150019.2.1
93 08 09

MARYLAND DEPARTMENT OF THE ENVIRONMENT
2500 Broening Highway • Baltimore, Maryland 21224
(410) 631-3000

William Donald Schaefer
Governor

Robert Perciasepe
Secretary

[redacted]