RULES AND REGULATIONS

Title 25—ENVIRONMENTAL PROTECTION

ENVIRONMENTAL QUALITY BOARD

[25 PA. CODE CHS. 121 AND 129]

Control of VOC Emissions from Industrial Cleaning Solvents; General Provisions; Aerospace Manufacturing and Rework; Additional RACT Requirements for Major Sources of NO_x and VOCs

The Environmental Quality Board (Board) amends Chapters 121 and 129 (relating to general provisions; and standards for sources) to read as set forth in Annex A. This final-form rulemaking amends Chapter 129 to add § 129.63a (relating to control of VOC emissions from industrial cleaning solvents) to adopt reasonably available control technology (RACT) requirements and RACT emission limitations for stationary sources of volatile organic compound (VOC) emissions from industrial cleaning solvents that are not regulated elsewhere in Chapter 129 or Chapter 130 (relating to standards for products). This final-form rulemaking amends §§ 121.1 and 129.51 (relating to definitions; and general) to support the addition of § 129.63a, § 129.73 (relating to aerospace manufacturing and rework) to correct a numbering error in the table of VOC content limits, and §§ 129.96, 129.97, 129.99 and 129.100, which were recently promulgated for additional RACT requirements for major sources of nitrogen oxides (NO_x) and VOCs (RACT 2) to update the list of presumptive VOC RACT regulations for which RACT 2 does not apply and to clarify certain requirements.

This final-form rulemaking will be submitted to the United States Environmental Protection Agency (EPA) for approval as a revision to the Commonwealth's State Implementation Plan (SIP) following promulgation of this final-form rulemaking.

This order was adopted by the Board at its meeting of April 17, 2018.

A. *Effective Date*

This final-form rulemaking will be effective upon publication in the *Pennsylvania Bulletin*.

B. *Contact Persons*

For further information, contact Kirit Dalal, Chief, Division of Air Resource Management, Bureau of Air Quality, Rachel Carson State Office Building, P.O. Box 8468, Harrisburg, PA 17105-8468, (717) 772-3436; or Jesse C. Walker, Assistant Counsel, Bureau of Regulatory Counsel, Rachel Carson State Office Building, P.O. Box 8464, Harrisburg, PA 17105-8464, (717) 787-7060. Persons with a disability may use the Pennsylvania AT&T Relay Service, (800) 654-5984 (TDD users) or (800) 654-5988 (voice users). This final-form rulemaking is available on the Department of Environmental Protection's (Department) web site at www.dep.pa.gov (select "Public Participation," then "Environmental Quality Board (EQB)").

C. *Statutory Authority*

This final-form rulemaking is authorized under section 5(a)(1) of the Air Pollution Control Act (APCA) (35 P.S. § 4005(a)(1)), which grants the Board the authority to adopt rules and regulations for the prevention, control, reduction and abatement of air pollution in this Commonwealth. Section 5(a)(8) of the APCA also grants the Board the authority to adopt rules and regulations designed to implement the Clean Air Act (CAA) (42 U.S.C.A. §§ 7401—7671q).

D. *Background and Purpose*

The purpose of this final-form rulemaking is to implement control measures to reduce VOC emissions from industrial cleaning solvents used and applied during cleaning unit operations at facilities which are not regulated elsewhere in Chapter 129 or Chapter 130. Industrial cleaning solvents are used or applied in a cleaning activity to remove a contaminant, including an adhesive, ink, paint, dirt, soil, oil or grease, from a cleaning unit operation or work production-related work area or from a part, product, tool, machinery, equipment, vessel, floor or wall. This final-form rulemaking amends §§ 129.96, 129.97, 129.99 and 129.100 to clarify when the presumptive RACT requirements of §§ 129.52d, 129.52e and 129.74 (relating to control of VOC emissions from miscellaneous metal parts surface coating processes, miscellaneous plastic parts surface coating processes and pleasure craft surface coatings; control of VOC emissions from automobile and light-duty truck assembly coating operations and heavier vehicle coating operations; and control of VOC emissions from fiberglass boat manufacturing materials) and this final-form rulemaking apply to the owner or operator of a major source of NO_x emissions or VOC emissions.

VOCs are precursors for ground-level ozone formation. Ground-level ozone, a public health and welfare hazard, is not emitted directly to the atmosphere by industrial cleaning solvents, but forms from a photochemical reaction between VOCs and NO_x in the presence of sunlight. In accordance with sections 172(c)(1), 182(b)(2)(A) and 184(b)(1)(B) of the CAA (42 U.S.C.A. §§ 7502(c)(1), 7511a(b)(2)(A) and 7511c(b)(1)(B)), this final-form rulemaking establishes VOC emission limitations and other requirements generally consistent with the EPA's recommendations in the Control Techniques Guidelines: Industrial Cleaning Solvents, EPA 453/R-06-001, Office of Air Quality Planning and Standards, EPA, September 2006 (2006 ICS CTG) as RACT for these sources in this Commonwealth. See 71 FR 58745 (October 5, 2006).

The EPA is responsible for establishing National Ambient Air Quality Standards (NAAQS) for six criteria pollutants considered harmful to public health and welfare, including the environment—ground-level ozone, particulate matter, NO_x, carbon monoxide, sulfur dioxide and lead. Section 109 of the CAA (42 U.S.C.A. § 7409) established two types of NAAQS: primary standards, which are limits set to protect public health; and secondary standards, which are limits set to protect public welfare and the environment, including protection against visibility impairment and from damage to animals, crops, vegetation and buildings. The EPA established primary and secondary ground-level ozone NAAQS to protect public health and welfare.

Ground-level ozone is a highly reactive gas, which at sufficiently high concentrations can produce a wide variety of harmful effects. At elevated concentrations, ground-level ozone can adversely affect human health, animal health, vegetation, materials, economic values, and personal comfort and well-being. It can cause damage to important food crops, forests, livestock and wildlife. Repeated exposure to ground-level ozone pollution may

cause a variety of adverse health effects for healthy people and those with existing conditions, including difficulty in breathing, chest pains, coughing, nausea, throat irritation and congestion. It can worsen bronchitis, heart disease, emphysema and asthma, and reduce lung capacity. Asthma is a significant and growing threat to children and adults. High levels of ground-level ozone affect animals in ways similar to humans. High concentrations of ground-level ozone can also cause damage to buildings and synthetic fibers, including nylon, and reduced visibility on roadways and in natural areas. The implementation of additional measures to address ozone air quality nonattainment in this Commonwealth is necessary to protect the public health and welfare, animal and plant health and welfare, and the environment.

In July 1997, the EPA promulgated primary and secondary ozone standards at a level of 0.08 part per million (ppm) averaged over 8 hours. See 62 FR 38856 (July 18, 1997). In 2004, the EPA designated 37 counties in this Commonwealth as 8-hour ozone nonattainment areas for the 1997 8-hour ozone NAAQS. See 69 FR 23858, 23931 (April 30, 2004). Based on the certified ambient air monitoring data for the 2016 ozone season as well as the preliminary 2017 ozone season data, all monitored areas of this Commonwealth are attaining the 1997 8-hour ozone NAAQS. Maintenance plans have been submitted to the EPA and approved for the 1997 ozone standard. In accordance with section 175A(a) of the CAA (42 U.S.C.A. § 7505a(a)), the maintenance plans include permanent and enforceable control measures that will provide for the maintenance of the ozone NAAQS for at least 10 years following the EPA's redesignation of the areas to attainment.

In March 2008, the EPA lowered the primary and secondary ozone NAAQS to 0.075 ppm (75 parts per billion (ppb)) averaged over 8 hours to provide greater protection for children, other at-risk populations and the environment against the array of ozone-induced adverse health and welfare effects. See 73 FR 16436 (March 27, 2008). In April 2012, the EPA designated five areas in this Commonwealth as nonattainment for the 2008 ozone NAAQS. See 77 FR 30088, 30143 (May 21, 2012). These areas include all or a portion of Allegheny, Armstrong, Beaver, Berks, Bucks, Butler, Carbon, Chester, Delaware, Fayette, Lancaster, Lehigh, Montgomery, Northampton, Philadelphia, Washington and Westmoreland Counties. The certified 2016 ambient air monitoring data indicate that all ozone monitors in this Commonwealth, except for the Bristol and Northeast Airport monitors in Bucks and Philadelphia Counties, respectively, are monitoring attainment of the 2008 ozone NAAQS. The Department's analysis of the preliminary 2017 ambient air monitoring data shows that all ozone monitors in this Commonwealth, except for the Bristol, Northeast Airport and Northwest Waste (Philadelphia County) monitors, are monitoring attainment of the 2008 ozone NAAQS. The Department must ensure that the 2008 ozone NAAQS is attained and maintained by implementing permanent and enforceable control measures.

On October 1, 2015, the EPA lowered the primary and secondary ozone NAAQS to 70 ppb averaged over 8 hours. See 80 FR 65292 (October 26, 2015). As required under section 107(d) of the CAA (42 U.S.C.A. § 7407(d)), the Commonwealth submitted designation recommendations for the 2015 ozone NAAQS to the EPA on October 3, 2016, based on the ambient ozone concentrations from the 2013—2015 ozone seasons following opportunity for public notice and comment. See 46 Pa.B. 5162 (August 20, 2016). The Commonwealth submitted revised designation recommendations to the EPA on April 22, 2017. See 47 Pa.B. 2387 (April 22, 2017). The EPA issued final designations for the attainment/unclassifiable areas on November 16, 2017. See 82 FR 54232 (November 16, 2017). However, the EPA has not yet issued final nonattainment area designations. The Department submitted a request to the EPA on February 20, 2018, requesting that the EPA not include "exceptional" ambient air monitoring data from the 2016 Canadian forest fires in determining the final nonattainment area designations. Based on certified ambient air monitoring data for the 2014—2016 ozone seasons, eight monitors in seven counties in this Commonwealth have design values that violate the 2015 ozone NAAQS. The monitors are in Berks, Bucks, Chester, Delaware, Lebanon, Montgomery and Philadelphia Counties. If the EPA concurs on the Department's exceptional event analysis with respect to the Fort McMurray wildfires in Alberta, Canada, from May 2016, only five monitors in this Commonwealth will have design values that violate the 2015 ozone NAAQS based on the certified data for the 2014—2016 ozone seasons. The monitors are in Bucks, Chester, Delaware and Philadelphia Counties.

Following the EPA's designation of nonattainment areas, the Department must ensure that the 2015 ozone NAAQS is attained and maintained in these areas by implementing permanent and Federally-enforceable control measures. Reductions in VOC emissions that are achieved following the adoption and implementation of VOC RACT emission control measures for source categories covered by Control Techniques Guidelines (CTG), including the use and application of industrial cleaning solvents during a cleaning activity at a cleaning unit operation, will assist the Commonwealth in making substantial progress in achieving and maintaining the ozone NAAQS.

In this final-form rulemaking, § 129.63a adopts VOC emission limitations and other requirements consistent with the RACT recommendations in the EPA's 2006 ICS CTG to meet the requirements of sections 172(c)(1), 182(b)(2) and 184(b)(1)(B) of the CAA. These VOC emission limitations and other requirements will apply across this Commonwealth as required under section 184(b)(1)(B) of the CAA. The control measures in § 129.63a will reduce VOC emissions from the industrial cleaning solvents source category at those affected sources that are not regulated elsewhere under Chapter 129 or Chapter 130. The VOC emission reduction measures in § 129.63a are reasonably necessary to attain and maintain the health-based and welfare-based ozone NAAQS in this Commonwealth and to satisfy related CAA requirements.

There are no Federal statutory or regulatory RACT limits for VOC emissions from industrial cleaning solvents used or applied during a cleaning activity at a cleaning unit operation. When developing the recommendations for the VOC emission reduction RACT measures included in its 2006 ICS CTG, the EPA took into account the data collected during the development of the 1994 Alternative Control Techniques Document—Industrial Cleaning Solvents. See 2006 ICS CTG, Appendix A (Alternative Control Techniques Document—Industrial Cleaning Solvents, EPA-453/R-94-015, February 1994).

State regulations to control VOC emissions from existing stationary sources of industrial cleaning solvents used or applied during a cleaning activity at a cleaning unit operation are required under Federal law. The Commonwealth regulation will be reviewed and approved by the EPA as a revision to the Commonwealth's SIP if the

provisions meet the RACT requirements of the CAA and its implementing regulations. See 71 FR 58745. The EPA defines RACT as "[t]he 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." See 44 FR 53761 (September 17, 1979).

Section 110(a) of the CAA (42 U.S.C.A. § 7410(a)) provides that each state shall adopt and submit to the EPA a plan to implement measures (a SIP) to enforce the NAAQS or revision to the NAAQS promulgated under section 109(b) of the CAA. Section 172(c)(1) of the CAA provides that SIPs for nonattainment areas must include "reasonably available control measures," including RACT, for sources of emissions of VOC and NO_x. Section 182(b)(2) of the CAA provides that for moderate ozone nonattainment areas, states must revise their SIPs to include RACT for sources of VOC emissions covered by a CTG document issued by the EPA prior to the area's date of attainment of the applicable ozone NAAQS. More importantly, section 184(b)(1)(B) of the CAA requires that states in the Ozone Transport Region (OTR), including the Commonwealth, submit a SIP revision requiring implementation of RACT for all sources of VOC emissions in the state covered by a specific CTG and not just for those sources that are located in designated nonattainment areas of the state. Consequently, the Commonwealth's SIP must include regulations applicable Statewide to control VOC emissions from existing stationary sources of industrial cleaning solvents used or applied during cleaning unit operations at facilities that are not regulated elsewhere in Chapter 129 or Chapter 130. The ground-level ozone reduction measures included in proposed § 129.63a should achieve VOC emission reductions and lowered concentrations of ground-level ozone locally and should also reduce the amounts of VOC emissions and ground-level ozone transported to downwind states. Adoption of VOC emission reduction requirements for these sources is part of the Commonwealth's strategy, in concert with other OTR jurisdictions, to further reduce the transport of VOC ozone precursors and ground-level ozone throughout the OTR to attain and maintain the 8-hour ozone NAAQS.

Section 183(e) of the CAA (42 U.S.C.A. § 7511b(e)) directs the EPA to list for regulation those categories of products that account for at least 80% of the aggregate VOC emissions from consumer and commercial products in ozone nonattainment areas. Section 183(e)(3)(C) of the CAA further provides that the EPA may issue a CTG document in place of a National regulation for a product category on the section 183(e) list when the EPA determines that the recommendations of the CTG, when implemented by the affected states, will be "substantially as effective as regulations" in reducing emissions of VOC in ozone nonattainment areas. In 1995, the EPA listed industrial cleaning solvents on its section 183(e) list and, in 2006, issued a CTG for this product category. See 60 FR 15264, 15267 (March 23, 1995); 71 FR 58745; and Control Techniques Guidelines: Industrial Cleaning Solvents, EPA 453/R-06-001, Office of Air Quality Planning and Standards, EPA, September 2006. The 2006 ICS CTG is available on the EPA web site at https://www.epa.gov/stationary-sources-air-pollution/clean-air-act-guidelines-and-standards-solvent-use-and-surface.

In the 2006 notice of final determination and availability of final CTGs, the EPA determined that the recommendations of the 2006 ICS CTG will be "substantially as effective as National regulations" in reducing VOC emissions from the industrial cleaning solvents product category in ozone nonattainment areas. See 71 FR 58745. The CTG provides states with the EPA's recommendation of what constitutes RACT for the covered category. State air pollution control agencies may use the Federal recommendations provided in the CTG to inform their own determination as to what constitutes RACT for VOC emissions from the covered category. State air pollution control agencies may implement other technically-sound approaches that are consistent with the CAA requirements and the EPA's implementing regulations or guidelines.

The Department's Bureau of Air Quality reviewed the RACT recommendations regarding VOC emission reduction measures included in the 2006 ICS CTG for their applicability to the ground-level ozone reduction measures necessary for this Commonwealth. The Bureau of Air Quality determined that VOC emission reduction measures and other requirements generally consistent with the recommendations provided in the 2006 ICS CTG are appropriate to be implemented in this Commonwealth as RACT for this source category.

The types of persons, businesses, small businesses and organizations that are affected by § 129.63a vary. The 2006 ICS CTG states that the recommendations apply to industries that have to use organic solvent to conduct cleaning activities in cleaning unit operations such as mixing vessels (tanks), spray booths and parts cleaners. The cleaning activities for the removal of foreign material from the substrate being cleaned include actions (activities) such as wiping, flushing or spraying. Section 129.63a applies to the owner and the operator of a facility at which an industrial cleaning solvent is used or applied in a cleaning activity to remove a contaminant, including an adhesive, ink, paint, dirt, soil, oil or grease, in a cleaning unit operation, a work production-related work area or a part, product, tool, machinery, equipment, vessel, floor or wall, except as specified in § 129.63a(c), which lists exceptions and exemptions. A cleaning unit operation is an operation at a facility that is a source of VOC emissions from a cleaning activity. A cleaning activity is the use or application of an industrial cleaning solvent formulated with one or more regulated VOCs to remove a contaminant from a substrate or from equipment used to apply a material. Cleaning unit operations covered by § 129.63a include cleaning activities such as spray gun cleaning, spray booth cleaning, manufactured components cleaning, parts cleaning, equipment cleaning, line cleaning, floor cleaning and tank cleaning. Cleaning unit operations under § 129.63a do not include operations emitting VOCs from the use or application of consumer products subject to §§ 130.201—130.471 (relating to consumer products), including an institutional product or industrial and institutional product as defined in § 130.202 (relating to definitions) for cleaning offices, bathrooms or other areas that are not part of a cleaning unit operation or production-related work area.

This final-form rulemaking does not apply to the owner or operator of a cleaning unit operation associated with certain categories specified under exceptions and exemptions in § 129.63a(c). Subsection (c)(1) specifies industry sectors and product categories that are exempt from § 129.63a. Subsection (c)(2) specifies that the VOC emission limitations of subsection (e) do not apply to the use or application of an industrial cleaning solvent by the owner or operator of a cleaning unit operation at a facility subject to subsection (a) under certain circumstances: if the use or application of the industrial cleaning solvent is subject to a standard or specification required by the United States Department of Defense, Federal Aviation

Administration or other Federal government entity; or if the use or application of the industrial cleaning solvent is associated with the cleaning of screen printing equipment and the industrial cleaning solvent used or applied has an as applied VOC content that does not exceed 4.2 pounds of VOC per gallon (lb VOC/gal) (500 grams of VOC per liter (g VOC/l)). An owner or operator claiming one of these exemptions is subject to specified recordkeeping and reporting requirements.

Section 129.63a(c)(3) specifies that the VOC emission limitations of subsection (e) and the work practice requirements of subsection (f) do not apply to the owner or operator of a facility subject to subsection (a) if the total combined actual VOC emissions from all subject cleaning unit operations at the facility are less than 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of controls. An owner or operator claiming this exemption is subject to specified recordkeeping and reporting requirements.

The EPA estimated that there were as many as 166 facility owners and operators in this Commonwealth that would be subject to the recommended 2006 ICS CTG control measures. The Department expects that the universe of potentially affected facility owners and operators could be larger than the group of 166 facility owners and operators identified by the EPA due to the threshold of 2.7 tons (2,455 kilograms) of VOC emissions per 12-month rolling period, before consideration of controls, for implementing the VOC emission control measures. This threshold is equivalent to an average daily emission rate of 15 pounds (6.8 kilograms) of VOC emissions per day, which is equivalent to the evaporation of approximately 2 gallons of VOC-containing industrial cleaning solvent per day. The Department therefore requested the assistance of the Commonwealth's Small Business Development Center's Environmental Management Assistance Program (EMAP) in generating a list of potentially affected businesses in this Commonwealth. The Department's assessment of the number of owners and operators of facilities potentially subject to § 129.63a resulted from reviewing information obtained from the EMAP as well as information from databases maintained by the Department. The Department also reviewed the methodology of an analysis prepared in 2010 by E.H. Pechan & Associates, Inc. (Pechan) for the State of Texas. The Pechan analysis was used by Texas Department of Environmental Quality staff to assess the impact of their industrial cleaning solvents proposed rulemaking. The Department applied a process similar to the one used by Pechan in Texas to delineate the number of businesses in this Commonwealth that may be impacted by proposed § 129.63a. The results apply equally to this final-form rulemaking.

The EPA listed 469 North American Industry Classification System (NAICS) codes for identifying businesses potentially covered by the 2006 ICS CTG recommendations. The complete list is found in the 2006 ICS CTG in Appendix C (relating to Summary of NAICS Codes for nonattainment facilities estimated to meet the applicability criteria recommended in the CTG). As noted by Pechan for the Texas Department of Environmental Quality, this list of NAICS codes provided by the EPA includes cleaning unit operations at source categories for which VOC emission control regulations already exist in Chapters 129 and 130. Further, it is important to note that a business owner or operator may select and report the NAICS code of its own choosing. Prior experience by Department staff has shown that this self-reporting of NAICS codes is problematic when trying to accurately identify potentially affected facility owners and operators in this Commonwealth.

The EMAP provided the Department with a list of potentially affected businesses in this Commonwealth using the 469 NAICS codes included in the 2006 ICS CTG. The initial list identified 144,222 facilities of all sizes. It is likely that many of the facility owners and operators identified by the EMAP solely through the use of the EPA list of NAICS codes may be subject to other regulations in Chapters 129 and 130 and therefore not subject to § 129.63a. The Department cross-referenced the NAICS codes from the EMAP list of 144,222 facilities with the list of NAICS codes generated by Pechan as likely being subject to the Texas industrial cleaning solvents rulemaking. Ten NAICS codes from the Pechan report list were identified in the EMAP list. This cross-referencing reduced the number of potentially affected facility owners and operators in this Commonwealth to 45,718. From Pechan's analysis, it was further determined that only about 1.26% of identified facilities in Texas would be subject to the Texas industrial cleaning solvents rulemaking. Applying the same percentage to this Commonwealth's "universe" of 45,718, it is estimated that as many as 576 (45,718 × 1.26%) facility owners and operators in this Commonwealth may potentially be subject to § 129.63a. Also from the Pechan analysis, it was determined that 44% of the potentially subject facilities in Texas were likely small businesses. Applying this percentage to the potentially subject group of 576 facility owners and operators identified by the EMAP, the Department estimated that 253 (576 × 44%) facility owners and operators may be small businesses.

The Department also gathered information about potentially affected facility owners and operators from the Environmental Facility Application Compliance Tracking System (eFACTS) database and the Air Information Management System (AIMS) database. These are Department permitting and air emissions databases that share data and interface with each other. The eFACTS database contains facility-specific information, including the NAICS code, for permitted facilities and for some previously inspected facilities for which permits are not required. The AIMS database contains site-specific source and air pollutant emissions data, as well as NAICS codes, to maintain the air pollutant emissions inventory. The eFACTS and AIMS database systems do not provide an exhaustive list of all facility owners and operators that conduct industrial cleaning solvent activities in this Commonwealth. The databases include only those facility owners and operators with which the Department has had contact and for which the Department has a reason to input data; these are usually the largest emitters of air pollutants, which may or may not meet the definition of "small business" in accordance with section 3 of the Regulatory Review Act (71 P.S. § 745.3). This database analysis revealed that the owners or operators of approximately 3,154 facilities in this Commonwealth have a permit issued by the Department that includes provisions for the control of VOC emissions from industrial cleaning solvent processes. Using the factor of 1.26% developed by Pechan for the Texas analysis, the Department estimates that approximately 40 (1.26% × 3,154) of these permitted facility owners and operators would be subject to § 129.63a. The remaining 3,114 permitted facility owners and operators are likely subject to cleaning solvent requirements elsewhere in Chapter 129 or Chapter 130 and therefore reflected in the exceptions listed in § 129.63a(c). Of the potentially affected 40 permitted

facility owners and operators, the Department applied the 44% factor developed by Pechan to calculate that as many as 18 (40 × 44%) facility owners and operators identified from the Department's databases may be small businesses.

On January 24, 2018, the Department briefed the Small Business Compliance Advisory Committee (SBCAC) on this final-form rulemaking and on the comments received on the proposed rulemaking. The SBCAC recommended the Department conduct education and outreach for the regulated community on this final-form rulemaking. The Department initially added language to § 129.96 (relating to applicability) in the draft final-form rulemaking to address comments from the EPA and the Independent Regulatory Review Commission (IRRC) regarding retroactive applicability of § 129.63a(a); this language was in the draft final-form rulemaking provided to the SBCAC, denoted in bolded capitals as § 129.63a(e), (f) and (g). However, in further considering the comments provided by the EPA and IRRC prior to the SBCAC meeting, the Department concluded that this additional language created unnecessary complexity and determined that the language would be deleted. The Department advised the SBCAC during the January 2018 meeting of its intent to delete draft § 129.63a(e), (f) and (g) from the draft final-form rulemaking. The SBCAC voted unanimously (6-0-0) to concur with the Department's recommendation to move this final-form rulemaking forward to the Board for consideration. On February 8, 2018, the Department briefed the Air Quality Technical Advisory Committee (AQTAC) on this final-form rulemaking and on the comments received on the proposed rulemaking. The AQTAC members did not have concerns and voted unanimously (14-0-0) to concur with the Department's recommendation to move this final-form rulemaking forward to the Board for consideration. The Department discussed this final-form rulemaking with the Citizens Advisory Council's (CAC) Policy and Regulatory Oversight Committee on February 9, 2018. On the recommendation of the Policy and Regulatory Oversight Committee, on February 20, 2018, the CAC concurred with the Department's recommendation to move this final-form rulemaking to the Board. Advisory committee meetings are advertised and open to the public.

E. *Summary of Final-Form Rulemaking and Changes from Proposed to Final-Form Rulemaking*

§ 121.1. Definitions

An error in the definition of "cleaning solvent" is corrected by adding a comma.

§ 129.51. General

Subsection (a) is amended to establish that compliance with § 129.63a may be achieved by alternative methods.

Subsection (a)(3) is amended to establish that compliance with the applicable emission limitation in § 129.63a by a method other than the use of compliant materials shall be determined on the basis of equal volumes of solids.

Subsection (a)(6) is amended to establish that the alternative compliance method must be incorporated into a plan approval or operating permit, or both, reviewed by the EPA, including the use of an air cleaning device to comply with § 129.63a.

Revisions were not made to this section in this final-form rulemaking.

§ 129.63a. Control of VOC emissions from industrial cleaning solvents

Under subsection (a), this section applies to the owner and the operator of a facility at which an industrial cleaning solvent is used or applied in a cleaning activity to remove a contaminant, including an adhesive, ink, paint, dirt, soil, oil or grease, from a cleaning unit operation or production-related work area or from a part, product, tool, machinery, equipment, vessel, floor or wall.

Subsection (b) defines four terms used in this section—"cleaning activity," "cleaning unit operation," "industrial cleaning solvent" and "regulated VOC." Proposed subparagraph (ii)(A)—(H) of the definition of "cleaning unit operation" is revised in response to a comment from the EPA and IRRC. Descriptive and clarifying language was added to each of the cleaning activity categories in this subparagraph. Proposed subparagraph (ii)(I) is deleted. The definition of "industrial cleaning solvent" is revised in response to a comment from the EPA and IRRC. The revised definition specifies that an industrial cleaning solvent is a product formulated with one or more regulated VOCs that is used in a cleaning activity for a cleaning unit operation.

Subsection (c) establishes exceptions and exemptions for specific circumstances. The exceptions in subsection (c)(1) include cleaning unit operations subject to § 129.63 (relating to degreasing operations) or 40 CFR Part 63, Subpart T (relating to National emission standards for halogenated solvent cleaning), cleaning unit operations associated with a source category covered by a regulation elsewhere in Chapter 129 or Chapter 130 and cleaning unit operations associated with certain other specified source categories. Subsection (c)(1)(ii)(A) is revised to clarify the exception for aerospace coatings. The category is revised to "aerospace manufacturing and rework operations" as recommended by industry commentators and IRRC.

Subsection (c)(2) establishes that the VOC emission limitations of subsection (e) do not apply to the use or application of an industrial cleaning solvent by the owner or operator of a cleaning unit operation at a facility subject to subsection (a) that uses or applies an industrial cleaning solvent subject to a standard or specification required by a Federal government entity or that uses or applies an industrial cleaning solvent associated with the cleaning of screen printing equipment when the as applied industrial cleaning solvent VOC content is 4.2 lb VOC/gal (500 g VOC/l) of industrial cleaning solvent or less. This subsection is amended so as not to identify the industrial cleaning solvents as "noncomplying" in response to comments from the EPA and IRRC.

Subsection (c)(3) establishes that the VOC emission limitations of subsection (e) and the work practice requirements of subsection (f) do not apply to the owner or operator of a facility subject to subsection (a) if the total combined actual VOC emissions from all subject cleaning unit operations at the facility are less than 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of controls. These owners and operators are subject to the recordkeeping and reporting requirements of subsection (h). Revisions were not made in this final-form rulemaking to subsection (c)(3).

With regard to the exceptions and exemptions of subsection (c), the Board requested comment in the proposed preamble on the need to establish an exemption for the use and application of an industrial cleaning solvent subject to a standard or specification required by a plastic

recycling operation. Comments were not received and revisions were not made to this final-form rulemaking.

Subsection (d) establishes that the requirements of this section supersede the requirements of a RACT permit issued to the owner or operator of a cleaning unit operation subject to this section prior to August 11, 2018, under §§ 129.91—129.95 (relating to stationary sources of NO_x and VOCs) to control, reduce or minimize VOCs from cleaning unit operation cleaning activities at the facility, except to the extent the RACT permit contains more stringent requirements.

Subsection (e) establishes that, beginning August 11, 2018, the owner or operator of a facility at which the total combined actual VOC emissions from all subject cleaning unit operations at the facility are equal to or greater than 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of controls, may not cause or permit the emission into the outdoor atmosphere of VOCs from an industrial cleaning solvent used or applied in a cleaning unit operation subject to this section at the facility, unless the industrial cleaning solvent meets one of the two specified emissions limitation options. The first emissions limitation option is to use an industrial cleaning solvent with either a VOC content less than or equal to 0.42 lb VOC/gal (50 g VOC/l) as applied or a VOC composite vapor pressure less than or equal to 8 millimeters mercury (mmHg) at 68°F (20°C) as applied. The second emissions limitation option is to use a VOC emissions capture system and an add-on air pollution control device that is acceptable under § 129.51(a) to reduce the weight of VOCs emitted to the atmosphere from cleaning unit operation cleaning activities. The overall emission reduction of a control system, as determined by the test methods and procedures specified in Chapter 139 (relating to sampling and testing), may not be less than 85% or may not be less than the equivalent efficiency as calculated by the specified equation, whichever is less stringent. As with all RACT regulations, an owner or operator with VOC emissions at or above the threshold to implement the VOC emission control measures remains subject to the VOC emission control requirements of § 129.63a even if the VOC emissions from the affected sources fall below the emissions threshold for implementation of the VOC emission control measures.

Subsection (e) establishes the emissions threshold of 2.7 tons (2,455 kilograms) of VOC per 12-month rolling period, before consideration of controls, for consistency with other SIP-approved regulations in Chapter 129 and with SIP-approved requirements in other states. Emission levels at, above and below this threshold will determine with which other specified requirements a subject facility owner or operator shall comply, including VOC emission limitations, work practice requirements, and recordkeeping and reporting requirements. The emission of 2.7 tons (2,455 kilograms) of VOCs per 12-month rolling period is equivalent to an average daily emission rate of 15 pounds (6.8 kilograms) per day, which is equivalent to the evaporation of approximately 2 gallons of industrial cleaning solvent per day. The Board requested comment on whether the emissions threshold should be established at 15 pounds (6.8 kilograms) of VOC per day as recommended by the 2006 ICS CTG. Comments were not received regarding the 15 pounds (6.8 kilograms) of VOC per day threshold. The Board received a comment supporting the proposed 2.7 tons of VOC per 12-month rolling period. The emissions threshold of 2.7 tons (2,455 kilograms) per 12-month rolling period provides greater flexibility for small businesses by providing the opportunity to average subject emissions over 12 months by adding the most recent month of data to the 12-month rolling period and dropping the oldest month of data. An affected owner or operator with 1 day or more of VOC emissions higher than 15 pounds (6.8 kilograms) may average those emissions over the month and the 12-month rolling period to maintain an emission rate below the 2.7 tons (2,455 kilograms) per 12-month rolling period and thereby not be required to implement the VOC emission control measures. If the threshold for implementing the VOC emission controls were 15 pounds (6.8 kilograms) per day, an affected owner or operator with just 1 day of 15 pounds (6.8 kilograms) or more of emissions would be required to implement the VOC emission control measures, regardless of whether the level of emissions on the other days of operation was consistently below the 15 pounds (6.8 kilograms) per day.

Subsection (f) establishes work practice requirements for industrial cleaning solvents, used shop towels and waste materials.

Subsection (g) establishes requirements for affected owners and operators to demonstrate compliance.

Subsection (h) establishes recordkeeping and reporting requirements.

Subsection (i) establishes procedures for determining the composite vapor pressure of organic compounds in cleaning unit operation industrial cleaning solvents.

Subsection (j) establishes procedures for determining the vapor pressure of each single component compound in a cleaning unit operation industrial cleaning solvent.

Subsection (k) establishes ASTM method references.

Revisions were not made in this final-form rulemaking to subsections (a) and (d)—(k).

§ 129.73. Aerospace manufacturing and rework

Table II (relating to allowable content of VOCs in aerospace coatings) is amended to correct a numbering error as published at 29 Pa.B. 1879 (April 10, 1999). The coating type "high-temperature coating" was incorrectly numbered as (20)(a) and is renumbered as (21). The succeeding coating types are renumbered accordingly. The redundant phrase "allowable VOC content" is deleted from the heading of Table II. Revisions were not made in this final-form rulemaking to Table II.

§ 129.96. Applicability

Subsections (a) and (b) are revised to address comments from the EPA and IRRC that the proposed amendments to this section created an issue with respect to retroactive applicability. Subsection (a) is revised to clarify that the owner or operator of a major NO_x emitting facility or a major VOC emitting facility that was in existence on or before July 20, 2012, that is subject to a presumptive RACT requirement or presumptive RACT emission limitation under § 129.52d, § 129.52e or § 129.63a is also subject to §§ 129.96—129.100 and had to comply with the applicable provisions by January 1, 2017.

Subsection (b) is revised to clarify that §§ 129.96—129.100 do not apply to the owner or operator of a NO_x emitting facility or a VOC emitting facility when the installation of a new source or a modification or change in operation of an existing source after July 20, 2012, results in the source or facility meeting the definition of a major NO_x emitting facility or a major VOC emitting facility and for which a presumptive RACT requirement or a presumptive RACT emission limitation has been established under § 129.52d, § 129.52e, § 129.63a or § 129.74.

§ 129.97. Presumptive RACT requirements, RACT emission limitations and petition for alternative compliance schedule

§ 129.99. Alternative RACT proposal and petition for alternative compliance schedule

§ 129.100. Compliance demonstration and recordkeeping requirements

Sections 129.97(k)(1)(ii) and 129.99(i)(1)(ii) (relating to presumptive RACT requirements, RACT emission limitations and petition for alternative compliance schedule; and alternative RACT proposal and petition for alternative compliance schedule) are amended to add "or major VOC emitting facility" for clarity. An owner or operator of a source that meets the definition of a major NO_x emitting facility, who seeks an alternative compliance schedule under either of these sections, shall submit a petition requesting an alternative compliance schedule by the later of October 24, 2016, or 6 months after the date that the source meets the definition of a major NO_x emitting facility. The same applies to an owner or operator of a major VOC emitting facility.

Section 129.100(a) (relating to compliance demonstration and recordkeeping requirements) is amended to add "RACT" in two places for clarity.

Revisions were not made in this final-form rulemaking to §§ 129.97, 129.99 and 129.100.

F. *Summary of Major Comments and Responses*

The Board approved publication of the proposed rulemaking at its meeting on March 21, 2017. The proposed rulemaking was published at 47 Pa.B. 3356 (June 17, 2017). Three public hearings were held on July 18, 19 and 20, 2017, in Norristown, Pittsburgh and Harrisburg, respectively. A 66-day public comment period closed on August 21, 2017. Public comments were received from seven public commentators, including the EPA. IRRC separately provided comments on the proposed rulemaking. The comments received on the proposed rulemaking are summarized as follows and are addressed in a comment and response document which is available from the Department.

IRRC criteria

IRRC commented that EPA Region III cited several concerns in its comments regarding § 129.63a and the proposed amendments to § 129.96. IRRC explained that, because the EPA's comments relate to IRRC's criteria regarding implementation, ambiguity, reasonableness and clarity, IRRC shared the EPA's concerns and incorporated them into IRRC's comments on the proposed rulemaking. IRRC commented that the Board should carefully review the EPA's comments and work closely with the EPA to make the necessary revisions to bring this regulation into compliance with Federal requirements. IRRC indicated that it will consider the Board's response to the EPA in making a final determination as to whether the final-form rulemaking is in the public interest. After the Department carefully considered the comments from IRRC and the EPA, as well as all other comments, and held discussions with EPA Region III, the Department revised this final-form rulemaking, as appropriate. The most significant EPA comments incorporated by IRRC are discussed as follows.

Applicability

The EPA commented that the emissions threshold at which a facility owner or operator becomes subject to the emissions limitations and work practice standards under proposed § 129.63a(e) and (f), 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of controls, should be included in the general applicability provision, § 129.63a(a), for clarity and ease of implementation. After careful consideration, the Board decided not to move the emissions threshold to § 129.63a(a) because including it under the general applicability subsection could cause confusion. For instance, owners and operators of facilities with total VOC emissions below the 2.7 tons per 12-month rolling period emissions threshold, before consideration of controls, might only read § 129.63a(a) and incorrectly assume that no portion of § 129.63a applies to them. The Board retained the general applicability of § 129.63a(a) without revision.

Exemptions and alternatives to § 129.63a

Two commentators expressed concern that the exemption for "aerospace coatings" in § 129.63a(c)(1)(ii)(A) could be interpreted to limit the exemption to aerospace solvent cleaning activities associated with coatings only. The commentators asserted that the interpretation would be contrary to the EPA's Aerospace CTG, the 2006 ICS CTG and the Pennsylvania aerospace regulation in § 129.73, and that it is not feasible to use low VOC or aqueous industrial cleaning solvents for all operations at their aerospace manufacturing and rework facilities. The commentators suggested that § 129.63a(c)(1)(ii)(A) be revised by changing the exemption category name from "aerospace coatings" to "aerospace manufacturing and rework operations." IRRC also asked the Board to clarify and explain the reasonableness of exemptions and compliance options in the final-form rulemaking. Upon consideration of the commentators' concerns, the Board revised the category name to "aerospace manufacturing and rework operations." This revision clarifies that noncoating applications conducted during aerospace manufacturing and rework operations are exempt from this final-form rulemaking.

A commentator noted that § 129.63a(c) should include a specific categorical exemption to exclude emission sources that have previously proposed or established RACT in accordance with the alternative RACT requirements of §§ 129.96—129.100. IRRC also asked the Board to clarify and explain the reasonableness of exemptions and compliance options in the final-form rulemaking. The EPA 2006 ICS CTG does not provide for a categorical exemption or alternative RACT approach in a state's regulations for control of VOC emissions from industrial cleaning solvents. For this reason, this final-form rulemaking was not revised. Further, the commentator's battery cleaning operations fit under the exempted category of electrical and electronic components in § 129.63a(c)(1)(ii)(Z).

A commentator noted that it is technically infeasible to use an alternative non-VOC or low-VOC content industrial cleaning solvent as a wiping solution for battery cleaning operations. IRRC asked the Board to clarify and explain the reasonableness of exemptions and compliance options in the final-form rulemaking. Upon consideration of the commentators' concerns, the Board did not revise this final-form rulemaking. The assertion of technical infeasibility of using alternative solvent wiping solutions in battery cleaning operations is already addressed by the exemption of electrical and electronic components, which includes battery manufacturing, in § 129.63a(c)(1)(ii)(Z).

A commentator noted that an alternative compliance option should be included under § 129.63a(e) to allow facilities to propose alternative RACT conditions to the Department in accordance with §§ 129.96—129.100. The

commentator further noted that it is technically infeasible to use alternative non-VOC or low-VOC content industrial cleaning solvent as solvent wiping solutions in battery cleaning operations and that the installation of a VOC emissions capture system and add-on pollution control device is not cost effective. The commentator noted that a "case-by-case" compliance option should be allowed for facilities that cannot meet the available compliance options due to the technical infeasibility of alternative materials or the cost infeasibility of add-on capture and control systems. IRRC also asked the Board to clarify and explain the reasonableness of exemptions and compliance options in the final-form rulemaking.

RACT requirements and RACT emissions limitations in the proposed rulemaking were consistent with the recommendations in the 2006 ICS CTG, which includes an Alternative Composite Vapor Pressure Limit compliance option, in which the EPA recommends inclusion of a composite vapor pressure limit of 8 mmHg at 68°F (20°C) either as a replacement for the recommended 50 grams per liter (g/l) VOC content limit entirely, or as an alternative limit that may be used in place of the recommended 50 g/l VOC content limit for specific operations as determined by the state or local agency. The 2006 ICS CTG does not provide for other alternative compliance options and therefore revisions were not made in this final-form rulemaking.

The EPA commented that the Department must further justify the exceptions in § 129.63a(c)(2) because the exceptions did not follow the EPA's recommendations in the 2006 ICS CTG. In response, the Board clarified § 129.63a(c)(2) by deleting "noncomplying." The EPA also requested "further justification" for the exceptions.

The exceptions in this final-form rulemaking are consistent with the EPA's 2006 ICS CTG. The requested further justification is as follows:

Federal agency requirements. Major sources of VOC falling under the exception in § 129.63a(c)(2)(i) for the use or application of industrial cleaning solvent subject to a standard or specification required by the United States Department of Defense, the Federal Aviation Administration or other Federal government entity, are still required to meet RACT under §§ 129.96—129.100. The Board created the exception pertaining to Federal agency requirements because it determined that meeting the VOC requirements in this final-form rulemaking may not be technically feasible or reasonable when operations shall use a particular solvent specified by Federal agencies that are acting to protect public health or safety. The EPA approved exceptions for industrial cleaning solvent operations in New Hampshire and Connecticut based on similar reasoning. Consequently, the Board retained this exception in this final-form rulemaking.

Screen printing. Screen printing technology in this Commonwealth is not different from screen printing technology in other states. The Department reviewed Connecticut's screen printing industrial cleaning solvents rule because the EPA previously advised other states to review Connecticut's industrial cleaning solvent standards regarding RACT for screen printing operations. The EPA approved SIP revisions for other states, including Ohio and Indiana, which also incorporated the Connecticut industrial cleaning solvent standards for screen printing operations. The EPA approved the same RACT standard for New Jersey in 2017. During the public comment period, Specialty Graphic Imaging Association agreed that the Board's exception and alternate VOC content of 4.2 lb/gallon as applied constitutes RACT for the industry. Based on recommendations and approvals made by the EPA, and the comments provided by the Specialty Graphic Imaging Association, the Board finalized the exception for the use or application of industrial cleaning solvent associated with the cleaning of screen printing equipment. The Board did not revise the exception in this final-form rulemaking.

Definitions

The EPA expressed concern that the definition of "industrial cleaning solvent" in § 129.63a(b) is poorly worded and should be revised to be consistent with the 2006 ICS CTG. The EPA recommended that the Department consider Georgia's definition of "industrial cleaning solvent" and page 3-1 of the 2006 ICS CTG that includes a more detailed discussion for each activity. Upon consideration of the commentator's concern, the Department reviewed Georgia's definition as well as other states' definitions. As a result, the final-form definition is revised as follows: "[a] product formulated with one or more regulated VOCs that is used in a cleaning activity for a cleaning unit operation."

The EPA recommended adding a description or definition for each of the cleaning activities that is listed in the definition of "cleaning unit operation," consistent with Appendix C of the 2006 ICS CTG. This final-form rulemaking adds a description for each of the cleaning activities. Descriptions of cleaning activities are consistent with the descriptions of those cleaning activities in Appendix C of the 2006 ICS CTG. The cleaning activities "large manufactured components cleaning" and "small manufactured components cleaning" have been combined in this final-form rulemaking as one cleaning activity—"manufactured components cleaning." This revision is made to streamline the compliance and enforcement of the activity "manufactured components cleaning" because "large" and "small" may be subjective and ambiguous to the regulated community. The EPA did not provide a precise measure in the 2006 ICS CTG to differentiate between a large manufactured component and a small manufactured component. See page C-8 of the 2006 ICS CTG.

Recordkeeping and monitoring

The EPA recommended moving the provisions in § 129.63a(h), regarding the method to estimate the composite vapor pressure, from the recordkeeping requirements portion of this section to the compliance demonstration requirements in § 129.63a(g) to have all the compliance requirements together.

The methods to estimate composite vapor pressure were specified in proposed § 129.63a(i) and (j). They are not compliance demonstration requirements; rather, they are methods to follow to meet the compliance demonstration requirements of subsection (g). For this reason, proposed subsections (i) and (j) were incorporated into the compliance demonstration requirements of subsection (g) by cross-reference in subsection (g)(3). Consequently, revisions were not made in this final-form rulemaking.

The EPA commented that the Department should provide specific monitoring requirements for the operation of a capture system and add-on air pollution control device to ensure adequate compliance with the control requirements in § 129.63a(e)(2). This final-form rulemaking was not revised to provide specific monitoring requirements for the operation of a capture system and add-on air pollution control device because the monitoring requirements are determined on a case-by-case basis during the permitting process. Adequate standards already exist in the Department's regulations to guide this determination.

Retroactive applicability issues of § 129.96

The EPA commented that the proposed amendments to § 129.96(a) to add §§ 129.52d, 129.52e and 129.74 would not retroactively relieve affected VOC sources subject to § 129.52d, § 129.52e or § 129.74 from the requirements of the RACT 2 regulations, which required sources subject to § 129.96(a) to comply with any applicable provisions by January 1, 2017. The Board deletes the proposed amendment to add §§ 129.52d and 129.52e in § 129.96(a). However, the Board notes that there is not a retroactive applicability issue with respect to existing sources subject to § 129.74, because the compliance deadline for that regulation was December 19, 2015. See § 129.74(e). Moreover, the EPA approved § 129.74 as a revision to the Commonwealth's SIP on August 17, 2016, and the regulation meets RACT requirements for sources covered by the EPA's CTG for fiberglass boat manufacturing materials. See 81 FR 54742 (August 17, 2016). Therefore, existing sources under § 129.74 were not subject to §§ 129.96—129.100. As a result, the Board amended § 129.96(a) to add § 129.74.

The EPA commented that the proposed amendments to § 129.96(b) are appropriate for VOC sources subject to §§ 129.52d, 129.52e and 129.74 that become subject to §§ 129.96—129.100 in the future. Section 129.96(b) is amended to add cross-references to §§ 129.52d, 129.52e and 129.74.

The EPA commented that the Department must clarify the RACT level of control that would apply to VOC sources subject to these different sets of RACT requirements, specifying one set of requirements as RACT. Because the Department is required under § 129.99 to act on each RACT proposal received under the RACT 2 regulations, the Department should determine RACT on a case-by-case basis for these affected sources when acting on the individual proposals. The Department should make source-specific RACT determinations for each affected source in light of all applicable control requirements, including CTG RACT requirements such as those in §§ 129.52d, 129.52e and 129.74. Further, the Department must require RACT controls for these sources that are no less stringent than the EPA's corresponding CTG RACT requirements for these source-specific RACT determinations to be approvable into the SIP. To clarify as requested, the RACT level of control that would apply to VOC sources subject to either the RACT 2 regulations or any CTG regulation would be the more stringent set of requirements.

The EPA commented that in describing the amendments to § 129.96, the preamble of the proposed rulemaking did not list § 129.63a as a regulation to be excluded. If the Department's intention is to exclude CTG RACT sources from the RACT 2 regulations, then the Department should clearly state that in the preamble to the final-form rulemaking and include § 129.63a. Proposed § 129.96(a) included § 129.63a in the range of §§ 129.54—129.69. To address the concern raised by the EPA of retroactively relieving affected sources subject to § 129.63a from the applicability of §§ 129.96—129.100, final-form § 129.96(a) is revised to exclude § 129.63a. Further, § 129.96(b) includes § 129.63a in the range of §§ 129.54—129.69 for affected sources that become subject to §§ 129.96—129.100 in the future.

G. *Benefits, Costs and Compliance*

Benefits

The Board estimates that the owners and operators of as many as 576 facilities across this Commonwealth may potentially be subject to § 129.63a, of which as many as 253 may meet the definition of "small business" as defined in section 3 of the Regulatory Review Act. It is possible that far fewer than 576 facility owners and operators will be subject to this section, depending on whether the VOC emissions are from a cleaning unit operation subject to an existing regulation in Chapter 129 or Chapter 130, or qualify for an exemption under § 129.63a(c).

Using data from the 2002 National Emissions Inventory database, the EPA provides in the 2006 ICS CTG that of the total VOC emissions from solvent cleaning operations Nationally (64,000 megagrams per year (Mg/yr) 71,000 tons per year (tpy)), approximately 4,000 Mg/yr (4,400 tpy), were from degreasing operations that use industrial cleaning solvents. The Department regulates the VOC emissions from degreasing operations under § 129.63. The remaining 60,000 Mg/yr (66,600 tpy) were from the other solvent cleaning activities that are the subject of § 129.63a. Therefore, of the total VOC emissions from solvent cleaning operations of 71,000 tpy, approximately 6% of those emissions were from degreasing operations and approximately 94% were from other industrial cleaning solvent cleaning activities.

The EPA estimated that there are 166 facilities in this Commonwealth that will be affected by the recommended 2006 ICS CTG control measures, with baseline total emissions of VOC of 3,660 Mg/yr. The 3,660 Mg/yr converts to 4,034 tpy. Prorating this amount of emissions to the Board's estimated group of 576 potentially affected facility owners and operators projects total VOC emissions of as much as 13,997 tpy (576 facilities/X tpy = 166 facilities/4,034 tpy) if the VOC emissions from subject cleaning activities are not already controlled. Of the total projected VOC emissions of 13,997 tpy from the potentially affected group of 576 facility owners and operators, as much as 13,157 tpy (13,997 tpy × 94%) may be from the other solvent cleaning activities addressed by § 129.63a.

The EPA assumed that the average solvent density of uncontrolled solvent is 900 g/l of solvent. The EPA-recommended control limit is 50 g/l. Solvent is considered to be 100% VOC. Reducing the VOC content of industrial cleaning solvent allowed to be used in subject cleaning activities from 900 g/l to 50 g/l would be a reduction of approximately 95% or 95% control efficiency ([(900 g/l—50 g/l) / 900 g/l] × 100 = 95%).

The Department estimated the maximum amount of potential VOC emission reductions that may be generated through implementation of the control measures in § 129.63a by using the EPA's control efficiency of 95% times the estimated projected amount of total VOC emissions of 13,157 tpy. The estimated amount of VOC emission reductions from the potentially affected 576 facility owners and operators, including small businesses, could be as much as 12,499 tpy (13,157 tpy × 95%). The estimated average amount of potential VOC emission reductions per affected owner and operator could be approximately 22 tpy per affected facility (12,499 tpy/576 facilities). The amount of VOC emission reductions achieved by implementing these control measures could be less depending on the level of compliance already demonstrated by the affected facility owners and operators.

The Statewide implementation of the VOC emission control measures in § 129.63a will benefit the health and welfare of the approximately 12.77 million residents and the numerous animals, crops, ecosystems and natural

areas of this Commonwealth by reducing emissions of VOCs, which are precursors to the formation of ground-level ozone air pollution. Exposure to high concentrations of ground-level ozone is a serious human and animal health and welfare threat, causing respiratory illnesses and decreased lung function as well as other adverse health effects leading to a lower quality of life. Reduced ambient concentrations of ground-level ozone will reduce the incidences of hospital admissions for respiratory ailments including asthma and improve the quality of life for citizens overall. While children, the elderly and those with respiratory problems are most at risk, even healthy individuals may experience increased respiratory ailments and other symptoms when they are exposed to high levels of ambient ground-level ozone while engaged in activities that involve physical exertion. High levels of ground-level ozone affect animals, including pets, livestock and wildlife, in ways similar to humans.

In addition to causing adverse human and animal health effects, the EPA has concluded that high levels of ground-level ozone affect vegetation and ecosystems leading to: reductions in agricultural crop and commercial forest yields by destroying chlorophyll; reduced growth and survivability of tree seedlings; and increased plant susceptibility to disease, pests and other environmental stresses, including harsh weather. In long-lived species, these effects may become evident only after several years or even decades and have the potential for long-term adverse impacts on forest ecosystems. Ozone damage to the foliage of trees and other plants can decrease the aesthetic value of ornamental species used in residential landscaping, as well as the natural beauty of parks and recreation areas.

The economic value of some welfare losses due to high concentrations of ground-level ozone can be calculated, such as crop yield loss from soybeans due to decreased seed production and reduced size and quality of seeds and from visible injury to some leaf crops, including lettuce, spinach and tobacco, as well as visible injury to ornamental plants, including grass, flowers and shrubs. Other types of welfare loss may not be quantifiable, such as the reduced aesthetic value of trees growing in heavily visited parks. This Commonwealth's 59,000 farm families are the stewards of more than 7.7 million acres of farmland, with $7.5 billion in cash receipts annually from production agriculture. In addition to production agriculture, the industry also raises revenue and supplies jobs through support services such as food processing, marketing, transportation and farm equipment. In total, production agriculture and agribusiness contributes nearly $75 billion to the economy in this Commonwealth. Source: Department of Agriculture.

The Department of Conservation and Natural Resources (DCNR) is the steward of State-owned forests and parks. DCNR awards millions of dollars in construction contracts each year to build and maintain the facilities in State parks and forests. Timber sales on State forest lands contribute to the $5 billion-a-year timber industry. Hundreds of concessions throughout the State park system help complete the park experience for visitors from this Commonwealth and outside of this Commonwealth. Source: DCNR. Further, this Commonwealth leads the Nation in growing volume of hardwood species, with 17 million acres in forest land. As the leading producer of hardwood lumber in the United States, this Commonwealth also leads in the export of hardwood lumber, exporting nearly $800 million annually in lumber, logs, furniture products and paper products to more than 70 countries around the world. Recent United States Forest Service data show that the forest growth-to-harvest rate in this Commonwealth is better than 2 to 1. This vast renewable resource puts the hardwoods industry at the forefront of manufacturing in this Commonwealth. Through 2006, the total annual direct economic impact generated by the wood industry in this Commonwealth was $18.4 billion. The industry employed 128,000 people, with $4.7 billion in wages and salaries earned. Production was 1.1 billion board feet of lumber annually. Source: Strauss, Lord, Powell; Pennsylvania State University, June 2007, cited in Pennsylvania Hardwoods Development Council Biennial Report, 2009-2010.

Through deposition, ground-level ozone also contributes to pollution in the Chesapeake Bay. These effects can have adverse impacts including loss of species diversity and changes to habitat quality and water and nutrient cycles. High levels of ground-level ozone can also cause damage to buildings and synthetic fibers, including nylon, and reduced visibility on roadways and in natural areas. The reduction of ground-level ozone air pollution concentrations directly benefits the human and animal populations in this Commonwealth with improved ambient air quality and healthier environments. The agriculture and timber industries and related businesses benefit directly from reduced economic losses that result from damage to crops and timber. Likewise, the natural areas and infrastructure in this Commonwealth and downwind benefit directly from reduced environmental damage and economic losses.

The Statewide implementation of the control measures in § 129.63a will assist the Department in reducing VOC emissions from the specified industrial cleaning solvents activities locally and reducing the resultant local formation of ground-level ozone and transport of VOC emissions and ground-level ozone to downwind states. Statewide implementation will also facilitate enforcement of § 129.63a in this Commonwealth. The measures in § 129.63a are reasonably necessary to attain and maintain the health-based and welfare-based 8-hour ozone NAAQS and to satisfy related CAA requirements in this Commonwealth.

Section 129.63a may create economic opportunities for VOC emission control technology innovators, manufacturers and distributors through an increased demand for new or improved equipment. In addition, the owners and operators of regulated facilities may elect to install and operate an emissions monitoring system or equipment necessary for an emissions monitoring method to comply with § 129.63a, thereby creating an economic opportunity for the emissions monitoring industry.

The amendments to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99 and 129.100 are clarifying amendments only. These amendments do not change the social or environmental impact of these sections on the health and welfare of the residents and the ecosystems and natural areas of this Commonwealth or the regulated community. The benefit of these amendments is improved clarity.

Compliance costs

Using the EPA cost number of $1,453 as the baseline for annual operating costs and the cost range of $1,171 to $1,480 to implement the recommended control measures in § 129.63a, the estimated combined total economic impact for the owners and operators of the estimated 576 potentially affected facilities, including small businesses, ranges from annual costs of as low as $15,552 to total annual savings of $162,432. The annual financial impact on potentially affected facility owners and operators could

range from an average savings of $282 per affected facility owner and operator to an average cost of $27 per affected facility owner and operator. The cost effectiveness could range from a savings of approximately $12.99 per ton of VOC emissions reduced per year ($162,432 total savings/12,499 tons of total VOC emissions reduced per year) to a cost of approximately $1.24 per ton of VOC emissions reduced per year ($15,552 costs/12,499).

The monetized health benefits to residents in this Commonwealth and the economic benefits to agricultural, hardwoods and tourism industries in this Commonwealth as a result of attaining and maintaining the ground-level 8-hour ozone NAAQS, achieved in part through reduced emissions of ozone precursors from the use of compliant industrial cleaning solvents in this Commonwealth, are considerable in comparison to the costs that may be incurred by the owners and operators of potentially subject facilities to comply with § 129.63a. The EPA estimated the monetized health benefits of attaining the 2008 and 2015 ozone NAAQS. The EPA estimated that the monetized health benefits of attaining the 2008 8-hour ozone NAAQS range from $8.3 billion to $18 billion on a National basis by 2020. See Regulatory Impact Analysis; Final National Ambient Air Quality Standard for Ozone (EPA, July 2011). Prorating that benefit to this Commonwealth, based on population, results in a public health benefit of $337 million to $732 million. Similarly, the EPA estimated that the monetized health benefits of attaining the 2015 8-hour ozone NAAQS range from $1.5 billion to $4.5 billion on a National basis by 2025. See Regulatory Impact Analysis of the Final Revisions to the National Ambient Air Quality Standards for Ground-Level Ozone (EPA-452/R-15-007, September 2015). Prorating that benefit to this Commonwealth, based on population, results in a public health benefit of $63 million to $189 million. The Board is not stating that these estimated monetized health benefits will all be the result of implementing the RACT measures in § 129.63a, but the EPA estimates are indicative of the benefits to residents in this Commonwealth of attaining and maintaining the 2008 and 2015 8-hour ozone NAAQS through the implementation of a variety of measures to control VOC emissions in the aggregate from different source categories.

The estimated combined total economic impact for the owners and operators of the 576 potentially affected facilities ranges from annual costs of $15,552 to total annual savings of $162,432. The worst-case scenario of annual costs of $15,552 for the affected owners and operators is very small in comparison to the potential economic gains in public health and welfare to residents in this Commonwealth of attaining and maintaining the 8-hour ozone NAAQS. The estimated annual financial impact on potentially affected facility owners and operators, including small businesses, could range from an average annual savings of $282 per affected facility owner and operator to an average annual cost of $27 per affected facility owner and operator, again a very small financial impact on the regulated community in comparison to the potential economic gains in public health and welfare.

The Board expects that negative impacts on individuals, small businesses, labor communities and the regulated community will be minimal to none. The owner and operator of an affected facility will likely incur savings or, in the worst-case scenario, little-to-no cost to implement the requirements of § 129.63a. Common industrial cleaning solvents, such as Stoddard solvent, mineral spirits and other common solvents provided by suppliers, have vapor pressures well below the 8 mmHg limit in § 129.63a. The owners and operators of potentially affected facilities, such as automobile repair garages and metal parts manufacturing facilities, as well as other common manufacturing facilities already using these materials, will likely not need to make any changes to their industrial cleaning solvent materials.

Because of the wide availability and lower cost (compared to the installation and operation of a VOC emissions capture system and an add-on air pollution control device) of compliant VOC content industrial cleaning solvent materials, these are generally used to reduce VOC emissions from industrial cleaning solvent activities. The Board expects the regulated industry in this Commonwealth to realize cost savings because low-VOC content industrial cleaning solvent materials are readily available at a cost that is lower than the high-VOC content industrial cleaning solvent materials they replace as a result of similar requirements already in effect in neighboring states.

The VOC emission limitations established by § 129.63a will not require the submission of applications for amendments to existing operating permits. These requirements will be incorporated as applicable requirements at the time of permit renewal, if less than 3 years remain in the permit term, as specified under § 127.463(c) (relating to operating permit revisions to incorporate applicable standards). If 3 years or more remain in the permit term, the requirements will be incorporated as applicable requirements in the permit within 18 months of the promulgation of the standards or regulations, as required under § 127.463(b). Most importantly, § 127.463(e) specifies that "[r]egardless of whether a revision is required under this section, the permittee shall meet the applicable standards or regulations promulgated under the Clean Air Act within the time frame required by standards or regulations." Consequently, upon adoption, § 129.63a will apply to affected owners and operators irrespective of a modification to the operating permit.

The amendments to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99 and 129.100 are clarifying amendments only. These amendments will not change the financial impact of these sections on affected persons or the regulated community. The benefit of these amendments is improved clarity.

New legal, accounting or consulting procedures would not be required to comply with this final-form rulemaking.

Compliance assistance plan

The Department plans to educate and assist the public and regulated community in understanding the requirements and how to comply with them. This will be accomplished through the Department's ongoing compliance assistance program. The Department will also work with the Small Business Assistance Program to aid the owners and operators of facilities less able to handle permitting matters with in-house staff.

Paperwork requirements

The owner and operator of a cleaning unit operation subject to § 129.63a is required to keep records of specified information for industrial cleaning solvent materials, as applicable, sufficient to demonstrate compliance with the applicable requirements of this section for the emission levels at, above and below the threshold of 2.7 tons (2,455 kilograms) of VOC emissions per 12-month rolling period, before consideration of controls. Demonstration of VOC emission levels at, above and below this

threshold determine with which other specified requirements a subject facility owner or operator needs to comply, including work practice requirements, compliance demonstration requirements and recordkeeping and reporting requirements. Section 129.63a establishes monthly recordkeeping requirements of specified parameters of industrial cleaning solvents, including VOC content and composite vapor pressure, for the owner and operator of an affected facility, regardless of the total amount of combined actual VOC emissions from subject industrial cleaning solvent unit operations at the facility. Records of operating parameters are required of the owner and operator of an affected facility if a VOC emissions capture system and an add-on air pollution control device are used to ensure compliance. Recordkeeping requirements are expected to be minimal for the affected facility owners and operators; the recordkeeping requirements for many affected facility owners and operators will likely be met by using the monthly purchase records and material safety data sheets that most facility owners and operators already keep for other purposes. Records shall be maintained onsite for 2 years, unless a longer period is required under Chapter 127 (relating to construction, modification, reactivation and operation of sources) or a plan approval, operating permit, consent decree or order issued by the Department. Records shall be submitted to the Department in an acceptable format upon receipt of a written request from the Department.

The amendments to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99 and 129.100 are clarifying amendments only. These amendments would likely not change the legal, accounting, consulting or recordkeeping and reporting impact of these sections on the regulated entities.

H. *Pollution Prevention*

The Pollution Prevention Act of 1990 (42 U.S.C.A. §§ 13101—13109) established a National policy that promotes pollution prevention as the preferred means for achieving state environmental protection goals. The Department encourages pollution prevention, which is the reduction or elimination of pollution at its source, through the substitution of environmentally friendly materials, more efficient use of raw materials and the incorporation of energy efficiency strategies. Pollution prevention practices can provide greater environmental protection with greater efficiency because they can result in significant cost savings to facility owners and operators that permanently achieve or move beyond compliance.

Statewide implementation of the VOC emission control measures in § 129.63a could generate reductions of as much as 12,499 tons of VOC emissions per 12-month rolling period from the potentially affected 576 facilities, depending on the level of compliance already demonstrated by the owners and operators of these facilities. These projected estimated reductions in VOC emissions and the subsequent reduced formation of ozone will help ensure that the owners and operators of regulated facilities, farms and agricultural enterprises, hardwoods and timber industries, and tourism-related businesses, and residents of labor communities and citizens and the environment of this Commonwealth experience the benefits of improved ground-level ozone air quality.

Commonwealth residents would also potentially benefit from improved groundwater quality through reduced quantities of VOCs and hazardous air pollutants (HAP) from low-VOC content and low-HAP content industrial cleaning solvent materials. Although § 129.63a is designed primarily to address ozone air quality, the reformulation of high-VOC content cleaning solvent materials to low-VOC content cleaning solvent materials or substitution of low-VOC content cleaning solvent materials to meet the VOC content limits applicable to users may also result in reduction of HAP emissions, which are also a serious health threat. The reduced levels of high-VOC content and high-HAP content cleaning solvents will benefit groundwater quality through reduced loading on water treatment plants and in reduced quantities of high-VOC content and high-HAP content cleaning solvents leaching into the ground, streams and rivers.

Section 129.63a(e)(1) provides as one compliance option the use of compliant industrial cleaning solvent materials. Industrial cleaning solvent materials that are compliant with the proposed VOC content limit and composite vapor pressure limit are readily available to the owners and operators of all sizes of subject facilities. Section 129.63a(e)(2) provides flexibility in compliance through the second option of installing and operating a VOC emissions capture system and an add-on air pollution control device with an overall control efficiency of at least 85% or no less than the equivalent efficiency calculated using the specified equation.

This final-form rulemaking also provides flexibility to the owners and operators potentially affected by § 129.63a by amending § 129.51(a) to extend its applicability to the owner and operator of a coating operation subject to § 129.63a. Section 129.51(a) authorizes the owner or operator to achieve compliance through an alternative method, which would achieve VOC emission reductions equal to or greater than those achieved by compliance with the proposed control measures, by submitting the alternative method to the Department for review and approval in an applicable plan approval or operating permit, or both.

However, because of the wide availability and lower cost (compared to installation and operation of VOC emissions capture systems and add-on air pollution control devices) of compliant VOC content and composite vapor pressure cleaning solvent materials, compliant cleaning solvent materials are generally expected to be used by affected owners and operators to reduce VOC emissions from industrial cleaning solvent activities subject to § 129.63a.

The implementation of the work practices for the use and application of industrial cleaning solvent materials is expected to result in a net cost savings. The recommended work practices for industrial cleaning solvent activities should reduce the amounts of industrial cleaning solvent materials used by reducing the amounts that are lost to evaporation, spillage and waste.

The amendments to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99 and 129.100 are clarifying amendments only. These amendments would not change the pollution prevention impact of these sections.

I. *Sunset Review*

The Board is not establishing a sunset date for this final-form rulemaking, since it is needed for the Department to carry out its statutory authority. The Department will continue to closely monitor this final-form rulemaking for effectiveness and recommend updates to the Board as necessary.

J. *Regulatory Review*

Under section 5(a) of the Regulatory Review Act (71 P.S. § 745.5(a)), on May 31, 2017, the Department submitted a copy of the notice of proposed rulemaking, published at 47 Pa.B. 3356, to IRRC and the Chairper-

sons of the House and Senate Environmental Resources and Energy Committees for review and comment.

Under section 5(c) of the Regulatory Review Act, IRRC and the House and Senate Committees were provided with copies of the comments received during the public comment period, as well as other documents when requested. In preparing this final-form rulemaking, the Department has considered all comments from IRRC and the public.

Under section 5.1(j.2) of the Regulatory Review Act (71 P.S. § 745.5a(j.2)), on June 27, 2018, this final-form rulemaking was deemed approved by the House and Senate Committees. Under section 5.1(e) of the Regulatory Review Act, IRRC met on June 28, 2018, and approved this final-form rulemaking.

K. *Findings*

The Board finds that:

(1) Public notice of proposed rulemaking was given under sections 201 and 202 of the act of July 31, 1968 (P.L. 769, No. 240) (45 P.S. §§ 1201 and 1202) and regulations promulgated thereunder, 1 Pa. Code §§ 7.1 and 7.2.

(2) At least a 60-day public comment period was provided as required by law and all comments were considered.

(3) This final-form rulemaking does not enlarge the purpose of the proposed rulemaking published at 47 Pa.B. 3356.

(4) These regulations are necessary and appropriate for administration and enforcement of the authorizing acts identified in Section C of this preamble.

(5) These regulations are reasonably necessary to attain and maintain the ozone NAAQS and to satisfy related CAA requirements.

L. *Order*

The Board, acting under the authorizing statutes, orders that:

(a) The regulations of the Department, 25 Pa. Code Chapters 121 and 129, are amended by adding § 129.63a and amending §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99 and 129.100 to read as set forth in Annex A, with ellipses referring to the existing text of the regulations.

(b) The Chairperson of the Board shall submit this order and Annex A to the Office of General Counsel and the Office of Attorney General for review and approval as to legality and form, as required by law.

(c) The Chairperson of the Board shall submit this order and Annex A to IRRC and the House and Senate Committees as required by the Regulatory Review Act (71 P.S. §§ 745.1—745.14).

(d) The Chairperson of the Board shall certify this order and Annex A and deposit them with the Legislative Reference Bureau as required by law.

(e) This final-form rulemaking will be submitted to the EPA as an amendment to the Pennsylvania SIP.

(f) This order shall take effect immediately upon publication in the *Pennsylvania Bulletin*.

PATRICK McDONNELL,
Chairperson

(*Editor's Note*: See 48 Pa.B. 4189 (July 14, 2018) for IRRC's approval order.)

Fiscal Note: Fiscal Note 7-492 remains valid for the final adoption of the subject regulations.

Annex A

TITLE 25. ENVIRONMENTAL PROTECTION

PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION

Subpart C. PROTECTION OF NATURAL RESOURCES

ARTICLE III. AIR RESOURCES

CHAPTER 121. GENERAL PROVISIONS

§ 121.1. Definitions.

The definitions in section 3 of the act (35 P.S. § 4003) apply to this article. In addition, the following words and terms, when used in this article, have the following meanings, unless the context clearly indicates otherwise:

* * * * *

Cleaning solvent—A liquid material used for hand-wipe, spray gun or flush cleaning. The term includes solutions that contain VOCs.

* * * * *

CHAPTER 129. STANDARDS FOR SOURCES

SOURCES OF VOCs

§ 129.51. General.

(a) *Equivalency.* Compliance with §§ 129.52, 129.52a, 129.52b, 129.52c, 129.52d, 129.52e, 129.54—129.63, 129.63a, 129.64—129.67, 129.67a, 129.67b, 129.68, 129.69, 129.71—129.73 and 129.77 may be achieved by alternative methods if all of the following exist:

(1) The alternative method is approved by the Department in an applicable plan approval or operating permit, or both.

(2) The resulting emissions are equal to or less than the emissions that would have been discharged by complying with the applicable emission limitation.

(3) Compliance by a method other than the use of a low VOC coating, adhesive, sealant, adhesive primer, sealant primer, surface preparation solvent, cleanup solvent, cleaning solution, fountain solution or ink which meets the applicable emission limitation in §§ 129.52, 129.52a, 129.52b, 129.52c, 129.52d, 129.52e, 129.63a, 129.67, 129.67a, 129.67b, 129.73 and 129.77 shall be determined on the basis of equal volumes of solids.

(4) Capture efficiency testing and emissions testing are conducted in accordance with methods approved by the EPA.

(5) Adequate records are maintained to ensure enforceability.

(6) The alternative compliance method is incorporated into a plan approval or operating permit, or both, reviewed by the EPA, including the use of an air cleaning device to comply with § 129.52, § 129.52a, § 129.52b, § 129.52c, § 129.52d, § 129.52e, § 129.63a, § 129.67, § 129.67a, § 129.67b, § 129.68(b)(2) and (c)(2), § 129.73 or § 129.77.

(b) *New source performance standards.* Sources covered by new source performance standards which are more stringent than those contained in this chapter shall comply with those standards in lieu of the standards in this chapter.

(c) *Demonstration of compliance.* Unless otherwise set forth in this chapter, test methods and procedures used to monitor compliance with the emission requirements of this section are those specified in Chapter 139 (relating to sampling and testing).

(d) *Records.* The owner or operator of a facility or source subject to one or more of the VOC emission limitations and control requirements in this chapter shall keep records to demonstrate compliance with the applicable limitation or control requirement.

(1) The records shall provide sufficient data and calculations to clearly demonstrate that the applicable emission limitation or control requirement is met. Data or information required to determine compliance with an applicable limitation shall be recorded and maintained in a time frame consistent with the averaging period of the standard.

(2) The records shall be maintained onsite for 2 years, unless a longer period is required by a plan approval or operating permit issued under Chapter 127 (relating to construction, modification, reactivation and operation of sources). The records shall be made available to the Department on request.

(e) *Demonstration of exempt status.* The owner or operator of a facility or source claiming that the facility or source is exempt from the VOC control provisions of this chapter shall maintain records that clearly demonstrate to the Department that the facility or source is not subject to the VOC emission limitations or control requirements of this chapter.

§ 129.63a. Control of VOC emissions from industrial cleaning solvents.

(a) *Applicability.* This section applies to the owner and the operator of a facility at which an industrial cleaning solvent is used or applied in a cleaning activity at a cleaning unit operation, a work production-related work area or a part, product, tool, machinery, equipment, vessel, floor or wall.

(b) *Definitions.* The following words and terms, when used in this section, have the following meanings unless the context clearly indicates otherwise:

Cleaning activity—The use or application of an industrial cleaning solvent to remove a contaminant, such as an adhesive, ink, paint, dirt, soil, oil or grease, by wiping, flushing, brushing, soaking, dipping, spraying or a similar effort.

Cleaning unit operation—

(i) An operation at a facility that is a source of VOC emissions from a cleaning activity.

(ii) The term includes the following cleaning activities:

(A) Spray gun cleaning, including the spray gun, attached paint lines and other spray gun equipment used to apply a coating.

(B) Spray booth cleaning, including the interior surfaces of the booth and the equipment contained within the booth.

(C) Manufactured components cleaning as a step in a manufacturing process, including automobile bodies, furniture, sheet metal, glass windows, engine components, subassemblies, sheet metal panels, molded parts, electrical contacts, steel and copper components, tin-plated or silver-plated terminals, plastic parts, upholstered parts, circuit breaker cases, switch covers, threads and bolts.

(D) Parts cleaning, including applicator tips, brushes, machine parts, pumps, circuit boards, truck parts, engine blocks, gauges, cutoff steel, machined parts, tool dies, motors and assemblies, screws, oil guns, welded parts, bearings and filters.

(E) Equipment cleaning of a piece of production equipment in place to prevent cross-contamination or for maintenance purposes, including punch presses, electrical contacts on equipment, pump parts, packaging equipment, rollers, ink pans, carts, press frames and table tops.

(F) Line cleaning, including a pipe, hose or other line that conveys material like paint or resin, that is cleaned separately from a spray gun, tank or other process equipment.

(G) Floor cleaning in a production area of the facility.

(H) Tank cleaning, including a tank, mixing pot or process vessel and the attached lines.

(iii) The term does not include VOC emissions from the use or application of consumer products subject to Chapter 130, Subchapter B (relating to consumer products), including an institutional product or industrial and institutional product as defined in § 130.202 (relating to definitions) for cleaning offices, bathrooms or other areas that are not part of a cleaning unit operation or work production-related work area.

Industrial cleaning solvent—A product formulated with one or more regulated VOCs that is used in a cleaning activity for a cleaning unit operation.

Regulated VOC—An organic compound which participates in atmospheric photochemical reactions, that is, an organic compound other than those which the Administrator of the EPA designates in 40 CFR 51.100 (relating to definitions) as having negligible photochemical reactivity.

(c) *Exceptions and exemptions.*

(1) This section does not apply to all of the following:

(i) An owner or operator of a cleaning unit operation subject to § 129.63 (relating to degreasing operations) or 40 CFR Part 63, Subpart T (relating to National emission standards for halogenated solvent cleaning).

(ii) An owner or operator of a cleaning unit operation associated with a following category:

(A) Aerospace manufacturing and rework operations.

(B) Architectural coatings.

(C) Automobile and light-duty truck assembly coatings.

(D) Fabric coating.

(E) Fiberglass boat manufacturing materials.

(F) Flat wood paneling coatings.

(G) Flexible packaging printing materials.

(H) Graphic arts printing and coating operations.

(I) Large appliance coatings.

(J) Letterpress printing materials.

(K) Lithographic printing materials.

(L) Magnet wire coating operations.

(M) Marine vessel coating.

(N) Metal container, closure and coil coating.

(O) Metal furniture coatings.

(P) Miscellaneous metal parts coatings.

(Q) Miscellaneous industrial adhesives.

(R) Motor vehicle and mobile equipment coating operations.

(S) Paper, film and foil coating.

(T) Plastic parts coatings.

(U) Polyester resin operations.

(V) Semiconductor wafer fabrication operations.

(W) Shipbuilding and repair coatings.

(X) Wood furniture coatings.

(Y) Wood products coating.

(Z) Electrical and electronic components.

(AA) Precision optics.

(BB) Numismatic dies.

(CC) Stripping of cured inks, coatings and adhesives.

(DD) Cleaning of resin, coating, ink or adhesive mixing, molding and application equipment.

(EE) Resin, coating, ink and adhesive manufacturing.

(FF) Performance or quality assurance testing of coatings, inks or adhesives.

(GG) Flexible and rigid disc manufacturing.

(HH) Research and development laboratories.

(II) Medical device manufacturing.

(JJ) Pharmaceutical manufacturing.

(KK) Janitorial cleaning.

(LL) Digital printing.

(2) The VOC emission limitations in subsection (e) do not apply to the use or application of an industrial cleaning solvent by the owner or operator of a cleaning unit operation at a facility subject to subsection (a) under either of the following circumstances:

(i) The use or application of the industrial cleaning solvent is subject to a standard or specification required by the United States Department of Defense, Federal Aviation Administration or other Federal government entity. An owner or operator claiming this exemption shall maintain records in accordance with subsection (h)(2).

(ii) The use or application of the industrial cleaning solvent is associated with the cleaning of screen printing equipment and the industrial cleaning solvent used or applied has an as applied VOC content that does not exceed 4.2 pounds of VOC per gallon (lb VOC/gal) (500 grams of VOC per liter (g VOC/l)) of industrial cleaning solvent. An owner or operator claiming this exemption shall maintain records in accordance with subsection (h)(3).

(3) The VOC emission limitations in subsection (e) and the work practice requirements in subsection (f) do not apply to the owner or operator of a facility subject to subsection (a) if the total combined actual VOC emissions from all subject cleaning unit operations at the facility are less than 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of controls. An owner or operator claiming this exemption shall maintain records in accordance with subsection (h)(4).

(d) *Existing RACT permit.* The requirements of this section supersede the requirements of a RACT permit issued to the owner or operator of a cleaning unit operation subject to this section prior to August 11, 2018, under §§ 129.91—129.95 (relating to stationary sources of NO_x and VOCs) to control, reduce or minimize VOCs from cleaning unit operation cleaning activities at the facility, except to the extent the RACT permit contains more stringent requirements.

(e) *Emissions limitations.* Beginning August 11, 2018, the owner or operator of a facility at which the total combined actual VOC emissions from all subject cleaning unit operations at the facility are equal to or greater than 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of controls, may not cause or permit the emission into the outdoor atmosphere of VOCs from an industrial cleaning solvent used or applied in a cleaning unit operation subject to this section at the facility, unless one of the following limitations is met:

(1) *Compliant solvents.* The industrial cleaning solvent meets one of the following VOC limits:

(i) A VOC content less than or equal to 0.42 lb VOC/gal (50 g VOC/l) as applied.

(ii) A VOC composite vapor pressure less than or equal to 8 mm mercury at 68°F (20°C) as applied.

(2) *VOC emissions capture system and add-on air pollution control device.* The weight of VOCs emitted to the atmosphere from cleaning unit operation cleaning activities is reduced through the use of vapor recovery or incineration or another method that is acceptable under § 129.51(a) (relating to general). The overall emission reduction of a control system, as determined by the test methods and procedures specified in Chapter 139 (relating to sampling and testing), may be no less than 85% or may be no less than the equivalent efficiency as calculated by the following equation, whichever is less stringent:

$$O = (1–E/V) \times 100$$

Where:

O = The overall required control efficiency.

E = 0.42 lb VOC/gal or 50 g VOC/l.

V = The VOC content of the industrial cleaning solvent in lb VOC/gal or g VOC/l.

(f) *Work practice requirements for industrial cleaning solvents, used shop towels and waste materials.* The owner or operator of a facility subject to subsection (e) shall comply with all of the following work practices for industrial cleaning solvents and shop towels used in the cleaning unit operation cleaning activity:

(1) Store all VOC-containing industrial cleaning solvents, used shop towels and related waste materials in closed containers.

(2) Ensure that mixing and storage containers used for VOC-containing industrial cleaning solvents and related waste materials are kept closed at all times except when depositing or removing these materials.

(3) Minimize spills of VOC-containing industrial cleaning solvents and related waste materials and clean up spills immediately.

(4) Convey VOC-containing industrial cleaning solvents and related waste materials from one location to another in closed containers or pipes.

(5) Minimize VOC emissions from cleaning of storage, mixing and conveying equipment.

(6) Minimize air circulation around cleaning unit operations.

(g) *Compliance demonstration.* The owner or operator of a cleaning unit operation subject to this section shall demonstrate compliance as follows:

(1) The owner or operator of a facility at which the total combined actual VOC emissions from all subject cleaning unit operations at the facility are equal to or greater than 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of controls, shall do either of the following:

(i) Ensure that industrial cleaning solvents used or applied in the subject cleaning unit operations at the facility meet the applicable emissions limitation in subsection (e)(1) and maintain records in accordance with subsection (h)(1)(i).

(ii) Use a VOC emissions capture system and an add-on air pollution control device that meets the VOC emission reduction requirement under subsection (e)(2), equip the add-on air pollution control device with the applicable monitoring equipment and maintain records in accordance with subsection (h)(1)(ii). All of the following apply:

(A) The monitoring equipment shall be installed, calibrated, operated and maintained according to manufacturer's specifications at all times when the add-on air pollution control device is operating.

(B) The add-on air pollution control device must be operating when the cleaning activity is occurring.

(2) The owner or operator of a cleaning unit operation subject to this section claiming exemption under:

(i) Subsection (c)(2)(i) shall maintain records in accordance with subsection (h)(2).

(ii) Subsection (c)(2)(ii) shall maintain records in accordance with subsection (h)(3).

(iii) Subsection (c)(3) shall maintain records in accordance with subsection (h)(4).

(3) The owner or operator of a cleaning unit operation subject to this section shall determine the VOC content of the industrial cleaning solvent as applied by conducting sampling and testing of the industrial cleaning solvent in accordance with the procedures and test methods specified in subsections (i) and (j) and Chapter 139.

(4) The owner or operator of a cleaning unit operation subject to paragraph (3) may use other test methods or documentation to demonstrate compliance with this section if approved in advance in writing by the Department and the EPA.

(h) *Recordkeeping and reporting requirements.* The owner or operator of a cleaning unit operation subject to this section shall comply with all of the following applicable recordkeeping and reporting requirements:

(1) The owner or operator of a facility at which the total combined actual VOC emissions from all subject cleaning unit operations at the facility are equal to or greater than 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of controls, shall maintain all of the applicable records:

(i) For an owner or operator that complies with this section by using a complying industrial cleaning solvent under subsection (e)(1), records of all of the following parameters for each cleaning unit operation industrial cleaning solvent:

(A) The name and identification number.

(B) The weight percent of total volatiles, water and exempt solvents, as supplied.

(C) The VOC content or composite vapor pressure, as supplied. The composite vapor pressure as supplied shall be determined in accordance with subsections (i) and (j).

(D) The VOC content or composite vapor pressure, as applied. The composite vapor pressure as applied shall be determined in accordance with subsections (i) and (j).

(E) The volume used or applied on a monthly basis.

(ii) For an owner or operator that complies with this section through the use of a VOC emissions capture system and an add-on air pollution control device under subsection (e)(2), records sufficient to demonstrate all of the following:

(A) Sampling and testing conducted in accordance with Chapter 139 as required under subsection (e)(2).

(B) Calibration, operation and maintenance of the monitoring equipment installed under subsection (g)(1)(ii) in accordance with manufacturer's specifications.

(2) The owner or operator of a cleaning unit operation claiming exemption under subsection (c)(2)(i) shall maintain records of all of the following information for the exempt industrial cleaning solvent:

(i) A copy of the applicable standard or specification.

(ii) The VOC content or composite vapor pressure, as applied. The composite vapor pressure as applied shall be determined in accordance with subsections (i) and (j).

(iii) The volume used or applied monthly.

(3) The owner or operator of a screen printing equipment cleaning unit operation claiming exemption under subsection (c)(2)(ii) shall maintain records of all of the following information for the screen printing equipment industrial cleaning solvent:

(i) The name and identification number.

(ii) The VOC content or composite vapor pressure, as applied. The composite vapor pressure as applied shall be determined in accordance with subsections (i) and (j).

(iii) The volume used or applied monthly.

(4) The owner or operator of a facility claiming exemption under subsection (c)(3) shall maintain monthly records of the industrial cleaning solvents used or applied at the subject cleaning unit operations sufficient to demonstrate that the total combined actual VOC emissions from all subject cleaning unit operations at the facility are less than 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of controls.

(5) Records shall be maintained onsite for 2 years, unless a longer period is required under Chapter 127 (relating to construction, modification, reactivation and operation of sources) or a plan approval, operating permit, consent decree or order issued by the Department.

(6) Records shall be submitted to the Department in an acceptable format upon receipt of a written request from the Department.

(i) *Composite vapor pressure.* The composite vapor pressure of organic compounds in cleaning unit operation industrial cleaning solvents shall be determined by one or more of the following procedures:

(1) Quantifying the amount of each compound in the blend using gas chromatographic analysis, using one or more of the following methods:

(i) An appropriate and current ASTM test method with prior written approval from the Department and the EPA.

(ii) Another test method demonstrated to provide results that are acceptable for purposes of determining compliance with this section if prior approval is obtained in writing from the Department and the EPA.

(2) Calculating the composite vapor pressure using the following equation:

$$Pp_c = \frac{\sum_{i=1}^{n} (W_i)\,(VP_i)/Mw_i}{W_w/Mw_w + \sum_{e=1}^{k} W_e/Mw_e + \sum_{i=1}^{n} W_i/Mw_i}$$

Where:

Pp_c = VOC composite partial pressure at 20°C, in mm mercury.

W_i = Weight of the "i"th VOC compound, in grams, as determined by ASTM E260.

W_w = Weight of water, in grams, as determined by ASTM D3792.

W_e = Weight of the "e"th exempt compound, in grams, as determined by ASTM E260.

Mw_i = Molecular weight of the "i"th VOC compound, in grams per g-mole, as given in chemical reference literature.

Mw_w = Molecular weight of water, 18 grams per g-mole.

Mw_e = Molecular weight of the "e"th exempt compound, in grams per g-mole, as given in chemical reference literature.

VP_i = Vapor pressure of the "i"th VOC compound at 20°C, in mm mercury, as determined by subsection (j).

(3) Providing documentation from the manufacturer of the industrial cleaning solvent that indicates the composite vapor pressure. The documentation may include an MSDS, CPDS or other data certified by the manufacturer.

(j) *Vapor pressure of single component compound.* The vapor pressure of each single component compound in a cleaning unit operation industrial cleaning solvent shall be determined from one or more of the following:

(1) An appropriate and current ASTM test method with prior written approval from the Department and the EPA.

(2) The most recent edition of one or more of the following sources:

(i) *Vapour Pressures of Pure Substances*, Boublik, Elsevier Scientific Publishing Company.

(ii) *Perry's Chemical Engineers' Handbook*, Green and Perry, McGraw-Hill Book Company.

(iii) *CRC Handbook of Chemistry and Physics*, CRC Press.

(iv) *Lange's Handbook of Chemistry*, McGraw-Hill Book Company.

(3) Documentation provided by the manufacturer of the single component compound that indicates the vapor pressure of the single component compound. The documentation may include an MSDS, CPDS or other data certified by the manufacturer.

(k) *ASTM method references.* References to ASTM methods in this section pertain to test methods developed by ASTM International, 100 Barr Harbor Drive, Post Office Box C700, West Conshohocken, Pennsylvania 19428-2959, www.astm.org.

§ 129.73. Aerospace manufacturing and rework.

Except as provided in paragraph (1), this section applies to the manufacture or rework of commercial, civil or military aerospace vehicles or components at any facility which has the potential to emit 25 tons per year of VOCs or more.

(1) This section does not apply to cleaning and coating of aerospace components and vehicles as follows:

(i) At any source conducting research and development for the research and development activities.

(ii) For quality control and laboratory testing.

(iii) For production of electronic parts and assemblies (except for cleaning and coating of completed assemblies).

(iv) For rework operations performed on antique aerospace vehicles or components.

(2) Paragraph (3) does not apply to cleaning and coating of aerospace components and vehicles in the following circumstances:

(i) The use of touchup, aerosol and Department of Defense "classified" coatings.

(ii) The coating of space vehicles.

(iii) At facilities that use separate formulations in volumes less than 50 gallons per year to a maximum exemption of 200 gallons per year of all the coatings in aggregate for these formulations.

(3) Beginning April 10, 1999, a person may not apply to aerospace vehicles or components, aerospace specialty coatings, primers, topcoats and chemical milling maskants including VOC-containing materials added to the original coating supplied by the manufacturer, that contain VOCs in excess of the limits specified in Table II.

(i) Aerospace coatings that meet the definitions of the specific coatings in Table II shall meet those allowable coating VOC limits.

(ii) All other aerospace primers, aerospace topcoats and chemical milling maskants are subject to the general coating VOC limits for aerospace primers, aerospace topcoats and aerospace chemical milling maskants.

TABLE II
Allowable Content of VOCs in Aerospace Coatings
Weight of VOC Per Volume of Coating (Minus Water and Exempt Solvents)

	LIMIT	
COATING TYPE	*POUNDS PER GALLON*	*GRAMS PER LITER*
Specialty Coatings		
(1) Ablative Coating	5.0	600
(2) Adhesion Promoter	7.4	890
(3) Adhesive Bonding Primers:		
(a) Cured at 250°F or below	7.1	850
(b) Cured above 250°F	8.6	1,030
(4) Adhesives:		
(a) Commercial Interior Adhesive	6.3	760
(b) Cyanoacrylate Adhesive	8.5	1,020
(c) Fuel Tank Adhesive	5.2	620
(d) Nonstructural Adhesive	3.0	360
(e) Rocket Motor Bonding Adhesive	7.4	890
(f) Rubber-Based Adhesive	7.1	850
(g) Structural Autoclavable Adhesive	0.5	60
(h) Structural Nonautoclavable Adhesive	7.1	850
(5) Antichafe Coating	5.5	660
(6) Chemical Agent-Resistant Coating	4.6	550
(7) Clear Coating	6.0	720
(8) Commercial Exterior Aerodynamic Structure Primer	5.4	650
(9) Compatible Substrate Primer	6.5	780
(10) Corrosion Prevention Compound	5.9	710
(11) Cryogenic Flexible Primer	5.4	645
(12) Cryoprotective Coating	5.0	600
(13) Electric or Radiation-Effect Coating	6.7	800
(14) Electrostatic Discharge and Electromagnetic Interference (EMI) Coating	6.7	800
(15) Elevated Temperature Skydrol Resistant Commercial Primer	6.2	740
(16) Epoxy Polyamide Topcoat	5.5	660
(17) Fire-Resistant (Interior) Coating	6.7	800
(18) Flexible Primer	5.4	640
(19) Flight-Test Coatings:		
(a) Missile or Single Use Aircraft	3.5	420
(b) All Other	7.0	840
(20) Fuel-Tank Coating	6.0	720
(21) High-Temperature Coating	7.1	850
(22) Insulation Covering	6.2	740
(23) Intermediate Release Coating	6.2	750
(24) Lacquer	6.9	830
(25) Maskants:		
(a) Bonding Maskant	10.2	1,230
(b) Critical Use and Line Sealer Maskant	8.6	1,020
(c) Seal Coat Maskant	10.2	1,230
(26) Metallized Epoxy Coating	6.2	740
(27) Mold Release	6.5	780
(28) Optical Anti-Reflective Coating	6.2	750

	LIMIT	
COATING TYPE	*POUNDS PER GALLON*	*GRAMS PER LITER*
(29) Part Marking Coating	7.1	850
(30) Pretreatment Coating	6.5	780
(31) Rain Erosion-Resistant Coating	7.1	850
(32) Rocket Motor Nozzle Coating	5.5	660
(33) Scale Inhibitor	7.3	880
(34) Screen Print Ink	7.0	840
(35) Sealants:		
(a) Extrudable/Rollable/Brushable Sealant	2.0	240
(b) Sprayable Sealant	5.0	600
(36) Self-Priming Topcoat	3.5	420
(37) Silicone Insulation Material	7.1	850
(38) Solid Film Lubricant	7.3	880
(39) Specialized Function Coating	7.4	890
(40) Temporary Protective Coating	2.7	320
(41) Thermal Control Coating	6.7	800
(42) Wet Fastener Installation Coating	5.6	675
(43) Wing Coating	7.1	850
Aerospace Primers, Aerospace Topcoats and Aerospace Chemical Milling Maskants		
(1) Primers	2.9	350
(2) Topcoats	3.5	420
(3) Chemical Milling Maskants (Type I/II)	1.3	160

(4) The mass of VOC per combined volume of VOC and coating solids, less water and exempt compounds shall be calculated for each coating by the following equation:

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ADDITIONAL RACT REQUIREMENTS FOR MAJOR SOURCES OF NO_x AND VOCs

§ 129.96. Applicability.

(a) The NO_x requirements of this section and §§ 129.97—129.100 apply Statewide to the owner and operator of a major NO_x emitting facility and the VOC requirements of this section and §§ 129.97—129.100 apply Statewide to the owner and operator of a major VOC emitting facility that were in existence on or before July 20, 2012, for which a requirement or emission limitation, or both, has not been established in §§ 129.51—129.52c, 129.54—129.63, 129.64—129.69, 129.71—129.75, 129.77, 129.101—129.107 and 129.301—129.310.

(b) The NO_x requirements of this section and §§ 129.97—129.100 apply Statewide to the owner and operator of a NO_x emitting facility and the VOC requirements of this section and §§ 129.97—129.100 apply Statewide to the owner and operator of a VOC emitting facility when the installation of a new source or a modification or change in operation of an existing source after July 20, 2012, results in the source or facility meeting the definition of a major NO_x emitting facility or a major VOC emitting facility and for which a requirement or an emission limitation, or both, has not been established in §§ 129.51—129.52e, 129.54—129.69, 129.71—129.75, 129.77, 129.101—129.107 and 129.301—129.310.

(c) This section and §§ 129.97—129.100 do not apply to the owner and operator of a NO_x air contamination source located at a major NO_x emitting facility that has the potential to emit less than 1 TPY of NO_x or a VOC air contamination source located at a major VOC emitting facility that has the potential to emit less than 1 TPY of VOC.

(d) This section and §§ 129.97—129.100 do not apply to the owner and operator of a facility which is not a major NO_x emitting facility or a major VOC emitting facility on or before January 1, 2017.

§ 129.97. Presumptive RACT requirements, RACT emission limitations and petition for alternative compliance schedule.

* * * * *

(k) The owner or operator of a major NO_x emitting facility or a major VOC emitting facility subject to § 129.96 that includes an air contamination source subject to one or more of subsections (b)—(h) that cannot meet the applicable presumptive RACT requirement or RACT emission limitation without installation of an air cleaning device may submit a petition, in writing, requesting an alternative compliance schedule in accordance with the following:

(1) The written petition shall be submitted to the Department or appropriate approved local air pollution control agency as soon as possible but not later than:

(i) October 24, 2016, for a source subject to § 129.96(a).

(ii) October 24, 2016, or 6 months after the date that the source meets the definition of a major NO_x emitting

facility or major VOC emitting facility, whichever is later, for a source subject to § 129.96(b).

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§ 129.99. Alternative RACT proposal and petition for alternative compliance schedule.

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(i) The owner and operator of a facility proposing to comply with the applicable RACT requirement or RACT emission limitation under subsection (a), (b) or (c) through the installation of an air cleaning device may submit a petition, in writing, requesting an alternative compliance schedule in accordance with the following:

(1) The written petition requesting an alternative compliance schedule shall be submitted to the Department or appropriate approved local air pollution control agency as soon as possible but not later than:

(i) October 24, 2016, for a source subject to § 129.96(a).

(ii) October 24, 2016, or 6 months after the date that the source meets the definition of a major NO_x emitting facility or major VOC emitting facility, whichever is later, for a source subject to § 129.96(b).

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§ 129.100. Compliance demonstration and recordkeeping requirements.

(a) Except as provided in subsection (c), the owner and operator of an air contamination source subject to a NO_x RACT requirement or RACT emission limitation or VOC RACT requirement or RACT emission limitation, or both, listed in § 129.97 (relating to presumptive RACT requirements, RACT emission limitations and petition for alternative compliance schedule) shall demonstrate compliance with the applicable RACT requirement or RACT emission limitation by performing the following monitoring or testing procedures:

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