

**FINAL RULEMAKING**  
**ENVIRONMENTAL QUALITY BOARD**  
**[25 PA CODE CHS. 121 AND 129]**  
**Control of VOC Emissions from Industrial Cleaning Solvents;**  
**General Provisions; Aerospace Manufacturing and Rework; and**  
**Additional RACT Requirements for Major Sources of NO<sub>x</sub> 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 also 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<sub>x</sub>) 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 the final-form regulation.

This order was adopted by the Board at its meeting of \_\_\_\_\_, 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](http://www.dep.pa.gov) (select "Public Participation," then "Environmental Quality Board").

*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 provisions of 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 also 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<sub>x</sub> 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<sub>x</sub> 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 Consumer and Commercial Products, Group II: Control Techniques Guidelines in Lieu of Regulations for Flexible Packaging Printing Materials, Lithographic Printing Materials, Letterpress Printing Materials, Industrial Cleaning Solvents, and Flat Wood Paneling Coatings, 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<sub>x</sub>, 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 both 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 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), 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 (ACT) 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 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 "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility." 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<sub>x</sub>. 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 this 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 would be affected by proposed § 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.

Subsection (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 (SBDC) 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 SBDC 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 (DEQ) 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 Pennsylvania businesses that may be impacted by proposed § 129.63a. The results apply equally to the 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, Summary of NAICS Codes for nonattainment facilities estimated to meet the applicability criteria recommended in this CTG. As noted by Pechan for the Texas DEQ, 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 Chapter 129 and Chapter 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 SBDC 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 SBDC EMAP solely through the use of the EPA list of NAICS codes may be subject to other regulations codified in Chapter 129 and Chapter 130 and therefore not subject to § 129.63a. The Department cross-referenced the NAICS codes from the SBDC 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 Texas report list were identified in the SBDC 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 the Commonwealth's 'universe' of 45,718, it is estimated that as many as 576 ( $45,718 \times 1.26\%$ ) 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 SBDC EMAP, the Department estimated that 253 ( $576 \times 44\%$ ) 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. 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 ( $1.26\% \times 3,154$ ) 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 codified 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 ( $40 \times 44\%$ ) 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 the draft final-form rulemaking Annex A in § 129.96 to address comments of 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 Annex A 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 removed. The Department advised the SBCAC during the January 2018 meeting of its intent to remove draft § 129.63a(e), (f) and (g) from the draft final-form rulemaking Annex A. 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 had no 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 CAC's 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 inserting a comma. Changes were not made to § 121.1 from proposed.

##### *§ 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.

Changes were not made to § 129.51 from proposed.

*§ 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) establishes four terms and their definitions to be used in this section. The terms are “cleaning activity,” “cleaning unit operation,” “industrial cleaning solvent” and “regulated VOC.” The term “cleaning unit operation” is amended in subparagraph (ii)(A) to (H) in response to a comment received from the EPA and IRRC on the proposed rulemaking. Descriptive and clarifying language was added to each of the cleaning activity categories listed under the term. Subparagraph (ii)(I) is deleted. The definition of “industrial cleaning solvent” is amended in response to a comment received from the EPA and IRRC on the proposed rulemaking. The definition now 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) is amended 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 made by 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). Changes were not made to subsection (c)(3) from proposed.

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 changes were not made from proposed.

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 \_\_\_\_\_. (*Editor's Note:* The blank refers to the effective date of adoption of this final-form rulemaking.) under §§ 129.91—129.95 (relating to stationary sources of NO<sub>x</sub> 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 \_\_\_\_\_ (*Editor's Note:* The blank refers to the effective date of adoption of this final-form rulemaking.), 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 be no less than 85% or may be no 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 must 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, however, 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 or more days 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.

Changes were not made to subsections (a), (d), (e), (f), (g), (h), (i), (j) and (k) from proposed.

#### *§ 129.73. Aerospace manufacturing and rework.*

Table II (relating to allowable content of VOCs in aerospace coatings) is amended to correct a numbering error that was promulgated at 29 Pa. B. 1879 (April 10, 1999). The coating type, “high-temperature coating,” was numbered incorrectly as (20)(a) and is renumbered as (21). The succeeding coating types are renumbered accordingly. The title of Table II is revised to delete the redundant phrase “allowable VOC content.” Changes were not made from proposed.

#### *§ 129.96. Applicability*

Subsections (a) and (b) are amended from proposed to address comments from the EPA and IRRC that the proposed changes to this section created an issue with respect to retroactive applicability. Subsection (a) is amended to clarify that the owner or operator of a major NO<sub>x</sub> 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 amended to clarify that the requirements of §§ 129.96—129.100 do not apply to the owner or operator of a NO<sub>x</sub> 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<sub>x</sub> 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) are amended to add the phrase “or major VOC emitting facility” for clarity. An owner or operator of a source that meets the definition of a major NO<sub>x</sub> emitting facility, who seeks an alternative compliance schedule under either of these sections, must 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<sub>x</sub> emitting facility. The same applies to an owner or operator of a major VOC emitting facility.

Subsection 129.100(a) (relating to compliance demonstration and recordkeeping requirements) is amended to add the word “RACT” in two places for clarity.

Changes were not made to §§ 129.97, 129.99 and 129.100 from proposed.

#### *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 in this section and are also 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 related to § 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 shares the EPA's concerns and incorporates 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 amendments 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 regulation is in the public interest. After the Department carefully considered the comments of IRRC and the EPA (as well as all other comments) and held discussions with EPA Region III, the Department amended the proposed rulemaking, as appropriate. The most significant EPA comments incorporated by IRRC are discussed in this section of the preamble.

### *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 §§ 129.63a(e) and 129.63a(f) of the proposed rulemaking, 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, however, 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 changes in this final-form rulemaking.

### *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 under § 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 amended 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 regulation. Upon consideration of the commentators' concerns, the Board revised the category name to "Aerospace Manufacturing and Rework Operations." This revision clarifies that non-coating applications conducted during aerospace manufacturing and rework operations are exempt from this rulemaking.

A commentator noted that the regulation should include a specific categorical exemption in § 129.63a(c) 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 regulation. The EPA 2006 ICS CTG, however, 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 amended. 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 regulation. Upon consideration of the commentators' concerns, the Board made no changes to 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 the regulation should include an alternative compliance option under § 129.63a(e) to allow facilities to propose alternative RACT conditions to the Department in accordance with the provisions of §§ 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 notes 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 regulation.

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 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 no changes were made from proposed to final.

The EPA commented that the Department must further justify the exceptions in § 129.63a(c)(2), because the exceptions are not following the EPA's recommendations in the 2006 ICS CTG. In response, the Board clarified § 129.63a(c)(2) by removing the term "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 U.S. Department of Defense, Federal Aviation Administration or other Federal government entity, are still required to meet RACT under the requirements of §§ 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 must 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 has previously advised other states to review Connecticut's industrial cleaning solvent standards regarding RACT for screen printing operations. The EPA has 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 (SGIA) 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 SGIA, 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 amend the exception in this final-form rulemaking.

### *Definitions*

The EPA expressed concern that the definition provided in § 129.63a(b) for "industrial cleaning solvent" is poorly worded and should be revised to be consistent with the 2006 ICS CTG. The EPA recommended that the Department consider the State of 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 the State of Georgia's definition as well as other States' definitions. As a result, the final-form definition is amended 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 to the regulation a description or definition for each of the cleaning activities that is listed under 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 change is made to streamline the compliance and enforcement of the activity “manufactured components cleaning” because the terms “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 2006 ICS CTG, p. C-8.

### *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 the regulation 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, changes are not made from proposed.

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 amended 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 under § 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 is not making the change to add §§ 129.52d and 129.52e to § 129.96(a). However, the Board notes that there is no 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 Pennsylvania’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 54744 (August 17, 2016). Therefore, existing sources under § 129.74 were not subject to §§ 129.96—129.100. As a result, the Board has amended § 129.96(a) to add § 129.74.

The EPA commented that the proposed changes under § 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 §§ 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 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 amended 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, Act 76 of 2012. 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 codified in Chapter 129 or Chapter 130 or qualify for an exemption under subsection (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 existing § 129.63. The remaining 60,000 Mg/yr (66,600 tpy) were from the other solvent cleaning activities that are the subject of

proposed § 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 x 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 grams of solvent per liter of solvent (g/l). 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 ( $[(900 \text{ g/l} - 50 \text{ g/l}) / 900 \text{ g/l}] \times 100 = 95\%$ ).

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 x 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 both 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 these parks and forests. Timber sales on State forest lands contribute to the \$5 billion-a-year timber industry. Hundreds of concessions throughout the park system help complete the park experience for both State and out-of-State visitors (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, the 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 Commonwealth's wood industry 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 within 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 within 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 revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99 and 129.100 are clarifying amendments only. These revisions will 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 revisions 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 Commonwealth residents and the economic benefits to the Commonwealth's agricultural, hardwoods and tourism industries 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 has 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, July 2011. Prorating that benefit to the 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, September 2015. Prorating that benefit to the 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 Commonwealth residents 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 Commonwealth residents 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 final-form rulemaking, 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 promulgation as final-form rulemaking, § 129.63a will apply to affected owners and operators irrespective of a modification to the Operating Permit.

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

New legal, accounting or consulting procedures would not be required to comply with this 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 revisions for §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99 and 129.100 are clarifying amendments only. These revisions 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 provides as one compliance option the use of compliant industrial cleaning solvent materials in proposed subsection (e)(1). 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 provides flexibility in compliance through the second option in subsection (e)(2) 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 revisions for §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99 and 129.100 are clarifying amendments only. These revisions would not change the pollution prevention impact of these sections.

#### *I. Sunset Review*

The Board is not establishing a sunset date for this regulation, since it is needed for the Department to carry out its statutory authority. The Department will continue to closely monitor this regulation for its 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 Chairpersons 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 the 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 \_\_\_\_\_, 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 \_\_\_\_\_, 2018, and approved the 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.

(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*