

Regulatory Analysis Form

(Completed by Promulgating Agency)

INDEPENDENT REGULATORY REVIEW COMMISSION

(All Comments submitted on this regulation will appear on IRRC's website)

(1) Agency:
Environmental Protection

(2) Agency Number:
Identification Number: 7-492

IRRC Number: 3173

(3) PA Code Cite: 25 Pa. Code Chapters 121 and 129

(4) Short Title: Control of VOC Emissions from Industrial Cleaning Solvents; General Provisions; Aerospace Manufacturing and Rework; and Additional RACT Requirements for Major Sources of NO_x and VOCs

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(6) Type of Rulemaking (check applicable box):

- Proposed Regulation
- Final Regulation
- Final Omitted Regulation

- Emergency Certification Regulation
- Certification by the Governor
- Certification by the Attorney General

(7) Briefly explain the regulation in clear and nontechnical language. (100 words or less)

This final-form rulemaking amends 25 Pa. Code Chapters 121 and 129 (relating to general provisions; and standards for sources) 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). Amendments are finalized for §§ 121.1 and 129.51 (relating to definitions; and general) to support the addition of § 129.63a.

Amendments are made to § 129.73 (relating to aerospace manufacturing and rework) to correct a numbering error in Table II (relating to allowable content of VOCs in aerospace coatings). Amendments are made to §§ 129.96, 129.97, 129.99, and 129.100 under the recently promulgated regulations 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. RACT 2 was promulgated at 46 Pa.B. 2036 (April 23, 2016).

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, from a cleaning unit operation or work production-related work area or from a part, product, tool, machinery, equipment, vessel, floor, or wall, except as specified in § 129.63a(c), which lists exceptions and exemptions. 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. The VOC emissions limitations, work practice requirements, compliance demonstration

requirements, and recordkeeping and reporting requirements apply to the owner and the 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. The VOC emissions limitations and the work practice requirements do not apply to the owner or operator of a subject facility 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, however, is required by § 129.63(h) to maintain monthly records to demonstrate that the subject VOC emissions are below 2.7 tons (2,455 kilograms) per 12-month rolling period.

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 rulemaking.

(8) State the statutory authority for the regulation. Include specific statutory citation.

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 Environmental Quality Board (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 (35 P.S. § 4005(a)(8)) also grants the Board the authority to adopt rules and regulations designed to implement the provisions of the CAA.

(9) Is the regulation mandated by any federal or state law or court order, or federal regulation? Are there any relevant state or federal court decisions? If yes, cite the specific law, case or regulation as well as any deadlines for action.

Federal mandates

Yes. State regulations to control VOC emissions from existing stationary sources of industrial cleaning solvents are required under Federal law. The state regulation will be reviewed and approved by the EPA as a revision to the Commonwealth's SIP. See 71 FR 58745, 58747 (October 5, 2006). 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 *State Implementation Plans; General Preamble for Proposed Rulemaking on Approval of Plan Revisions for Nonattainment Areas—Supplement (on Control Techniques Guidelines)*, 44 FR 53761 (September 17, 1979) and 71 FR 78747.

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)), final-form § 129.63a 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 (Industrial Cleaning Solvents (ICS) Control Techniques Guidelines (CTG) (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 Panel Coatings*, 71 FR 58745.

Section 101(a)(3) of the CAA (42 U.S.C.A. § 7401(a)(3)) provides that air pollution prevention (that is, the reduction or elimination, through any measures, of the amount of pollutants produced or created at the

source) and air pollution control at its source is the primary responsibility of States and local governments. Section 101(a)(4) of the CAA (42 U.S.C.A. § 7401(a)(4)) provides that Federal financial assistance and leadership is essential for the development of cooperative Federal, State, regional, and local programs to prevent and control air pollution.

Section 109(b) of the CAA (42 U.S.C.A. § 7409(b)) provides that the EPA Administrator must establish permissible ambient air limits, or National Ambient Air Quality Standards (NAAQS), for criteria air pollutants at levels that protect public health and welfare and the environment. The criteria air pollutants are commonly found throughout the United States and currently include six air pollutants: ground-level ozone, particle pollution (often referred to as particulate matter), carbon monoxide, sulfur dioxide, NO_x (with nitrogen dioxide (NO₂) as the indicator), and lead. These air pollutants, when present in sufficient concentration in the ambient air, can cause harm to public health and welfare as well as animal and plant health and welfare and to the environment.

The EPA calls these six principal air pollutants "criteria" air pollutants because it regulates them by developing human health-based or environmentally-based, or both, criteria (science-based guidelines) for setting permissible ambient air levels. The set of limits based on human health is called primary standards. The set of limits intended to prevent environmental and property damage is called secondary standards. Of the six criteria air pollutants, high concentrations of ground-level ozone and particle pollution are the most widespread health and welfare threats.

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 [State Implementation Plan or "SIP"] to enforce the NAAQS or a 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 "reasonably available control technology" or "RACT," for sources of emissions of NO_x and VOC. Section 182(b)(2) of the CAA (42 U.S.C.A. § 7511a(b)(2)) 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. CTG documents provide states with information about a VOC emission source category and recommendations of what the EPA considers to be RACT for the source category to attain and maintain the applicable ozone NAAQS. 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 source category for subject sources located within the State. 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. Control measures approved by the EPA as elements of the State's SIP are Federally-enforceable, ensuring the development of cooperative Federal, State, regional, and local programs to prevent and control air pollution.

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 (42 U.S.C.A. § 7511b(e)(3)(C)) 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 where 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. Under section 183(e) of the CAA, a National regulation for consumer or commercial products is limited to the measures applicable to manufacturers, processors, distributors, or importers of the solvents, materials, or products supplied to the consumer or industry.

Section 183(e) of the CAA does not authorize the EPA to issue regulations that would directly regulate end-users of these products. By contrast, CTGs are guidance documents that recommend RACT measures that States can adopt and apply to the end-users of products. This dichotomy (i.e., that the EPA cannot directly regulate end-users under section 183(e) of the CAA, but can address end-users through a CTG) created by Congress is relevant to the EPA's evaluation of the relative merits of promulgating a National regulation for a source category versus issuing a CTG. See 71 FR 58747. Control measures consistent with recommendations provided in a CTG and approved by the EPA as elements of a State's SIP are Federally-enforceable.

In 1995, the EPA listed industrial cleaning solvents on its section 183(e) list and, in 2006, the EPA issued a CTG for this product category. See 60 FR 15264, 15267 (March 23, 1995); 71 FR 58745; and *Control Techniques Guidelines for 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 website at: <https://www.epa.gov/stationary-sources-air-pollution/clean-air-act-guidelines-and-standards-solvent-use-and-surface>.

Section 184(a) of the CAA (42 U.S.C.A. § 7511c(a)) provides that the entire Commonwealth is included in the Ozone Transport Region (OTR) (www.otcair.org), which is also established under section 184 of the CAA. Section 184(b) of the CAA (42 U.S.C.A. § 7511c(b)) addresses provisions for the SIP of a state included in the OTR. Section 184(b)(1)(B) of the CAA requires that states in the 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 stationary sources of industrial cleaning solvents covered by the applicable CTG issued under the following notice: *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 Panel Coatings*, 71 FR 58745, 58747. In the 2006 notice of final determination and availability of final control techniques guidelines, the EPA determined that the recommendations of the 2006 ICS CTG would be substantially as effective as National regulations in reducing VOC emissions from the industrial cleaning solvents consumer and commercial products category in moderate ozone nonattainment areas. See 71 FR 58745, 58747.

The Department's Bureau of Air Quality (BAQ) 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. BAQ 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 VOC emission reduction measures included in final-form § 129.63a will achieve VOC emission reductions and lowered concentrations of ground-level ozone locally and will 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.

Deadlines for action– *Section 182(b)(2) of the CAA*

Section 182(b)(2) of the CAA (42 U.S.C.A. § 7511a(b)(2)) requires that a CTG issued by the EPA after November 15, 1990, include the date by which states subject to section 182(b) of the CAA must submit SIP revisions in response to the CTG. The EPA issued the 2006 ICS CTG on October 5, 2006. The EPA provided a 1-year period for the required SIP submittal, making SIP revisions for implementation of the 2006 ICS CTG recommendations due by October 5, 2007. See 71 FR 58745, 58748.

– *Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements*

The EPA published the notice of final rulemaking for the Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements on March 6, 2015 (80 FR 12264). The EPA stated that RACT SIP revisions for areas designated as nonattainment for the 2008 ozone NAAQS would be due no later than 24 months after the effective date of designation of an area as nonattainment for the 2008 ozone NAAQS. The EPA stated further that RACT measures for the 2008 ozone NAAQS must be implemented “as expeditiously as practicable, but no later than January 1 of the 5th year after the effective date of a nonattainment designation.” The nonattainment designations across the country for the 2008 ozone NAAQS were effective on July 20, 2012. Consequently, RACT measures for the 2008 8-hour ozone NAAQS must be implemented by January 1, 2017. While the implementation date for final-form § 129.63a will occur later than January 1, 2017, the Department will move forward as quickly as possible toward finalizing the final ICS VOC emission reduction measures and submitting the SIP revision to the EPA.

– *Complaint filed in the United States District Court for the Northern District of California*

On July 21, 2016, three environmental groups filed a complaint in the United States District Court for the Northern District of California (*Center for Biological Diversity et al. v. McCarthy*, N.D. Cal. No. 4:16-cv-04092) alleging that the EPA failed to make findings of a failure to submit under section 110(k)(1)(B) of the CAA and to publish notice of those findings in the Federal Register for specified nonattainment areas and specified SIP elements for the 2008 ozone NAAQS. The Commonwealth was listed in the lawsuit as failing to submit specified SIP revisions including the 2006 ICS CTG RACT elements.

On February 3, 2017, the EPA published a finding that the District of Columbia and 15 states, including the Commonwealth, failed to submit SIP revisions in a timely manner to satisfy certain requirements for the 2008 ozone NAAQS that apply to states in the OTR. See 82 FR 9158 (February 3, 2017). The finding related to the Commonwealth is based on its failure to submit certain required RACT SIP elements, including RACT for industrial cleaning solvents, by July 20, 2014. See 82 FR 9158, 9160. The effective date of the finding of failure to submit was March 6, 2017. The Commonwealth must submit the missing SIP elements to the EPA by 18 months from the effective date, or September 6, 2018. The timely submission of a SIP revision based on this final-form rulemaking, when promulgated, is necessary to avoid costs to the Commonwealth from potential sanctions imposed by the EPA under section 179 of the CAA (42 U.S.C.A. § 7509), including the costs of additional offsets for new or modified sources of emissions and costs related to the loss of Federal highway funding.

– *Potential consequences for missing the deadline*

Section 179 of the CAA (42 U.S.C.A. § 7509) provides that if the EPA Administrator finds that a state has failed to submit an acceptable implementation plan (i.e., “failure to submit” finding), sanctions will be imposed. Sanctions cannot be imposed until 18 months after the Administrator makes the “failure to submit” finding and sanctions cannot be imposed if a deficiency has been corrected within the 18-month period after the finding.

Section 179 of the CAA authorizes the EPA to use two types of sanctions: 1) imposing what are called “2:1 offsets” on new or modified sources of emissions; and 2) withholding of certain Federal highway funds. Under section 179 of the CAA and its implementing regulations, the Administrator first imposes 2:1 emission offset sanctions on the new or modified major stationary sources in the nonattainment area, and then, if the deficiency has not been corrected within 6 months, also applies Federal highway funding sanctions. See 40 CFR § 52.31 (relating to selection of sequence of mandatory sanctions for findings made pursuant to section 179 of the Clean Air Act). The EPA may reverse the order of sanctions under 40 CFR § 52.31(d)(6). The Commonwealth receives approximately \$1.6 billion in Federal transportation funding annually, which will be at risk if the Commonwealth does not implement RACT requirements for the control of VOC emissions from industrial cleaning solvents as quickly as possible to avoid sanctions.

While final-form § 129.63a was not promulgated by the CTG-specified deadline of January 1, 2017, the Department is moving the final-form rulemaking through the regulatory rulemaking process as quickly as possible to avoid the sanctions that will be imposed on the Commonwealth if DEP fails to submit the SIP revision to the EPA by September 6, 2018. See 82 FR 9158.

The final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100 are clarifying amendments only. These revisions are not mandated by any Federal law or state law or court order, or Federal regulation and are not subject to any deadline.

(10) State why the regulation is needed. Explain the compelling public interest that justifies the regulation. Describe who will benefit from the regulation. Quantify the benefits as completely as possible and approximate the number of people who will benefit.

The final-form rulemaking implements control measures and other requirements in § 129.63a to reduce VOC emissions from the use and application of industrial cleaning solvents by 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 or work production-related work area that is not regulated elsewhere in Chapters 129 and 130. The VOC emission control measures and other requirements in § 129.63a are generally consistent with the recommendations in the EPA’s 2006 ICS CTG and will reduce VOC emissions from the industrial cleaning solvents source category throughout this Commonwealth at those affected sources that do not already comply with the final-form control measures.

The final-form 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 provide additional VOC emission reduction benefits beyond what these regulations already achieve.

Emissions of VOCs are precursors to the formation of ground-level ozone, a criteria air pollutant. Ground-level ozone is not emitted directly to the atmosphere by the use and application of industrial cleaning solvents, but forms from the photochemical reaction between emissions of VOCs and NO_x in the presence of sunlight. The EPA regulates ground-level ozone as a criteria air pollutant because of its widespread

adverse health and environmental effects. 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, agricultural crop loss, visible foliar injury to sensitive plant species, and damage to forests, ecosystems, and infrastructure.

Adoption of the VOC emission control measures and other requirements in final-form § 129.63a will allow the Commonwealth to make substantial progress in achieving and maintaining the 1997 and 2008 8-hour ozone NAAQS statewide; implementation of and compliance with the final-form VOC emission reduction measures will also assist the Commonwealth in reducing the levels of ozone precursor emissions that contribute to potential nonattainment of the 2015 ozone NAAQS. The VOC emission control measures in final-form § 129.63a are reasonably necessary to attain and maintain the health-based and welfare-based 1997 and 2008 8-hour ozone NAAQS in this Commonwealth and to satisfy related CAA requirements.

The Department estimates that implementation of the control measures in final-form § 129.63a could generate VOC emission reductions of as much as 12,499 tons per year (tpy); these reductions will benefit the health and welfare of the approximately 12.77 million residents and the numerous animals, crops, vegetation, and natural areas of this Commonwealth by reducing the amount of ground-level ozone air pollution created by this industry sector. Ground-level ozone air pollution can also be transported downwind via regional air currents and meteorological events. Reductions of ground-level ozone in this Commonwealth will therefore also benefit the residents of downwind states and downwind environments.

Ozone NAAQS; Implementation of permanent and enforceable control measures for attainment and maintenance

The EPA promulgated the ground-level ozone NAAQS in July 1997 at 0.08 part per million (ppm) averaged over 8 hours. See 62 FR 38855 (July 18, 1997). Because ozone ambient air monitoring data is measured out to three decimal places, the standard effectively became 0.084 ppm because of rounding; areas with ozone levels as high as 0.084 ppm (84 parts per billion (ppb)) were considered as meeting the 0.08 ppm standard. 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 the Commonwealth are attaining the 1997 8-hour ozone NAAQS. Maintenance plans have been submitted to the EPA and approved for the 1997 ozone standard. Section 175A(a) of the CAA (42 U.S.C.A. § 7505a(a)) prescribes that the maintenance plans include permanent and enforceable control measures that will provide for the maintenance of the 1997 ozone NAAQS for at least 10 years following the EPA's redesignation of the areas to attainment of the 1997 ozone standard. Implementation of the final-form VOC emission control measures for the use and application of industrial cleaning solvents will allow the Commonwealth to continue to attain and maintain the 1997 ozone NAAQS.

In March 2008, the EPA lowered the 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 0.070 ppm (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. DEP 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 designation of nonattainment areas for the 2015 ozone NAAQS, the Department must ensure that the 2015 ozone NAAQS is attained and maintained by implementing permanent and Federally-enforceable control measures as necessary and appropriate. Implementation of and compliance with the final VOC emission reduction measures in § 129.63a will assist the Commonwealth in reducing the levels of ozone precursor emissions that contribute to potential nonattainment of the 2015 ozone NAAQS.

Monetized public health benefits of attaining the 2008 and 2015 ozone NAAQS

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 of 0.075 ppm range from \$8.3 billion to \$18 billion on a National basis by 2020.¹ 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 of 0.070 ppm range from \$1.5 billion to \$4.5 billion on a National basis by 2025.² Prorating that benefit to the Commonwealth, based on population, results in a public health benefit of \$63 million to \$189 million. The EPA estimates are indicative of the benefits to Commonwealth residents of attaining 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.

Adverse health and welfare effects of ground-level ozone on humans, animals, and the environment

¹ *Regulatory Impact Analysis, Final National Ambient Air Quality Standard for Ozone*, July 2011, <http://www.nrc.gov/docs/ML1224/ML12240A237.pdf>.

² *Regulatory Impact Analysis of the Final Revisions to the National Ambient Air Quality Standards for Ground-Level Ozone*, September 2015, https://www3.epa.gov/ttnecas1/docs/ria/naaqs-o3_ria_final_2015-09.pdf.

Exposure to high levels of ground-level ozone air pollution correlates to increased respiratory disease and higher mortality rates. Ozone can inflame and damage the lining of the lungs. Within a few days, the damaged cells are shed and replaced. Over time, lung tissue may become permanently scarred, resulting in permanent loss of lung function and a lower quality of life. When ambient ozone levels are high, more people with asthma have attacks that require a doctor's attention or use of medication. Ozone also makes people more sensitive to allergens including pet dander, pollen, and dust mites, all of which can trigger asthma attacks. The EPA has concluded that there is an association between high levels of ambient ozone and increased hospital admissions for respiratory ailments including asthma. 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 ozone while engaged in activities that involve physical exertion. High levels of ground-level ozone also 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 ground-level ozone affects vegetation and ecosystems, leading to reductions in agricultural crop and commercial forest yields by destroying chlorophyll; reducing the size and quality of seeds; reducing growth and survivability of tree seedlings; and increasing 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. 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.

Adverse effects of ground-level ozone on the Commonwealth's economy

Ground-level ozone also impacts Pennsylvania's farm crops, fruit industries, forests, parks, and timber. The economic value of some welfare losses due to high concentrations of ground-level ozone can be calculated, such as crop yield loss from both reduced growth and smaller, lower-quality seeds and tubers with less oil or protein. If ozone episodes last a few days, visible injury to some leaf crops, including lettuce, spinach, and tobacco, as well as visible injury to the leaves of ornamental plants, including grass, flowers, and shrubs, can appear. This injury can be seen as small pale yellow or brown blotches, below which the cells have died. Other types of welfare loss may not be quantifiable, such as the reduced aesthetic value of trees growing in heavily visited parks.

Information about the economic benefit of the Pennsylvania agricultural industry to the Commonwealth is provided by the Pennsylvania Department of Agriculture. Pennsylvania'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, Pennsylvania farmers and agribusinesses are the leading economic driver in our state. 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 Pennsylvania's economy and nearly 500,000 jobs.³ These families, farms, and related businesses benefit directly from the reduction of ground-level ozone air pollution concentrations to attain and maintain the ozone NAAQS.

³ Pennsylvania Department of Agriculture, 2016, About PDA, <http://www.agriculture.pa.gov/Pages/About-PDA.aspx> and Fast Facts on Agriculture and Food Careers in Pennsylvania, December 10, 2015,

The Pennsylvania Department of Conservation and Natural Resources (DCNR) is the steward of the state-owned forests and parks. DCNR awards millions of dollars in construction contracts each year to build and maintain the facilities in its parks and forests. Hundreds of concessions throughout the park system help complete the park experience for both state and out-of-state visitors. Pennsylvania's 2.2 million-acre state forest system, found in 48 of Pennsylvania's 67 counties, comprises 13% of the forested area in the Commonwealth.⁴ The state forest represents one of the largest expanses of public forestland in the eastern United States, making it a truly priceless public asset. The state forest provides an abundance of high quality forest products, which help to support a forest products industry with sales in excess of \$11.5 billion annually, a total economic impact of \$19 billion annually, and that employs in excess of 58,000 people.⁵

Information about Pennsylvania's hardwoods industry is provided by the Pennsylvania Department of Agriculture in its 2009-2010 biennial Hardwoods Development Council report. The following information and references are found in that report. Pennsylvania 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, Pennsylvania also leads in the export of hardwood lumber, exporting nearly \$800 million annually in lumber, logs, furniture, and paper products to more than 70 countries around the world. Recent U.S. Forest Service data shows that the state's forest growth-to-harvest rate is better than 2 to 1. This vast renewable resource puts the hardwoods industry at the forefront of manufacturing in the Commonwealth. Through 2006, the total annual direct economic impact generated by Pennsylvania'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. (Strauss, Lord, Powell; PSU, June 2007).⁶

(11) Are there any provisions that are more stringent than federal standards? If yes, identify the specific provisions and the compelling Pennsylvania interest that demands stronger regulations.

There are no Federal statutory or regulatory RACT limits for VOC emissions from the use and application of industrial cleaning solvents. Final-form § 129.63a is designed to adopt VOC emission limitations and control measures for the use and application of industrial cleaning solvents that are generally consistent with the standards and recommendations in the 2006 ICS CTG to meet the requirements of sections 172(c)(1), 182(b)(2) and 184(b)(1)(B) of the CAA. Section 129.63a applies the control measures across this entire Commonwealth, as required by section 184(b)(1)(B) of the CAA. The VOC emission limitations and other requirements included in § 129.63a are not more stringent than the recommendations included in the 2006 ICS CTG upon which § 129.63a is based.

The final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100 are clarifying amendments only. The emission control limitations, emission reduction measures, and other requirements in these sections are not amended in this final-form rulemaking.

[http://www.agriculture.pa.gov/Encourage/Documents/Fast%20Facts%20on%20Agriculture%20and%20Food%20Careers%20in%20Pennsylvania%20\(revised\).pdf](http://www.agriculture.pa.gov/Encourage/Documents/Fast%20Facts%20on%20Agriculture%20and%20Food%20Careers%20in%20Pennsylvania%20(revised).pdf).

⁴ Pennsylvania Department of Conservation and Natural Resources, 2016, DCNR Bureau of Forestry, Our Mission and What We Do, http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_010470.pdf.

⁵ Pennsylvania Department of Conservation and Natural Resources, Bureau of Forestry, 2016 State Forest Resource Management Plan, page 20.

<http://www.dcnr.state.pa.us/forestry/stateforestmanagement/sfrmp/2016sfrmp/index.htm>

⁶ Pennsylvania Hardwoods Development Council Biennial Report, 2009-2010.) A copy of this document is available from the Bureau of Air Quality upon request.

(12) How does this regulation compare with those of the other states? How will this affect Pennsylvania's ability to compete with other states?

The VOC emission reduction measures and other requirements in final-form § 129.63a are similar to the measures and requirements in regulations already adopted by Delaware, Maryland, and New Hampshire, which are members of the OTR, as is Pennsylvania. These final measures and requirements are also similar in many respects to the regulations adopted by Indiana, Missouri, and Ohio. The measures and requirements in § 129.63a will have little or no effect on Pennsylvania's ability to compete with other states that have industrial cleaning solvent operations.

The final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100 are clarifying amendments only. These revisions do not impact Pennsylvania's ability to compete with other states that have similar regulations.

(13) Will the regulation affect any other regulations of the promulgating agency or other state agencies? If yes, explain and provide specific citations.

No.

(14) Describe the communications with and solicitation of input from the public, any advisory council/group, small businesses and groups representing small businesses in the development and drafting of the regulation. List the specific persons and/or groups who were involved. ("Small business" is defined in Section 3 of the Regulatory Review Act, 71 P. S. § 745.3.)

The Board approved publication of the proposed rulemaking at its meeting of 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. The Independent Regulatory Review Commission (IRRC) separately provided comments on the proposed rulemaking. The comments received on the proposed rulemaking are summarized in the Preamble to this rulemaking and are also addressed in a separate Comment and Response Document that accompanies this rulemaking. All comments on the rulemaking were considered and addressed.

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.

The Department briefed the Air Quality Technical Advisory Committee (AQTAC) on this final-form rulemaking and on the comments received on the proposed rulemaking at the February 8, 2018, AQTAC meeting. 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.

(15) Identify the types and number of persons, businesses, small businesses (as defined in Section 3 of the Regulatory Review Act, Act 76 of 2012) and organizations which will be affected by the regulation. How are they affected?

Summary

The Department expects a maximum of about 576 facility owners and operators across the Commonwealth will potentially be subject to final-form § 129.63a. Of the 576 facility owners and operators, as many as 253 facility owners and operators 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 § 129.63a, depending on whether the VOC emissions are from a cleaning unit operation subject to an existing regulation elsewhere in Chapter 129 or Chapter 130, as well as depending on the accuracy of the self-reporting of facility owners and operators into the industry classification system used in North America.

The Department estimates that the annual financial impact on potentially affected Pennsylvania 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 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. 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).

Other potentially affected persons and businesses could include manufacturers, distributors, and sellers of complying and noncomplying industrial cleaning solvents due to restrictions on the VOC content of the materials, as well as the manufacturers, distributors, and sellers of VOC emission capture systems and add-on air pollution control devices. Estimating the numbers of these potentially affected persons and businesses is not feasible since this population includes entities outside of this Commonwealth for which the Department does not have records or data.

Types of persons, businesses, small businesses, and organizations that would be affected and how they are affected

The types of persons, businesses, small businesses, and organizations in this Commonwealth that will be affected by § 129.63a varies. The EPA's 2006 ICS CTG states that the recommendations apply to industries that 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.⁷

The EPA listed 469 North American Industry Classification System (NAICS) codes for identifying businesses potentially covered by the recommendations of the 2006 ICS CTG. The complete list is found in Appendix C, *Summary of NAICS Codes for nonattainment facilities estimated to meet the applicability criteria recommended in this CTG*, of the EPA's 2006 ICS CTG. The NAICS is an industry classification system developed by Canada, Mexico, and the United States that groups establishments into industry groups based on the economic activities, producing and nonproducing, in which the establishment is primarily engaged. The NAICS is a two-digit through six-digit hierarchical classification code system, offering five levels of detail. Each digit in the code is part of a series of progressively narrower categories, and more digits in the code signify greater classification detail. The first two digits designate the economic sector. The third digit designates the subsector. The fourth digit designates the industry group. The fifth digit designates the NAICS industry, and the sixth digit designates the National industry. A complete and valid NAICS code contains six digits. See <http://www.naics.com/frequently-asked-questions/>, "Why are some NAICS codes only 5-digits long?" More information about the United States portion of the NAICS is available at: <http://www.census.gov/eos/www/naics/>

Final-form § 129.63a applies to the owner and operator of a facility that uses or applies an industrial cleaning solvent to remove a contaminant, including an adhesive, ink, paint, dirt, soil, oil, or grease, from a cleaning unit operation or work production-related area or from a part, product, tool, machinery, equipment, vessel, floor, or wall. For purposes of § 129.63a, 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 include VOC emissions from cleaning activities related to spray gun cleaning, spray booth cleaning, manufactured components cleaning, parts cleaning, equipment cleaning, line cleaning, floor cleaning, and tank cleaning. Cleaning unit operations do not include VOC emissions from the use 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 work production-related work area.

The VOC emission limitations of § 129.63a(e) do not apply to the owner and operator of a cleaning unit operation associated with certain categories specified under exceptions and exemptions in subsection (c). The VOC emission limitations do not apply to the owner and operator of a cleaning unit operation that uses an industrial cleaning solvent subject to a standard or specification required by the United States Department of Defense, Federal Aviation Administration, or other Federal government entity, or that uses an industrial cleaning solvent associated with the cleaning of screen printing equipment if the industrial cleaning solvent has an as applied VOC content that does not exceed 4.2 pounds VOC per gallon solvent (lb VOC/gal solvent) (500 grams VOC per liter solvent (g VOC/l solvent)). These owners and operators are subject to the work practice requirements for industrial cleaning solvents, used shop towels, and waste materials and to the specified recordkeeping and reporting requirements of § 129.63a(f) and (h).

Subsection 129.63a(e) establishes VOC emission limitations for the use or application of an industrial cleaning solvent in a subject cleaning unit operation for the owner and operator of a facility at which the

⁷ *Control Techniques Guidelines: Industrial Cleaning Solvents*, EPA 453/R-06-001, Office of Air Quality Planning and Standards, EPA, September 2006, page 5.

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. Subsection 129.63a(e) establishes a presumptive VOC content limit of less than or equal to 0.42 lb VOC/gal solvent (50 g VOC/l solvent) of industrial cleaning solvent as applied, as well as an alternative presumptive VOC composite vapor pressure limit of less than or equal to 8 millimeters of Mercury (mmHg) at 68°F (20°C) of industrial cleaning solvent as applied. The alternative presumptive limit for VOC composite vapor pressure ensures that many of the industrial cleaning solvents most commonly used for affected cleaning activities, like mineral spirits, Stoddard solvent, and medium to heavier weight petroleum naphtha, comply with the emissions limitations in § 129.63a.

An affected owner or operator may also choose to comply through the installation and use of a VOC emissions capture system and add-on air pollution control device. The overall emission reduction of the VOC emissions capture system and add-on air pollution control device, as determined by the specified test methods and procedures, 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.

Subsection 129.63a(f) establishes work practice standards for the use, storage, and disposal of industrial cleaning solvents, used shop towels, and waste materials by the owner and operator of a subject facility at which the total combined actual VOC emissions from all 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.

Subsection 129.63a(h) establishes monthly recordkeeping requirements for the owner and operator of a subject facility, regardless of the total amount of combined actual VOC emissions from all cleaning unit operations at the facility. 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 (MSDS) that most facility owners and operators already keep for other purposes.

The numbers of persons, businesses, small businesses, and organizations that may be affected

– *The EPA's estimate of affected Pennsylvania facility owners and operators, based on the 2002 National emissions inventory*

The EPA estimated that as many as 166 Pennsylvania facility owners and operators would be subject to the recommended control measures provided in the 2006 ICS CTG. See 2006 ICS CTG, Appendix D, *Number of nonattainment facilities organized by State that are estimated to meet the applicability criteria recommended in the CTG*. The EPA number of potentially affected facility owners and operators is based on data from the 2002 EPA National Emissions Inventory (NEI).

– *Small Business Development Center's Environmental Management Assistance Program*

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 of VOC emissions per 12-month rolling period, before consideration of controls, for implementation of the VOC emissions 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 SBDC EMAP provided the Department with a list of potentially affected businesses in this Commonwealth using the 469 NAICS codes included in the EPA's 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 EPA list of NAICS codes may be subject to other regulations codified in Chapter 129 or Chapter 130 and therefore not subject to § 129.63a. The Department has found that NAICS classifications tend to be broad in scope and lists of potentially affected facility owners and operators generated by NAICS codes may include facility owners and operators that are not engaged in the specific activities covered under this final-form rulemaking. Further, it is important to note that a business owner or operator selects and self-reports the NAICS code of its 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.

Upon further research on how to meaningfully analyze the list of 144,222 potentially affected facility owners and operators identified by the SBDC EMAP through the NAICS codes, the Department reviewed an analysis prepared in 2010 by E.H. Pechan & Associates, Inc. (Pechan) for the State of Texas Commission on Environmental Quality (TCEQ). The analysis was used by the TCEQ to assess the impact of its proposed industrial cleaning solvents rulemaking, finalized December 29, 2011, on the Texas business community. The survey data and statistical analysis generated by Pechan appeared to provide a better representation of the potentially affected industry and the impact of the Texas industrial cleaning solvents rulemaking than the general guidance provided in the 2006 ICS CTG. The Department applied a process similar to the one used by Pechan for the TCEQ analysis to estimate the number of Pennsylvania businesses potentially impacted by § 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 being potentially 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 the Pechan analysis, it was further determined that only about 1.26% of identified facilities in Texas would likely be subject to the Texas industrial cleaning solvents rulemaking. Applying the same percentage to the Commonwealth's 'universe' of 45,718 identified by the SBDC EMAP, the Department 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.

– *Department databases*

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 databases that share data and interface with each other. The eFACTS database contains facility-specific information, including the NAICS code, for permitted facilities and 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 quality emission inventory. The AIMS and eFACTS 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 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.

A search of the AIMS and eFACTS databases 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% x 3,154) of these permitted facility owners and operators will be subject to the requirements of final-form § 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 x 44%) facility owners and operators identified from the Department’s databases may be small businesses.

Financial impact on affected facility owners and operators and on small businesses

The Department expects the impact of the requirements of final-form § 129.63a on affected owners and operators, including small businesses, will be minimal. The owner and operator of a facility that is subject to § 129.63a will likely incur a cost benefit or incur little, if any, cost to implement the requirements of § 129.63a. VOC compliant solvents are readily available, and industrial cleaning solvents such as Stoddard solvent, mineral spirits, and most other common solvents provided by suppliers have vapor pressures well below the 8 mmHg at 68°F (20°C) limit specified in § 129.63a(e). The owners and operators of potentially affected facilities such as automobile repair garages and metal parts manufacturing facilities using these materials will likely not have to make any changes to their industrial cleaning solvents.

The EPA based the costs of complying with the recommended control measures on the costs of operating a parts cleaner using industrial cleaning solvents. The Department regulates the VOC emissions from parts cleaners under existing § 129.63 (relating to degreasing operations), but the types of industrial cleaning solvents used in parts cleaners and in other solvent cleaning activities are the same. The EPA estimated in the 2006 ICS CTG that the annual costs for operating a mineral spirits parts cleaner were about \$1,453. The costs of switching to aqueous parts cleaners would range from \$1,171 to \$1,480. The owners and operators of affected facilities could incur an annual increase of as much as 1.8% in cleaning costs ($\$1,480 - \$1,453 / \$1,453 = 1.8\%$) or realize an annual cost savings of as much as 19% ($\$1,453 - \$1,171 / \$1,453 = 19\%$) as a result of switching to aqueous parts cleaning solvents.

Pechan’s cost analysis for the Texas proposed rulemaking updated the savings cited in the EPA’s 2006 ICS CTG through the use of updated cost factors. The 2010 Pechan report for Texas estimated that small businesses in Texas would save an average of \$2,760 annually from adoption of the 2006 ICS CTG recommendations. Based upon Pechan’s estimated cost savings for Texas and upon the EPA’s estimated overall cost savings in the 2006 ICS CTG, it is likely that Pennsylvania businesses will see similar cost savings as a result of implementing § 129.63a because low-VOC content industrial cleaning solvent materials are readily available at a cost that is equal to or lower than the high-VOC content industrial cleaning solvent materials they replace as a result of similar requirements already in effect in neighboring states.

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, the Department calculated that the annual financial impact on potentially affected Pennsylvania 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. Please see the response to Question 19 for more detail on the potential costs and savings.

Incorporation of applicable requirements into existing operating permits

The VOC emission limitations and other requirements established by § 129.63a will not require the submission of plan approval applications or applications for permit modifications for amendments to existing operating permits. These requirements will be incorporated as applicable requirements in the operating permit 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, the requirements will apply to affected owners and operators irrespective of a modification to the Operating Permit.

No new legal, accounting or consulting procedures are contained in this final-form rulemaking.

Effects of the final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100

The final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100 are clarifying amendments only. These revisions do not change the types or numbers of persons, businesses, small businesses, or organizations affected by these regulations or the financial impact of these regulations on affected facility owners and operators or small businesses.

(16) List the persons, groups or entities, including small businesses, which will be required to comply with the regulation. Approximate the number that will be required to comply.

The Department estimates that as many as 576 facility owners and operators across this Commonwealth could be affected by the final-form measures for control of VOC emissions from industrial cleaning solvents. About 253 of these potentially subject facility owners and operators may meet the definition of small business (as defined in Section 3 of the Regulatory Review Act (71 P. S. § 745.3)). The measures in final-form § 129.63a could affect the owners and operators of facilities involved in food manufacturing, wood and wood product manufacturing, fabricating metals, manufacturing and assembling industrial machinery and transportation equipment, fiber and fabric manufacturing, and other industries, if the potentially subject owners and operators are not already in compliance with the applicable requirements in § 129.63a.

It is possible that final-form § 129.63a will also apply to the owners and operators of industrial cleaning solvent operations at facilities that have not yet been identified. Please see the response to Question 15 for discussion of how the Department estimated the number of potentially subject facility owners and operators.

The final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100 are clarifying amendments only. These revisions do not change the types or numbers of persons, businesses, small businesses, or organizations required to comply with these regulations.

(17) Identify the financial, economic and social impact of the regulation on individuals, small businesses, businesses and labor communities and other public and private organizations. Evaluate the benefits expected as a result of the regulation.

Summary

The Department expects that the financial impact on individuals, small businesses, businesses, and labor communities will be minimal. The owner and operator of a facility that will be subject to the final-form measures for control of VOC emissions from industrial cleaning solvents will likely incur little, if any, cost to implement the requirements of § 129.63a. Industrial cleaning solvents such as Stoddard solvent, mineral spirits, and most other common solvents provided by suppliers have vapor pressures well below the 8 mmHg at 68°F (20°C) limit specified in final-form § 129.63a. The owners and operators of potentially affected facilities such as automobile repair garages and metal parts manufacturing facilities using these common industrial cleaning solvent materials will likely not have to make any changes to their cleaning materials. The estimated average amount of potential VOC emission reductions per affected owner and operator could be approximately 22 tpy per affected facility with an annual financial impact ranging 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 Department 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 equal to or lower than the high-VOC content industrial cleaning solvent materials they replace as a result of similar requirements already in effect in neighboring states.

Estimated amount of potential VOC emission reductions

Appendix D of the EPA's 2006 ICS CTG lists the estimated number of nonattainment facilities identified by the EPA in each state that were expected to meet the applicability criteria recommended in the 2006 ICS CTG. The table in Appendix D also included the EPA's estimate of the baseline total emissions of VOC from industrial cleaning solvent use at these facilities.⁸ The EPA estimated that there were 166 facilities in Pennsylvania that could potentially be affected by the recommended CTG control measures, with baseline total emissions of VOC of 3,660 megagrams per year (Mg/yr). The 3,660 Mg/yr converts to 4,034 tpy.

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 ($[(900 \text{ g/l} - 50 \text{ g/l}) / 900 \text{ g/l}] \times 100 = 95\%$).

Using data from the 2002 NEI database, the EPA provides in the 2006 ICS CTG that of the total VOC emissions nationally from solvent cleaning operations (64,000 Mg/yr; 71,000 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 industrial solvent cleaning activities that are the subject of final-

⁸ *Control Techniques Guidelines: Industrial Cleaning Solvents*; EPA 453/R-06-001 September 2006; Appendix D, Number of nonattainment facilities organized by State that are estimated to meet the applicability criteria recommended in the CTG.

form § 129.63a. Therefore, of the total VOC emissions from industrial cleaning 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 the 166 facilities in Pennsylvania had baseline total emissions of VOC of 3,660 Mg/yr (4,034 tpy). Prorating this amount of emissions to the Department'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) from the group of 576 affected facility owners and operators estimated by the Department using the SBDC EMAP data 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 industrial cleaning solvent cleaning activities addressed by final-form § 129.63a.

The Department estimated the maximum amount of potential VOC emission reductions that may be generated by implementing the control measures in final-form § 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.

Estimated potential financial impact on affected owners and operators

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, the Department calculated that the annual financial impact on potentially affected Pennsylvania 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. Please see the responses to Questions 18 and 19 for additional detail.

Social impact and benefits

The VOC emission control measures in final-form § 129.63a will help ensure that the owners and operators of regulated facilities, farms and agricultural enterprises, hardwoods and timber industries and tourism-related businesses, and employees, residents of labor communities, citizens and the environment of this Commonwealth experience the benefits of improved health and welfare resulting from the implementation of the VOC emission reduction measures to attain and maintain the ozone NAAQS in this Commonwealth. Although final-form § 129.63a is designed primarily to address ground-level ozone air quality, the substitution of no-VOC or low-VOC content cleaning materials for materials with noncomplying VOC contents to meet the VOC content limits applicable to users may also result in other health and environmental benefits. The reduced levels of high-VOC content industrial cleaning solvents will benefit groundwater quality through reduced loading on water treatment plants and in reduced quantities of high-VOC content industrial cleaning solvents leaching into the ground and streams and rivers. The improvements in ground-level ozone air quality and groundwater quality through reduced emissions of VOCs from industrial cleaning solvent operations will provide economic and social benefits through reduced need for medical treatment for asthma and lung-related illnesses and reduced costs for repairing damage to infrastructure, as well as through improved crop yields, healthier forests and wildlife, and increased tourism to see the beautiful natural areas of the Commonwealth.

Economic opportunities

The final-form measures for the control of VOC emissions from industrial cleaning solvents may create economic opportunities for industrial cleaning solvent material and VOC emission control technology innovators, manufacturers, and distributors through an increased demand for new or improved industrial cleaning solvent material products and control technology. In addition, the owners and operators of regulated facilities that choose to comply by using a VOC emissions capture system and add-on air pollution control device may be required to install and operate an emissions monitoring system or equipment necessary for an emissions monitoring method to demonstrate compliance with the final-form emissions limitations, thereby creating an economic opportunity for the emissions monitoring industry.

Effects of the final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100

The final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100 are clarifying amendments only. These revisions do not change the financial, economic, amount of emission reductions, or social impact of these regulations on affected persons, businesses, small businesses, labor communities, or private or public organizations. The benefit of these final-form revisions is improved clarity.

(18) Explain how the benefits of the regulation outweigh any cost and adverse effects.

In addition to the health, environmental, and economic benefits anticipated from implementing the control measures in final-form § 129.63a, § 129.63a is expected to result in an overall cost savings to the regulated community. In the 2006 ICS CTG, the EPA estimates that facilities could face a slight annual increase of about 1.8% in cleaning costs or realize an annual cost savings of about 19% as a result of switching to aqueous parts cleaning. Pechan's cost analysis for the Texas proposed rulemaking updated the savings cited in the 2006 ICS CTG through the use of updated cost factors. The 2010 Pechan report for Texas estimates that small businesses in Texas will save an average of \$2,760 annually from adoption of the 2006 ICS CTG recommendations. Please see the response to Question 15 for further explanation.

As discussed in the response to Question 10, 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 the Commonwealth, are considerable in comparison to the costs that will be incurred by the owners and operators of potentially subject facilities to comply with the control measures in final-form § 129.63a. The EPA has estimated the monetized health benefits of attaining the 2008 and 2015 8-hour ozone NAAQS. The EPA estimated that the monetized health benefits of attaining the 2008 8-hour ozone NAAQS of 0.075 ppm range from \$8.3 billion to \$18 billion on a National basis by 2020.⁹ 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 of 0.070 ppm range from \$1.5 billion to \$4.5 billion on a National basis by 2025.¹⁰ Prorating that benefit to the Commonwealth, based on population, results in a public health benefit of \$63 million to \$189 million. The EPA estimates are indicative of the benefits to Commonwealth residents of attaining the 2008 and 2015 8-hour ozone

⁹ *Regulatory Impact Analysis, Final National Ambient Air Quality Standard for Ozone*, July 2011, <http://www.nrc.gov/docs/ML1224/ML12240A237.pdf>.

¹⁰ *Regulatory Impact Analysis of the Final Revisions to the National Ambient Air Quality Standards for Ground-Level Ozone*, September 2015, https://www3.epa.gov/ttnecas1/docs/ria/naaqs-o3_ria_final_2015-09.pdf.

NAAQS through the implementation of various 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 as low as \$15,552 to total annual savings of \$162,432. The worst-case scenario of \$15,552 annual costs 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 Department further calculated that the annual financial impact on potentially affected Pennsylvania 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.

The Department expects that negative impacts on individuals, small businesses, businesses, and labor communities will be minimal to none. In fact, 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 in final-form § 129.63a. Industrial cleaning solvents such as Stoddard solvent, mineral spirits, and most other common solvents provided by suppliers have vapor pressures well below the 8 mmHg at 68°F (20°C) limit specified in final-form § 129.63a(e). The owners and operators of potentially affected facilities such as automobile repair garages and metal parts manufacturing facilities, as well as other affected manufacturing facilities already using these materials will likely not need to make any changes to their industrial cleaning solvent materials. The Department 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.

Effects of the final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100

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

(19) Provide a specific estimate of the costs and/or savings to the **regulated community** associated with compliance, including any legal, accounting or consulting procedures which may be required. Explain how the dollar estimates were derived.

The EPA estimates in the 2006 ICS CTG that the owner and operator of an affected facility could face a slight annual increase of as much as 1.8% in cleaning costs or realize an annual cost savings of as much as 19% as a result of switching to aqueous parts cleaning solvents. Pechan's cost analysis for the Texas proposed rulemaking updated the savings cited in the 2006 ICS CTG through the use of updated cost factors. The 2010 Pechan report for Texas estimates that small businesses in Texas would save an average of \$2,760 annually from adoption of the 2006 ICS CTG recommendations. The Department 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 equal to or lower than the high-VOC content industrial cleaning solvent materials they replace as a result of similar requirements already in effect in neighboring states. Please see the response to Question 15 for further explanation.

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, 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 Department calculated this estimate as follows:

576 facilities x \$1,453 = \$836,928 baseline costs
 576 facilities x \$1,171 = \$674,496 lower cost solvent replacement
 \$836,928 – \$674,496 = \$162,432 total cost savings

576 facilities x \$1,453 = \$836,928 baseline costs
 576 facilities x \$1,480 = \$852,480 higher cost solvent replacement
 \$852,480 – \$836,928 = \$15,552 total costs

The Department further calculated that the annual financial impact on potentially affected Pennsylvania 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.

$\$162,432 / 576 \text{ affected facilities} = \$282 \text{ savings per affected facility owner and operator}$

$\$15,552 / 576 \text{ affected facilities} = \$27 \text{ cost increase per affected facility owner and operator}$

The cost effectiveness could range from a savings of approximately \$12.99 per ton of VOC emissions reduced per year ($\$162,432 \text{ total savings} / 12,499 \text{ tons of total VOC emissions reduced per year}$) to a cost of approximately \$1.24 per ton of VOC emissions reduced per year ($\$15,552 \text{ costs} / 12,499$).

The Department anticipates that the impact of final-form § 129.63a on the regulated community will be to generate overall cost savings of as much as \$162,432 per year or an average of approximately \$282 savings per affected facility owner and operator, including small businesses. The savings could be greater, considering the updated cost savings cited in the 2010 Pechan Texas report of \$2,760 per affected small business. If there are increased costs, the Department estimates that the increase will likely not be more than \$15,552 per year and the corresponding impact on an individual affected facility owner and operator will be minimal, with an estimated average impact of \$27 per affected facility owner and operator, including small businesses. Industrial cleaning solvents such as Stoddard solvent, mineral spirits, and most other common solvents provided by suppliers have vapor pressures well below the 8 mmHg at 68°F (20°C) limit specified in final-form § 129.63a(e). The owners and operators of potentially affected facilities such as automobile repair garages, metal parts manufacturing facilities, and other affected manufacturing facilities using these materials will not likely have to make any changes to their industrial cleaning solvent materials.

If an owner or operator of a facility were to elect to comply by installing and operating a VOC emissions capture system and add-on air pollution control device, the owner or operator will likely experience increased costs. It is unlikely, however, that an owner or operator would choose this option, given the wide availability of low cost compliant VOC content industrial cleaning solvent materials.

No new legal, accounting or consulting procedures are contained in final-form § 129.63a.

Effects of the final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100

The final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100 are clarifying amendments only. These revisions do not change the financial impact of these sections on the regulated community.

(20) Provide a specific estimate of the costs and/or savings to the **local governments** associated with compliance, including any legal, accounting or consulting procedures which may be required. Explain how the dollar estimates were derived.

Costs and/or savings to local governments will be the same as, or similar to, those described in response to Question 19. Please also see the responses to Questions 15 and 17 for further explanation.

Effects of the final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100

The final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100 are clarifying amendments only. These revisions do not change the financial impact of these sections on local governments.

(21) Provide a specific estimate of the costs and/or savings to the **state government** associated with the implementation of the regulation, including any legal, accounting, or consulting procedures which may be required. Explain how the dollar estimates were derived.

Costs and/or savings to state governments will be the same as, or similar to, those described in response to Question 19. Please also see the responses to Questions 15 and 17 for further explanation.

Effects of the final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100

The final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100 are clarifying amendments only. These revisions do not change the financial impact of these sections on affected state government entities.

(22) For each of the groups and entities identified in items (19)-(21) above, submit a statement of legal, accounting or consulting procedures and additional reporting, recordkeeping or other paperwork, including copies of forms or reports, which will be required for implementation of the regulation and an explanation of measures which have been taken to minimize these requirements.

(22a) Are forms required for implementation of the regulation?

No new legal, accounting or consulting procedures are contained in final-form § 129.63a for entities listed in (19)-(21) above. No new forms are required by final-form § 129.63a. The measures for the control of VOC emissions from industrial cleaning solvents in final-form § 129.63a establish monthly recordkeeping requirements for the owners and operators of affected facilities. Recordkeeping costs should be minimal however, as the affected facility owners and operators may use typical industry records such as monthly purchase records and material safety data sheets (MSDS) as part of the documentation to demonstrate compliance.

Effects of the final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100

The final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100 are clarifying amendments only. These revisions do not change the legal, accounting, consulting, or recordkeeping and reporting impact of these sections on the entities listed in questions 19–21.

(22b) If forms are required for implementation of the regulation, **attach copies of the forms here**. If your agency uses electronic forms, provide links to each form or a detailed description of the information required to be reported. **Failure to attach forms, provide links, or provide a detailed description of the information to be reported will constitute a faulty delivery of the regulation.**

N/A because no forms are required for the implementation of the final-form rulemaking.

(23) In the table below, provide an estimate of the fiscal savings and costs associated with implementation and compliance for the regulated community, local government, and state government for the current year and five subsequent years.

	Current FY Year 17/18	FY+1 Year 18/19	FY+2 Year 19/20	FY+3 Year 20/21	FY+4 Year 21/22	FY+5 Year 22/23
SAVINGS:	\$	\$	\$	\$	\$	\$
Regulated Community	0.00	121,824.00	162,432.00	162,432.00	162,432.00	162,432.00
Local Government	0.00	0.00	0.00	0.00	0.00	0.00
State Government	0.00	0.00	0.00	0.00	0.00	0.00
Total Savings	0.00	121,824.00	162,432.00	162,432.00	162,432.00	162,432.00
COSTS:	\$	\$	\$	\$	\$	\$
Regulated Community	0.00	11,664.00	15,552.00	15,552.00	15,552.00	15,552.00
Local Government	0.00	0.00	0.00	0.00	0.00	0.00
State Government	0.00	0.00	0.00	0.00	0.00	0.00
Total Costs	0.00	11,664.00	15,552.00	15,552.00	15,552.00	15,552.00
REVENUE LOSSES:	\$	\$	\$	\$	\$	\$
Regulated Community	0.00	0.00	0.00	0.00	0.00	0.00
Local Government	0.00	0.00	0.00	0.00	0.00	0.00
State Government	0.00	0.00	0.00	0.00	0.00	0.00
Total Revenue Losses	0.00	0.00	0.00	0.00	0.00	0.00

(23a) Provide the past three-year expenditure history for programs affected by the regulation.

Program	FY-3 (14/15)	FY-2 (15/16)	FY-1 (16/17)	Current FY (17/18)
Environmental Program Management (161-10382)	\$28,517,000	\$28,277,000	\$26,885,000	\$30,054,000
Clean Air Fund Major Emission Facilities (215-20077)	\$16,870,000	\$17,373,000	\$16,931,000	\$18,786,000
Clean Air Fund Mobile and Area Facilities (233-20084)	\$9,811,000	\$10,142,000	\$8,228,000	\$10,886,000

(24) For any regulation that may have an adverse impact on small businesses (as defined in Section 3 of the Regulatory Review Act, Act 76 of 2012), provide an economic impact statement that includes the following:

(a) An identification and estimate of the number of small businesses subject to the regulation.

The Department anticipates that the owners and operators of as many as 576 facilities across the Commonwealth may be subject to the final-form measures to control VOC emissions from industrial cleaning solvent cleaning activities. Of these potentially subject facility owners and operators, as many as 253 may meet the definition of small business (as defined in Section 3 of the Regulatory Review Act). Please see the response to Question 15 for a detailed explanation of how the Department estimated these numbers. As noted in the response to Question 15, it is also possible that far fewer will be subject to the requirements of final-form § 129.63a.

The final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100 are clarifying amendments only. These revisions do not change the types or numbers of small businesses required to comply with these regulations.

(b) The projected reporting, recordkeeping and other administrative costs required for compliance with the final regulation, including the type of professional skills necessary for preparation of the report or record.

Reporting, recordkeeping, and administrative costs relating to implementation of the final-form measures to control VOC emissions from industrial cleaning solvent cleaning activities will be minimal. The owners and operators of affected facilities that use common VOC-compliant cleaning solvents and maintain monthly purchase records along with MSDS sheets will likely not incur additional costs to meet the reporting, recordkeeping, and administrative requirements of final-form § 129.63a. The professional skills required to keep the necessary records are the same as the skills the facility owner and operator requires when keeping normal business records.

The final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100 are clarifying amendments only. These revisions will likely not impact the reporting, recordkeeping, or administrative costs incurred by those entities required to comply with these regulations.

(c) A statement of probable effect on impacted small businesses.

The Department expects that the impact on small businesses will be minimal. The owner and operator of a facility that would be subject to the final-form measures to control VOC emissions from industrial cleaning solvent cleaning activities will likely incur little, if any, cost to implement the applicable requirements. Industrial cleaning solvents such as Stoddard solvent, mineral spirits, and most other common solvent products have vapor pressures well below the 8 mmHg at 68°F (20°C) limit specified in final-form § 129.63a(e). The owners and operators of potentially affected facilities such as automobile repair garages and metal parts manufacturing facilities using these materials will likely not have to make any changes to their industrial cleaning solvent materials. In the 2006 ICS CTG, the EPA estimates that affected facility owners and operators could face a slight annual increase of about 1.8% in cleaning costs or realize an annual cost savings of about 19% as a result of switching to aqueous parts cleaning solvents. Pechan's cost analysis for the Texas proposed rulemaking updated the savings cited in the 2006 ICS CTG through the use of updated cost factors. The 2010 Pechan report for Texas estimates that small businesses in Texas will save an average of \$2,760 annually from adoption of the 2006 ICS CTG recommendations. The Department expects the regulated industry in this Commonwealth to likewise realize cost savings because low-VOC content industrial cleaning solvent materials are readily available at a cost that is likely equal to or lower than the high-VOC content industrial cleaning solvent materials they replace as a result of similar requirements already in effect in neighboring states. Please see the response to Question 15 for additional information.

Final-form § 129.63a allows the use of a VOC emissions capture system and add-on air pollution control device as an additional compliance option. If an owner or operator of a facility were to elect to comply by installing and operating a VOC emissions capture system and add-on air pollution control device, the owner or operator will likely experience increased costs. It is unlikely that an owner or operator will choose this option however, given the wide availability of low-cost compliant VOC-content materials.

The final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100 are clarifying amendments only. These revisions do not have an impact on those small businesses required to comply with these regulations.

(d) A description of any less intrusive or less costly alternative methods of achieving the purpose of the proposed regulation.

There are no alternative regulatory provisions available. Final-form § 129.63a includes flexibility for compliance, but the final-form measures for control of VOC emissions from industrial cleaning solvent cleaning activities must satisfy the Federal CAA requirements. Adopting RACT regulations is a Federal CAA requirement. The emission control requirements of the RACT regulations must apply to the owners and operators of all subject sources that meet the applicable VOC emission thresholds regardless of business size. In accordance with sections 172(c)(1), 182(b)(2)(A) and 184(b)(1)(B) of the CAA, final-form § 129.63a establishes VOC emission limitations and other requirements consistent with the recommendations of the EPA 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 Panel Coatings*, 71 FR 58745 (October 5, 2006).

The final-form 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 likely have any impact on those entities required to comply with these regulations.

(25) List any special provisions which have been developed to meet the particular needs of affected groups or persons including, but not limited to, minorities, the elderly, small businesses, and farmers.

The Department expects that the impact on minorities, the elderly, small businesses, and farmers will be minimal. Minorities, the elderly, small businesses, and farmers who are not owners or operators of an industrial cleaning solvent cleaning unit operation subject to final-form § 129.63a will not be affected by this final-form rulemaking. For those that are owners or operators of a subject industrial cleaning solvent cleaning unit operation, no special provisions are necessary. Reporting, recordkeeping, and administrative costs relating to implementation of the final-form measures to control VOC emissions from industrial cleaning solvent cleaning activities will be minimal.

The owner and operator of a facility that is subject to the final-form measures to control VOC emissions from industrial cleaning solvent cleaning activities will likely incur little, if any, cost to implement the applicable requirements. Industrial cleaning solvents such as Stoddard solvent, mineral spirits and most other common solvents products have vapor pressures well below the 8 mmHg at 68°F (20°C) limit specified in final-form § 129.63a(e). The owners and operators of potentially affected facilities such as automobile repair garages and metal parts manufacturing facilities using these materials will likely not have to make any changes to their industrial cleaning solvent materials or recordkeeping procedures.

The final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100 are clarifying amendments only. Special provisions to implement these revisions are not needed.

(26) Include a description of any alternative regulatory provisions which have been considered and rejected and a statement that the least burdensome acceptable alternative has been selected.

The final-form measures to control VOC emissions from industrial cleaning solvent cleaning activities are considered the least burdensome acceptable method of ensuring compliance with the Federal RACT mandate. In accordance with sections 172(c)(1), 182(b)(2)(A) and 184(b)(1)(B) of the CAA, final-form § 129.63a establishes VOC emission limitations and other requirements generally consistent with the recommendations of the EPA 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 Panel Coatings*, 71 FR 58745.

The final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100 are clarifying amendments only. These revisions should improve the understanding for the regulated community and other impacted entities. Alternative regulatory provisions for these revisions were not considered.

(27) In conducting a regulatory flexibility analysis, explain whether regulatory methods were considered that will minimize any adverse impact on small businesses (as defined in Section 3 of the Regulatory Review Act, Act 76 of 2012), including:

(a) The establishment of less stringent compliance or reporting requirements for small businesses.

Less stringent compliance requirements are not available for small businesses. The Department included flexibilities in final-form § 129.63a, but the final-form measures to control VOC emissions from industrial cleaning solvent activities must satisfy the Federal CAA requirements. Adopting RACT regulations is a Federal CAA requirement. The final-form VOC emission control measures must apply to the owners and operators of all subject sources that emit VOC emissions from the covered industrial cleaning solvent cleaning activities at or above the threshold of total combined actual emissions of 2.7 tons of VOC per 12-

month rolling period, regardless of business size. In accordance with sections 172(c)(1), 182(b)(2)(A) and 184(b)(1)(B) of the CAA, final-form § 129.63a satisfies RACT requirements for owners and operators engaging in these industrial cleaning solvent cleaning activities by establishing VOC emission limitations and other requirements generally consistent with the recommendations in the EPA's 2006 ICS CTG. 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 Panel Coatings*, 71 FR 58745 .

The final-form 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 impact compliance or reporting requirements for small businesses subject to these regulations.

(b) The establishment of less stringent schedules or deadlines for compliance or reporting requirements for small businesses.

Minimal to no adverse impact is expected for the owners and operators of small business-sized facilities to implement the final-form measures to control VOC emissions from industrial cleaning solvent cleaning activities. As explained in the response to Question 9, final-form § 129.63a is overdue to the EPA for approval as a SIP revision. Further delay of implementation is not feasible. The Commonwealth's rulemaking process provides ample time for the owners and operators of facilities that might be subject to final-form § 129.63a to prepare to comply as soon as final-form § 129.63a is published in the *Pennsylvania Bulletin* as a final-form regulation. Additionally, many potentially impacted entities may already be complying with the final-form requirements, as compliant VOC-content industrial cleaning solvent materials are readily available at a cost that is likely equal to or lower than the high-VOC content industrial cleaning solvent materials they replace since similar requirements are already in effect for neighboring states. No adverse impact will occur to these entities as a result of this final-form rulemaking.

The final-form 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 impact compliance schedules or deadlines for small businesses subject to these regulations.

(c) The consolidation or simplification of compliance or reporting requirements for small businesses.

Minimal to no adverse impact is expected for the owners and operators of small business-sized facilities to implement the final-form measures to control VOC emissions from industrial cleaning solvent cleaning activities. The compliance options in final-form § 129.63a should allow the owners and operators of small business-sized facilities to find an acceptable method of compliance appropriate to their operation. Reporting will only be necessary for these facility owners and operators under final-form § 129.63a if requested in writing by the Department. The professional skills required to keep the necessary records are the same as the skills the facility owner and operator requires when keeping normal business records.

The final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100 are clarifying amendments only. These revisions do not amend compliance or reporting requirements for small businesses subject to these regulations.

(d) The establishment of performance standards for small businesses to replace design or operational standards required in the regulation.

The final-form measures to control VOC emissions from industrial cleaning solvent cleaning activities include performance standards. If an owner or operator of a subject industrial cleaning solvent cleaning unit operation, including a small business-sized facility, chooses not to comply through the use of compliant VOC-content industrial cleaning solvents, the owner or operator could achieve equivalent compliance through the use of a VOC emissions capture system and an add-on air pollution control device. If the owner or operator is not able to comply with either of these options, the owner or operator may also meet the emission limitations through an alternative method under the final-form amendments to § 129.51.

The final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100 are clarifying amendments only. These revisions do not require the establishment of performance standards to replace design or operational standards for small businesses subject to these regulations.

(e) The exemption of small businesses from all or any part of the requirements contained in the regulation.

Adopting RACT regulations is a Federal CAA requirement. The VOC emission control measures in final-form § 129.63a must apply Statewide to the owners and operators of *all* facilities at which the total combined actual VOC emissions from all subject industrial cleaning solvent cleaning activities at the facility are equal to or greater than the threshold of 2.7 tons (2,455 kilograms) of VOC emissions per 12-month rolling period, before consideration of controls, regardless of business size. A facility may be classified as a small business under the Federal Small Business Size Regulations under 13 CFR Chapter 1, Part 121, while still emitting sufficient emissions of VOC to subject the owner and operator to regulations designed to implement measures for the control of those VOC emissions.

The final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100 are clarifying amendments only. Small businesses subject to these regulations will not be exempted from the implementation of these revisions.

(28) If data is the basis for this regulation, please provide a description of the data, explain in detail how the data was obtained, and how it meets the acceptability standard for empirical, replicable and testable data that is supported by documentation, statistics, reports, studies or research. Please submit data or supporting materials with the regulatory package. If the material exceeds 50 pages, please provide it in a searchable electronic format or provide a list of citations and internet links that, where possible, can be accessed in a searchable format in lieu of the actual material. If other data was considered but not used, please explain why that data was determined not to be acceptable.

The Department reviewed the information provided by the EPA in the 2006 ICS CTG for establishing RACT for the industrial cleaning solvent activities that will be regulated by the final-form measures to control VOC emissions from these covered activities. The Department believes that the data used by the EPA to develop the RACT recommendations meet the acceptability standard for empirical, replicable and testable data. Additionally, according to the EPA's Scientific Integrity Policy, the EPA adheres to the 2002 Office of Management and Budget (OMB) Information Quality Guidelines, the 2005 OMB Information Quality Bulletin for Peer Review, the EPA's Quality Policy (CIO 2106) for assuring the collection and use of sound scientific data and information, the EPA's Peer Review Handbook for internal and external review of scientific products, and the EPA's Information Quality Guidelines for establishing the transparency, integrity and utility of information published on the Agency's websites.¹¹

¹¹ United States Environmental Protection Agency, Scientific Integrity Policy, http://www.epa.gov/osa/pdfs/epa_scientific_integrity_policy_20120115.pdf, page 1.

The Department reviews its own ambient air quality ozone monitoring data for purposes of reporting to the EPA to establish attainment and maintenance of the NAAQS for all areas of this Commonwealth as discussed in the response to Question 9. The Commonwealth's Ambient Air Monitoring Network is operated in accordance with all network design, siting, monitoring and quality assurance requirements set forth in 40 CFR Part 58 (relating to ambient air quality surveillance). All ozone concentration data measured during the ozone monitoring season, which runs from April to October, are subject to comparison with the ozone NAAQS set forth in 40 CFR Part 50 (relating to National primary and secondary ambient air quality standards). Specific guidance on the requirements for quality assurance and quality control of the ozone monitoring network may be found in the EPA's Quality Assurance (QA) Handbook for Air Pollution Measurement Systems, Volume II, Ambient Air Quality Monitoring Program, EPA-454/B-13-003, May 2013. The QA Handbook is available on the EPA web site at:

<http://www.epa.gov/ttnamti1/files/ambient/pm25/qa/QA-Handbook-Vol-II.pdf>

The following list provides complete citations for data sources referenced in this Regulatory Analysis Form:

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 Panel Coatings, 71 FR 58745 (October 5, 2006).

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 website at:

<https://www.epa.gov/stationary-sources-air-pollution/clean-air-act-guidelines-and-standards-solvent-use-and-surface>

Industrial Cleaning Solvents and Adhesives, Inventory Research, Final Report, Texas Commission on Environmental Quality (TCEQ), Austin, TX 78711, TCEQ Grant Agreement No. 582-7-84007, Work Order No. 582-7-84007-FY10-03, Tracking No. 2010-41, July 2010, prepared by Dr. Jonathan G. Dorn, E.H. Pechan & Associates, Inc., 3622 Lyckan Parkway, Suite 2005, Durham, NC 27707. The report is available on the TCEQ website at: <http://www.tceq.texas.gov/assets/public/implementation/air/rules/contracts/2010-cleaning-adhesives-final.pdf>

Pennsylvania Department of Agriculture:

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The final-form revisions to §§ 121.1, 129.51, 129.73, 129.96, 129.97, 129.99, and 129.100 are clarifying amendments only. No data was needed to develop these revisions.

(29) Include a schedule for review of the regulation including:

- | | |
|---|-----------------------------------|
| A. The length of the public comment period: | <u>66 days</u> |
| B. The date or dates on which public meetings or hearings will be held: | <u>July 18,19, & 20, 2017</u> |
| C. The expected date of delivery of the final-form regulation: | <u>Quarter 2, 2018</u> |
| D. The expected effective date of the final-form regulation: | <u>September 1, 2018</u> |
| E. The expected date by which compliance with the final-form regulation will be required: | <u>September 1, 2018</u> |
| F. The expected date by which required permits, licenses or other approvals must be obtained: | <u>NA</u> |

(30) Describe the plan developed for evaluating the continuing effectiveness of the regulation after its implementation.

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