Air Pollution Control Board

San Diego County Air Pollution Control District

AGENDA ITEM

DATE: November 9, 2011

AP01

TO: Air Pollution Control Board

SUBJECT: NOTICED PUBLIC HEARING – ADOPTION OF AMENDMENTS TO RULE 67.16 – GRAPHIC ARTS OPERATIONS AND RELATED AMENDMENTS TO RULE 11 – EXEMPTIONS FROM RULE 10 PERMIT REQUIREMENTS (DISTRICT: All)

SUMMARY:

Overview

The Air Pollution Control Board is requesting to adopt proposed amendments to Rule 67.16, which limits emissions of volatile organic compounds from inks, cleaning solvents, and other graphics arts materials used in printing operations. Volatile organic compounds emitted into the atmosphere contribute to the formation of ozone, which at elevated levels can impact public health. Despite substantial air quality improvement over the past two decades, San Diego County has not yet attained state and federal air quality standards for ozone.

The amendments, if adopted, will reduce the allowable amount of volatile organic compounds in fountain solutions, cleaning solvents, and adhesives used in printing operations, consistent with recent federal guidelines and existing requirements of several air districts in California. The amendments help fulfill state and federal requirements to update rules as necessary to reflect the current state of air pollution control technology.

In addition, related amendments are proposed for Rule 11 (Exemptions from Rule 10 Permit Requirements) pertaining to the digital printing industry. Digital printing is an evolving technology that in many cases uses inks and other materials containing volatile organic compounds, although the extent of emissions is currently unknown. The proposed amendments to Rule 11 exempt digital printing operations from air quality permits but require large operations (as defined) to keep records on the use of inks and cleaning solvents as specified in Rule 67.16. These records will enable future assessment of emission levels and the potential need for pollution control requirements specific to the digital printing industry.

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Recommendation(s)
AIR POLLUTION CONTROL OFFICER

1. Find that the adoption of amendments to Rule 67.16 and Rule 11 is categorically exempt from the provisions of the California Environmental Quality Act pursuant to California Code of Regulations, Title 14, Section 15308, as an action taken to assure the protection of the environment, where the regulatory process involves procedures for protection of the environment, and pursuant to California Code of Regulations Title 14, Section 15061(b)(3), since it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment.

2. Adopt the resolution entitled Resolution Adopting Amendments to Rule 67.16 – Graphic Arts Operations of Regulation IV and Related Amendments to Rule 11 – Exemptions from Rule 10 Permit Requirements of Regulation II of the Rules and Regulations of the San Diego County Air Pollution Control District..

Fiscal Impact
The proposed amendments to Rule 67.16 and Rule 11 will be implemented and enforced with existing staff and will not have a fiscal impact on the Air Pollution Control District.

Business Impact Statement
Adopting the proposed amendments to Rule 67.16 will not adversely impact the business community. The proposed graphics arts and cleaning materials with a lower content of volatile organic compounds are widely available and equally priced, or only marginally more expensive. Many printing facilities already comply with the proposed amendments. Furthermore, the amendments will not take effect for six months, allowing time to deplete existing inventories of non-compliant materials.

No additional permit requirements will result from the amendments to Rule 11. Thus, this action will not adversely impact the business community.

Advisory Board Statement
At its meeting on August 10, 2011, with a quorum present, the Air Pollution Control District Advisory Committee voted 3 to 1 in support of the Air Pollution Control District's recommendations.

BACKGROUND:
San Diego County does not currently meet the National and State Ambient Air Quality Standards for ozone and therefore is classified as an ozone nonattainment area. National and state laws require the San Diego County Air Pollution Control District (District) to implement rules that reduce emissions of ozone precursors – volatile organic compounds (VOCs) and oxides of nitrogen.

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Existing Rule 67.16 regulates VOC emissions from inks, cleaning solvents, and other graphic arts materials used in printing operations. The rule was adopted in 1988 and last revised in 1996. The primary objective in amending Rule 67.16 is to ensure ongoing compliance with federal Reasonably Available Control Technology (RACT) requirements applicable to the printing industry. The proposed amendments comply with federal Control Techniques Guidelines for printing operations, recently issued by the U.S. Environmental Protection Agency (EPA). Accordingly, amended Rule 67.16 will implement current RACT as required by the federal Clean Air Act.

The proposed amendments to Rule 67.16 reduce the VOC content limit for fountain solutions (used to repel ink from non-printing areas) from 15% to 5%, or to 8.5% if the fountain solution is chilled to reduce evaporation of VOCs into the atmosphere. The VOC content limit for cleaning solvents is reduced from 200 grams/liter to 100 grams/liter. Alternatively, a facility may use cleaning solvents with a low vapor pressure (low evaporation rate). The VOC content limit of adhesives is reduced from 300 grams/liter to 150 grams/liter.

In addition, the proposed rule amendments address the issue of estimating VOC emissions from digital printing operations, which are not presently quantified. The amendments exempt digital printing operations but require facilities using high-capacity digital printing equipment, as defined, to keep monthly or daily records of the amounts of inks and cleaning solvents used and their VOC content. Information obtained as a result of this provision will allow the District to evaluate the potential necessity of VOC emissions control at digital printing operations and whether to continue the record keeping requirements.

The proposed rule amendments also update the test methods for determining the VOC content of graphic arts and cleaning materials and the overall efficiency of emission control systems. In addition, the amendments include updated and new definitions, including those for digital printing operations.

There are 16 facilities in San Diego County that are currently subject to Rule 67.16, with total VOC emissions from printing operations of approximately 64 tons/year. The rule amendments will reduce VOC emissions by approximately 10.5 tons/year or 16%.

In conjunction with the proposed exemption in Rule 67.16 for digital printing operations, corresponding amendments to Rule 11 (Exemptions from Rule 10 Permit Requirements) are also proposed. The amendments will exempt digital printing operations from air quality permit requirements—in fact, no such operations currently have an air quality permit—but will require facilities using high-capacity digital printing equipment to keep records as specified in Rule 67.16.

Rule 67.16 addresses federal requirements and therefore is included in the State Implementation Plan (SIP). Upon its adoption, the amended rule will be submitted to EPA as a SIP revision.

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Socioeconomic Impact Assessment

Section 40728.5 of the State Health and Safety Code requires the District to assess the socioeconomic impacts when adopting, amending, or repealing a rule that will significantly affect air quality or emission limitations. The assessment must include an evaluation of small business impacts. The proposed amendments to Rule 67.16 contain new, lower VOC emission limitations for graphic arts materials and cleaning agents used in printing operations. Accordingly, a Socioeconomic Impact Assessment has been prepared (Attachment B), which shows that the rule amendments will not have significant economic impact on the affected industry, including small business.

Environmental Statement

The amendment of Rule 67.16 and 11 are exempt from the California Environmental Quality Act (CEQA) pursuant to California Code of Regulations, Title 14, Section 15308, as an action taken to assure the protection of the environment, where the regulatory process involves procedures for protection of the environment. In this case, this action is being taken in response to federal and state requirements to reduce emissions of VOCs in order to achieve ambient air quality standards. Additionally, this action is also exempt pursuant to California Code of Regulations Title 14, Section 15061(b)(3), since it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment. Many affected facilities already comply with the proposed requirements and compliant materials are widely available and in use.

Linkage to the County of San Diego Strategic Plan

The County's five-year strategic plan includes an Environment Initiative to ensure environmental preservation and enhance quality of life. Proposed amendments to Rule 67.16 will codify the use of graphic arts materials with lower emissions of volatile organic compounds without negatively impacting the local business community. The rule balances air quality preservation, public health protection, and economic development needs.

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Respectfully submitted,

SARAH E. AGHASSI
Deputy Chief Administrative Officer

ROBERT J. KARD
Air Pollution Control Officer

ATTACHMENT(S)

Attachment A – Resolution Adopting Amendments to Rule 67.16 – Graphic Arts Operations of Regulation IV and Related Amendments to Rule 11 – Exemptions from Rule 10 Permit Requirements of Regulation II of the Rules and Regulations of the San Diego County Air Pollution Control District
Attachment B – Socioeconomic Impact Analysis
Attachment C – Comparative Analysis
Attachment D – Incremental Cost Effectiveness Analysis
Attachment E – Workshop Report
Attachment F – Rule 67.16 Change Copy
Attachment G – Rule 11 Change Copy

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AGENDA ITEM INFORMATION SHEET

REQUIRES FOUR VOTES: [] Yes [X] No

WRITTEN DISCLOSURE PER COUNTY CHARTER SECTION 1000.1 REQUIRED
[] Yes [X] No

PREVIOUS RELEVANT BOARD ACTIONS:
May 15, 1996 (APCB #2), Amendment of Rule 67.16 – Graphic Arts Operations; April 25, 2007 (APCB #1), Amendment of Rule 11 – Exemptions from Rule 10 Permit Requirements

BOARD POLICIES APPLICABLE: N/A

BOARD POLICY STATEMENTS: N/A

MANDATORY COMPLIANCE: N/A

ORACLE AWARD NUMBER(S) AND CONTRACT AND/OR REQUISITION NUMBER(S): N/A

ORIGINATING DEPARTMENT: Air Pollution Control District

OTHER CONCURRENCE(S): N/A

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ATTACHMENT A

Re Rules and Regulations of the)
Air Pollution Control District . .)
of San Diego County . . . . . .)

RESOLUTION ADOPTING AMENDMENTS TO RULE 67.16 – GRAPHIC ARTS OPERATIONS OF REGULATION IV AND RELATED AMENDMENTS TO RULE 11 – EXEMPTIONS FROM RULE 10 PERMIT REQUIREMENTS OF REGULATION II OF THE RULES AND REGULATIONS OF THE SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT

On motion of Member Slater-Price, seconded by Member Jacob, the following resolution is adopted:

WHEREAS, the San Diego County Air Pollution Control Board, pursuant to Section 40702 of the Health and Safety Code, adopted Rules and Regulations of the Air Pollution Control District of San Diego County; and

WHEREAS, said Board now desires to amend said Rules and Regulations; and

WHEREAS, notice has been given and a public hearing has been held relating to the amendment of said Rules and Regulations pursuant to Section 40725 of the Health and Safety Code; and

WHEREAS, pursuant to section 40727 of the Health and Safety Code, the San Diego County Air Pollution Control Board makes the following findings:

(1) (Necessity) The adoption of proposed amendments to Rule 67.16 and related proposed amendments to Rule 11 are necessary in order to implement federal Reasonably Available Control Technology and all feasible control measures to achieve the ambient air quality standards for ozone by reducing emissions of volatile organic compounds in the County of San Diego;

(2) (Authority) The adoption of proposed amendments to Rule 67.16 and related proposed amendments to Rule 11 are authorized by Health and Safety Code section 40702;

(3) (Clarity) The proposed amendments to Rule 67.16 and related proposed amendments to Rule 11 can be easily understood by persons directly affected;

(4) (Consistency) The adoption of proposed amendments to Rule 67.16 and related proposed amendments to Rule 11 are in harmony with, and not in conflict with or contrary to, existing statutes, court decisions, and State and federal regulations;

(5) (Non-duplication) The adoption of proposed amendments to Rule 67.16 and related proposed amendments to Rule 11 will not duplicate existing District or federal requirements;

(6) (Reference) The adoption of proposed amendments to Rule 67.16 and related proposed amendments to Rule 11 are necessary to comply with: federal law, Clean Air Act Section 182(b)(2), which requires implementation of Reasonably Available Control Technology on stationary sources of volatile organic compound emissions; and State law, California Health and Safety Code Section 40914(b)(2), that requires adoption of every feasible control measure to reduce ozone precursor emissions;

WHEREAS, the Air Pollution Control Board further finds pursuant to Health and Safety Code section 40001 that proposed amendments to Rule 67.16 and related proposed amendments to Rule 11 will facilitate the attainment of ambient air quality standards; and

WHEREAS, the Air Pollution Control Board further finds that an analysis comparing proposed amendments to Rule 67.16 and related proposed amendments to Rule 11 with applicable requirements of federal and local regulations has been prepared pursuant to Health and Safety Code Section 40727.2; and

WHEREAS, the Air Pollution Control Board further finds that an incremental cost-effectiveness analysis pursuant to Health and Safety Code Section 40920.6(a) has been prepared for proposed amendments to Rule 67.16 and related proposed amendments to Rule 11 and has been made available for public review and comment, and has been actively considered; and

WHEREAS, the Air Pollution Control Board further finds that the adoption of amended Rule 67.16 and Rule 11 is categorically exempt from the provisions of the California Environmental Quality Act pursuant to California Code of Regulations, Title 14, Section 15308, as an action taken to assure the protection of the environment, where the regulatory process involves procedures for protection of the environment, and pursuant to California Code of Regulations Title 14, Section 15061(b)(3), since it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment.

NOW THEREFORE IT IS RESOLVED AND ORDERED by the San Diego County Air Pollution Control Board that the Rules and Regulations of the Air Pollution Control District of San Diego County be and hereby are amended as follows:

1. Proposed amended Rule 67.16 is to read as follows:

RULE 67.16. GRAPHIC ARTS OPERATIONS (Effective 10/18/88; Rev. Adopted & Effective 5/15/96; Amended (*date of adoption*) & Effective (*6 months after date of adoption*)

(a) **APPLICABILITY**

(1) This rule is applicable to all continuous web or single sheet fed graphic arts printing, processing, laminating or drying operations and digital printing operations.

(2) This rule is not applicable to printing operations on ceramic or circuit boards. These operations are subject to Rule 66.1.

(3) Graphic arts operations subject to or exempt from this rule shall not be subject to Rule 66.1 or Rule 67.5.

(b) **EXEMPTIONS**

(1) The provisions of Sections (d) and (e) of this rule shall not apply to stationary sources which emit less than an average of 15 lbs (6.8 kg) of volatile organic compounds (VOCs) from all graphic arts operations per day of operation, excluding digital printing operations, for each calendar month. It is the responsibility of any person claiming this exemption to maintain daily or monthly records as specified in Section (f) of this rule necessary to establish average daily emissions and to make this information available to the District upon request. The average daily emission levels shall be determined by recording and taking into account the number of operational days per given month.

(2) The provisions of Sections (d) and (e) shall not apply to large digital printing operations provided that any facility claiming this exemption maintains applicable records as specified in Subsection (f)(4).

(3) The provisions of this rule shall not apply to:

(i) All proofing systems.

(ii) Manufacture of:

(A) Solar control window film,

(B) Heat applied transfer decals,

(C) Ceramic decals manufactured for firing above 800°F, or

(D) Water slide decals.

(iii) Embossing and foil stamping which do not use materials containing VOCs.

(iv) Development process associated with the preparation of lithographic printing plates.

(v) Blanket repair material applied from non-refillable aerosol containers of four ounces or less.

(vi) Digital printing operations that are not large operations as defined in Subsection (c)(12).

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

(viii) Research and development operations.

(ix) Preservative oils application using hand-held non-refillable aerosol containers.

(x) Cleaning of ultraviolet lamps and reflectors and electron beam processors.

(c) **DEFINITIONS**

For the purpose of this rule the following definitions shall apply:

(1) **"Adhesive"** means a substance that is used to bond one surface to another by attachment.

(2) **"Cleaning Material"** means a VOC containing material used for cleaning hands, tools, printing presses, ink or coating application equipment and work area.

(3) **"Coating"** in the graphic arts operation means a layer of material applied to a substrate in a relatively unbroken film.

(4) **"Digital Printing Operation"** means an operation that uses a printing device guided by a computer-driven machine to transfer an electronic image to a substrate through the use of inks, toners, or other graphic arts materials. Digital printing operation also includes associated surface preparation, solvent cleaning, and the cleaning of application equipment.

(5) **"Precision Electro-optical Component"** is an optical element used in an electro-optical device and is designed to sense, detect, or transmit light energy, including specific wavelengths of light energy and changes in light energy levels.

(6) **"Exempt Compound"** means the same as defined in Rule 2.

(7) **"Exterior Marking"** means any outdoor sign printed, coated or laminated by any of the graphic arts methods.

(8) **"Flexographic Printing"** means a letterpress method utilizing flexible rubber or other elastomeric plate.

(9) **"Fountain Solution"** means the solution which is applied to the image plate to maintain the hydrophilic properties of the non-image areas.

(10) **"Graphic Arts Operations"** means all screen, gravure, letterpress, flexographic, lithographic and digital printing operations, or related coating, or laminating processes including coating of flexible packaging materials for food or health care products and laboratory or experimental processes.

(11) **"Graphic Arts Material"** means any ink, coating, adhesive or thinner used in printing or related coating or laminating processes.

(12) **"Gravure Printing"** means an intaglio process in which the ink is carried in minute etched or engraved wells on a roll or cylinder, with excess ink being removed from the surface by doctor blade.

(13) **"Large Commercial Digital Printing Operation"** means a commercial digital printing operation where a print capacity of any individual printer that uses solvent based inks is 1,000 ft^2/hr or higher; or an operation where a print capacity of any individual printer that uses water based or UV inks is 10,000 ft^2/hr or higher.

(14) **"Lamination"** means a process of composing two or more layers of material to form a single multiple layer sheet by using adhesive.

(15) **"Letterpress Printing"** means a method where the image area is raised relative to the non-image area and the ink is transferred to the paper directly from the image surface.

(16) **"Lithographic Printing"** means a plane-o-graphic method in which the image and non-image areas are on the same plane, and the ink is offset from a plate to a rubber blanket, and then from the blanket to the substrate.

(17) **"Preservative Oil"** means any liquid material which does not contain any solids, and is applied to rollers or ink wells to prevent them from drying when the graphic arts equipment is stopped for an extended time or to provide lubrication, or both.

(18) **"Printing"** means any operation that imparts color, design, alphabet or numerals on a substrate.

(19) **"Printing Ink"** means any fluid or viscous composition used in printing, impressing or transferring an image onto a substrate.

(20) **"Proofing System"** means a system used only to check the quality or print color reproduction and editorial content and includes proof presses and/or off-press proofing lines.

(21) **"Publication Gravure"** means a gravure printing on paper substrate which is subsequently used to form books, magazines, catalogues, brochures, directories, and newspaper supplements or other printed material.

(22) **"Screen Printing"** means a process where the printing ink passes through a web or a fabric to which a refined form of stencil has been applied. The stencil openings determine the form and dimensions of imprint.

(23) **"Stationary Source"** means the same as defined in Rule 2.

(24) **"Thinner"** means a solvent used to reduce viscosity of printing inks.

(25) **"Volatile Organic Compound (VOC)"** means the same as defined in Rule 2.

(26) **"VOC Content per Volume of Graphic Arts Materials, Less Water and Exempt Compounds"** (excluding thinners) means the same as defined in Rule 2, "VOC Content per Volume of Coatings, Less Water and Exempt Compounds."

(27) **"VOC Content per Volume of Thinner or Cleaning Material"** means the same as defined in Rule 2, "VOC Content per Volume of Material."

(28) **"Web-fed"** means an automatic system which supplies substrate from a continuous roll or from an extrusion process.

(d) **STANDARDS**

(1) Graphic Arts Materials and Fountain Solutions.

A person shall not conduct any printing or graphic arts operation unless the following materials are used:

(i) Graphic arts materials, except adhesives, containing less than 300 grams of VOC per liter (2.5 lbs/gal) as applied, less water and exempt compounds.

(ii) Adhesives containing not more than 150 grams of VOC per liter (1.25 lb/gal), as applied, less water and less exempt compounds.

(iii) Fountain solutions containing not more than 5% VOC by volume; or

(iv) Fountain solutions containing not more than 8.5% VOC by volume refrigerated to a temperature below 60°F.

(2) Cleanup of Equipment

A person shall not use materials containing VOCs for the cleanup of equipment used in graphic arts operations unless:

(i) The cleaning material has a VOC content of less than 100 grams per liter; or

(ii) The total VOC vapor pressure of the cleaning material is 5 mm of Hg at 20°C or less.

(e) **CONTROL EQUIPMENT**

(1) In lieu of complying with the provisions of Subsection (d)(1) or (d)(2), a person may use an air pollution control system which:

(i) Has been installed in accordance with an Authority to Construct; and

(ii) Includes an emission collection system which captures and transports emissions generated by an applicable graphic arts operation to an air pollution control device; and

(iii) Has a combined VOC emissions capture and control device efficiency of at least 85 percent by weight.

(2) A person subject to the requirements of this section shall submit to the Air Pollution Control Officer for approval an Operation and Maintenance (O&M) plan for the proposed emission control device and emission collection system. Such plan shall:

(i) Identify all key system operating parameters. Key system operating parameters are those necessary to ensure compliance with Subsection (e)(1)(iii), such as temperature, pressure, and/or flow rate.

(ii) Include proposed inspection schedules, anticipated ongoing maintenance, and proposed recordkeeping practices regarding the key system operating parameters.

(3) The Operation and Maintenance plan must be submitted to the Air Pollution Control Officer and receive written approval prior to operation of the air pollution control equipment. A person subject to the requirements of this section shall implement the plan on approval of the Air Pollution Control Officer.

(f) **RECORDKEEPING**

Any person conducting a graphic arts operation subject to this rule shall maintain records in accordance with the following requirements:

(1) Maintain a current list of graphic arts materials, fountain solutions and cleaning materials used containing VOCs which provides data necessary to evaluate compliance, including, but not limited to:

(i) Type of graphic arts materials, fountain solutions or cleaning materials used;

(ii) Dilution ratio of mixed components, if applicable;

(iii) VOC content, less water and exempt compounds of each graphic arts material (excluding thinner), as applied; volume percent of VOC in fountain solution; and VOC content of each thinner and cleaning material and/or total VOC vapor pressure, as used.

(2) Maintain daily or monthly records showing the amount of each graphic arts material, and each fountain solution and cleaning material used.

(3) Any person using control equipment pursuant to Section (e) of this rule shall:

(i) For all graphic arts materials, fountain solutions and cleaning materials not in compliance with Subsection (d)(1) or (d)(2) of this rule, maintain daily records of the amount of each material used; and

(ii) Maintain daily records sufficient to document continuous compliance with Subsection (e)(1)(iii), including records of key system operating parameters as approved in the Operation and Maintenance plan.

(4) Any person claiming an exemption pursuant to Subsection (b)(2) for large commercial digital printing operations shall:

(i) Maintain a current list of graphic arts materials and cleaning materials used;

(ii) Provide documentation containing the VOC content, less water and exempt compounds of each graphic arts material (excluding thinner), as applied and the VOC content of each thinner and cleaning material and/or total VOC vapor pressure, as used;

(iii) Keep monthly records of the type and amount of each graphic arts material and cleaning material used.

All records shall be retained on site for at least three years and shall be made available to the District upon request.

(g) **TEST METHODS**

When more than one test method or set of test methods are specified in this Section, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of this rule.

(1) Measurements of VOC content of graphic arts materials subject to Section (d) of this rule shall be conducted and reported in accordance with the Environmental Protection Agency (EPA) Test Method 24 (40 CFR 60, Appendix A), dated 9/11/1995, or

by the South Coast Air Quality Management District (SCAQMD) Method 304, dated 2/1/1996, as applicable.

(2) Measurements of VOC content of rotogravure publication inks subject to Section (d) of this rule shall be conducted and reported in accordance with EPA Test Method 24A (40 CFR 60, Appendix A), dated 8/6/1993.

(3) The VOC content of cleaning materials shall be determined by the SCAQMD Method 313-91 (Determination of Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry), dated 2/1/1993, or SCAQMD Method 308-91 (Quantification of Compounds by Gas Chromatography), dated 2/1/1993.

(4) Calculations of total VOC vapor pressures of cleaning materials pursuant to Subsection (d)(2)(ii) of this rule shall be calculated using the District's "SD1-Procedure for Estimating the Vapor Pressure of VOC Mixtures", dated 6/20/1990. If the vapor pressure of the liquid mixture is in excess of the limit specified in Subsection (d)(2)(ii), the vapor pressure shall be determined in accordance with ASTM Test Method D 2879-10, "Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope".

(5) The content of methyl acetate, acetone and parachlorobenzotrifluoride shall be determined in accordance with the ASTM Test Method D6133-02 (2008) (Standard Test Method for Acetone, p-Chlorobenzotrifluoride, Methyl Acetate or t-Butyl Acetate Content of Solventborne and Waterborne Paints, Coatings, Resins, and Raw Materials by Direct Injection Into a Gas Chromatograph).

(6) Measurements of exempt compounds content, except for those determined in accordance with Subsection (g)(5), shall be conducted in accordance with the SCAQMD Test Method 303-91 (Determination of Exempt Compounds), dated 8/1/1996.

(7) The overall control efficiency of air pollution control equipment operated pursuant to Subsection (e)(1)(iii) shall be determined by multiplying the capture efficiency of the emission collection system by the control efficiency of the air pollution control device. The control efficiency of the air pollution control device shall be determined using EPA Test Methods 25A and/or 18 (40 CFR Part 60, Appendix A), both dated 9/25/1996, and in accordance with a protocol approved by the Air Pollution Control Officer. Capture efficiency of an emission collection system pursuant to Subsection (e)(1)(iii) shall be determined according to EPA Test Methods 204 and 204A through 204 F (51 CFR Appendix M), dated 6/4/97, as applicable, and technical document, "Guidelines for Determining Capture Efficiency," dated January 9, 1995. Subsequent to the initial compliance demonstration period, appropriate key system operating parameters as approved by the Air Pollution Control Officer may be used as indicators of the performance of the emission control system.

(8) Other test methods which are determined to be equivalent to the test methods specified in this rule and approved, in writing, by the Air Pollution Control Officer,

California Air Resources Board, and EPA may be used in place of the test methods specified in this rule.

2. Proposed amended Rule 11 to read as follows:

RULE 11. EXEMPTIONS FROM RULE 10 PERMIT REQUIREMENTS

(Effective 1/1/69: Rev. Adopted & Effective 10/17/95
Rev. Adopted & Effective 7/30/96
Rev. Adopted & Effective 5/21/97
Rev. Adopted & Effective 11/15/00
Rev. Adopted & Effective 4/25/07
Rev. Adopted *(date of adoption)* & Effective *(6 months from date of adoption)*

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RULE 11. EXEMPTIONS FROM RULE 10 PERMIT REQUIREMENTS

(a) APPLICABILITY

(1) This rule is applicable to any article, machine, equipment, or other contrivance which would otherwise be subject to Rule 10.

(2) This rule shall not exempt equipment, operations, or processes described in Section (d) from meeting all other applicable requirements of these Rules and Regulations.

(3) This rule shall not apply to any equipment, operation, or process that violates Rule 51 as determined by the Air Pollution Control Officer. When the Air Pollution Control Officer makes such a determination and written notification is given to the owner or operator, the equipment, operation, or process may thereafter be subject to Rule 10. If no additional violations of Rule 51 are determined over a 2-year period, a permit may no longer be required.

(4) This rule shall not apply to any equipment, operation, or process described in Subsections (d)(2) through (d)(19) that emits more than 100 lbs per day of any one of the following criteria air pollutants: particulate matter (PM10), oxides of nitrogen (NO_x), volatile organic compound (VOC), oxides of sulfur (SO_x), carbon monoxide (CO), or lead (Pb).

(5) This rule shall not apply to any equipment, operation, or process that is subject to the provisions of the National Emissions Standards for Hazardous Air Pollutants (NESHAP), 40 CFR 63, the New Source Performance Standards (NSPS), 40 CFR 60, and the Air Pollution Control District (District) Regulation X - Standards of Performance for New Stationary Sources and/or Regulation XI - National Emission Standards for Hazardous Air Pollutants.

(6) Except for equipment specified in Subsection (d)(20)(iii), Section (d) of this rule shall not apply to any new or modified equipment, operation, or process that

(i) emits or may emit toxic air contaminants, as defined in Rule 1200, and

(ii) has emissions of toxic air contaminants that, in the absence of any emission control device or limitation on material usage or production, may be expected to exceed any standard specified in Rule 1200 (d)(1)(i), (d)(2), or (d)(3) as determined by the Air Pollution Control Officer. This provision shall not apply to any equipment, operation, or process for which construction or modification, as applicable, commenced prior to November 15, 2000, unless such equipment, operation, or process is subsequently modified in such a manner that increases emissions of one or more toxic air contaminants.

In the event the Air Pollution Control Officer makes a preliminary determination that any standard specified in Rule 1200 (d)(1)(i), (d)(2), or (d)(3) may be exceeded, the Air Pollution Control Officer shall notify the owner or operator in writing and specify the information needed to make a final determination. If the Air Pollution Control Officer makes a final determination that emissions, in the absence of any emission control device or limitation on material usage or production, may be expected to exceed any standard specified in Rule 1200 (d)(1)(i), (d)(2), or (d)(3), the Air Pollution Control Officer shall notify the owner or operator in writing and include a statement that, as a result, Rule 11(d) does not apply and an Authority to Construct and Permit to Operate are therefore required.

(b) **RESERVED**

(c) **DEFINITIONS**

For the purposes of this rule, unless otherwise noted, the following definitions shall apply:

(1) **"Abrasive Blasting Cabinet"** means an enclosure used to contain abrasive media that can only be entered through ports for gloved arms and hands when abrasive blasting is conducted.

(2) **"Agricultural Source"** means any equipment, operation, or process, or aggregation thereof, used in the production of crops, or raising of fowl or animals and located on contiguous property under common ownership or control that meets any of the criteria identified in Section 39011.5 of California Health and Safety Code.

(3) **"Brake Horsepower Rating"** means the maximum continuous brake horsepower output rating of the internal reciprocating combustion engine as specified by the engine manufacturer and listed on the engine nameplate, if available.

(4) **"CFR"** means Code of Federal Regulations.

(5) **"Designated Workstation"** means an assigned area within the stationary source where a specified operation is conducted.

(6) **"Exempt Compounds"** means the same as defined in Rule 2.

(7) **"First-Article Deliverable Product"** means the first product that is produced using research and development equipment and that is delivered to a potential intra-company or external customer for approval. First-article deliverable product shall not exceed one unit of each product per customer.

(8) **"Hazardous Air Pollutant (HAP)"** means an air contaminant identified in the Federal Clean Air Act, Title 1, Section 112 (b).

(9) **"Hot Melt Adhesive"** means a thermoplastic adhesive that melts at temperatures above 180°F (82°C), does not contain organic solvents, and sets rapidly upon cooling.

(10) **"Major Stationary Source"** means the same as defined in Rule 2.

(11) **"Military Tactical Support Equipment"** means any equipment owned by the U.S. Department of Defense or the National Guard and used in combat, combat support, combat service support, tactical or relief operations, or training for such operations.

(12) **"Operating Day"** means any calendar day during which the specified equipment is operated, or specified operations occur.

(13) **"Organic Solvent"** means any substance that is liquid at standard conditions and contains an organic compound or combination of organic compounds, and that is used as a diluent, thinner, dissolver, viscosity reducer, or cleaning agent, or for other similar purposes.

(14) **"Pilot Plant Facility"** means a trial assembly of small-scale reaction and processing equipment that is the intermediate stage between laboratory experiment and full-scale operation in the development of a new product and/or process.

(15) **"Portable Emission Unit"** means the same as defined in Rule 20.1.

(16) **"Process Heater"** means any combustion equipment fired with liquid and/or gaseous fuel that transfers heat from the combustion gases to water or process streams. Heaters used for swimming pools, spas, and/or therapy pools shall be considered process heaters. This definition does not include any combustion equipment where the material being heated is in direct contact with the products of combustion, such as furnaces or kilns, or any unfired waste heat recovery heater that is used to recover sensible heat from the exhaust of any combustion equipment.

(17) **"Research and Development Equipment"** means equipment that is used to conduct research and develop new or improved processes and products, where such equipment is operated by technically trained personnel under the supervision of a research director, and is not used in the manufacture of products for sale or exchange for commercial profit, other than the first-article deliverable product.

(18) **"Stationary Internal Combustion Engine"** means a spark or compression ignited, reciprocating internal combustion engine that is not a portable emission unit.

(19) **"Stationary Source"** means the same as defined in Rule 2.

(20) **"Toxic Air Contaminant"** means the same as defined in Rule 2.

(21) **"Volatile Organic Compound (VOC)"** means the same as defined in Rule 2.

(22) **"Volatile Organic Liquid"** means any organic liquid either having a Reid Vapor Pressure (RVP) greater than 3 pounds per square inch if the American Society for Testing Material International (ASTM) RVP test method is applicable, or having a true vapor pressure greater than 3 pounds per square inch absolute at 100°F if the ASTM RVP test is not applicable.

(23) **"Volatile Organic Solvent"** means an organic solvent with an initial boiling point of less than 400°F (204°C).

(d) EQUIPMENT, OPERATIONS, OR PROCESSES NOT REQUIRING A PERMIT TO OPERATE

Any equipment, operation, or process that is listed below in Subsections (d)(1) through (d)(20), and that meets the stated exemption provision, parameter, requirement, or limitation, is exempt from the requirements of Rule 10. Such equipment, operation, or process shall not be exempt from any otherwise applicable standards in these Rules and Regulation, or applicable State or federal regulations, unless specified as exempt by that rule or regulation.

Any person claiming such an exemption shall provide documentation sufficient to substantiate the applicability of the stated exemption provision, parameter, requirement, or limitation at the request of the Air Pollution Control Officer.

(1) MOBILE SOURCES

(i) Any engine mounted on, within, or incorporated into any vehicle, train, ship, boat, or barge, that is used primarily to provide propulsion, but which may also supply heat, mechanical, hydraulic, or electrical power to that same vehicle, train, ship, boat, or barge. This exemption does not apply to equipment located onboard floating dry docks or equipment used for dredging operations.

(ii) Railway, road, and runway sweepers used respectively for cleaning rail tracks, roadways, and runways, provided the maximum manufacturer's output rating of any auxiliary sweeper engine is 200 brake horsepower or less.

(2) COMBUSTION AND HEAT TRANSFER EQUIPMENT

(i) Any reciprocating internal combustion engine with a brake horsepower rating of less than 50.

(ii) RESERVED

(iii) Any engine mounted on, within, or incorporated into any motor vehicle, train, ship, boat, or barge, that is used exclusively to load or unload cargo. For the purposes of this exemption, cargo shall not include the removal or relocation of sand, rock, silt, soil, or other materials from dredging operations.

(iv) Any gas turbine engine that has:

(A) an output power rating of less than 0.3 megawatt (MW), or

(B) a maximum gross heat input rating at International Standards Organization (ISO) Standard Day Conditions of less than 1 million British thermal units (BTU) per hour.

This exemption does not apply to any gas turbine operating on waste-derived gaseous fuel.

(v) Any boiler, process heater, or steam generator with a manufacturer's maximum gross heat input rating of less than:

(A) 1 million BTU per hour fired with any fuel, or

(B) 5 million BTU per hour fired exclusively with natural gas and/or liquefied petroleum gas.

This exemption does not apply to reciprocating internal combustion or gas turbine engines.

(vi) Air heaters with a manufacturer's maximum gross heat input rating of less than 20 million BTU per hour fired exclusively with natural gas and/or liquefied petroleum gas and installed in conjunction with combustor testing in gas turbine test cells.

(vii) Portable pile drivers and construction cranes that are routinely dismantled and transported to non-contiguous locations for temporary use. This exemption does not apply to diesel pile driving hammers.

(viii) Portable aircraft engine test stands constructed before November 4, 1976.

(ix) Back-pack power blowers.

(x) Orchard or citrus grove heaters.

(xi) Any oven having an internal volume of 27 cubic feet (0.765 cubic meter) or less.

(xii) Curing or baking ovens in which no volatile organic solvents or materials containing volatile organic solvents are introduced.

(xiii) Any oven used exclusively for the curing, softening, or annealing of plastics.

(xiv) Any oven that is an integral part of a process for which a Permit to Operate is not required pursuant to this rule.

(xv) Any portable internal combustion engine or gas turbine engine used exclusively in conjunction with military tactical support equipment. Such engines shall not be subject to the limitations of Subsections (a)(3) or (a)(4) of this rule. For the purposes of this subsection, portable means carried or moved from one location within a stationary source to another location within the same stationary source, or from one stationary source to another stationary source, in the normal course of operations. Indicia of portability shall include, but are not limited to, wheels, skids, carrying handles, or a dolly, trailer, or vessel.

(xvi) Internal combustion engines used exclusively for purposes of educating students in the operation, maintenance, repair, and rebuilding of such engines.

(xvii) Auxiliary internal combustion reciprocating engines mounted on any authorized emergency vehicle as specified in Section 27156.3 of the California Vehicle Code.

(3) **STRUCTURES AND STRUCTURAL MODIFICATIONS**

(i) Equipment used exclusively in support of any structure designed for and used exclusively as a dwelling for not more than four families.

(ii) Structural modifications that cannot change the quality, nature, or quantity of air contaminant emissions.

(4) **LABORATORY EQUIPMENT AND RELATED OPERATIONS**

(i) Laboratory testing equipment and quality control testing equipment, used exclusively for chemical and physical analysis.

(ii) Vacuum-producing devices used in laboratory operations.

(iii) Hoods, stacks, or ventilators.

(iv) Research and development equipment.

(v) Peptide and DNA synthesis operations.

(vi) Equipment used to manufacture:

(A) biotechnology pharmaceutical products for exclusive use in federal Food and Drug Administration (FDA) approved clinical trials, or

(B) biomedical devices and diagnostic kits for exclusive use in FDA approved clinical trials and laboratory failure analysis testing, or

(C) bioagricultural products for exclusive use in field testing required to obtain FDA, Environmental Protection Agency (EPA), United States Department of Agriculture (USDA) and/or California Environmental Protection Agency (Cal-EPA) approval, and provided the uncontrolled emissions of VOCs from all such operations located at the stationary source do not exceed 5 tons per calendar year. All data and/or records necessary to demonstrate that this exemption is applicable, shall be maintained on-site for 2 years and made available to the District upon request.

(vii) Laboratory equipment and laboratory operations located at secondary schools, colleges, or universities and used exclusively for instruction.

(viii) Any temporary equipment installed in a pilot plant facility, provided that the total emissions increase from all such temporary equipment does not exceed 10 pounds per day of VOCs. For the purposes of this exemption, temporary equipment means equipment located at a pilot plant facility for a period not exceeding 90 days in any consecutive 12-month period excluding construction and installation periods. It shall be the responsibility of a person claiming this exemption to maintain daily records necessary for the District to determine its applicability.

(5) **REPLACEMENT OF EQUIPMENT**

Subject to the limitations and requirements stated in this Subsection (d)(5), identical replacement equipment and like-kind replacement equipment as listed below are exempt from the requirements of Rule 10. The provisions of this Subsection (d)(5) shall not apply to replacement of equipment pursuant to other requirements of these Rules and Regulations; or replacement of equipment subject to air contaminant control standards specified for replacement equipment; or replacement of equipment in whole or part, that in sum would constitute reconstruction or modification under NSPS or District Regulation X - Standards of Performance for New Stationary Sources, or would constitute a major stationary source or replacement of any stationary or portable compression ignition reciprocating internal combustion engine; or rim seal replacements for bulk gasoline floating roof tanks subject to the Best Available Control Technology (BACT) requirements of Rule 61.1.

(i) Identical replacement in whole or part of any article, machine, equipment or other contrivance for which a Permit to Operate has previously been granted for such equipment. Identical means the same manufacturer, model number, and type.

In order to claim the applicability of Subsection (d)(5)(i) for portable equipment (other than a diesel-fueled portable engine), written notification of the proposed equipment replacement and information identifying the manufacturer, model number, serial number, and type of the item used as a replacement, and information detailing

the expected use of the equipment being replaced, must be submitted to the District prior to such replacement.

(ii) Like-kind replacement in whole or part of any article, machine, equipment, or other contrivance where a Permit to Operate has previously been granted for such equipment, and the Air Pollution Control Officer determines that the replacement equipment meets the following requirements:

(A) is identical in function, and

(B) is similar in design, and

(C) the actual air contaminant emissions are the same in nature, and

(D) has a capacity, production rate, and actual air contaminant emissions that are equal to or less than those of the currently permitted equipment.

In order to claim the applicability of Subsection (d)(5)(ii) and prior to replacing any equipment, written notification in the form of an application for permit revision, the information required to make the determinations listed above, and the fees specified in Rule 40 must be submitted to the District.

(6) **PLANT SUPPORT EQUIPMENT**

The exemptions listed in Subsection (d)(6) shall not apply to any combustion equipment associated with plant support equipment unless the combustion equipment is also exempt pursuant to Subsection (d)(2) of this rule.

(i) Vacuum cleaning devices used exclusively for housekeeping purposes.

(ii) Equipment used exclusively for comfort air conditioning or comfort ventilation systems, and not designed or used to remove air contaminants generated by or released from specific equipment.

(iii) Refrigeration units except those used as, or in conjunction with, air pollution control equipment.

(iv) Equipment used exclusively to compress or hold dry natural gas.

(v) Vacuum-producing devices used in connection with other equipment not requiring a Permit to Operate pursuant to this rule.

(vi) Equipment used exclusively for space heating, other than boilers.

(vii) Water cooling towers and water cooling ponds used for evaporative cooling of water utilized solely in heat transfer processes but not used for evaporative cooling of:

(A) process water (e.g., contaminated water or industrial wastewater), or

(B) water from barometric jets or barometric condensers.

(7) **METALLURGICAL PROCESSING EQUIPMENT - GENERAL**

(i) Non-automated soldering equipment, such as handheld soldering irons and guns.

(ii) Solder-screen processes and associated soldering ovens that use a process similar to silk-screening in order to apply the solder paste.

(iii) Each solder leveler, hydrosqueegee, wave solder machine or drag solder machine that uses less than an average of 10 pounds of any material containing VOCs per operating day for each calendar month. The number of operating days per calendar month, monthly purchase records, and daily or monthly records of material usage shall be maintained on-site for 2 years and be made available to the District upon request.

(iv) Brazing and welding equipment, including arc welding equipment.

(v) Molds used for the casting of metals.

(vi) Foundry sand mold forming equipment. This exemption does not apply if heat, sulfur dioxide, or VOCs are used.

(vii) Forming equipment used exclusively for forging, rolling, or drawing of metals.

(viii) Metal and ceramic deposition spray operations where all the materials sprayed contain no chromium, lead, or nickel. This exemption does not apply when electric arc or flame spray guns are used in these operations.

(ix) Tumblers used for the cleaning or deburring of metal products without abrasive blasting.

(x) Shell-core and shell-mold manufacturing machines.

(xi) Extrusion equipment used exclusively for extruding metals or minerals. This exemption does not apply to coking extrusion equipment or processes that manufacture products containing greater than 1% asbestos fiber by weight.

(xii) Shot peening operations where only steel shot is employed and no surface material such as scale, rust, or old paint is removed.

(xiii) Chemical milling of titanium or niobium (columbium) and/or their alloys using nitric and/or hydrofluoric acid at milling bath temperatures below 110°F (43°C).

(xiv) Equipment used for anodizing, plating, polishing, stripping, or etching, if the VOC content of the aqueous material does not exceed 10% by weight. This exemption does not apply to acid chemical milling, chrome plating, chromic acid anodizing, chromate conversion coating processes, or the stripping of chromium. This exemption also does not apply to copper etching or plating operations which use formaldehyde, ammonium hydroxide, ammonium chloride, or solutions of nitric, hydrofluoric, and/or hydrochloric acids which contain more than 17% acid concentration by weight.

(xv) Oil quenching tanks that use less than 20 gallons per year of make-up oil. Monthly purchase records and daily or monthly usage records of all materials added must be maintained on-site to claim applicability of this exemption.

(xvi) Salt bath quenching tanks where no chromium containing compounds are added to the tank.

(8) **METALLURGICAL, GLASS, AND CERAMIC PROCESSING EQUIPMENT - USING FURNACES, KILNS, AND OVENS**

(i) Crucible furnaces, pot furnaces, or induction furnaces, each with a maximum rated capacity of less than 450 cubic inches of any molten metal.

(ii) Crucible furnaces, pot furnaces, or induction furnaces each with a maximum rated capacity of 2,500 cubic inches or less, or 950 pounds or less, and where

(A) no sweating or distilling is conducted, and

(B) only non-ferrous metals, except lead and yellow brass, are poured or held in a molten state.

Records of the types of all metal poured from such furnaces shall be maintained on-site for 2 years and be made available to the District upon request. This exemption does not apply if alloying elements of arsenic, beryllium, cadmium, chromium, lead, and/or nickel are utilized in such furnaces.

(iii) Equipment used exclusively for the sintering of glass or metals (excluding lead), where no coke or limestone is used.

(iv) Equipment used exclusively for heating metals immediately prior to forging, pressing, rolling, or drawing.

(v) Any oven used exclusively for heat treating glass or metal if the materials are not heated to a molten state, and the oven is heated exclusively by natural gas, liquefied petroleum gas, and/or electricity.

(vi) Atmosphere generators and vacuum producing devices used in connection with metal heat treating processes.

(vii) Die casting machines.

(viii) Kilns used exclusively for firing ceramic ware, heated exclusively with natural gas, liquefied petroleum gas, and/or electricity.

(9) **ABRASIVE BLASTING EQUIPMENT**

The exemptions listed in this Subsection (d)(9) shall not apply to any combustion equipment associated with abrasive blasting equipment unless the associated combustion equipment is also exempt pursuant to Subsection (d)(2) of this rule. The exemptions listed in this Subsection (d)(9) shall not also apply to abrasive blasting operations where asbestos containing materials are being removed.

(i) Blast cleaning equipment using a suspension of abrasive in water.

(ii) Abrasive blasting cabinets that are vented through a control device into the building where such cabinets are located.

(iii) Robotically-operated enclosed abrasive blasting equipment that emits less than 5 pounds of particulate matter per day, operates at a negative pressure, and is vented through a control device into the building where it is located.

(iv) Abrasive blasting equipment with a manufacturer's sand capacity rating of 100 pounds or less (45.4 kg), or 1 cubic foot or less.

(10) **MACHINING EQUIPMENT**

(i) Equipment used for buffing, polishing, carving, cutting, deburring, drilling, machining, routing, shearing, sanding, sawing, surface grinding, or turning of: ceramic artwork, ceramic precision parts, glass, leather, metal, rubber, fiberboard, masonry, or non-fiberglass reinforced plastic. This exemption does not apply to tire buffers.

(ii) Wet-jet devices used to cut fiberglass reinforced plastic.

(iii) Portable handheld equipment used for buffing, polishing, carving, cutting, drilling, machining, routing, sanding, sawing, surface grinding, or turning of fiberglass reinforced plastic, when not used at a designated workstation, booth, or room.

(iv) Equipment used for carving, cutting, drilling, surface grinding, planing, routing, sanding, sawing, shredding, or turning of wood.

(v) Tub grinders and trommel screens used for processing wood waste. This exemption does not apply to any associated combustion equipment unless such equipment is also exempt pursuant to Subsection (d)(2) of this rule.

(vi) Equipment used for the pressing or storing of sawdust, wood chips, or wood shavings.

(vii) Equipment used exclusively to mill or grind coatings or molding compounds where all materials introduced are in a paste form and no volatile organic solvents are used.

(viii) Drilling machines for fiberglass parts that are exclusively vented through an intact bag filter that exhausts inside the building where such equipment is located and provided that the amount of fiberglass collected in the bag filter is below 500 pounds per calendar year per facility. Monthly records of all fiberglass collected in the bag filter shall be maintained on-site for 2 years and made available to the District upon request.

(11) **PRINTING AND REPRODUCTION EQUIPMENT AND OPERATIONS**

(i) Any graphic arts operation or group of graphic arts operations located at a stationary source, that emit less than an average of 15 pounds of VOCs per operating day for each calendar month from all such operations. All records necessary to calculate average daily VOC emissions, such as emission factors or mix ratios, VOC content of each material used, number of operating days per month, and daily or monthly records of material usage, shall be maintained on-site for 3 years and be made available to the District upon request.

(ii) Inkjet and laser printing equipment.

(iii) Digital printing operation as defined in Rule 67.16(c)(4) where a print capacity of any individual printer which uses solvent based inks is less than 1000 ft^2/hr, or an operation where a print capacity of any individual printer which uses water based or UV inks is less than 10,000 ft^2.

(iv) Large commercial digital printing operation as defined in Rule 67.16 (c)(13), provided that the records specified in Rule 67.16 (f) (4) are maintained.

(v) Ink cartridge filling, refilling, and/or refurbishing operations.

(12) **FOOD PROCESSING AND FOOD PREPARATION EQUIPMENT**

(i) Equipment used exclusively to grind, blend, or package tea, cocoa, spices, dried flowers, or roasted coffee.

(ii) Equipment located at eating establishments that is used for preparing food for human consumption at the same establishment. This exemption does not apply to boilers or coffee roasting equipment.

(iii) Coffee roasting equipment with a manufacturer's rating of 15 pounds per hour or less.

(iv) Any bakery oven that is located at a stationary source where the combined rated heat input capacity of all bakery ovens is less than 2 million BTU per hour.

(v) Any bakery oven used exclusively to bake non-yeast-leavened products.

(vi) Equipment used to crush and/or ferment grapes to produce wine.

(vii) Equipment used to brew beer at breweries that produce less than one million gallons of beer per year. This exemption does not apply to boilers or silos.

(viii) Smokehouses used for preparing food.

(13) **PLASTICS, FOAM, AND RUBBER PROCESSING EQUIPMENT OR OPERATIONS**

(i) Extrusion equipment used exclusively for extruding rubber products or plastics where no organic additives are present.

(ii) Equipment used for compression molding and/or injection molding of plastics.

(iii) Mixers, roll mills, and calenders for rubber or plastics, where no material in powder form is added and no volatile organic solvents are used.

(iv) Equipment used exclusively for conveying and storing plastic materials.

(v) Foam manufacturing or foam application operations that emit less than an average of 5 pounds of VOCs per operating day for each calendar month. All records necessary to calculate average daily VOC emissions, such as emission factors, VOC content of each material used, number of operating days per calendar month, and daily or monthly records of material usage, shall be maintained on-site for 2 years and be made available to the District upon request.

(vi) Plastics manufacturing or fabrication operations, including reinforced plastic fabrication operations using materials such as epoxy and/or polyester resins, that emit less than an average of 5 pounds of VOCs per operating day for each calendar month. All records necessary to calculate average daily VOC emissions, such as emission factors, VOC content of each material used, number of operating days per calendar month, and daily or monthly records of material usage, shall be maintained on-site for 2 years and be made available to the District upon request.

(vii) Hot wire cutting of expanded polystyrene foam.

(14) **MIXING, BLENDING, AND PACKAGING EQUIPMENT**

(i) Dry batch mixers with a rated working capacity of 0.5 cubic yards or less, where material is added in a dry form prior to the introduction of a subsequent liquid fraction or where no liquid fraction is added.

(ii) Wet batch mixers with a rated working capacity of 1 cubic yard or less, where no volatile organic solvents are used.

(iii) Equipment used exclusively for the manufacture of water emulsions of asphalt, greases, oils, or waxes.

(iv) Equipment used exclusively for the packaging of lubricants or greases.

(v) Equipment used at ambient temperatures exclusively for mixing and blending materials to make water-based adhesives.

(vi) Any coating and/or ink manufacturing operations located at a stationary source that emit less than an average of 15 pounds of VOCs per operating day for each calendar month from all such operations. All records necessary to calculate average daily VOC emissions, such as emission factors, VOC content of each material used, number of operating days per calendar month, and daily or monthly records of material usage, shall be maintained on-site for 3 years and be made available to the District upon request.

(15) **COATING AND ADHESIVE APPLICATION EQUIPMENT AND OPERATIONS**

(i) Powder coating operations where less than 0.5 gallons per day of any surface preparation or cleaning material containing VOCs are used. Monthly purchase and daily or monthly usage records of surface preparation and cleaning materials shall be maintained on-site for 3 years and made available to the District upon request. This exemption does not apply to metallizing gun operations.

(ii) Application equipment and processes used exclusively to apply coatings and/or adhesive materials to stationary structures and/or their appurtenances at the site of installation, to portable buildings including mobile homes at the site of

installation, to pavement, or to curbs. This exemption does not apply to application equipment and processes where coatings or adhesive materials are applied in off-site shops or to non-stationary structures such as airplanes, ships, boats, railcars, and automobiles.

(iii) Any coating or adhesive materials application operation (portable or stationary) where 20 gallons or less of liquid coatings or adhesive materials are applied per consecutive 12-month period. Monthly purchase records and daily or monthly usage records of all coatings or adhesive materials applied must be maintained on-site for 3 years to claim applicability of this exemption. The volume of materials applied using non-refillable handheld aerosol spray containers shall not be included when determining the applicability of this exemption.

(iv) Any coating or adhesive materials application operation at a stationary source where the VOC emissions from such operation are 150 pounds or less per consecutive 12-month period, excluding surface preparation and cleanup solvents. All records necessary to calculate VOC emissions, such as VOC content of each coating or adhesive material applied and daily or monthly usage records of such materials must be maintained on-site for 3 years to claim applicability of this exemption.

The volume or VOC content of materials applied using non-refillable handheld aerosol spray containers shall not be included when determining the applicability of this exemption.

(v) Chromate conversion coating processes where coatings are applied exclusively by brush or rollers.

(vi) Coating operations that exclusively use preservative oils and compounds as defined in Rule 67.9, lubricants, greases, or waxes containing no volatile organic solvents.

(vii) Coating operations that exclusively use non-refillable handheld aerosol spray containers.

(viii) The application of coatings outside of a defined application station that are necessary to cover minor imperfections or repair minor mechanical damage incurred prior to intended use.

(ix) Coating application equipment located at primary or secondary schools and used exclusively for instruction.

(x) Liquid surface coating operations that exclusively use hand-held brushes to apply wet fastener primer coatings from containers that are 8 ounces or less in size.

(xi) Liquid surface coating operations that exclusively use air brushes with a coating capacity of 2 ounces or less.

(xii) Hot melt adhesive application equipment.

(xiii) The application of coatings outside of a designated workstation that is necessary for the maintenance of stationary equipment.

(16) **SOLVENT APPLICATION EQUIPMENT AND OPERATIONS**

(i) Equipment used exclusively for surface preparation and cleaning if the VOC content of the aqueous material does not exceed 50 grams per liter, as applied.

(ii) Cold solvent cleaning dip tanks, vapor degreasers, and paint stripping tanks:

(A) with a liquid surface area of 1 square foot or less, or

(B) with a maximum capacity of 1 gallon or less.

(iii) Cold solvent cleaning remote reservoirs with a sink cross-sectional area of 1 square foot (0.09 square meters) or less.

(iv) Batch-type waste solvent recovery stills for on-site recovery of waste solvent with a maximum solvent usage of 350 gallons per day, provided the still is equipped with a device that shuts off the heating system if the solvent vapor condenser is not operating properly.

(v) Metal inspection tanks that:

(A) have a liquid surface area of less than 5 square feet, or

(B) do not use volatile organic solvents, or

(C) are not equipped with spray type flow devices or a means of solvent agitation.

(vi) Cold solvent degreasers used exclusively for educational purposes.

(vii) Golf grip application stations that exclusively use liquid materials with an initial boiling point of 450°F (232°C), or greater.

(viii) Solvent wipe cleaning operations, not associated with any permitted operation, provided the solvent is applied from a container that minimizes emissions to the air, such as but not limited to, squeeze containers with narrow tips, spray bottles, or dispensers with press down caps; and the uncontrolled VOC emissions from all such operations located at the stationary source do not exceed 5 tons per calendar year, or the total purchase of solvents for such operations does not exceed 1,500 gallons per calendar year. All data and/or records necessary to demonstrate

that this exemption is applicable, shall be maintained on-site for 2 years and made available to the District upon request.

(17) **STORAGE AND TRANSFER EQUIPMENT**

(i) Stationary equipment used exclusively to store and/or transfer organic compounds that are not volatile organic liquids.

(ii) Stationary storage tanks for volatile organic liquids with a capacity of less than 250 gallons and associated equipment used exclusively to transfer materials into such tanks.

(iii) Equipment used exclusively to store and/or transfer organic solvents that are not used as fuels.

(iv) Equipment used exclusively to store and/or transfer natural gas, butane, or propane when not mixed with other volatile organic liquids, other than odorants.

(v) Equipment used exclusively to store and/or transfer fuels that are used exclusively as a source of fuel for wind machines used for agricultural purposes.

(vi) Mobile transport, delivery, or cargo tanks on vehicles used for the delivery of volatile organic liquids. This exemption does not apply to asphalt tankers used to transport and transfer hot asphalt used for roofing applications.

(vii) Equipment used to transfer fuel to and from amphibious ships for maintenance purposes, provided total annual transfers do not exceed 60,000 gallons per year at a stationary source.

(viii) Equipment used exclusively to store and/or transfer liquid soaps, liquid detergents, vegetable oils, fatty acids, fatty esters, fatty alcohols, or waxes, and wax emulsions.

(ix) Pressurized tanks used to store inorganic or halogenated organic gases and associated equipment used exclusively to transfer materials into such tanks.

(18) **DRYCLEANING, LAUNDRY EQUIPMENT, AND FABRIC RELATED OPERATIONS**

(i) Non-immersion dry cleaning equipment.

(ii) Lint traps used exclusively in conjunction with dry cleaning tumblers.

(iii) Wastewater processing units associated with drycleaning operations using halogenated compounds, provided the concentration of halogenated compounds in the water being evaporated in the unit does not exceed 400 parts per million (by weight).

(iv) Laundry dryers, extractors, or tumblers used for fabrics cleaned only with solutions of bleach or detergents containing no volatile organic solvents.

(v) Equipment used for wet cleaning (using water as a cleaning agent), washing or drying articles fabricated from cloth, fabric, or glass, where no volatile organic solvents are employed in the process and none of the articles being cleaned have residues of volatile organic solvents.

(vi) Equipment, including dryers, used exclusively for printing, dyeing, stripping, or bleaching of textiles where no volatile organic solvents are used.

(vii) Any equipment listed above in Subsections (18)(iv), (18)(v), or (18)(vi) which does not emit more than an average of 5 pounds of VOCs per operating day for each calendar month. All records needed to calculate average daily VOC emissions, such as emission factors, VOC content of all materials used, number of operating days per calendar month, and daily or monthly records of material usage, shall be maintained on-site for 2 years and be made available to the District upon request.

(19) **MISCELLANEOUS EQUIPMENT AND OPERATIONS**

(i) Air pollution control equipment used exclusively to reduce

(A) emissions from any article, machine, equipment, process, or contrivance not required to have a Permit to Operate; or

(B) emissions generated during the draining and degassing of stationary floating roof gasoline storage tanks provided that a written authorization from the Air Pollution Control Officer to conduct the draining and degassing is obtained pursuant to Rule 61.1.

(ii) Repairs or maintenance not involving structural changes to any equipment for which a Permit to Operate has been granted.

(iii) Roofing kettles (used to heat asphalt), each with a capacity of 85 gallons or less.

(iv) Paper shredders and disintegrators, each with a capacity of 600 pounds per hour or less, and the associated conveying systems and baling equipment.

(v) Alkaline chemical milling equipment:

(A) used exclusively for the cleaning of internal combustion engine parts, or

(B) for which construction or installation commenced prior to March 27, 1990.

(vi) Portable conveyors (belt or screw type) where there is no screening.

(vii) Fire extinguishing equipment using halons.

(viii) Equipment used exclusively for the purposes of:

(A) flash-over fire fighting training, or

(B) hand-held fire extinguisher training operations.

(ix) Equipment used exclusively for bonding lining to brake shoes, where no volatile organic solvents are used.

(x) Equipment used exclusively to liquefy or separate oxygen, nitrogen, or the inert gases from air.

(xi) Any operation producing or blending materials for use in cosmetic or pharmaceutical products and/or manufacturing cosmetic or pharmaceutical products by chemical processes, that emit less than an average of 15 pounds of VOCs per operating day for each calendar month from all phases of all such operations located at a single stationary source. All records necessary to calculate average daily VOC emissions, such as emission factors, VOC content of each material used, number of operating days per calendar month, and daily or monthly records of material usage, shall be maintained on-site for 3 years and be made available to the District upon request.

(xii) Equipment used for hydraulic or hydrostatic testing.

(xiii) Ethylene oxide sterilizing processes that use less than 5 pounds of ethylene oxide per calendar year. Purchase records and records of monthly ethylene oxide usage shall be maintained on-site for 2 years and be made available to the District upon request.

(xiv) Sterilizers or autoclaves using only steam or hydrogen peroxide.

(xv) Nail salon operations.

(xvi) Equipment used exclusively for the melting or applying wax where no volatile organic solvents are used.

(xvii) Aerosol can puncturing or crushing operations that use:

(A) a closed loop recovery system that emits no air contaminants, or

(B) a recovery system that vents all emissions through a properly operated and maintained carbon canister, provided not more than 500 cans are processed through the equipment per day. Throughput records of the number of cans processed shall be maintained on-site for 2 years and be made available to the District upon request.

(xviii) Any article, machine, equipment, or contrivance that emits airborne radioactive materials in concentrations above the natural radioactive background concentration in air in the form of dusts, fumes, smoke, mists, liquids, vapors, or gases. This exemption does not apply to incinerators or boilers.

Atomic energy development and radiation protection are controlled by the State of California to the extent it has jurisdiction thereof, in accordance with the advice and recommendations made to the Governor by the Advisory Council on atomic energy development and radiation protection. Such development and protection are fully regulated by the Nuclear Regulatory Commission to the extent that such authority has not been delegated to the states.

(xix) Any other piece of equipment or operation that the Air Pollution Control Officer determines to be a negligible source of air contaminants. This provision applies only to equipment or operations that have obtained a Certificate of Exemption in writing from the District. The Certificate of Exemption document must be maintained with the exempt equipment or be made readily available at all times and applies only to the specific equipment or operation described in the Certificate of Exemption document.

(xx) Equipment approved for use by the EPA for recovering and/or recycling chlorofluorocarbons (CFCs) or alternative fluorocarbons.

(xxi) Wastewater treatment facilities, water reclamation facilities, and wastewater pump stations each with a design throughput capacity of less than one million gallons of wastewater per day.

(xxii) Sludge processing operations at wastewater treatment facilities each with a design throughput capacity of less than one million gallons of wastewater per day.

(xxiii) Smoke generating equipment in training sessions conducted by government agencies for the purpose of certifying persons to evaluate visible emissions for compliance with State law or District Rules and Regulations.

(xxiv) Smoke generating equipment used for training military personnel and the testing of military equipment by the Department of Defense.

(xxv) Any agricultural source where the aggregate actual emissions from all stationary emission units do not exceed 25 tons per year of each criteria pollutant and do not exceed 5 tons per year of any single HAP or 12.5 tons per year of combined HAPs.

(xxvi) Fuel cells used in power and/or heat generating equipment that are certified under California Air Resources Board's Distributed Generation Program or meet the emission standards of that program.

(20) **REGISTERED EQUIPMENT**

(i) Any portable equipment that is registered in accordance with District Rule 12.1. This exemption does not apply to any equipment while in use for screening of soils in contaminated soil remediation projects.

(ii) Any emission unit registered in accordance with District Rule 12.

(iii) Any portable equipment registered in accordance with the Statewide Portable Equipment Registration Program adopted pursuant to California Health and Safety Code Section 41750, et seq., except in circumstances specified in that program (California Code of Regulations, Title 13, §2451 and §2457).

(e) **RESERVED**

(f) **RESERVED**

(g) **TEST METHODS**

The following test methods will be used for compliance verification purposes.

(1) Measurement of the VOC content of all coating and adhesive materials subject to this rule shall be conducted in accordance with EPA Test Method 24 (40 CFR 60, Appendix A).

(2) Measurement of VOC content of cleaning materials subject to the requirements of Subsection (d)(16)(i) shall be conducted in accordance with the South Coast Air Quality Management District Test Method 308 or 313.

(3) Measurement of the initial boiling point of all materials subject to this rule shall be conducted in accordance with ASTM Standard Test Method D1078-05, for distillation range of volatile organic liquids, or its most current version.

(4) Calculation of total VOC vapor pressure for all materials subject to this rule shall be conducted in accordance with the District's "Procedures for Estimating the Vapor Pressure of VOC Mixtures," as it exists on June 27, 1995. If the vapor pressure of the

liquid mixture, as calculated by this procedure, exceeds the limits specified, the vapor pressure shall be determined in accordance with ASTM Standard Test Method D2879-97 (2002), or its most current version. The solvent composition shall be determined using one of the following ASTM standard recommended practices: E168-99 (2004), E169-04, or E260-96 (2001), or their most current versions. The fraction of water and exempt compounds in the liquid phase shall be determined by using ASTM Standard Test Methods D3792-05 and D4457-02, or their most current versions, and shall be used to calculate the partial pressure of water and exempt compounds. The results of vapor pressure measurements obtained using ASTM Standard Test Method D2879-97 (2002), or its most current version, shall be corrected for partial pressure of water and exempt compounds.

(5) Reid Vapor Pressure pursuant to Subsections (c)(22) and (d)(17) of this rule shall be measured in accordance with ASTM Standard Test Method D323-99a, or its most current version.

(6) Concentration of halogenated compounds in water pursuant to Subsection (d)(18)(iii) shall be measured in accordance with EPA Test Method 8021B.

(h) **COMPLIANCE SCHEDULE**

Any person operating existing equipment previously exempt from Rule 10 permit requirements pursuant to the version of Rule 11 existing prior to April 25, 2007, and that is no longer exempt from Rule 10 permit requirements pursuant to this rule, shall submit an application for a permit to operate such equipment by April 25, 2008.

IT IS FURTHER RESOLVED AND ORDERED that the subject amendments to Rule 67.16 of Regulation IV shall take effect *(6 months after date of adoption).*

IT IS FURTHER RESOLVED AND ORDERED that the subject amendments to Rule 11 of Regulation II shall take effect *(6 months after date of adoption).*

APPROVED AS TO FORM AND LEGALITY
COUNTY COUNSEL

BY:_____
SENIOR DEPUTY

- - -

PASSED AND ADOPTED by the Board of Supervisors, County of San Diego, State of California, on this 9th day of November, 2011, by the following vote:

AYES: Cox, Jacob, Slater-Price, Roberts, Horn

STATE OF CALIFORNIA)
County of San Diego)SS

I hereby certify that the foregoing is a full, true and correct copy of the Original Resolution entered in the Minutes of the San Diego County Board of Supervisors.

THOMAS J. PASTUSZKA
Clerk of the Board of Supervisors

By: _____
Catherine Santos, Deputy

Resolution No. 11-163
Meeting date: 11/09/11 (AP1)

ATTACHMENT B

SOCIOECONOMIC IMPACT ASSESSMENT

PROPOSED AMENDED RULE 67.16 -GRAPHIC ARTS OPERATIONS

July 2011

Prepared by

San Diego County Air Pollution Control District
10124 Old Grove Road
San Diego, CA 92131

SOCIOECONOMIC IMPACT ASSESSMENT
PROPOSED AMENDED RULE 67.16 –
GRAPHIC ARTS OPERATIONS

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EXECUTIVE SUMMARY

This report represents the results of a socioeconomic impact assessment (SIA) of the San Diego County Air Pollution Control District's (District) proposed amended Rule 67.16 - Graphic Arts Operations. The proposed rule will comply with the latest federal Control Techniques Guidelines (CTGs) for lithographic, letterpress and flexible packaging printing industries.

Proposed amended Rule 67.16 contains volatile organic compound (VOC) emission limits for inks, adhesives, coatings, fountain solutions and cleaning materials used in conventional (analog) printing processes. These limits are at least as stringent as those established by the federal CTGs. The rule provides new exemptions for cleaning of UV lamps and reflectors, electronic beam processors and stripping of cured inks, coatings and adhesives. The amended rule also includes new and revised definitions and updated test methods for determining compliance.

In addition, the rule contains an exemption for digital printing operations (comparatively new technology) provided that specified records are kept for large scale digital printing operations, as defined. This will allow the District to estimate the magnitude of VOC emissions from digital printing and provide an answer as to whether it is necessary to control them.

It is not anticipated that the proposed amendments will have a significant socioeconomic impact on affected industries. SIA demonstrates that proposed emission limits in the rule are feasible and that complying materials are available in the market place. Many printing facilities in San Diego County are already using fountain solutions, cleaning and adhesive materials that comply with the proposed lower VOC content limits. The estimated cost-effectiveness of proposed amendments to Rule 67.16 is well within the District threshold for the rules regulating VOC emissions that reflect Reasonably Available Control Technology.

I. INTRODUCTION

California law requires air pollution control districts (excluding those with populations of less than 500,000 people) to perform a socioeconomic impact assessment (SIA) when adopting, amending, or repealing rules and regulations that will significantly affect air quality and emission limitations.

The Health and Safety (H&S) Code Section 40728.5, subdivision (b) specifies the following elements to be included in the socioeconomic impact assessment:

1. The type of industries or business, including small business, affected by the rule or regulation.

2. The impact of the rule or regulation on employment and the economy of the region affected by the adoption of the rule or regulation.

3. The range of probable costs, including costs to industry or business, including small business, of the rule or regulation.

4. The availability and cost-effectiveness of alternatives of the rule or regulation.

5. The emission reduction potential of the rule or regulation.

6. The necessity of adopting, amending, or repealing the rule or regulation in order to attain state and federal ambient air quality standards.

The H&S Code Section 40728.5, subdivision (e) states that "upon the approval by a majority vote of the district board, a county district is not required to include the analysis specified in paragraphs (2) and (4) above in any assessment of economic impacts of any rule or regulation that only has a requirement that is substantially similar to, or is required by, state, or federal statute, regulation or applicable formal guidance document".

The proposed amendments to Rule 67.16 comply with the emission standards of two federal guidance documents: Control Technique Guidelines (CTGs) for Offset Lithographic Printing and Letterpress Printing [(1)] and for Flexible Package Printing [(2)]. Therefore, the following report does not include the analysis required by paragraphs (2) and (4).

II. NECESSITY OF AMENDING RULE 67.16

San Diego County Air Basin does not attain the National and State Ambient Air Quality Standards for ozone. Both federal and state laws require the District to implement rules that control emissions of ozone precursors -- volatile organic compounds (VOC) and oxides of nitrogen. Current Rule 67.16 – Graphic Arts Operations regulates VOC emissions from printing and related operations. In addition, in 2006 the Environmental Protection Agency (EPA) issued two Control Techniques Guidelines (CTGs) for printing industry: the CTG for Lithographic and

Letterpress Printing[1] and the CTG for Flexible Package Printing[2] that established more stringent emission limits for cleaning solvents and fountain solutions than those in existing Rule 67.16. The proposed amended Rule 67.16 follows the federal guidelines. In addition, the rule requires updating because it was last amended in 1996.

III. SUMMARY OF PROPOSED AMENDMENTS TO RULE 67.16

The amended rule will:

- Reduce the VOC content limit for non-refrigerated fountain solutions to 5% VOC by volume, and to 8.5% for refrigerated fountain solutions;

- For cleaning materials, establish the new, lower emissions limits: VOC content less than 100 g/liter, or VOC vapor pressure 5 mm Hg at 20^{o}C or less;

- Establish a new VOC content limit for adhesives at 150 g/liter, less water and less exempt compounds;

- Include new or revised definitions including definitions for digital printing operations;

- Exempt digital printing operations from Rule 67.16, provided that specified records are maintained for large operations with a print capacity as defined in the rule;

- Provide new exemptions for stripping of cured inks, coatings and adhesives, cleaning of UV lamps and reflectors and electronic beam processors; and,

- Update the test methods for determining VOC content of graphic arts and cleaning materials and VOC vapor pressure of cleaning materials and the overall control efficiency of emission control systems.

IV. TYPE OF INDUSTRIES AFFECTED BY AMENDED RULE 67.16

Proposed amended Rule 67.16 will affect owners and operators of companies conducting graphic arts operations, such as lithographic, letterpress and flexographic printing (NAICS Code 32311). Presently, there are 16 companies with permits to operate in San Diego County subject to Rule 67.16. The majority of them (13) conduct lithographic printing.

Lithography is a printing technique where the image and non-image areas are on the same plane on a printing plate. The image area of the plate is hydrophobic (repels water) and the non-image area is hydrophilic (attracts water). A water system continually supplies a fountain solution wetting the non-image area. Often lithographic processes are offset, i.e., the ink is transferred from the plate to a rubber blanket and then to a paper substrate. Lithography is used mostly in newspaper and book printing. Three companies in the county conduct flexographic printing where the image carrier is made of elastomeric material and the image is raised above the non-

image area. The substrates in flexographic printing include plastic films, foil, paper boards and envelopes, textiles, etc. One company uses letterpress printing, the oldest printing technology where raised inked metal type is applied directly onto the substrate, in this case onto paper plates.

The newest printing technique that became quite popular in the last decade is digital printing. Unlike traditional printing it does not use real metal or rubber plates to create images. The images are generated electronically in a computer that uses digital files such as PDFs (portable document formats) and sends the images to a printer (inkjet or laser).

V. ESTIMATED VOC EMISSIONS FROM GRAPHIC ARTS OPERATIONS IN SAN DIEGO COUNTY

VOC emissions from traditional analog printing processes occur as a result of using VOC-based inks, cleaning solvents, and fountain solutions. The magnitude of VOC emissions from these processes is very well established, including emission factors for cleaning materials and inks, i.e., their VOC content, and retention factors for VOC- and water-based inks applied to porous surfaces such as paper.

Table 1 on the following page contains a list of facilities subject to proposed amended Rule 67.16 and their VOC emissions. This list does not include operations, each emitting less than an average 15 lbs VOC per day of operation, calculated on monthly basis, that are exempt from the rule emission limits. These operations are also exempt from District permit requirements by current Rule 11 (Exemptions from Rule 10 Permit Requirements). In addition, Table 1 does not include facilities conducting digital printing operations because their VOC emissions are not yet quantified. It is assumed in this report that such emissions are below the permit requirement threshold (average of 15 lbs per day calculated on monthly basis from all operations at a stationary source) as specified in Rule 11.

Table 1 also contains the number of employees at each facility obtained from the data published by the California Employment Development Department[3] and from the information provided by the affected companies.

Table 1 shows that the total VOC emissions from sources subject to Rule 67.16 are about 64 tons/year, with the majority of emissions (66%) coming from the use of cleaning materials. The printing inks are not a main contributor to the total emissions from graphic arts operations due to a significant retention of volatile organic compounds (up to 95% of ink oils) that occurs during non-heat lithographic printing on porous substrates such as paper. Therefore, the proposed rule amendments almost entirely address control measures to reduce VOC emissions from the use of cleaning materials.

T**able 1. Sources and VOC Emissions Subject to Amended Rule 67.16.**

Company	Number of Employees[3]	Operation	VOC Emissions tpy		
			Fountain Solutions	Cleaning Materials	Total, including inks
1	20-49	Lithographic, single sheet fed heat set w/ cat. oxidizer; also non- heat set, digital	0.01	0.02	2.6
2	App.195	Letterpress, single sheet fed Paper Plates printing	0	0.01	0.1
3	50-99	Lithographic, single sheet fed	1.34	8.87	10.5
4	50-99	Lithographic web fed	0.06	6.23	7.9
5	20-49	Lithographic, web fed & flexographic, single sheet & web fed	0.06	0.45	2.0
6	50-99	Lithographic, single sheet fed	0.01	0.65	1.0
7	50-99	Lithographic, single sheet fed	0.01	6.62	7.6
8	App.500	Lithographic, web fed	0.13	2.24	2.8
9	50-99	Lithographic , web fed	0.19	2.57	3.4
10	100-249	Lithographic, web fed	0.21	1.35	1.9
11	100-249	Lithographic, web fed	0.71	5.96	7.0
12	50-99	Flexographic & lithographic, web fed	0.1	0.71	2.2
13	50-99	Flexographic	0.06	1.29	3.1
14	20-49	Lithographic, web fed	0.01	0.96	1.0
15	100	Lithographic, web fed	0.01	2.75	4.3
16	120	Flexographic, envelopes	0	1.6	6.7
Total			**2.9**	**42.3**	**64.1**

VI. EMISSION REDUCTION POTENTIAL AND COST-EFFECTIVENESS OF THE PROPOSED AMENDMENTS

1. Cleaning materials.

As shown in Table 1, the estimated emissions from the use of cleaning materials in graphic arts subject to the proposed amendments are approximately 42.3 tons per year. These VOC-containing materials are used for manual and automatic cleaning of printing presses and their parts. The proposed emission limits for cleaning materials in the amended Rule 67.16 are 100 g VOC per liter or a VOC vapor pressure of 5 mm Hg at 20^{o}C. In the current rule, the VOC content limit for cleaning materials is 200 g/l or the VOC vapor pressure 45 mm Hg at 20^{o}C. If all facilities choose to use a cleaning material complying with the VOC content limit, the estimated emission reduction will be approximately 50%, i.e. proportional to the reduction in the VOC content, or approximately 21 tons per year.

However, if a facility chooses to comply with the rule by using a cleaning material with a VOC vapor pressure not exceeding 5 mm Hg a 20^{o}C, estimating emission reductions will present some problems. The majority of cleaning materials are mixtures of several organic compounds; therefore it is very difficult to determine the correlation between the vapor pressure of such mixtures and their evaporation rates. In addition, some graphic arts companies in San Diego County are already using cleaning materials with a complying VOC composite vapor pressure, some are using solvents with a vapor pressure as low as 0.5 mm Hg at 20^{o}C.

Therefore, to be more realistic and assuming that only half of the estimated emission reductions will actually take place, this rule provision is conservatively estimated to reduce VOC emissions by 10.5 tons per year.

The current rule requires fountain solutions to contain less than 15vol. % of VOCs. The proposed amendments will reduce the VOC concentration to 5vol. % if a fountain solution is not refrigerated, or 8.5vol. % if it is refrigerated to at least 60^{o}F. As shown in Table 1, the total emissions from fountain solutions are about 3 tons/year. The majority of fountain solutions presently used by the graphic arts industry in San Diego County do not contain high volatility alcohols such as isopropyl alcohol, very widely used in the past. Instead, they use low volatility alcohols, or their esters. In addition, most fountain solutions are normally sold as concentrates and are diluted with water, sometimes in proportions as high as 1:10 or 1: 20. Many companies are already using fountain solutions that are in compliance with the VOC limits in the proposed rule. Therefore, it is not expected that reducing VOC concentration limits for fountain solutions will result in measurable emission reductions.

2. Adhesive materials.

The proposed VOC content limit for adhesives is reduced from 300 g/l to 150 g/l (less water and less exempt compounds). While this limit is significantly lower than the previous one, there will be no significant emission reductions because adhesives are not used in the majority of graphic arts operations in the county. The companies that use adhesives are already in compliance with the proposed limit.

3. Cost-effectiveness of the proposed rule.

The emission limits of cleaning products will only affect the companies that are presently using solvents with a VOC content close to 200 g/liter as provided by existing Rule 67.16. These companies will have to replace them with complying products, having either a VOC content less than 100 g/liter, or with a low composite vapor pressure as required by the proposed rule.

It should be noted that many air districts in California, including such large districts as Bay Area and South Coast Air Quality Management Districts, have very similar or even more stringent rules for graphic arts industry. Therefore low VOC content adhesives, cleaning materials and fountain solutions are widely available in the market place at the prices not much different from the cleaning products that were previously sold.

The District's information obtained from cleaning products manufacturers and local distributors of graphic arts materials shows that there is no significant difference in the cost of cleaning materials complying with a proposed VOC composite vapor pressure limit and the ones presently used. On the other hand, if a facility chooses to use cleaning products complying with the VOC content limit of the amended rule, they will have to buy products that are slightly more expensive than the non-complying ones. For example, according to the information from local distributors, conventional high VOC content solvents are sold for about $10 per gallon, while low VOC content products cost between $10 and $17 per gallon, with the average cost of $13.5 per gallon, which is an increase of approximately 35%. Assuming that the solvents complying with the proposed rule limits have the same cleaning effectiveness as previously used products, the cost effectiveness of the proposed rule will be about $2,265/ton, or $1.1/lb of VOC emissions reduced[4]. This value is significantly lower than the District cost-effectiveness threshold of $6/lb of VOC reduced for prohibitory rules reflecting RACT.

In reality, the cost of compliance with proposed amendments to Rule 67.16 may be somewhat higher for some facilities because the amount of low VOC content products used to achieve the same quality of cleaning maybe higher than the amount of conventional cleaning materials. On the other hand, some printing companies in San Diego County may not need to replace cleaning materials because they are using products that comply with the VOC vapor pressure limits in the proposed rule. Therefore they would not incur any additional expenses.

VII. RANGE OF PROBABLE COSTS TO INDUSTRY INCLUDING SMALL BUSINESS

As mentioned above, the majority of facilities subject to the rule will not incur any additional costs as a result of amendments of Rule 67.16, because they either use low vapor pressure cleaning materials or have add-on emission control equipment. Those facilities that will have to replace their high VOC content solvents will find a variety of complying materials at reasonable prices.

In the previous socioeconomic impact assessments for several proposed rules, the District has defined a small business as an entity that meets all of the conditions below.

1. The business is independently owned and operated. (California Government Code, Section 11342.610, Small Business definition)

2. The business is not dominant in its field of operation. (Same)

3. The business has gross annual receipts not more than $500,000. (SCAQMD, Rule 102)

4. The business employs ten persons or less. (SCAQMD Rule 102)

5. The business has total annual VOC emissions less than 10 tons. (H&S Code, Section 42323, Small Stationary Source).

According to the District's permit files and information obtained from the California Employment Development Department[3], none of the businesses subject to the proposed amended rule meet all conditions mentioned above. As shown in Table 1, all of them employ more than ten people. In addition, some companies are not independently operated but are part of bigger corporations. Therefore proposed Rule 67.16 amendments will not affect small businesses.

III. CONCLUSION

Proposed amended Rule 67.16 will not negatively impact affected industry, including small business entities. It will provide air quality benefits by reducing emissions of volatile organic compounds that are precursors of ground level ozone, a major component of photochemical smog.

References

1. Control Techniques Guidelines for Offset Lithographic Printing, EPA 453/R-06002, September 2006.

2. Control Techniques Guidelines for Flexible Packaging Printing, EPA-453/R-06003, September 2006.

3. California Employment Development Department, Labor Market Information, http://www.labormarketinfo.edd.ca.gov.

4. Bay Area Air Quality Management District. Staff Report for the BAAQMD Regulation 8, Rule 20 – Graphic Arts Printing and Coating Operations, October 2008.

COUNTY OF SAN DIEGO
AIR POLLUTION CONTROL DISTRICT

COMPARATIVE ANALYSIS OF

PROPOSED AMENDMENTS TO RULE 67.16 – GRAPHIC ARTS OPERATIONS

STATUTORY REQUIREMENTS

Prior to adopting, amending, or repealing a rule or regulation, California Health and Safety Code Section 40727 requires findings of necessity, authority, clarity, consistency, non-duplication, and reference, as defined therein. As part of the consistency finding and to ensure proposed rule requirements do not conflict with or contradict other District or federal regulations, Health and Safety Code Section 40727.2(a) requires the District to perform a written analysis identifying and comparing the air pollution control standards and other provisions of proposed amended Rule 67.16 with existing or proposed District rules and guidelines and existing federal rules, requirements, and guidelines applying to the same source category.

ANALYSIS

Proposed Rule 67.16 applies to any person who conducts graphic arts operations and associated cleaning operations. There are two federal guidelines published by the U.S. Environmental Protection Agency (EPA) that apply to these processes: Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing, and Control Techniques Guidelines for Flexible Package Printing (CTGs).

In addition, District New Source Review (NSR) Rule 20.2 - Non-Major Stationary Sources, also applies to any new or modified graphic arts operation that would be subject to amended Rule 67.16. Rule 20.2 requires that any non-major new or modified emission unit that has a post-project potential to emit of 10 pounds/day or more of volatile organic compounds (VOC) be equipped with Best Available Control Technology (BACT). For graphic arts operations, BACT is identified as either use of an add-on emission control system, or if such system is demonstrated to be not cost-effective, compliance with the requirements of Rule 67.16. Proposed amended Rule 67.16 will take effect (for new or modified sources) six months after the date of rule adoption. Since amended Rule 67.16 contains VOC content limits for fountain solutions, cleaning materials, and adhesives that are more stringent than the existing rule, these limits will become the new BACT requirements.

CONCLUSION

As shown in Table 1, there are no conflicts or contradictions between proposed amended Rule 67.16 and EPA's Control Technique Guidelines. Furthermore, there are no contradictions between the proposed amended rule and the District's NSR Rule 20.2 BACT requirements.

TABLE 1 – COMPARATIVE ANALYSIS

Items for Comparison	Proposed Amended Rule 67.16	CTG for Lithographic & Letterpress Printing	CTG for Flexible Packaging Printing
Applicability	1. Continuous web or single sheet fed graphic arts printing, processing, laminating or drying operations. 2. All cleaning operations associated with graphic arts operations.	Offset lithographic printing and letterpress printing operations using inks, cleaning solutions and fountain solutions.	Flexible packaging printing operations using VOC containing inks, adhesives, coatings and cleaning materials.
Exemptions	1. Stationary sources emitting $\leq$ 15 lbs/VOCs/day for each calendar month, excluding digital printing operations,. 2. Large digital printing operations as defined provided that specified records are kept. 3. Manufacture of proofing systems, solar window film, heat applied , water slide and ceramic decals; development process in preparation of lithographic printing plates; blanket repair material, preservative oils application from hand-held aerosol containers; stripping of cured inks, coatings and adhesives; cleaning of UV lamps and EB processors.	1. Offset lithographic or letterpress printing operation where VOC emissions from fountain solutions and cleaning materials in all aspects of that operation are 15 lbs per day or less. 2. Add-on control is not required for heat seat letterpress or offset lithographic printing with VOC emissions of 25 tpy or less.	1. Flexible packaging printing operation where VOC emissions from cleaning materials are 15 lbs per day or less. 2. Add-on control is not required for presses with PTE less than 25 tpy of VOCs from inks, adhesives and coatings.
VOC Content Limits for Inks Adhesives & Fountain Solutions, as applicable	1. 300 g/liter less water and less exempt compounds for graphic arts materials excluding adhesives; 2. 150 g/liter for adhesives; 3. VOC concentration not to exceed 5 vol.% for fountain solutions, or 8.5 vol.% if they are refrigerated below 60^{o}F.	1. No VOC content limits for inks or adhesives because their emissions are very low. 2. Alcohol content of fountain solutions < 5vol.%, or < 8.5% if refrigerated below 60^{o}F.	For presses emitting than 25 tpy or more, the VOC content limit for inks, coatings & adhesives is 160 g VOC/kg of material applied, or add-on control as specified below.

Items for Comparison	Proposed Amended Rule 67.16	CTG for Lithographic & Letterpress Printing	CTG for Flexible Packaging Printing
VOC Content Limits for Cleaning Materials	1. VOC content is less than 100 g/liter, or 2. Total VOC vapor pressure is less than 5 mm Hg at 20^{o}C.	1. VOC content is less than 70 weight percent, or 2. Composite VOC vapor pressure is less than 10 mm Hg at 20^{o}C.	Work Practice Recommendations
Add-on Emission Control Equipment	Use of add-on control equipment (85% overall control efficiency) in lieu of complying with VOC content limits	Add-on control on heatset web offset lithographic presses emitting 25 tpy of VOCs or more with 90-95% overall efficiency	Add-on emission control on presses with the PTE for an individual press is higher than 25 tpy. With 65% to 80% overall efficiency, depending on the date of installation
Recordkeeping	Current list of each graphic arts materials and associated cleaning material used, with the VOC content, monthly purchase records, and monthly or daily usage records. Records must be kept for at least 3 years.	N/A	N/A
Test Methods	1. EPA Test Method 24 2. SCAQMD Method 304 3. Various test methods for determining VOC content of inks, efficiency of add-on emission control, and exempt compound content.	N/A	N/A

COUNTY OF SAN DIEGO
AIR POLLUTION CONTROL DISTRICT

INCREMENTAL COST-EFFECTIVENESS ANALYSIS OF

PROPOSED AMENDMENTS TO RULE 67.16 – GRAPHIC ARTS OPERATIONS

Pursuant to State law (California Health & Safety Code (H&SC) §40914), air districts in ozone nonattainment areas are required to adopt "every feasible measure" to control emissions of ozone precursors, including volatile organic compounds (VOC), from stationary sources. Prior to adopting a rule pursuant to this requirement, air districts are required (pursuant to H&SC §40920.6(a)) to: (1) identify one or more potential control options that achieve the emission reduction objectives for the proposed rule; (2) assess the cost-effectiveness of each identified control option; (3) calculate the incremental cost-effectiveness of each identified control option, defined as the difference in control costs divided by the difference in emission reductions between two potential control options; (4) consider and review the information described above; and (5) state the reasons for adopting a particular control option or options.

Rule 67.16 is proposed for amendment to satisfy the requirement for every feasible control measure and therefore is subject to the requirement for incremental cost-effectiveness analysis. The proposed amendments will reduce VOC emissions from graphic arts operations by requiring low-VOC-content fountain solutions, cleaning materials, and adhesives. Similar requirements are already implemented in other air districts in California and compliant materials are widely available in the marketplace. These materials are equally priced or only marginally more expensive than their higher-VOC-content counterparts, and thus provide cost-effective emission reductions (as discussed in the Socioeconomic Impact Assessment).

There are no potential control options providing equivalent emission reductions from graphic arts operations other than the mandatory use of add-on emission control systems, which are expensive. Due to high costs, this control option would have very unfavorable cost-effectiveness and incremental cost-effectiveness values and therefore is not feasible.

AIR POLLUTION CONTROL DISTRICT
COUNTY OF SAN DIEGO

PROPOSED AMENDMENTS TO RULE 67.16 –
GRAPHIC ARTS OPERATIONS AND RELATED CHANGES TO
RULE 11 – EXEMPTIONS FROM RULE 10 PERMIT REQUIREMENTS

WORKSHOP REPORT

A workshop notice was mailed to facilities conducting graphic arts operations, and manufacturers, suppliers, and distributors of printing inks and other graphic arts materials in San Diego County that may be subject to proposed amended Rule 67.16 – Graphic Arts Operations. The corresponding proposed revisions to Rule 11 – Exemptions from Rule 10 Permit Requirements, were also mailed to the entities mentioned above. Notices were also mailed to the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (ARB), all Economic Development Corporations and Chambers of Commerce in San Diego County, and other interested parties.

The workshop was held on January 13, 2011, and was attended by 11 people. Written comments were also received after the workshop. The workshop comments and San Diego County Air Pollution Control (District) responses are as follows:

Rule 67.16 – Graphic Arts Operations

1. WRITTEN COMMENT

Proposed amended Rule 67.16 should include an exemption for the cleaning of UV lamps and reflectors or electron beam processors. The lamps and reflectors are extremely sensitive and require special cleaning materials.

DISTRICT RESPONSE

The District agrees. The proposed amended rule has been revised as suggested.

2. WRITTEN COMMENT

An exemption should be provided for cleaning materials used for the stripping of cured inks, coatings and adhesives.

DISTRICT RESPONSE

The District agrees. The proposed amended rule has been revised as suggested.

3. WRITTEN COMMENT

The definition of "digital printing operation" should list specific technologies that are presently used in the digital printing industry.

DISTRICT RESPONSE

The District disagrees. The term “digital printing operation” is broadly defined to encompass all digital printing technologies that exist now or could exist in the future.

4. WRITTEN COMMENT

Screen printing inks with a volatile organic compound (VOC) content limit of 450 grams/liter (g/l) should be included in the proposed rule as a separate ink category.

DISTRICT RESPONSE

A screen printing ink category is not warranted at this time. According to District information there are no screen printing facilities in San Diego County that have VOC emissions exceeding the permit exemption threshold of Rule 11 (less than 15 lbs per day), which is the same as an applicability threshold of Rule 67.16. The District intends to amend Rule 11 in the near future and require smaller size facilities to obtain permits to operate. This will provide necessary information regarding the magnitude of VOC emissions from screen printing operations in the county.

5. WRITTEN COMMENT

Rule 67.16 should have a separate category for adhesives used in graphic arts industry.

DISTRICT RESPONSE

The District agrees. The proposed amended rule has been revised to establish a VOC content limit of 150 grams/liter for adhesives, which is consistent with requirements of several California air districts.

6. WRITTEN COMMENT

The VOC content limit for fountain solutions should be 80 g/l. The rule also should include a separate VOC content limit of 100 g/l if a refrigerated chiller is used.

DISTRICT RESPONSE

The proposed VOC content limits for fountain solutions have been revised to more fully align with EPA's Control Techniques Guidelines (CTG) for lithographic and letterpress printing. Specifically, the District proposes allowing fountain solutions containing up to 5% VOC by volume (alcohols or alcohol substitutes) or up to 8.5% VOC (alcohol or alcohol substitute), provided the fountain solution is refrigerated to below 60^{o}F (15.5^{o}C). These percentage limits equate to approximately 50 g/l and 85 g/l, respectively.

7. WRITTEN COMMENT

Rule 67.16 should include an exemption for digital printing equipment used in research and development operations.

DISTRICT RESPONSE

The District agrees that research and development operations should be exempt and has revised the proposed amended rule accordingly. This exemption includes both conventional and digital graphic arts operations conducted for purposes of research and development. The definition of research and development is provided in existing District Rule 11.

8. WRITTEN COMMENT

Rule 67.16 should include an exemption for materials used for cleaning of precision electro-optical components used in digital printing operations.

DISTRICT RESPONSE

The District agrees. The proposed amended rule has been revised to include a definition of precision electro-optical components and an exemption for materials used to clean them.

9. WRITTEN COMMENT

The definition of a "large digital printing operation" needs clarification. This definition should state that the specified print capacity thresholds apply to each individual printer, not to the entire operation.

DISTRICT RESPONSE

The District agrees and has revised the definition accordingly. Specifically, a "large digital printing operation" is defined as an operation where the print capacity of any individual printer using solvent-based inks is 1,000 ft^2/hr or higher; or an operation where the print capacity of any

individual printer using water-based or UV inks is 10,000 ft^2/hr or higher. Such an operation is subject only to the record keeping requirements of Section (f), whereas smaller digital printing operations are completely exempt from the rule.

10. WORKSHOP COMMENT

Do water-based inks also include soy based inks?

DISTRICT RESPONSE

No. Soy based inks do not contain any water. In addition to soybean oil, they may also contain pigments, resins and waxes.

11. WORKSHOP COMMENT

Does the exemption for digital printing operations refer to a single equipment unit, or the entire operation?

DISTRICT RESPONSE

The exemption for digital printing operations is based on a printing capacity of a single equipment unit (i.e., individual printer). If a facility has several digital printing lines the records required by the Subsection (b)(2) need to be kept only for the printing line that includes a printer using solvent based inks with a capacity of 1000 ft^2/hr or higher, or a printer using water-based or UV inks with a capacity of 10,000 ft^2/hr or higher.

12. WORKSHOP COMMENT

Current Rule 67.16, Subsection b(1), exempts graphic arts operations emitting less than an average 15 lbs of VOCs per day. Does this exemption apply to digital printing operations with an equipment print capacity of 10,000 ft^2/hr or more if it emits less than 15 lbs VOC per day?

DISTRICT RESPONSE

No, because the magnitude of VOC emissions from digital printing operations is not known at this time. The exemption in Subsection (b)(1) applies only to conventional (analog) graphic arts operations, such as lithography, flexography, rotogravure, etc. Digital printing on a commercial scale is a comparatively new technology and there currently are not enough data to estimate emissions from these operations. This is the reason why digital printing is treated separately in proposed amended Rule 67.16. Therefore, the District is proposing that the largest digital printing operations, as defined, will be exempt from the rule provided that the records specified in Section (f) are kept. Such stipulation would allow the District to estimate whether VOC

emissions from digital printing operations are significant enough to justify any emission control requirements.

13. WORKSHOP COMMENT

If a digital equipment has a print capacity specified in the definition of a "large digital printing operation," does this mean that the facility is exempt from the rule and the only requirement is to keep records as described in Subsection (f)(4) of the rule?

DISTRICT RESPONSE

Yes, although strictly speaking a large digital printing operation is not exempt from Rule 67.16. Rather, it is exempt from the emission standards and some other specified provisions of the rule, but is still subject to the record keeping requirements specified in Subsection (f)(4).

14. WORKSHOP COMMENT

If adhesives are used in a large digital printing operation, would such use affect the operation exemption status?

DISTRICT RESPONSE

No. Large digital printing operations are exempt from the rule's emission standards, regardless of whether adhesives are used. Such operations are only subject to the record keeping requirements of Subsection (f)(4). These records must be kept for all VOC-containing materials, including adhesives.

15. WORKSHOP COMMENT

Would Rule 67.21 (Adhesives and Sealants Application Operations) apply to printing operations?

DISTRICT RESPONSE

No. Rule 67.21, Subsection (a)(4), specifically exempts adhesive application operations that are subject to Rule 67.16.

16. WORKSHOP COMMENT

Would the exemption from Rule 67.16, provided by Subsection (b)(1) for stationary sources that emit less than an average 15 lbs/day of operation for each calendar month, remain in the rule?

DISTRICT RESPONSE

Yes. At this time the exemption will remain as it complies with federal requirements specified in EPA's Control Technique Guidelines for lithographic, letterpress, and flexible package printing operations. Please also see District Response to Comment 36, regarding planned future consideration of lowering the exemption threshold.

17. WORKSHOP COMMENT

Would it be possible to provide the exemption in Subsection (b)(1) in terms of monthly rather than daily VOC emissions? Sometimes, production may vary from day to day, and it is difficult to estimate average daily emissions.

DISTRICT RESPONSE

The exemption in Subsection (b)(1) is based on average daily VOC emissions per each calendar month. Emission calculations for each individual day are not required under this provision. The average daily emissions may be determined by dividing monthly emissions by the number of operating days in a calendar month.

18. WORKSHOP COMMENT

Does the rule apply to color or black-and-white digital equipment?

DISTRICT RESPONSE

The rule and the proposed exemptions apply to both types of digital equipment.

19. WORKSHOP COMMENT

VOC content limits for cleaning materials may be too stringent, specifically in the case of the high speed web application equipment. Water-based solvents that meet these limits also require applying water as a rinsing agent to remove paper residue. If a low-grade paper is used with high speed web equipment, the equipment can be down for a long period of time due to flying or loose material. In this case, the use of a water-based solvent will result in significant problems. Because jobs are run for days at a time and there is no opportunity to stop and rinse rubber components, the loose material remains on these components and causes rubber swelling, which leads to major equipment failures.

DISTRICT RESPONSE

Proposed amended Rule 67.16 does not mandate the use of water-based cleaning materials. It allows the use of VOC-containing cleaning materials with a VOC vapor pressure of 5 mm Hg at 20^{o}C or less. These materials are available in the market place and are already being used in some graphic arts operations in San Diego County.

20. WORKSHOP COMMENT

Proposed Rule 67.16 prohibits the use of alcohols in fountain solutions. There are no air districts in California that have such provision. The federal CTG offers three different approaches to reduce emissions from fountain solutions. One of them prohibits the use of alcohols. It seems that this is the most extreme approach.

DISTRICT RESPONSE

The proposed amended rule has been revised to allow limited use of alcohols in fountain solutions (pursuant to federal guidelines), as described in District Response to Comment 6.

21. WORKSHOP COMMENT

Alcohol substitutes are also VOCs and are toxic.

DISTRICT RESPONSE

The District acknowledges that alcohol substitutes are VOCs and are toxic in some cases. However, pursuant to federal guidelines, the proposed amended rule limits the concentration of alcohol or alcohol substitutes in fountain solutions to 5% or less (or up to 8.5% if refrigerated). Their use is allowed because many alcohol substitutes, such as ethylene glycol ethers, have a high boiling point and evaporate much slower than conventional additives such as isopropyl alcohol.

In addition, if a facility uses materials containing toxic air contaminants, it may become subject to a toxic air contaminant risk assessment analysis pursuant to District Rule 1200 (Toxic Air Contaminants – New Source Review). If the result of this analysis shows that a level of toxic air contaminant emissions is higher than the specified threshold, the facility must reduce its emissions according to Rule 1200 requirements.

22. WORKSHOP COMMENT

Is it possible to allow an alcohol to be used in small amounts if a fountain solution is chilled? Some printing jobs require a small amount of alcohol to be present in fountain solution.

DISTRICT RESPONSE

Yes. The proposed amended rule has been revised to allow the use of fountain solutions with 8.5% of alcohols or less if the fountain solution is refrigerated to below 60^{o} F (15.5^{o}C).

23. WORKSHOP COMMENT

Would the District consider an exemption for the UV ink application equipment cleaning?

DISTRICT RESPONSE

No, this exemption is not necessary. Materials for UV ink application equipment cleaning that comply with the vapor pressure limits in the proposed amended rule (Subsection (d)(2)(ii)) are presently available.

24. WORKSHOP COMMENT

Subsection (e)(1)(ii) specifies that an "emission collection system which captures and transports emissions generated by graphic arts *operations*…" Can this provision be clarified to mean that it would be a control device for a particular unit rather than an entire operation?

DISTRICT RESPONSE

Subsection (e)(1)(ii) has been clarified to state that the emission collection system may be installed to capture emissions from an "applicable" graphic arts operation. This operation may include any equipment or materials in use, such as printing presses, inks, etc.

25. WORKSHOP COMMENT

In the original definition of "graphic arts operations," the terms "process" and "operation" seem to be interchangeable. Using the word "process" to define a graphic arts operation will make the definition clearer.

DISTRICT RESPONSE

The District agrees. The definition has been revised as suggested.

26. WORKSHOP COMMENT

Some facilities use 60 different inks per month, making emissions calculations difficult. Would the District approve using the highest VOC content of the ink used to calculate emissions from all inks? The Printing Industry Association has a video that addresses every potential case of record keeping for VOC-containing graphic arts materials and all the necessary calculations.

DISTRICT RESPONSE

The District has reviewed the information provided in the video and agrees that the highest VOC content of inks may be used to calculate VOC emissions. However, this methodology overestimates the actual emissions from the facility. In addition, there may be cases when a facility has a permit condition with daily emission limits pursuant to New Source Review rules, such as 10 lbs of VOC per day. In this situation, it would be advisable to use an itemized method of calculations, which is also discussed in the video.

27. WORKSHOP COMMENT

It is difficult sometimes to calculate the actual usage of inks or other materials, especially in cases where small amounts of them are used for each operation. Would purchase records be acceptable to the District?

DISTRICT RESPONSE

Yes. However, using purchase records may result in an overestimate (significant in some cases) of VOC emissions from a facility. Therefore, it is advisable also to keep dispensing and/or inventory records, and the records of inks and other materials recycled or sent to disposal services in the end of each month or each year. These records will help the facility determine the amount of VOC-containing materials used, and therefore the facility's emissions.

28. WORKSHOP COMMENT

Would there be a way to correlate material usage using other operational parameters, without having to actually weigh or track a small amount of material?

DISTRICT RESPONSE

Yes. Please see the District Response to the previous comment.

29. WORKSHOP COMMENT

Existing Subsection (f)(2) requires a facility to maintain "daily or monthly" records of material usage. Is this a choice of the facility? Does the District generally require monthly records?

DISTRICT RESPONSE

A facility may choose whether to keep monthly or daily records, unless daily records are required pursuant to conditions on the facility's permit. For example, if the facility is subject to New Source Review requirements, it may be limited to a certain amount of VOC emissions per day. Accordingly, the Permit to Operate may have a condition to keep daily usage records of VOC-containing materials. In this case, the more stringent requirement will apply, and the facility must keep daily records.

30. WORKSHOP COMMENT

What is the intent of Subsection (f)(3)(ii)? Is this for compliance with capture efficiency requirements? If so, how would one keep daily records of capture efficiency?

DISTRICT RESPONSE

Subsection (f)(3)(ii) does not require keeping daily records of capture efficiency. The intent of this subsection is to ensure that add-on emission control equipment operates properly at all times when VOC-emitting activities take place. Therefore, a facility has to keep daily records of "key system operating parameters" such as "temperature, pressure and/or flow rate" for an entire system, i.e., for both the emissions collection and control equipment. If the key operating parameters do not deviate from those specified in the District-approved Operation and Maintenance plan as required by the rule or as specified in a Permit to Operate, then the entire emission control system (including its capture efficiency) operates properly.

31. WORKSHOP COMMENT

Why is South Coast Air Quality Management District (SCAQMD) Test Method 304 included in Subsection (g)(1)?

DISTRICT RESPONSE

Subsection (g)(1) lists the test methods that must be used to determine the VOC content of various graphic arts materials. SCAQMD Test 304 may be used for graphic arts materials such as thinners, where EPA Test Method 24 is not applicable.

32. WORKSHOP COMMENT

Would the EPA Test Method 24 be used for determining the VOC content of cleaning materials?

DISTRICT RESPONSE

No. EPA Method 24 is not applicable for determining the VOC content of cleaning materials. Currently, there are other test methods developed by the SCAQMD or other air districts and approved by EPA that use gas chromatography often combined with mass-spectrometry.

33. WORKSHOP COMMENT

Are SCAQMD Test Methods 313 and 308 nationally approved?

DISTRICT RESPONSE

Yes, these methods are approved by EPA. They are listed on EPA's and SCAQMD's websites.

34. WORKSHOP COMMENT

Does the District have a contact at EPA regarding the Test Methods?

DISTRICT RESPONSE

EPA's Emission Measurement Center (EMC) in North Carolina is responsible for Test Methods. EMC's staff directory is available at www.epa.gov/ttn/emc/staffdir.html, and contacts are Candace Sorrell at (919) 541-1064 or Ray Merrill at (919) 541-5225.

35. WORKSHOP COMMENT

Some facilities use preservative oils sprayed from aerosol containers on press rollers when the equipment is turned off for an extended period of time to prevent the ink hardening during non-operating periods. The amount of oils used is very low, about a few ounces per day. Can such operations be exempt from the rule?

DISTRICT RESPONSE

Yes. This exemption has been added to the proposed rule amendments.

36. ARB COMMENT

The exemption for small operations is too broad. It allows operations emitting over 450 pounds of VOC per month to be exempt from regulation. Other air districts in California have much lower exemption levels, such as 200 pounds VOC per rolling 12-month period. ARB recommends reducing the exemption level in Rule 67.16. By lowering the exemption level, more sources will be subject to the rule and additional emission reductions will be achieved.

DISTRICT RESPONSE

The proposed amendments to Rule 67.16 address federal Reasonably Available Control Technology (RACT) requirements specified in EPA's CTGs for both flexographic and lithographic printing operations. The exemption level in the rule complies with EPA guidelines and is not proposed for amendment at this time.

As noted above, lower emission operations that are currently exempt from Rule 67.16 are also exempt from Rule 11 permit requirements. In the future, the District is planning to consider amending Rule 11 to reduce the exemption level for graphic arts operations, thereby requiring permits for facilities with lower VOC emissions. This will enable an assessment of presently non-permitted sources and their VOC emissions to determine whether lowering the Rule 67.16 exemption level is warranted.

It should be noted that existing Rule 67.16 exempts a stationary source that emits less than an average of 15 lbs per operating day for each calendar month. It is unrealistic to assume that the companies in San Diego County operate 30 days in a calendar month. Many of them, according to District information, operate only 2-3 days per week, i.e., about 9-14 days per month.

37. ARB COMMENT

The VOC content limit in Section (d) for all graphic arts materials is 300g/l (less water and less exempt compounds). This limit may be high for some graphic arts materials, particularly adhesives.

DISTRICT RESPONSE

The District agrees. A VOC content limit of 150 g/l for adhesives has been added to the rule.

38. ARB COMMENT

ARB recommends providing separate VOC content limits for screen printing operations.

DISTRICT RESPONSE

Please see District Response to Comment 4.

39. ARB COMMENT

Subsection (d)(1)(ii) indicates a VOC content limit of 5% by volume for fountain solutions, with no alcohols to be used. Per the EPA's CTGs for Offset Lithographic Printing and Letterpress Printing (September 2006), this limit should be 5% VOC by weight, not volume, provided no alcohol is used in the fountain solution.

DISTRICT RESPONSE

Fountain solutions come from the suppliers as liquid concentrates. It is more practical to use a volume percent to describe a VOC limit for fountain solutions because it is easier to measure the volume rather than the weight of a liquid. In addition, since fountain solutions are made by diluting a liquid concentrate with water, often using a 1:10 ratio, the final product is an aqueous solution with a low concentration of VOCs. The numerical difference between volume and weight percent concentrations in such case will be negligible.

40. ARB COMMENT

Subsections (d)(2)(i) and (d)(2)(ii) specify that cleaning material must have a VOC content of less than 100 grams per liter or a total vapor pressure of 5mm of Hg at 20^{o}C or less. ARB recommends a VOC limit for cleaning operations of 25 g/l, with exceptions made for certain cleaning operations based on BAAQMD Rule 8-20.

DISTRICT RESPONSE

The proposed amendments to Rule 67.16 are designed to satisfy federal requirements for implementing RACT, as defined by EPA's CTGs. (Accordingly, the amended rule will be submitted to EPA, through ARB, along with the District's pending Ozone State Implementation Plan (SIP).) The emission limits for cleaning materials provided in the proposed amended rule comply with those federal requirements.

41. ARB COMMENT

ARB recommends a ban on cleaners containing methylene chloride, as provided in other air districts' rule.

DISTRICT RESPONSE

The District disagrees. Methylene chloride is an exempt compound and therefore is not subject to Rule 67.16, which regulates emissions of ozone-forming VOCs. The District does not have the jurisdiction to prohibit the use of any exempt compounds. Since methylene chloride is a toxic air contaminant, its use and allowable emissions are regulated by National Emission Standards for Hazardous Air Pollutants and by District Rule 1200 (Air Toxic Contaminants – New Source Review).

There were no EPA comments on proposed amendments to Rule 67.16.

Rules 11 – Exemptions from Rule 10 Permit Requirements

1. WORKSHOP COMMENT

Section (d)(11) of Rule 11 includes both terms - "operation" and "equipment." Is it correct to assume that the term "operation" encompasses the entire printing process?

DISTRICT RESPONSE

Yes, this assumption is correct. Section (d)(11) of Rule 11 historically specified exemptions from permit requirements for both printing equipment and printing operations. For clarity, this section's heading will be revised to read, "Printing and Reproduction Equipment and Operations." Please refer also to the definition of a Graphic Arts Operation in proposed amended Rule 67.16 that specifically includes the entire graphic arts process**.**

2. EPA COMMENT

EPA recommends that the District submit this version of Rule 11 as a revised part of the SIP. This will make it easier to keep track of different versions of Rule 11 submitted to EPA.

DISTRICT RESPONSE

The District agrees. Rule 11, with amended Section (d)(11), will be submitted to EPA as a SIP revision.

3. EPA COMMENT

If a proposed amended Rule 11 contains any additional exemptions that may have emission impacts, these impacts should be addressed in the District's submittal. In addition, the exemptions in Rule 11 should be consistent with the exemptions in Rule 67.16.

DISTRICT RESPONSE

Section (d)(11) of Rule 11 contains new exemptions from permit requirements for digital printing operations, consistent with the exemptions in the proposed amended Rule 67.16.

"Large" digital printing operations as defined in Rule 67.16 are exempt from permit requirements, provided that the facility keeps specified records. Smaller digital printing operations commonly performed in homes, schools, business offices, etc. will be completely exempt from permit requirements.

Digital printing on a commercial scale is a comparatively new technology and its VOC emissions are not yet quantified. The proposed record keeping requirement will provide the data for estimating VOC emissions from large scale digital printing operations.

It is expected, however, that emission impacts from this exemption, if any, will not be significant. Many digital printing operations use dry inks and toners, UV inks, or low VOC water-based inks and solvents. Some digital printing equipment is also equipped with internal VOC capture and recycling devices.

There were no ARB comments on proposed amendments to Rule 11.

NY:jlm
07/06/11

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RULE 67.16. GRAPHIC ARTS OPERATIONS (Effective 10/18/88~~:~~; Rev. Adopted & Effective 5/15/96; Amended (*date of adoption*) & Effective (*6 months after date of adoption*)

(a) **APPLICABILITY**

(1) This rule is applicable to all continuous web or single sheet fed graphic arts printing, processing, laminating or drying operations and digital printing operations.

(2) This rule is not applicable to printing operations on ceramic or circuit boards. These operations are subject to Rule 66.1.

(~~2~~3) Graphic arts ~~O~~operations subject to or exempt from this rule shall not be subject to Rule 66.1 or Rule 67.5.

(b) **EXEMPTIONS**

(1) The provisions of Sections (d) and (e) of this rule shall not apply to stationary sources which emit less than an average of 15 lbs (6.8 kg) of volatile organic compounds (VOCs) from all graphic arts operations per day of operation, excluding digital printing operations, for each calendar month. It is the responsibility of any person claiming ~~an~~ this exemption ~~pursuant to Subsection (b)(1)~~ to maintain daily or monthly records as specified in Section (f) of this rule necessary to establish average daily emissions and to make this information available to the District upon request. The average daily emission levels shall be determined by recording and taking into account the number of operational days per given month.

(2) The provisions of Sections (d) and (e) shall not apply to large digital printing operations provided that any facility claiming this exemption maintains applicable records as specified in Subsection (f)(4).

(~~2~~3) The provisions ~~of Sections (d), (e), and (f)~~ of this rule shall not apply to:

(i) All proofing systems.

(ii) Manufacture of:

(A) Solar control window film,

(B) Heat applied transfer decals,

(C) Ceramic decals manufactured for firing above 800°F, or

(D) Water slide decals.

~~(iii) Printing on ceramic or circuit boards.~~

(~~v~~iii) Embossing and foil stamping which do not use materials containing VOC<u>s</u>.

~~(v) Coating operations subject to Rule 67.5, Paper, Film and Fabric Coating Operations.~~

(~~vi~~iv)Development process associated with the preparation of lithographic printing plates.

(~~i~~v) Blanket repair material applied from non-refillable aerosol containers of four ounces or less.

<u>(vi) Digital printing operations that are not large operations as defined in Subsection (c)(12).</u>

<u>(vii) Stripping of cured inks, coatings and adhesives.</u>

<u>(viii) Research and development operations.</u>

<u>(ix) Preservative oils application using hand-held non-refillable aerosol containers.</u>

<u>(x) Cleaning of ultraviolet lamps and reflectors and electron beam processors.</u>

(c) **DEFINITIONS** ~~(Rev. Effective 5/15/96)~~

For the purpose of this rule the following definitions shall apply:

(1) **"Adhesive"** means a substance that is used to bond one surface to another by attachment.

(~~1~~2) "**Cleaning Material"** means a VOC containing material used for cleaning hands, tools, printing presses, ink or coating application equipment and work area.

(~~12~~3) **"Coating"** in the graphic arts operation means a layer of material applied to a substrate in a relatively unbroken film.

(~~3~~4) **"Digital Printing Operation"** means an operation that uses a printing device guided by a computer-driven machine to transfer an electronic image to a substrate through the use of inks, toners, or other graphic arts materials. Digital printing operation also includes associated surface preparation, solvent cleaning, and the cleaning of application equipment.

(5) **"Precision Electro-optical Component"** is an optical element used in an electro-optical device and is designed to sense, detect, or transmit light energy, including specific wavelengths of light energy and changes in light energy levels.

(~~24~~6) **"Exempt Compound"** means the same as defined in Rule 2. ~~(Rev. Effective 5/15/96)~~

(~~35~~7) **"Exterior Marking"** means any outdoor sign printed, coated or laminated by any of the graphic arts methods.

(~~46~~8) **"Flexographic Printing"** means a letterpress method utilizing flexible rubber or other elastomeric plate.

(~~57~~9) **"Fountain Solution"** means the solution which is applied to the image plate to maintain the hydrophilic properties of the non-image areas.

(~~68~~10) **"Graphic Arts Operations"** means all screen, gravure, letterpress, flexographic, ~~and~~ lithographic and digital printing ~~processes~~ operations, or related coating, or laminating processes including coating of flexible packaging materials for food or health care products and laboratory or experimental processes.

(~~7~~9) ~~**"Graphic Arts Line"** means printing application equipment, coating equipment, laminating equipment, flash-off areas, ovens, conveyors or other equipment operating in an uninterrupted series to produce graphic arts using graphic art materials.~~

(~~810~~11) **"Graphic Arts Material"** means any ink, coating, adhesive~~, fountain solutions,~~ or thinner~~s, or retarders~~ used in printing or related coating or laminating processes.

(~~911~~12) **"Gravure Printing"** means an intaglio process in which the ink is carried in minute etched or engraved wells on a roll or cylinder, with excess ink being removed from the surface by doctor blade.

(~~12~~13) **"Large Commercial Digital Printing Operation"** means ~~commercial~~ a commercial digital printing operation where a print capacity of any individual printer that uses solvent based inks is 1,000 ft^2/hr or higher; or an operation where a print capacity of any individual printer that uses water based or UV inks is 10,000 ft^2/hr or higher. ~~with an equipment print capacity of 1,000 ft^2/hr or higher which uses solvent based inks, or an operation with an equipment print capacity of 10,000 ft^2/hr or higher which uses water based or UV inks.~~

(~~1013~~14) **"Lamination"** means a process of composing two or more layers of material to form a single multiple layer sheet by using adhesive.

(~~1114~~15) **"Letterpress Printing"** means a method where the image area is raised relative to the non-image area and the ink is transferred to the paper directly from the image surface.

(~~1215~~16) **"Lithographic Printing"** means a plane-o-graphic method in which the image and non-image areas are on the same plane, and the ink is offset from a plate to a rubber blanket, and then from the blanket to the substrate.

(17) **" Preservative Oil"** means any liquid material which does not contain any solids, and is applied to rollers or ink wells to prevent them from drying when the graphic arts equipment is stopped for an extended time or to provide lubrication, or both.

(~~13~~~~16~~18) **"Printing"** means any operation that imparts color, design, alphabet or numerals on a substrate.

(~~14~~~~17~~19) **"Printing Ink"** means any fluid or viscous composition used in printing, impressing or transferring an image onto a substrate.

(~~15~~~~18~~20) **"Proofing System"** means a system used only to check the quality or print color reproduction and editorial content and includes proof presses and/or off-press proofing lines.

(~~16~~~~19~~21) **"Publication Gravure"** means a gravure printing on paper substrate which is subsequently used to form books, magazines, catalogues, brochures, directories, and newspaper supplements or other printed material.

(~~17~~~~20~~22) **"Screen Printing"** means a process where the printing ink passes through a web or a fabric to which a refined form of stencil has been applied. The stencil openings determine the form and dimensions of imprint.

(~~18~~~~21~~23) **"Stationary Source"** means the same as ~~is~~ defined in Rule 2~~0.1~~.

(~~22~~24) **"Thinner"** means a solvent used to reduce viscosity of printing inks.

(~~19~~~~23~~25) **"Volatile Organic Compound (VOC)"** means the same as defined in Rule 2. ~~for the purpose of this rule means any volatile compound containing at least one atom of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, ammonium carbonate, metallic carbides and carbonates, and exempt compounds which may be emitted to the atmosphere during the application of and/or subsequent drying or curing of graphic arts materials or cleaning materials subject to this rule.~~

(~~24~~26) **"VOC Content per Volume of Graphic Arts Materials, Less Water and Exempt Compounds"** (excluding thinners) means the same as defined in Rule 2, "VOC Content per Volume of Coatings, Less Water and Exempt Compounds."

(~~25~~27) **"VOC Content per Volume of Thinner or Cleaning Material"** means the same as defined in Rule 2, "VOC Content per Volume of Material."

(~~20~~26~~28~~) **"Web-fed"** means an automatic system which supplies substrate from a continuous roll or from an extrusion process.

(d) **STANDARDS**

(1) Graphic Arts Materials and Fountain Solutions.

A person shall not conduct ~~operate~~ any printing or graphic arts operation ~~process~~ unless the following materials are used:~~:~~

(i) ~~Only~~ gGraphic arts materials, except adhesives, containing less than 300 grams of VOC per liter (2.5 lbs/gal) as applied, less water and exempt compounds. ~~are used; and~~

(ii) Adhesives containing not more than 150 grams of VOC per liter (1.25 lb/gal), as applied, less water and less exempt compounds.

(iii) ~~Only f~~Fountain solutions containing not more than 5% VOC ~~15%~~ by volume~~, as applied, and no alcohols are used.~~; or

(iv) Fountain solutions containing not more than 8.5% VOC by volume refrigerated to a temperature below 60^{o}F.

(2) Cleanup of Equipment

A person shall not use materials containing VOCs for the cleanup of equipment used in graphic arts operations unless:

(i) The cleaning material ~~solvent~~ has a VOC content of less than 100 ~~200~~ grams per liter ~~of material~~; or

(ii) The total VOC vapor pressure of the cleaning material is ~~45~~ 5 mm of Hg at 20°C or less.~~; or~~

~~(iii) A system is used that totally encloses the component parts being cleaned during the washing, rinsing, and draining processes. ;or~~

~~(iv) The cleaning solvent is transferred through the application equipment, without exposure to air, into a container which has in place an apparatus or cover which completely covers the container and has no visible holes, breaks, openings or separations between adjoining components of the container or container cover. Containers may be equipped with vents provided such vents are necessary to comply with applicable fire and safety codes.~~

(e) **CONTROL EQUIPMENT**

(1) In lieu of complying with the provisions of Subsection (d)(1) or (d)(2), a person may use an air pollution control system which:

(i) Has been installed in accordance with an Authority to Construct; and

(ii) Includes an emission collection system which captures and transports ~~organic gaseous~~ emissions generated by an applicable graphic arts operation to an air pollution control device; and

(iii) Has a combined VOC emissions capture and control device efficiency of at least 85 percent by weight.

(2) A person subject to the requirements of this section shall submit to the Air Pollution Control Officer for approval an Operation and Maintenance (O&M) plan for the proposed emission control device and emission collection system. Such plan shall:

(i) Identify all key system operating parameters. Key system operating parameters are those necessary to ensure compliance with Subsection (e)(1)(iii), such as temperature, pressure, and/or flow rate.

(ii) Include proposed inspection schedules, anticipated ongoing maintenance, and proposed recordkeeping practices regarding the key system operating parameters.

(3) The Operation and Maintenance plan must be submitted to the Air Pollution Control Officer and receive written approval prior to operation of the air pollution control equipment. A person subject to the requirements of this section shall implement the plan on approval of the Air Pollution Control Officer.

(f) **RECORDKEEPING**

Any person conducting ~~applying~~ a graphic arts operation subject to this rule ~~materials~~ shall maintain records in accordance with the following requirements:

(1) Maintain a current list of graphic arts materials, fountain solutions and cleaning materials used containing VOCs ~~such as inks, adhesives, thinners, retarders, fountain solutions and cleaning materials in use~~ which provides data necessary to evaluate compliance, including, but not limited to:

(i) Type of graphic arts materials, fountain solutions or cleaning materials used;

(ii) Dilution ratio of mixed components, if applicable;

(iii) VOC content, less water and exempt compounds ~~and/or vapor pressure~~ of each graphic arts material (excluding thinner), as applied; volume percent of VOC in fountain solution; and VOC content of each thinner and cleaning material and/or total VOC vapor pressure, as used ~~applied~~.

(2) Maintain daily or monthly records showing the amount of each graphic arts material, and each fountain solution and cleaning material used ~~including, but not limited to, inks, adhesives, thinners, retarders, fountain solutions, and cleaning solutions~~.

(3) Any person using control equipment pursuant to Section (e) of this rule shall:

(i) For all graphic arts materials, fountain solutions and cleaning materials not in compliance with Subsection (d)(1) or (d)(2) of this rule, maintain daily records of the amount of each material used; and

(ii) Maintain daily records sufficient to document continuous compliance with Subsection (e)(1)(iii), including records of key system operating parameters as approved in the Operation and Maintenance plan.

(4) Any person claiming an exemption pursuant to Subsection (b)(2) for large commercial digital printing operations shall:

(i) Maintain a current list of graphic arts materials and cleaning materials used;

(ii) Provide documentation containing the VOC content, less water and exempt compounds of each graphic arts material (excluding thinner), as applied and the VOC content of each thinner and cleaning material and/or total VOC vapor pressure, as used;

(iii) Keep monthly records of the type and amount of each graphic arts material and cleaning material used.

~~These~~ All records shall be retained on site for at least three years and shall be made available to the District upon request.

(g) **TEST METHODS**

When more than one test method or set of test methods are specified in this Section, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of this rule.

(1) Measurements of VOC content of graphic arts materials subject to Section (d) of this rule shall be conducted and reported in accordance with the Environmental Protection Agency (EPA) Test Method 24 (40 CFR 60, Appendix A), dated 9/11/1995, or by the South Coast Air Quality Management District (SCAQMD) Method 304, dated 2/1/1996, as applicable ~~they it exists on (*date of adoption*)September 20, 1994, and ASTM Test Method D 4457-85 for determination of dichloromethane and 1,1,1-trichloroethane in paints and coatings by direct injection into a gas chromatograph~~.

(2) Measurements of VOC content of rotogravure publication inks subject to Section (d) of this rule shall be conducted and reported in accordance with EPA Test Method 24A (40 CFR 60, Appendix A), dated 8/6/1993.~~as it exists on *(date of adoption).* September 20, 1994, and ASTM Test Method D 4457-85 for determination of dichloromethane and 1,1,1,-trichloroethane in paints and coatings by direct injection into a gas chromatograph.~~

~~(3) Measurements of VOC emissions subject to Section (e) of this rule shall be conducted in accordance with EPA Methods 18, and 25 or 25A (40 CFR 60, Appendix A) as they exist on (*date of adoption)* September 20, 1994. Test procedures shall be performed in accordance with a protocol approved by the Air Pollution Control Officer.~~

(3) The VOC content of cleaning materials shall be determined by the SCAQMD Method 313-91 (Determination of Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry), dated 2/1/1993, or SCAQMD Method 308-91 (Quantification of Compounds by Gas Chromatography), dated 2/1/1993~~as they exist on *(date of adoption*~~).

(4) ~~Measurements~~ Calculations of total VOC vapor pressure~~s~~ of cleaning materials ~~VOC containing compounds~~ pursuant to Subsection (d)(2)(ii) of this rule shall be calculated using the District's "SD1-Procedure for Estimating the Vapor Pressure of ~~a Solvent~~ VOC Mixture~~s~~", dated 6/20/1990.~~as it exists on *(date of adoption)* September 20, 1994~~. If the vapor pressure of the liquid mixture is in excess of the limit specified in Subsection (d)(2)(ii), the vapor pressure shall be determined in accordance with ASTM Test Method D 2879-10~~8397 (2007)~~, "Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope"~~, or its most current version~~.

~~(5) Measurements of VOC content pursuant to Subsection (d)(1)(ii) shall be conducted and reported in accordance with ASTM Standard Recommended Practices for General Gas Chromatography Procedures, E 260-85.~~

(5) The content of methyl acetate, acetone and parachlorobenzotrifluoride shall be determined in accordance with the ASTM Test Method D6133-02 (2008) (Standard Test Method for Acetone, p-Chlorobenzotrifluoride, Methyl Acetate or t-Butyl

Acetate Content of Solventborne and Waterborne Paints, Coatings, Resins, and Raw Materials by Direct Injection Into a Gas Chromatograph)~~, or its most current version~~.

~~(6) Perfluorocarbon (PFC) compounds and other exempt compounds shall be assumed to be absent from a coating, cleaning, or surface preparation material subject to this rule unless a manufacturer of the material or a facility operator identifies the specific individual compound(s) and the amount(s) present in the material and provides an EPA and ARB approved test method which can be used to quantify the specific compounds.~~

(6) Measurements of exempt compounds content, ~~other than~~ except for those determined in accordance with Subsection (g)(5), shall be conducted in accordance with the SCAQMD Test Method 303-91 (Determination of Exempt Compounds), dated 8/1/1996~~ as it exists on *(date of adoption)*~~.

(7) The overall control efficiency of air pollution control equipment operated pursuant to Subsection (e)(1)(iii) shall be determined by multiplying the capture efficiency of the emission collection system by the control efficiency of the air pollution control device. The control efficiency of the air pollution control device shall be determined using EPA Test Methods 25A and/or 18 (40 CFR Part 60, Appendix A), both dated 9/25/1996, and in accordance with a protocol approved by the Air Pollution Control Officer. Capture efficiency of an emission collection system pursuant to Subsection (e)(1)(iii) shall be determined according to EPA Test Methods 204 and 204A through 204 F (51 CFR Appendix M), dated 6/4/97, as applicable, and technical document, "Guidelines for Determining Capture Efficiency," dated January 9, 1995. Subsequent to the initial compliance demonstration period, appropriate key system operating parameters as approved by the Air Pollution Control Officer may be used as indicators of the performance of the emission control system.

(8) Other test methods which are determined to be equivalent to the test methods specified in this rule and approved, in writing, by the Air Pollution Control Officer, California Air Resources Board, and EPA may be used in place of the test methods specified in this rule.

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RULE 11. EXEMPTIONS FROM RULE 10 PERMIT REQUIREMENTS

(Effective 1/1/69: Rev. Adopted & Effective 10/17/95
Rev. Adopted & Effective 7/30/96
Rev. Adopted & Effective 5/21/97
Rev. Adopted & Effective 11/15/00
Rev. Adopted & Effective 4/25/07

Rev. Adopted *(date of adoption)* & Effective *(6 months from date of adoption)*

(11) **PRINTING AND REPRODUCTION EQUIPMENT AND OPERATIONS**

(i) Any graphic arts operation or group of graphic arts operations located at a stationary source, that emit less than an average of 15 pounds of VOCs per operating day for each calendar month from all such operations. All records necessary to calculate average daily VOC emissions, such as emission factors or mix ratios, VOC content of each material used, number of operating days per month, and daily or monthly records of material usage, shall be maintained on-site for 3 years and be made available to the District upon request.

(ii) Inkjet and laser printing equipment.

(iii) Digital printing ~~equipment~~ operation as defined in Rule 67.16(c)(4) ~~with~~ where a print capacity of any individual printer ~~less than 1000 ft²/hr~~ which uses solvent based inks is less than 1000 ft^2/hr, or ~~such equipment with a print capacity less than 10,000 ft²~~ an operation where a print capacity of any individual printer which uses water based or UV inks is less than 10,000 ft^2/hr.

(iv) Large commercial ~~D~~digital printing operation~~equipment~~ as defined in Rule 67.16 (c)(13) ~~(14) with a print capacity of 1000 ft²/hr or higher which uses solvent based inks, or such equipment with a print capacity of 10,000 ft²/hr or higher which uses water based or UV inks~~, provided that the records specified in Rule 67.16 (f) (4) are maintained.

(~~iii~~v) Ink cartridge filling, refilling, and/or refurbishing operations.