Bay Area Air Quality Management District

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Staff Report

BAAQMD Regulation 8, Rule 3: Architectural Coatings

May 2009

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STAFF REPORT
Regulation 8, Rule 3: Architectural Coatings

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I. EXECUTIVE SUMMARY

The Bay Area Air Quality Management District (District or BAAQMD) regulates emissions of volatile organic compounds (VOC) from architectural coatings through limits contained in Regulation 8: Organic Compounds, Rule 3: Architectural Coatings (Rule 8-3). VOCs are one of the primary components of ozone, or photochemical smog. The District is not in attainment of the state one-hour or eight-hour or the federal eight-hour ozone standards. Rule 8-3, which was adopted on March 1, 1978, sets limits on the amount of VOCs that are allowed in various types of coatings used on architectural structures, such as buildings, signs, bridges, and roadways, in the Bay Area. Architectural coatings in the Bay Area emit approximately 16.9 tons per day (tpd) of VOC emissions.

This proposal would further limit the amount of VOCs that would be allowed in architectural coatings. The proposed VOC limits are based on the emission standards recommended by the Final Approved Suggested Control Measure for Architectural Coatings (SCM) developed by the California Air Resources Board (ARB) in 2007. The SCM was developed as a guideline to be used by California air districts in amending their architectural coatings rules. These guidelines promote regulatory uniformity within the California coatings market. Most districts in populated areas typically follow the SCM. The San Joaquin and Sacramento districts are expected to adopt limits reflecting the SCM and the South Coast has adopted similar limits.

The proposed amendments would result in a VOC emission reduction of 5.4 tpd, or about a 32 percent reduction, and cost about $4.42 million per year in the Bay Area. This translates to an average cost increase of $1.21 per gallon of coating. The resulting cost effectiveness is $2,243 per ton of VOC reduced. A socioeconomic impact analysis found no significant impacts on Bay Area jobs or the economy. An environmental impact analysis found no adverse environmental impacts and a CEQA Negative Declaration is proposed.

II. BACKGROUND

A. Architectural Coatings

Architectural coatings include house paints, stains, primers, roof coatings, waterproofing sealers, and industrial maintenance coatings. Architectural coatings are used for aesthetics, for protection, and for labeling on stationary structures such as buildings, fences, and roadways. When these coatings are applied, VOCs are emitted. Solvents that are used for thinning and cleaning are also sources of VOCs.

Although many architectural coatings are waterborne products, they may contain additives that contribute to a small VOC content. These additives include resins, coalescing aids, polymer plasticizers, freeze-thaw stabilizers, and anti-foam agents. These additives are included to create homogeneous films, improve block and print

resistance, prevent coagulation, ease application, and reduce defects formed during application. Other VOC additives include preservatives, thickeners and colorants. Freeze-thaw stabilizers and resin-coalescing aids are major contributors to the VOC content and include ethylene glycol or propylene glycol which prevent the paint from coagulating or solidifying under freezing temperatures and provide more "open time" for proper setting and drying.

Over 40 categories of coatings are regulated under Rule 8-3. The five largest coating categories in terms of emissions are:

1. Flat Coatings
2. Nonflat Coatings
3. Primers, Sealers and Undercoaters
4. Rust Preventative Coatings
5. Wood Coatings.

These five categories account for over 75 percent of the emissions from architectural coatings in the Bay Area.

Detailed lists of each of the coating categories are in Section IV: Proposed Amendments. Below are descriptions of the five largest VOC-emitting coating categories.

1. Flat Coatings

Flat coatings are generally used in low traffic areas and for decorative purposes. Made with a large amount of pigment, they hide the underlying surface well. Flat coatings leave a matte finish, without gloss or shine, and consequently, deemphasize surface irregularities and imperfections. Flat coatings are widely used on both residential and commercial buildings to paint interior and exterior surfaces. Flat coatings are typically used to paint interior surfaces such as ceilings and walls in living and dining rooms, bedrooms and hallways. Flat coatings are also used to paint exterior substrates such as brick; concrete block; wood, vinyl, and aluminum siding; and stucco. Flats are not generally used in bathrooms or kitchens because they generally have less moisture resistance than gloss coatings.

Most flat coatings are formulated to be waterborne products that allow application equipment to be cleaned using soap and water. Flat coatings can be brushed, rolled, or sprayed onto surfaces, such as walls and ceilings. Application typically requires surfaces that are cured, firm, dry, and free of dust, dirt, oil, grease, wax, chalk, mildew or anything that could contaminate or affect the performance of the coating.

Some flat coatings are marketed as "zero VOC" with "low odor" and "quick return to service" qualities. Because of these features, the coatings are recommended for use in buildings that need to be occupied soon after painting.

In developing the SCM, ARB conducted a survey of manufacturers of architectural coatings sold in California. The survey reported 15 solvent-based flat coatings (0.01

percent of flat coatings by volume) that contributed two percent of the VOC emissions from flat coatings. Flat coatings, with over 2770 products, contributed about 15 percent of the total VOC emissions from architectural coatings (2.71 tpd).

2. Nonflat Coatings

The nonflat coatings category includes both nonflat and nonflat – high gloss coatings. Nonflat coatings are typically used in high traffic areas that require frequent cleaning or where moisture is present. Typical residential use includes family rooms, children's rooms, kitchens, bathrooms, high traffic hallways and laundry rooms. Typical use in commercial buildings and institutional facilities includes walls, corridors and stairwells. Nonflat – high gloss coatings have a gloss rating of 70 or more and require more resin to create a glossy appearance, and, consequently, more coalescing solvent to dissolve and suspend the resin. Nonflat – high gloss coatings have a higher VOC limit than other nonflats.

Nonflat coatings are used (with proper preparation and priming) on both interior and exterior surfaces such as drywall, plaster, concrete block, wood and metal. These coatings work best on smooth surfaces.

The most common resins used are vinyl-acrylic or acrylic latexes. Additives containing VOCs include resin coalescing aids, polymer plasticizers, freeze/thaw stabilizers and anti-foam agents. Additives help to create homogeneous films, improve block and print resistance, prevent coagulation, ease application, and reduce defect formation during application. Other VOC-containing additives include thickeners and colorants.

The vast majority of nonflat coatings, over 99 percent, are formulated as waterborne coatings. Nonflat coatings emit 3.72 tpd VOC. Nonflat – high gloss coatings account for less than 1.6 percent of the total volume of architectural coatings and emit 1.07 tpd VOC.

3. Primer, Sealers and Undercoaters

The primers, sealers, and undercoaters category is a generic term that describes the initial coat that provides a suitable substrate for subsequent coatings. It also describes clear sealer coatings that do not require a topcoat. Primers, sealers, and undercoaters are used by homeowners and professionals and are typically sprayed, rolled, or brushed on to the substrate.

Primers, sealers, and undercoaters are used both indoors and outdoors on a wide variety of substrates. The products in this category vary widely in their purpose, from preparing walls for application of vinyl wallpaper to filling porous concrete masonry units. Substrates include drywall, previously painted porous surfaces, masonry, concrete, concrete block, brick, stone, wood, plywood, plaster, polyurethane, aluminum or galvanized siding, vinyl, composition board, ferrous metal, hardboard siding, fiberglass, plastics, spray applied polyurethane foam, organic polymers, foil/mylar, acoustic ceiling tiles, popcorn ceilings, flakeboard, acrylic based mortar systems, wallpaper, asbestos

siding, polyvinyl chloride (PVC), copper, oriented strand board, and bituminous surfaces. Because most products are topcoated, primers, sealers, and undercoats are not exposed to substances in the environment, but must tolerate the environment of the substrate to which they are applied and the environment of the coating that serves as a topcoat. The product data sheets of many primers, sealers, and undercoaters specify a time frame within which they must be topcoated. If not topcoated within the specified time frame, additional surface preparation and/or recoating prior to topcoating may be necessary. As the substrates and topcoats used with primers, sealers, and undercoaters vary widely, so does the range of conditions to which they must be resistant. Primer, sealers, and undercoaters may need to be resistant to, and perform well, under conditions that are alkaline, acidic, etc.

In general, the lower-VOC primers, sealers, and undercoaters typically employ the use of acrylic, acrylic copolymer, or vinyl acrylic copolymer resins, while the higher VOC coatings are formulated with alkyd, urethane, and polyurethane resins. Comparison between the ARB surveys conducted in 2001 and 2005 indicates an increasing reliance on low-VOC primers, sealers, and undercoaters.

A small number of the reported primers, sealers, and undercoaters products require no topcoat. These coatings may be used to prevent toxic outgassing of the substrate, or to provide moisture, dust, and mar resistance.

As with flat and non-flat coating, the vast majority of primers, sealers, and undercoaters are formulated as waterborne coatings, with 98 percent being waterborne. This category accounts for 1.42 tpd of VOC emissions in the Bay Area.

4. Rust Preventative Coatings

Rust preventative coatings are used to provide corrosion protection for metal substrates such as wrought iron and exposed pipes. This category excludes coatings that are recommended for any nonmetallic substrate. Rust preventative coatings are applied directly to interior and exterior metal, or over previously coated surfaces that exhibit corrosion. The finish can range from flat to glossy and the coatings can be applied with a brush, roller, or spray gun. Rust preventative coatings are used by homeowners, contractors, maintenance personnel, and professional painters.

This category was originally intended for those who are not professional paint contractors, such as homeowners and maintenance personnel. The intent was to provide an effective, single component product that would prevent corrosion of metal substrates for residential and commercial uses, not heavy industrial uses such as bridge and structural steel painting. However, after implementation of the 2000 SCM, ARB staff found that products from other categories were shifted to the rust preventative category which still allowed for the use of higher VOC solventborne alkyd technology. After the industrial maintenance 250 g/l limit became effective in 2004, many industrial maintenance products were re-labeled as rust preventative coatings. Based on ARB's survey, rust preventative coatings are primarily solventborne coatings that would not meet the lower industrial maintenance VOC limit. Coatings sold under this category also include

primers, sealers and undercoaters that were shifted from other categories with lower VOC limits.

Some products in this category contain a corrosion inhibitor. Corrosion inhibitors are additives that alleviate or retard the electrochemical oxidation of metals by forming an electrically insulating and/or chemically impermeable coating on exposed metal surfaces to suppress electrochemical reactions. Common materials used for this purpose are chromates, phosphates, and a wide range of specially-designed chemicals that resemble surfactants. Some inhibitors are added to waterborne rust preventative coatings to prevent corrosion that occurs during the drying process.

Traditional coatings in this category use alkyd resins for their good performance combined with ease of application. Most of these are solventborne and have VOC contents above 300 g/l.

Currently, 96 percent of rust preventative coatings are solventborne. This coating category is estimated to emit 1.23 tpd VOC.

5. Wood Coatings

As the name implies, wood coatings are formulated for application to wood, bamboo, cork and wood products, such as plywood, particle board wood composite, and hardboard. Wood coatings can be used both indoor and outdoors. Wood coatings are used for decorative purposes and to provide some protection from abrasion, staining, moisture, dirt, and common chemicals. Wood coatings cover a wide range of applications and functions. Clear wood coatings include lacquers, sanding sealers, penetrating oils, varnishes, stain controllers/wood conditioners, clear stains, and waterproofing sealers. Most opaque wood coatings are lacquers and lacquer undercoaters, but opaque sanding sealers and opaque conversion varnishes are also available.

The wood coatings category includes clear and semitransparent lacquers, varnishes, sanding sealers; penetrating oils; clear stains; wood conditioners used as undercoats; and wood sealers used as topcoats. The wood coatings category also includes opaque wood coatings such as opaque lacquers, sanding sealers, and lacquer undercoaters. The wood coatings category does not include clear sealers that are labeled and formulated for use on concrete/masonry surfaces, or coatings intended for substrates other than wood.

Seventy three percent of wood coatings sold are solventborne, and this coating category is responsible for 1.26 tpd of VOC emissions.

B. Regulatory History

Regulation 8, Rule 3, Architectural Coatings, limits the amount of volatile organic compounds (VOC) used to formulate paints and coatings used on architectural structures. Coatings with a VOC concentration in excess of the limits of the rule may not be sold or used in the Bay Area.

The District Board of Directors adopted Regulation 8, Rule 3 on March 1, 1978. The rule has been amended numerous times since its adoption as shown in the table below, initially to allow sufficient time for coatings manufacturers to meet VOC limits, and subsequently to add and refine categories and reduce allowable VOC content.

Table 1
Regulation 8, Rule 3 History

Date	Action
March 1, 1978	Initial adoption
May 20, 1981	Small business exemption and compliance dates extended
September 1, 1982	Compliance dates extended and temporary exemptions added
December 1, 1982	Compliance dates extended
March 17, 1983	Administrative and test method requirements added
May 18, 1983	New coating categories and VOC limits added; compliance dates adjusted
January 8, 1986	New coating categories and VOC limits added; compliance dates adjusted
January 17, 1990	Amended to incorporate 1989 ARB Suggested Control Measure; amendments later voided by court decision
November 21, 2001	Adoption of current rule incorporating 2000 ARB Suggested Control Measure

The Board adopted the current rule on November 21, 2001, to incorporate ARB's 2000 Architectural Coatings SCM. The amendments contained new and modified definitions, VOC limits, container labeling requirements, reporting provisions, and references to test methods for compliance determinations. The Board also adopted a new chapter to the Manual of Procedures (MOP), Volume I, Number 7: Emissions Averaging Procedure for Architectural Coatings, which was also derived from the SCM. This procedure was intended to provide a temporary compliance option to meet the state-derived limits; it has since expired. Table 2 below provides a summary of the current VOC limits in Rule 8-3.

Table 2
Rule 8-3 Current VOC Limits for Architectural Coatings

Coating Category	Limit (g/l)
Flat Coatings	100
Nonflat Coatings	150
Nonflat – High Gloss Coatings	250
Specialty Coatings:	
Antenna Coatings	530
Antifouling Coatings	400
Bituminous Roof Coatings	300

Coating Category	Limit (g/l)
Bituminous Roof Primers	350
Bond Breakers	350
Clear Wood Coatings:	
Clear Brushing Lacquer	680
Lacquer (including lacquer sanding sealer)	550
Sanding sealer	350
Varnish	350
Concrete Curing Compounds	350
Dry Fog Coatings	400
Faux Finishing Coatings	350
Fire Resistive Coatings	450
Fire Retardant Coatings:	
Clear	650
Opaque	350
Floor Coatings	250
Flow Coatings	420
Form-Release Compounds	250
Graphic Arts Coatings (Sign Paints)	500
High Temperature Coatings	420
Industrial Maintenance Coatings	250
Low Solids Coatings	120
Magnesite Cement Coatings	450
Mastic Texture Coatings	300
Metallic Pigmented Coatings	500
Multi-Color Coatings	250
Pre-Treatment Wash Primers	420
Primers, Sealers, and Undercoaters	200
Quick-Dry Enamels	250
Quick-Dry Primers, Sealers, Undercoaters	200
Recycled Coatings	250
Roof Coatings	250
Rust Preventative Coatings	400
Shellacs:	
Clear	730
Opaque	550
Specialty Primers, Sealers and Undercoaters	350
Stains	250
Swimming Pool Coatings	340
Swimming Pool Repair and Maintenance Coatings	340
Temperature-Indicator Safety Coatings	550
Traffic Marking Coatings	150
Waterproofing Concrete/Masonry Sealers	400
Waterproofing Sealers	250
Wood Preservatives	350

In practice, some coatings may be used for more than one purpose. To address this, the rule requires that the most restrictive VOC limit applicable to any use listed for the product (on labeling, stickers, sales advertising and technical literature) applies to all uses of the product. However, the rule makes an exception for 15 coating products, which include bituminous roof coatings, flow coatings, pretreatment wash primers, shellacs, and wood preservatives.

The rule requires specific information to be provided with all coatings: date of manufacture or date code; thinning recommendation, if applicable; and the VOC content.

The rule also requires manufacturers of coatings to report to ARB the amount sold or distributed for certain types of coatings, including clear brush lacquers, rust preventative coatings, specialty primers, recycled coatings, and bituminous coatings. Further, manufacturers also must report on the amounts of toxic compounds used in coatings such as methylene chloride or perchloroethylene. These reports must be submitted by each manufacturer at least once a year.

III. TECHNICAL REVIEW

A. 2007 SCM Development

Staff members of ARB, in conjunction with staff members of California air districts and CAPCOA, developed an updated SCM for architectural coatings along with a technical support document that provides the technical basis for the SCM. The SCM is ARB's model rule for architectural coatings and is not a formal regulation. CARB approved an SCM for architectural coatings in 1977 and, as technology advanced, amended it in 1985, 1989, 2000, and 2007. While CARB provides support to the District by developing the SCM, the District is responsible for adopting, implementing, and enforcing architectural coating rules in the Bay Area. The 2007 SCM development was based on:

- ARB's 2005 Architectural Coatings Survey / Reactivity Analysis;
- Meetings with district and EPA representatives
- Public workshops;
- Meetings with industry trade groups and individual manufacturers;
- Meetings with essential public services agencies;
- Evaluation of the South Coast AQMD Rule 1113 and the EPA National Architectural Coatings Rule;
- Technology assessments of coating categories;
- Evaluation of durability and performance research for several coating categories;
- Preparation of an environmental impact analysis; and
- An economic impacts survey and preparation of an economic analysis.

The SCM recommends lower VOC limits and modified definitions for many coating categories no later than 2010 for most coating categories (2012 for two categories).

B. Emissions Inventory

The emissions inventory for architectural coatings is based on ARB's 2005 Architectural Coating Survey, Final Report. Statewide (excluding the South Coast Air Quality Management District and architectural coatings sold in containers less than a quart) ARB reported emissions to be about 47.4 tpd. VOC emissions from architectural coatings in the Bay Area, as derived from the statewide inventory, are estimated to be approximately 16.9 tpd.

IV. PROPOSED AMENDMENTS

The District is proposing the adoption of the VOC limits recommended by ARB in the 2007 Architectural Coatings SCM.

A. VOC Limits

The VOC limits recommended by the 2007 Architectural Coatings SCM were developed by ARB staff following a detailed assessment of each of the coating categories. Manufacturers of architectural coatings would comply with the proposed limits by reformulating their products to replace some of the VOCs with water or exempt compounds or increasing the amount of resin and pigmented solids contained in the coatings. However, many coating products already comply with the VOC limits and no reformulation is necessary.

The proposed VOC limits are provided in Table 3. The proposed amendments would set VOC limits for more than 40 coating categories. Categories listed in boldface indicate VOC limits that are more stringent than the VOC limits currently contained in Rule 8-3, or categories that were either combined or eliminated.

Table 3
Proposed VOC Limits for Architectural Coatings

Proposed Coating Category: (Coatings listed in **bold face** have a proposed change in VOC limits.)	**Proposed VOC Limits (g/l)**	
	Effective Dates	
	1/1/2011	**1/1/2012**
Flat Coatings	**50**	
Nonflat Coatings	**100**	
Nonflat – High Gloss Coatings	**150**	
SPECIALTY COATINGS		
Aluminum Roof	**400**	
Basement Specialty Coatings	**400**	
Bituminous Roof Coatings	**50**	
Bituminous Roof Primers	350	
Bond Breakers	350	
Concrete Curing Compounds	350	
Concrete/Masonry Sealers	100	
Driveway Sealer	**50**	
Dry Fog Coatings	**150**	
Faux Finishing Coatings	350	
Fire Restive Coatings	350	
Floor Coatings	**100**	
Form-Release Compounds	250	
Graphic Arts Coatings (Sign Paints)	500	
High Temperature Coatings	420	
Industrial Maintenance Coatings	250	
Low Solids Coatings	120	
Magnesite Cement Coatings	450	
Mastic Texture Coatings	**100**	
Metallic Pigmented Coatings	500	
Multi-Color Coatings	250	
Pre-Treatment Wash Primers	420	
Primers, Sealers, and Undercoaters	**100**	
Reactive Penetrating Sealer	350	
Recycled Coatings	250	
Roof Coatings	**50**	
Rust Preventative Coatings		**250**
Shellacs: Clear Opaque	 730 550	
Specialty Primers, Sealers and Undercoaters (Specialty PSU)		**100**
Stains	250	
Stone Consolidants	450	
Swimming Pool Coatings	340	
Traffic Marking Coatings	**100**	
Tub and Tile Refinish	**420**	
Waterproofing Membranes	250	
Wood Coatings	**275**	
Wood Preservatives	350	
Zinc-Rich Primer	**340**	

B. Changes in the Definitions and Coating Categories

ARB added, made changes to, or eliminated architectural coating categories based on information provided in the 2001 and 2005 surveys. Table 4 lists the categories and definitions that are proposed to be added to the rule for new product categories identified in the surveys.

Table 4
Proposed New Architectural Coating Categories and Definitions

Added Category	Definition
Aluminum Roof	A coating labeled and formulated exclusively for application to roofs and containing at least 84 grams of elemental aluminum pigment per liter of coating (at least 0.7 pounds per gallon).
Basement Specialty Coating	A clear or opaque coating that is labeled and formulated for application to concrete and masonry surfaces to provide a hydrostatic seal for basements and other below-grade surfaces.
Concrete/Masonry Sealer	A clear or opaque coating that is labeled and formulated primarily for application to concrete and masonry surfaces to perform one or more of the following functions: 1) prevent penetration of water; or 2) provide resistance against abrasion, alkalis, acids, mildew, staining, or ultraviolet light; or 3) harden or dustproof the surface of aged or cured concrete
Driveway Sealer	A coating labeled and formulated for application to worn asphalt driveway surfaces to fill cracks or seal the surface to provide protection; or restore or preserve the appearance.
Reactive Penetrating Sealer	A clear or pigmented coating that is labeled and formulated for application to above-grade concrete and masonry substrates to provide protection from water and waterborne contaminants, including, but not limited to, alkalis, acids, and salts. Reactive Penetrating Sealers must penetrate into concrete and masonry substrates and chemically react to form covalent bonds with naturally-occurring minerals in the substrate. Reactive Penetrating Sealers line the pores of concrete and masonry substrate with a hydrophobic coating, but do not form a surface film.
Stone Consolidants	A coating that is labeled and formulated for application to stone substrates to repair historic structures that have been damaged by weathering or other decay mechanisms. Stone Consolidants must penetrate into stone substrates to create bonds between particles and consolidate deteriorated material.
Tub and Tile Refinish	A clear or opaque coating that is labeled and formulated exclusively for refinishing the surface of a bathtub, shower, sink, or countertop.
Waterproofing Membrane	A coating that is labeled and formulated for application to concrete and masonry surfaces to provide a seamless waterproofing membrane that prevents any penetration of liquid water into the substrate. Waterproofing Membranes are intended for the following waterproofing applications: below-grade surfaces, between concrete slabs, inside tunnels, inside concrete planters, and under flooring materials.

Added Category	Definition
Wood Coatings	Coatings labeled and formulated for application to wood substrates only. The Wood Coatings category includes the following: clear and semitransparent lacquers, varnishes, sanding sealers, penetrating oils; clear stains; wood conditioners used as undercoats; and wood sealers used as topcoats. The Wood Coatings category also includes the following opaque wood coatings: opaque lacquers, opaque sanding sealers, and opaque lacquer undercoaters. The Wood Coatings category does not include the following: clear sealers that are labeled and formulated for use on concrete/masonry surfaces, or coatings intended for substrates other than wood.
Zinc-Rich Primer	A coating that meets all of the following specifications: coating contains at least 65 percent metallic zinc powder or zinc dust by weight of total solids and is formulated for application to metal substrates to provide a firm bond between the substrate and subsequent applications of coatings

Some of the existing definitions and categories are proposed to be deleted because the categories were either replaced by new categories or were unnecessary because the coatings were no longer sold in California. Table 5 provides a listing of the categories that are proposed to be eliminated and the reason for each elimination.

Table 5
Architectural Coating Categories Proposed to Be Eliminated

Deleted Category	Rationale for Removal
Antenna	No products were reported in the 2005 survey. Coatings used for antennas can be addressed under other categories (e.g., Industrial Maintenance, Rust Preventative).
Antifouling	No products were reported in the 2001 survey nor the 2005 survey. Antifouling coatings are primarily addressed by marine coating rules.
Fire-Retardant – Clear Fire-Retardant – Opaque	The Fire Retardant categories are no longer needed. Products with fire retardant properties can comply with VOC limits in the Flat, Nonflat, and other applicable categories. Therefore, separate categories to accommodate higher-VOC fire retardant coatings are not necessary.
Flow	No products were reported in the 2005 survey. Flow coatings can be addressed by other categories (e.g., Industrial Maintenance).
Quick Dry Enamel	This category is no longer needed as these products fall under the Nonflat – High Gloss category. During development of the 2000 SCM, ARB staff indicated that this category would be eliminated.
Quick Dry Primer, Sealer, Undercoater	This category is no longer needed as these products fall under the Primer, Sealer and Undercoater (PSU) and Specialty PSU categories. During development of the 2000 SCM, ARB staff indicated that this category would be eliminated.
Swimming Pool Repair and Maintenance Coatings	This category will be covered under the revised definition of Swimming Pool Coatings. During development of the 2000 SCM, ARB staff indicated that this category would be eliminated.
Temperature Indicator Safety	No products were reported in the 2001 survey nor the 2005 survey. Coatings used for temperature indicatory safety can be addressed by other categories (e.g., Industrial Maintenance, High Temperature).

Deleted Category	Rationale for Removal
Waterproofing Concrete/ Masonry Sealers	Most of the products that were formerly classified as Waterproofing Concrete/Masonry Sealers will be addressed by the new Concrete/ Masonry Sealer category. In addition, some products can be reclassified as Basement Specialty Coatings, Industrial Maintenance, Reactive Penetrating Sealer, Stone Consolidants, Wood Coatings, or Waterproofing Membranes.
Waterproofing Sealers	Most of the products that were formerly classified as Waterproofing Sealers will be addressed by the new Concrete / Masonry Sealer category. In addition, some products will be reclassified as Basement Specialty Coatings, Industrial Maintenance, Reactive Penetrating Sealer, Stone Consolidants, Wood Coatings, or Waterproofing Membranes.

VI. EMISSIONS AND EMISSIONS REDUCTIONS

The proposed amendments would result in a VOC emission reduction of 5.4 tpd, or about 32 percent of the 16.9 tpd inventory for this source category. Table 6 presents the annual VOC emissions, emissions reduction and VOC limits per coating category. Although there are emissions reductions from 19 coating categories with changes in the VOC limits, 95 percent of the emissions reductions are attributable to eight categories, which account for over 80 percent of the total emissions. These eight categories are highlighted in **boldface** type.

Table 6
VOC Emission Reductions by Product Category

Coating Category	Current VOC Limit (g/l)	Proposed VOC Limit (g/l)	Current VOC Emissions (tpd)	Emission Reductions (tpd)
Flat Coatings	**100**	**50**	**2.71**	**1.11**
Nonflat Coatings	**150**	**100**	**3.72**	**0.99**
Nonflat - High GlossCoatings	**250**	**150**	**1.07**	**0.32**
SPECIALTY COATINGS				
Aluminum Roof	500	400	0.39	0.07
Basement Specialty Coatings	400	400	0.00	0.00
Bituminous Roof Coatings	300	50	0.08	0.06
Bituminous Roof Primers	350	350	0.05	0.00
Bond Breakers	350	350	0.03	0.00
Concrete Curing Compounds	350	350	0.09	0.00
Concrete / Masonry Sealer	**250-400**	**100**	**0.40**	**0.19**
Driveway Sealer	100	50	0.01	0.00
Dry Fog Coatings	400	150	0.16	0.11
Faux Finishing Coatings	350	350	0.04	0.00
Fire Restive Coatings	350	350	0.00	0.00
Floor Coatings	250	100	0.14	0.02
Form-Release Compounds	250	250	0.16	0.00

Coating Category	Current VOC Limit (g/l)	Proposed VOC Limit (g/l)	Current VOC Emissions (tpd)	Emission Reductions (tpd)
Graphic Arts Coatings (Sign Paints)	500	500	0.00	0.00
High Temperature Coatings	420	420	0.01	0.00
Industrial Maintenance Coatings	250	250	0.84	0.00
Low Solids Coatings	120	120	0.01	0.00
Magnesite Cement Coatings	450	450	0.02	0.00
Mastic Texture Coatings	300	100	0.10	0.00
Metallic Pigmented Coatings	500	500	0.02	0.00
Multi-Color Coatings	250	250	0.00	0.00
Pre-Treatment Wash Primers	420	420	0.00	0.00
Primers, Sealers, and Undercoaters	**200**	**100**	**1.42**	**0.40**
Reactive Penetrating Sealer	350	350	0.00	0.00
Recycled Coatings	250	250	0.00	0.00
Roof Coatings	250	50	0.08	0.02
Rust Preventative Coatings	**420**	**250**	**1.23**	**0.56**
Shellacs:				
Clear	730	730	0.05	0.00
Opaque	550	550	0.16	0.00
Specialty Primers, Sealers and Undercoaters (PSU)	**350**	**100**	**1.21**	**0.94**
Stains	250	250	0.76	0.00
Stone Consolidant	250	450	0.00	0.00
Swimming Pool Coatings	340	340	0.01	0.00
Traffic Marking Coatings	150	100	0.33	0.03
Tub and Tile Refinish	250	420	0.00	0.00
Waterproofing Membranes	250	250	0.23	0.03
Wood Coatings	**350-650**	**275**	**1.26**	**0.50**
Wood Preservatives	350	350	0.11	0.00
Zinc-Rich Primer	500	340	0.01	0.00
		TOTAL	**16.9**	**5.4**

V. ECONOMIC IMPACTS

ARB, in developing the 2007 SCM, found no serious adverse economic impacts and no significant impacts on employment. There were no significant adverse impacts on the profitability of businesses affected by the rule. Profitability was estimated by determining the potential decline in the return on owner's equity (ROE) from costs imposed by compliance with the rule. If coating manufacturers were to absorb all costs associated with the proposed amendments (i.e., not pass any costs on to consumers), the proposal would result in an average ROE decline of 2.1 percent, which is not considered to be a significant impact on the profitability of an affected business. It is expected that most coatings manufacturers would elect to pass on the additional cost to their customers.

A. Costs

1. Total Costs of the Proposal

ARB estimated nonrecurring costs such as R&D, testing, and equipment purchases. These costs were annualized and added to annual recurring costs that include increases or decreases in raw material costs, labeling, packaging and reporting. They found a statewide total of $12.3 million in costs to implement the SCM proposal. The proposed amendments are estimated to cost approximately $4.42 million per year in the Bay Area. This cost value includes costs to consumers throughout California, as well as manufacturers and distributors within and beyond California. Total annual cost to the nine coating firms affected by Rule 8-3 is estimated to be $300,000.

2. Costs to Consumers

On a per gallon basis, the proposal would reduce the costs of coatings in some categories by more than six dollars per gallon, and increase the costs of coatings in other categories, in certain cases by as much as $27 per gallon.[i] On average, if all costs were passed on to the consumer, ARB found that the average cost of a gallon would increase by about six percent, or $1.21 per gallon.

B. Cost Effectiveness

The District-wide cost of the proposal is estimated to be $4.42 million per year. The estimated emission reduction is 5.4 tpd (1,971 tons per year). This results in a cost effectiveness of $2,243 per ton of VOC reduced.

C. Incremental Cost Effectiveness

The District is required to conduct an incremental cost effectiveness analysis prior to adopting any proposed Best Available Retrofit Control Technology rule or feasible measure pursuant to Health and Safety Code Section 40920.6(a)(3). Under this section, the District must: (1) identify one or more control options achieving the emission reduction objectives for the proposed rule; (2) determine the cost effectiveness for each option; and (3) calculate the incremental cost effectiveness for each option. To determine incremental costs, the District must "calculate the difference in the dollar costs divided by the difference in the emission reduction potentials between each progressively more stringent potential control option as compared to the next less expensive control option."

$$\text{ICE} = \frac{\text{Cost}_{\text{Proposal}} - \text{Cost}_{\text{Alternative}}}{\text{Reductions}_{\text{Proposal}} - \text{Reductions}_{\text{Alternative}}}$$

[i] Floor coatings are the only category with a projected cost increase of more than $17 per gallon. The ARB staff report states that this is because there are a large number of coatings sold in this category in small containers. However, the report notes that 85% of floor coatings sold, by volume, already comply with the proposed VOC limit, and so will incur no increased costs.

The option chosen to be compared with this proposal is reducing the VOC limits only for the five coating categories that achieve the greatest emissions reductions. These coating categories are Flat Coatings; Nonflat Coatings; Specialty Primers, Sealers, and Undercoaters; Rust Preventative Coatings; and Wood Coatings. Table 7 presents the cost difference between current and future compliant coatings, the estimated emission reductions, and the cost effectiveness associated with each of the five coating categories.

Table 7
Summary of Cost and Cost Effectiveness for the Top Five Emitting Coatings

Coating Category	Bay Area Annual Cost Increase ($/year)	Emission Reductions (tpd)	Cost Effective-ness ($/ton)
Flat Coatings	- ($299,418)	1.11	- ($739)
Nonflat Coatings	$2,644,566	0.99	$7,319
Specialty Primers, Sealers, Undercoaters	- ($257,941)	0.94	- ($752)
Rust Preventative Coatings	- ($99,450)	0.56	- ($487)
Wood Coatings	- ($221,956)	0.50	- ($1,216)
	$1,765,801	**4.10**	**$1,180**

Importing the cost and emission reduction values for the proposed amendments, and the option of only reducing VOC limits for five categories from Table 7 into the formula for incremental cost effectiveness yields the following expression:

$$\text{ICE} = \frac{\$4.42 - 1.77 \text{ million/yr}}{(5.4 - 4.1 \text{ tpd})(365 \text{ days/yr})}$$

An incremental cost effectiveness of $5593 per ton of VOC emissions reduced is estimated for achieving emission reductions from coating categories other than the five highest emitting categories. This means that the first 4.1 tons per day of emission reductions come at a cost of $1,180 per ton, while the remaining 1.3 tons per day of emission reductions come at a cost of $5593 per ton, which is nevertheless well within the range of cost effectiveness for measures included in the District's most recent ozone strategy, the Bay Area 2005 Ozone Strategy.

D. Socioeconomic Impacts

Section 40728.5 of the California Health and Safety Code requires an air district to assess the socioeconomic impacts of the adoption, amendment or repeal of a rule if the rule is one that "will significantly affect air quality or emissions limitations." Bay Area Economics of Emeryville, California has prepared a socioeconomic analysis of the proposed amendments to Rule 8-3. The analysis concludes that the affected

manufacturers and distributors should be able to pass through the costs of compliance with the proposed rule without significant economic dislocation or loss of jobs. District staff has reviewed and accepted this analysis.

E. District Impacts

The proposed amendments will have very little impact on District resources. Enforcement of this rule is conducted on a periodic basis through surveying coatings sold and used on major projects, through interaction with ARB staff regarding coatings distributed statewide, and through response to complaints from contractors and the general public.

VI. REGULATORY IMPACTS

Section 40727.2 of the Health and Safety Code requires an air district, in adopting, amending, or repealing an air district regulation, to identify existing federal and district air pollution control requirements for the equipment or source type affected by the proposed change in air district rules. The air district must then note any difference between these existing requirements and the requirements imposed by the proposed change. There is only one federal air pollution control regulation that applies to architectural coatings: the National Volatile Organic Compound Emission Standards for Architectural Coatings (National Rule), which was promulgated by the EPA and published in the Federal Register on September 11, 1998. The National Rule applies only to manufacturers and importers of architectural coatings. Rule 8-3 applies to a wider range of entities, including manufacturers, distributors, retailers, and end users of architectural coatings. Further, category by category, the VOC limits contained in this proposal are more stringent than those found in the National Rule as shown in the comparison presented in Table 8.

Table 8
Comparison Between the National Rule and the Proposed Amendments to Rule 8-3

National Rule Coating Category	VOC Limit (g/l)	Reg. 8-3 Coating Category, as per proposed amendments	VOC Limit (g/l)
Antenna Coatings	530	Industrial Maintenance	250
Anti-Fouling Coatings	450	Industrial Maintenance	250
Anti-Graffiti Coatings	600	Industrial Maintenance	250
Bituminous Coatings And Mastics	500	Bituminous Roof Coatings Bituminous Roof Primers Concrete/Masonry Sealers Driveway Sealers Industrial Maintenance Waterproofing Membranes	50 350 100 50 250 250
Bond Breakers	600	Bond breakers	350
Calcimine Recoater	475	Flat Specialty PSU	50 100
Chalkboard Resurfacers	450	Industrial Maintenance	250

National Rule Coating Category	VOC Limit (g/l)	Reg. 8-3 Coating Category, as per proposed amendments	VOC Limit (g/l)
Concrete Curing Compounds	350	Concrete Curing Compounds	350
Concrete Curing and Sealing Compounds	700	Concrete Curing Compounds Concrete/Masonry Sealers	350 100
Concrete Protective Coatings	400	Concrete/Masonry Sealers	100
Concrete Surface Retarders	780	Concrete Curing Compounds	350
Conversion Varnish	725	Wood Coatings	275
Dry Fog Coatings	400	Dry Fog Coatings	150
Extreme High Durability Coatings	800	Industrial Maintenance	250
Faux Finishing/Glazing	700	Faux Finishing Coatings	350
Fire-Retardant/Resistive Coatings:			
Clear	850	Fire Resistive[1]	350
Opaque	450	Fire Resistive[1]	350
Flat Coatings:			
Exterior Coatings	250	Flat	50
Interior Coatings	250	Flat	50
Floor Coatings	400	Floor Coatings	100
Flow Coatings	650	Industrial Maintenance	250
Form Release Compounds	450	Form Release Compounds	250
Graphic Arts Coatings (Sign Paints)	500	Graphic Arts Coatings (Sign Paints)	500
Heat Reactive Coatings	420	Industrial Maintenance	250
High Temperature Coatings	650	High Temperature Coatings	420
Impacted Immersion Coatings	780	Industrial Maintenance	250
Industrial Maintenance Coatings	450	Industrial Maintenance	250
Lacquers (Including Lacquer Sanding Sealers)	680	Wood Coatings	275
Magnesite Cement Coatings	600	Magnesite Cement Coatings	450
Mastic Texture Coatings	300	Mastic Texture Coatings	100
Metallic Pigmented Coatings	500	Metallic Pigmented Coatings Aluminum Roof Zinc-Rich Primers	500 400 340
Multi-Colored Coatings	580	Multi-Colored Coatings	250
Nonferrous Ornamental Metal Lacquers And Surface Protectants	870	Rust Preventative Nonflat – High Gloss Primers, Sealers, Undercoaters	250 150 100
Nonflat Coatings:			
Exterior Coatings	380	Nonflat Coatings	100
Interior Coatings	380	Nonflat Coatings	100
Nuclear Coatings	450	Industrial Maintenance	250
Pretreatment Wash Primers	780	Pretreatment Wash Primers	420
Primers and Undercoaters	350	Primers, Sealers, Undercoaters Specialty PSU	100 100
Quick-Dry Coatings:			
Enamels	450	Non-flat – High Gloss	150
Primers, Sealers, and Undercoaters	450	Primers, Sealers, Undercoaters Specialty PSU	100 100
Repair and Maintenance Thermoplastic Coatings	650	Industrial Maintenance	250
Roof Coatings	250	Roof Coatings	50
Rust Preventative Coatings	400	Rust Preventative Coatings	250
Sanding Sealers (Other than Lacquer	550	Wood Coatings	275

National Rule Coating Category	VOC Limit (g/l)	Reg. 8-3 Coating Category, as per proposed amendments	VOC Limit (g/l)
Sanding Sealers)			
Sealers (Including Interior Clear Wood Sealers)	400	Primers, Sealers, Undercoaters Specialty PSU Wood Coatings Concrete/Masonry Sealers	100 100 275 100
Shellacs:		Shellacs:	
Clear	730	Clear	730
Opaque	550	Opaque	550
Stains:			
Clear and Semitransparent	550	Stains (Semitransparent) Wood Coatings (Clear Stains)	250 275
Opaque	350	Stains	250
Low Solids	120[2]	Low Solids	120
Stain Controllers	720	Wood Coatings	275
Swimming Pool Coatings	600	Swimming Pool Coatings	350
Thermoplastic Rubber Coatings and Mastics	550	Roof Coatings	50
Traffic Marking Coatings	150	Traffic Marking Coatings	100
Varnishes	450	Wood Coatings	275
Waterproofing Sealers and Treatments	600	Concrete/Masonry Sealers Wood Coatings Basement Specialty Coating Driveway Sealers Waterproofing Membrane	100 275 400 50 250
Wood Preservatives:			
Below Ground Wood Preservatives	550	Wood Preservatives	350
Clear and Semitransparent	550	Wood Preservatives	350
Opaque	350	Wood Preservatives	350
Low Solids	120[2]	Wood Preservatives	350
Zone Marking Coatings	450	Traffic Marking Coatings	100

1. In the proposed SCM, the "Fire Resistive" category would be retained for those products that are certified in accordance with ASTM E119-07. However, the "Fire Retardant" category would be eliminated and coatings with fire retardant properties would fall under their primary categories (e.g., Flat, Nonflat, etc.).
2. Units are grams of VOC per liter of coating, including water and exempt compounds, thinned to the maximum thinning recommended by the manufacturer.

The National Rule also contains flexibility provisions that are not in the proposed amendments. These provisions include: (1) an exceedance fee provision; (2) a tonnage exemption; and (3) a recycled coating compliance option. To comply with these provisions, manufacturers and importers must keep specified records and submit annual reports to the appropriate regional US EPA office.

The exceedance fee provision allows manufacturers and importers to comply with the rule by paying a fee, in lieu of meeting the VOC content limits. The tonnage exemption allows manufacturers and importers to sell or distribute limited quantities of architectural coatings that do not comply with the VOC content limits and for which no exceedance fee is paid. The recycled coatings compliance option allows calculation of an adjusted

VOC content for coatings that contain a certain percentage of post-consumer coating. Containers of recycled architectural coatings must include labeling that shows the percentage, by volume, of post-consumer coating content. Staff did not propose to include an exceedance fee or tonnage exemption in the proposed SCM, because of the need to maximize emission reductions in California, and because California architectural coating rules have been successful without these type of exemptions. The National Rule's recycled coating option was not included in the proposed SCM, because ARB staff believes having a Recycled Coatings category with a VOC limit of 250 g/l accomplishes the same goal of encouraging recycling without the need for an adjusted VOC content credit.

VII. ENVIRONMENTAL IMPACTS

A. CEQA

Pursuant to the California Environmental Quality Act, the District has had an initial study for the proposed amendments prepared by Environmental Audit, Inc. The initial study concludes that there are no potential significant adverse environmental impacts associated with the proposed amendments. The initial analysis and a draft negative declaration will be posted and available for comment prior to the public hearing.

B. Greenhouse Gas Emissions

In June, 2005, the District's Board of Directors adopted a resolution that recognizes the link between global climate change and localized air pollution impacts. Climate change, or global warming, is the process whereby emissions of anthropogenic pollutants, together with other naturally-occurring gases, absorb infrared radiation in the atmosphere, leading to increases in the overall average global temperature.

While carbon dioxide (CO_2) is the largest contributor to global warming, methane, halogenated carbon compounds, nitrous oxide, and other species also contribute to climate change. Gases in the atmosphere can contribute to the greenhouse effect both directly and indirectly. Direct effects occur when the gas itself is a greenhouse gas (GHG). While there is relative agreement on how to account for these direct effects of GHG emissions, accounting for indirect effects is more problematic. Indirect effects occur when chemical transformations of the original compound produce other GHGs, when a gas influences the atmospheric lifetimes of methane, and/or when a gas affects atmospheric processes that alter the radiative balance of the Earth (e.g., affect cloud formation).

VOCs have some direct global warming effects; however, they may also be considered greenhouse gases due to their indirect effects. VOCs react chemically in the atmosphere to increase concentrations of ozone and may prolong the life of methane. The magnitude of the indirect effect of VOCs is poorly quantified and depends on local air quality. Global warming not only exacerbates ozone formation, but ozone formation exacerbates global warming because ozone absorbs infrared radiation. Consequently, reducing VOCs to make progress towards meeting California air quality standards for ozone will help reduce global warming.

Adoption and implementation of the proposed amendments to Rule 8-3 should not result in any impact on the emissions of greenhouse gases. The method of control in this proposal is the reduction of VOC limits for various architectural and industrial maintenance coatings. These coatings are applied and allowed to dry via evaporation. No abatement equipment is used. Consequently, there would be no additional energy requirements and, therefore, the proposal is neutral in regards to greenhouse gas generation.

VIII. RULE DEVELOPMENT / PUBLIC CONSULTATION PROCESS

The process to bring this proposal to the Board of Directors has been a comprehensive process involving architectural coatings manufacturers, their suppliers and trade associations, and consultation with other regulatory agencies such as ARB, EPA, and other California air districts. In the development of this staff report, the previous workshop report and associated Public Workshops, and proposed amendments District staff has:

- Participated in the development of ARB's 2007 Architectural Coatings SCM;
- Held meetings and conference calls, and met and corresponded via telephone calls, emails and letters with architectural coatings manufacturers, suppliers, trade association representatives, solvent manufacturers, end users, and other interested parties; and
- Consulted with staff members from the ARB, EPA, and other air districts.

Staff developed the economic analysis based on the analysis presented in the 2007 SCM technical support document and by additional costing information provided by coating manufacturers.

Staff also hosted a public workshop to inform and solicit comments from the affected industries and interested public on the proposed amendments to Rule 8-3. The workshop was held at the District office on January 13, 2009. Stakeholders, who included coating industry representatives, and staff members from ARB, attended in person or via conference call.

Staff received comments during and subsequent to the workshops. The following is a summary of the comments received along with District responses:

- Adopt the 2007 Architectural Coatings SCM VOC limits and other provisions as recommended.

  Response: Staff revised the proposal to ensure consistency with the 2007 SCM including definitions and VOC limits, where applicable.

- Delay the effective date of the proposed limits for a year or two.

Response: Effective dates for compliance were delayed from January 1, 2010 until January 1, 2011 for all but two coating categories (January 1, 2012 for the remaining two, as recommended by the SCM) to provide sufficient time for coating manufacturers to produce compliant coatings and label them as prescribed in the proposal.

- Eliminate the proposed 25 g/l standard for solvents used in surface preparation and cleanup.

  Response: The proposed 25 g/l standard for solvents used in surface preparation and cleanup was removed. The rule already has solvent handling and storage requirements so as to minimize evaporation into the atmosphere. In some coating applications, surface preparation has included wipe cleaning with solvent-laden cloth. However, this is rarely true in the application of architectural coatings as verified by industrial painting contractors who work on the metal substrates where solvent wipe cleaning could be used.

- Add language to address circumvention of the one-quart exemption.

  Response: A request was made to eliminate the exemption for coatings sold in liter containers by Kyle Frakes, representing Tnemec Coatings. Mr. Frakes claims that large quantities of quart (0.9 liter) containers of high-solvent fluoropolymer coating (for metal exteriors) were being sold by Tnemec's competitors. The liter exemption was developed for small jobs, touch up, and to allow certain higher VOC niche products to remain in the marketplace in small applications. Mr. Frakes cited one instance in the Sacramento area where many quarts containers were mixed for application, circumventing the intent of the rule. Staff believes that such instances are rare, in part because multiple quart containers are significantly more expensive to purchase. Under the proposed amendments, manufacturers will be required to submit data on quart containers, so any large scale circumvention could be detected.

- Provide a limited exemption for the construction of the Eastern Span of the Bay Bridge.

  Response: An exemption for foreign-constructed segments of the Bay Bridge retrofit was requested by Andy Rogerson of Caltrans. Mr. Rogerson claims that Caltrans must use solvent-borne inorganic zinc coatings to touch up foreign-applied coatings for compatibility. The solvent-borne inorganic zinc coating has a VOC content of 490 g/l. In contrast the Golden Gate Bridge has used waterborne inorganic zinc coatings for a number of years in both new construction for seismic retrofit projects and for repainting. Staff consulted with Golden Gate Bridge District personnel and believes that Caltrans can comply with the lower limit. Caltrans was consulted; but did not raise this issue during the development of the SCM at the state level.

- Clarify labeling requirements.

  Response: Labeling requirements were clarified.

- Clarify some of the definitions.

Response: Definitions were clarified.

- Include a reactivity-based compliance option.

  Response: Staff does not propose a reactivity-based compliance option at this time. Staff has collaborated closely with staff members from ARB and EPA and other interested parties in an attempt to develop a reactivity option for a limited number of architectural coatings. Different VOCs vary in their capacity to react in the atmosphere to form ozone. Reactivity would account for the ozone-forming ability of each of the volatile organic compounds used in the coating formulations. A manufacturer could comply through a reduction in the overall reactivity of the coating, even if the mass of the VOC in the coating did not meet the traditional mass-based VOC limit (grams VOC per liter of coating or pounds VOC per gallon of coating).

  Staff generally supports the concept of a reactivity-based alternative for coating manufacturers, provided certain criteria are met. These criteria include ensuring comparable ozone benefits with a reactivity-based limit; limiting the use of low-reactive, but potentially toxic compounds; and developing of a verifiable test method to enforce a reactivity-based standard. To date, the only reactivity-based rule adopted for paints and coatings is one adopted by the ARB for aerosol paint products. No district has adopted a reactivity-based rule. Staff believes that more time is necessary to develop consensus on the derivation and form of a reactivity-based standard, on how to address toxicity and other environmental impacts and on what other elements should be incorporated into a rule to make a standard enforceable. Consequently, staff recommends adoption of the proposed amendments to reduce emissions as quickly as possible, and futher the analysis of a potential reactivity-based compliance option.

- Exempt tertiary butyl acetate (TBAC) as a VOC.

  Response: Staff does not propose to exempt TBAC in the definition of VOC for architectural coatings. This request was evaluated during the recent regulatory development of amendments to Regulation 8, Rule 45: Motor Vehicle and Mobile Equipment Coating Operations (Rule 8-45). Staff evaluation of the exemption request concluded that because TBAC may potentially pose a cancer risk to humans, and because compliant coatings that do not contain TBAC are already available on the market, TBAC should not be proposed for exemption in the amendments to Rule 8-45. Additional testimony from staff at the California Office of Environmental Health Hazard Assessment (OEHHA) informed the Board's decision not to exempt this compound.

  No new toxicological data have been made available to District staff since the adoption of the amendments to Rule 8-45 in December 2008. However, Daniel Pourreau, representing LyondellBasell Chemical Company, the manufacturer of TBAC, referenced a conclusion made by a non-profit group, Toxicology Excellence for Risk Assessment (TERA). TERA concluded that a two-year bioassay on TBAC is unnecessary to reach a conclusion that TBAC is unlikely to be a human carcinogen.

Their findings were to have been made available in a report to be released in March 2009.

In 1993, the District Board of Directors adopted a policy directing staff to consider the impacts of negligibly photochemically reactive compounds on a rule-by-rule basis and to not exempt compounds that deplete stratospheric ozone or are toxic. The Suggested Control Measure developed by ARB does not exempt TBAC, nor do the proposed VOC limits contemplate the use of TBAC to comply. OEHHA, which is the agency best suited to determine and recommend an exemption for newly developed (or newly exempted) compounds, has not recommended an exemption for this compound.

IX. CONCLUSION

Pursuant to the California Health and Safety Code Section 40727, before adopting, amending, or repealing a rule the Board of Directors must make findings of necessity, authority, clarity, consistency, non-duplication and reference. The proposal is:

- Necessary to supplement the District's ability to progress toward meeting federal and state ozone standards, as well as meet transport mitigation requirements;
- Authorized by California Health and Safety Code Section 40702;
- Clear, in that the new regulation specifically delineates the affected industries, compliance options and administrative and monitoring requirements for industry subject to this rule;
- Consistent with other District rules, and not in conflict with state or federal law;
- Non-duplicative of other statutes, rules or regulations; and
- Properly references the applicable District rules and test methods and does not reference other existing law.

A socioeconomic analysis prepared by Bay Area Economics has found that the proposed amendments would not have a significant economic impact or cause regional job loss. District staff have reviewed and accepted this analysis. A California Environmental Quality Act analysis prepared by Environmental Audit, Inc., concludes that the proposed amendments would not result in any adverse environmental impacts. District staff have reviewed and accepted this analysis as well. A Negative Declaration for the proposed amendments has been prepared and will be circulated for comment.

Staff recommends the adoption of the proposed amendments to Regulation 8, Rule 3: Architectural Coatings, and approval of a CEQA Negative Declaration.

X. REFERENCES

Final Approved Suggested Control Measure for Architectural Coatings, ARB, February 2008.

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Primer on Greenhouse Gases, Donald J. Wuebbles and Jae Edmonds, 1991.

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