BOARD MEETING DATE: June 3, 2011 AGENDA NO. 24

PROPOSAL: Amend Rule 1113 – Architectural Coatings

SYNOPSIS: The proposed amendments to Rule 1113 will further reduce VOC emissions from architectural coatings by limiting the allowable VOC content of previously unregulated colorants used to tint coatings at the point of sale; establishing VOC limits for certain new coating categories; and reducing the allowable VOC content for several existing coating categories. The proposed amendments will also revise the Averaging Compliance Option and Small Container Exemption, remove outdated language and provide rule clarification to improve its enforceability.

COMMITTEE: Stationary Source, January 21, 2011 and March 18, 2011, Reviewed

RECOMMENDED ACTION:
Adopt the attached resolution:

1. Certifying the Final Environmental Assessment for Proposed Amended Rule 1113 – Architectural Coatings; and
2. Amending Rule 1113 – Architectural Coatings.

Barry R. Wallerstein, D.Env.
Executive Officer

EC:LT:NB

Background
Architectural coatings are one of the largest non-mobile sources of VOC emissions in the South Coast Air Quality Management District (AQMD). Rule 1113 is applicable to manufacturers, distributors, specifiers, and end-users of architectural coatings. These coatings are used to enhance the appearance of and to protect stationary structures and their appurtenances, including homes, office buildings, factories, pavements, curbs, roadways, racetracks, bridges, other structures; and their appurtenances, on a variety of substrates. Architectural coatings are typically applied using brushes, rollers, or spray guns by homeowners, painting contractors, and maintenance personnel. Rule 1113 was first adopted in 1977, and has undergone numerous amendments, most recently on July 15, 2007, to address the metallic pigmented coatings category. Although successive amendments to Rule 1113 contributed to significantly reduced emissions, architectural coatings continue to be one of the largest sources of VOC emissions in the AQMD, with the exception of consumer products and mobile sources.

The 2007 Air Quality Management Plan (AQMP) projected that the 2010 Annual Average Emissions for architectural coatings would be 23 tons per day (tpd), with a Summer Planning Inventory of 27 tpd. That estimate is based on the CARB's 2001 survey of coatings sold in California in calendar year 2000; assuming 45% of those coatings were sold in the AQMD. The survey was last updated in 2006 with 2004 sales data.

Based on data collected under Rule 314 – Fees for Architectural Coatings for coatings shipped in 2008 and 2009, the emissions in the AQMD that can be attributed to architectural coatings were 15 tpd and 12 tpd, respectively, and do not include VOC emissions from colorants added at the point of sale. Staff notes that the Rule 314 data has not been fully audited, and volumes and emissions may be under or over-reported. The data may be revised upon more detailed audits and subsequent compliance reviews. Furthermore, Rule 314 data indicates declining coating sales volumes exemplifying impacts of the decline in economic activity, particularly the local real estate market, which is the biggest driver for architectural coating usage.

Proposal
Staff proposes the following amendments to achieve emission reductions and clarify rule implementation issues for improved enforceability:

- Remove outdated language;
- Clarify existing definitions and requirements;
- Create several new categories with VOC limits;
- Reduce the VOC content limits of certain architectural coating categories, effective January 1, 2014;
- Add VOC limits for colorants added at the point of sale, effective January 1, 2014;
- Make changes to the Averaging Compliance Option (ACO) provision:

  - Lower ceiling limits, effective upon Rule adoption;
  - Limit coating categories that can be averaged, effective January 1, 2012; and
  - Phase-out provision, effective January 1, 2015.
- Add a general prohibition against the use of Group II exempt solvents, other than cyclic, branched, or linear, completely methylated siloxanes (VMS).
- Include specific labeling requirements to improve the visibility of the VOC content.
- Remove reporting requirements that are now redundant with Rule 314.
- Propose changes to the Small Container Exemption (SCE):
  - Clarify that the exemption only applies to the VOC limits; and
  - Prohibit "bundling" of the coatings sold on the retail shelves.
- Amend the exemptions for stains used above 4,000 feet to include use or sale in such areas for such use.
- Remove exemption for adding 10% VOC by volume to lacquers, since it is no longer necessary to prevent blushing on cool days with high humidity.

Emission Inventory and Emission Reduction

The emission inventory of architectural coatings is calculated from the CARB 2005 Architectural Coatings Survey based on 2004 reported sales of architectural coatings in California and the Rule 314 – Fees for Architectural Coatings Annual Quantity and Emissions Reports of reported sales of architectural coatings in the 2009 calendar year. Staff used the sales volumes reported in the 2005 Architectural Survey as an indication of the pre-recession sales and the sales weighted VOC and percent compliant products in the Rule 314 Annual Quantity and Emissions Reports. The share of statewide sales in the AQMD is based upon the percentage of the California population within the AQMD jurisdiction. Staff has estimated the emission reductions to be 4.4 tons of VOC reductions per day, as summarized below.

Rule Change	Emission Reductions (tpd)		
	2012	2014	2015
Remove PSU & Specialty Primer from ACO	0.9	0	0
Reduce VOC Limits	0	0.4	0
Limit VOC of Colorants (see Table 20)[3]	0	2.8	0
Phase out ACO	0	0	0.3
Total Emission Reductions (tpd)	4.4		

Cost-Effectiveness
Staff has estimated the cost-effectiveness to be $6,211 per ton of VOC reduced from lowering the VOC limit for the following coating categories: Dry Fog Coatings, Fire Proofing Coatings, Form Release Compounds, Graphic Arts Coatings, Mastic Coatings, and Metallic Coatings; establishing a VOC limit on colorants used at the point of sale; eliminating certain coating categories eligible for the Averaging Compliance Option (ACO); and phasing out the ACO. The range of cost-effectiveness is within that for other VOC rules adopted by your Board.

California Environmental Quality Act (CEQA)
Pursuant to the CEQA and AQMD Rule 110, AQMD has prepared an Environmental Assessment (EA) for the proposed amendments to Rule 1113. The Draft EA was circulated for a 30-day public review and comment period from April 12, 2011 to May 11, 2011. Comments received on the Draft EA and responses to the comments have been incorporated into the Final EA for the proposed project.

Socioeconomic Analysis
Proposed amendments to Rule 1113 would affect 198 coating manufacturers, of which 48 are local, and 3,436 retail outlets selling paints in the four-county area. The manufacturers and retail outlets belong to the industries of chemical manufacturing (NAICS 325) and retail trade (NAICS 44), respectively. PAR 1113 would also affect the end-users of coatings which include paint and wall covering contractors and the general public. The paint contractors belong to the construction sector (NAICS 238). The total annualized cost of the proposed amendments is projected to be $9.0 million. It is estimated that approximately 1- 21 jobs could be forgone annually, on average, in the four-county area between 2012 and 2025. It should be noted that job estimate impacts are small enough and are considered to be within the noise of the economic model employed for this analysis.

AQMP and Legal Mandates
The California Health and Safety Code require the AQMD to adopt an Air Quality Management Plan (AQMP) to meet state and federal ambient air quality standards within the South Coast Air Basin. In addition, California Health and Safety Code require the AQMD to adopt rules and regulations that carry out the objectives of the AQMP.

Implementation Plan and Resource Impact
Existing AQMD resources will be sufficient to implement the proposed changes to this rule with minimal impact on the budget.

Attachments

A. Summary of Proposed Amendments
B. Rule Development Process Flow Chart
C. Key Contacts
D. Resolution
E. Rule Language
F. Final Staff Report
G. Socioeconomic Assessment
H. CEQA – Environmental Assessment

A T T A C H M E N T A

PROPOSED AMENDMENTS TO

RULE 1113 – ARCHITECTURAL COATINGS

PROPOSED AMENDMENTS TO

RULE 1113 – ARCHITECTURAL COATINGS

Staff proposes the following amendments to achieve emission reductions and clarify rule implementation issues for improved enforceability:

- Change the applicability of the rule by eliminating the phrase "for use," including "market for sale" and adding language to include "storing coatings at worksites."

- Add 20 definitions; amend 13 definitions, and delete 3 definitions:

  - Add – Concrete Surface Retarders; Driveway Sealers; Faux Finishing subcategories: Glazes, Decorative Coatings, Trowel Applied Coatings, and Clear Topcoats; Form Release Compounds; Gonioapparent; Manufacturer; Market; Non-Sacrificial Anti-Graffiti Coating; Pearlescent; Pigmented; Reactive Penetrating Sealers; Restoration Architect; Retail Outlet; Sacrificial Anti-Graffiti Coatings; Stationary Structures; Stone Consolidants; and Worksite.

  - Amend – Architectural Coatings; Faux Finishing Coatings; Fire Proofing Coatings; Floor Coatings; Japans/Glazes; Metallic Pigmented Coatings; Product Line; Quick Dry Enamels; Quick Dry Primers, Sealers, Undercoaters; Sanding Sealers; Swimming Pool Coatings; Varnishes; Volatile Organic Compounds; and Waterproofing Concrete/Masonry Sealers.

  - Delete – Clear Brushing Lacquers; Fire Retardant Coatings, and Non-Flat High Gloss Coatings.

- Clarify the requirements in paragraphs (c)(1) and (c)(2) which address the VOC limits in the Table of Standards, the VOC limit for the default category, and the new VOC limits established for colorants added at the point of sale.

- Establish a VOC limit for the following new coating categories and reduce the VOC limit for the following categories:

PROPOSED AMENDMENTS TO

RULE 1113 – ARCHITECTURAL COATINGS

Category	Current VOC limit (g/L)	Proposed VOC limit (g/L)	Current Category	New Category
Concrete Surface Retarder	250	50[3]	Default	Yes
Driveway Sealers	100	50[2]	Waterproofing Sealers	Yes
Dry Fog Coatings	150	50[3]	N/A	No
Faux Finishing Coatings				
Clear topcoat	50	200[2] (100[3])	Flat or Non-Flat	Yes
Decorative Coatings	50		Flat or Non-Flat	Yes
Glazes	350		Japan/Faux	No
Japan	350		Japan/Faux	No
Trowel Applied Coatings	50	150[2] (50[3])	Flat or Non-Flat	Yes
Fire Proofing Coatings	350	150[3]	N/A	No
Form Release Compound	250	100[3]	Default	Yes
Graphic Arts Coatings	500	150[3]	N/A	No
Mastic Coatings	300	100[3]	N/A	No
Metallic Pigmented Coatings	500	150[3]	N/A	No
Non-Sacrificial Anti-Graffiti Coating	100	100	Industrial Maintenance	Yes
Reactive Penetrating Sealer	100	350[1]	Waterproofing Sealers	Yes
Stone Consolidants	100	450[1]	Waterproofing Sealers	Yes
Sacrificial Anti-Graffiti Coatings	250	50	Default	Yes

1. Effective upon Rule adoption
2. Effective January 1, 2012
3. Effective January 1, 2014

- Add VOC limits for colorants added at the point of sale, effective January 1, 2014.
- Propose changes to the ACO provision:
  - Lower ceiling limits, effective upon Rule adoption;
  - Limit coating categories that can be averaged, effective January 1, 2012; and
  - Phase-out provision, effective January 1, 2015.
- Add a general prohibition against the use of Group II exempt solvents, other than cyclic, branched, or linear, completely methylated siloxanes (VMS).
- Include specific labeling requirements to improve the visibility of the VOC content.
- Remove reporting requirements that are now redundant with Rule 314.

PROPOSED AMENDMENTS TO

RULE 1113 – ARCHITECTURAL COATINGS

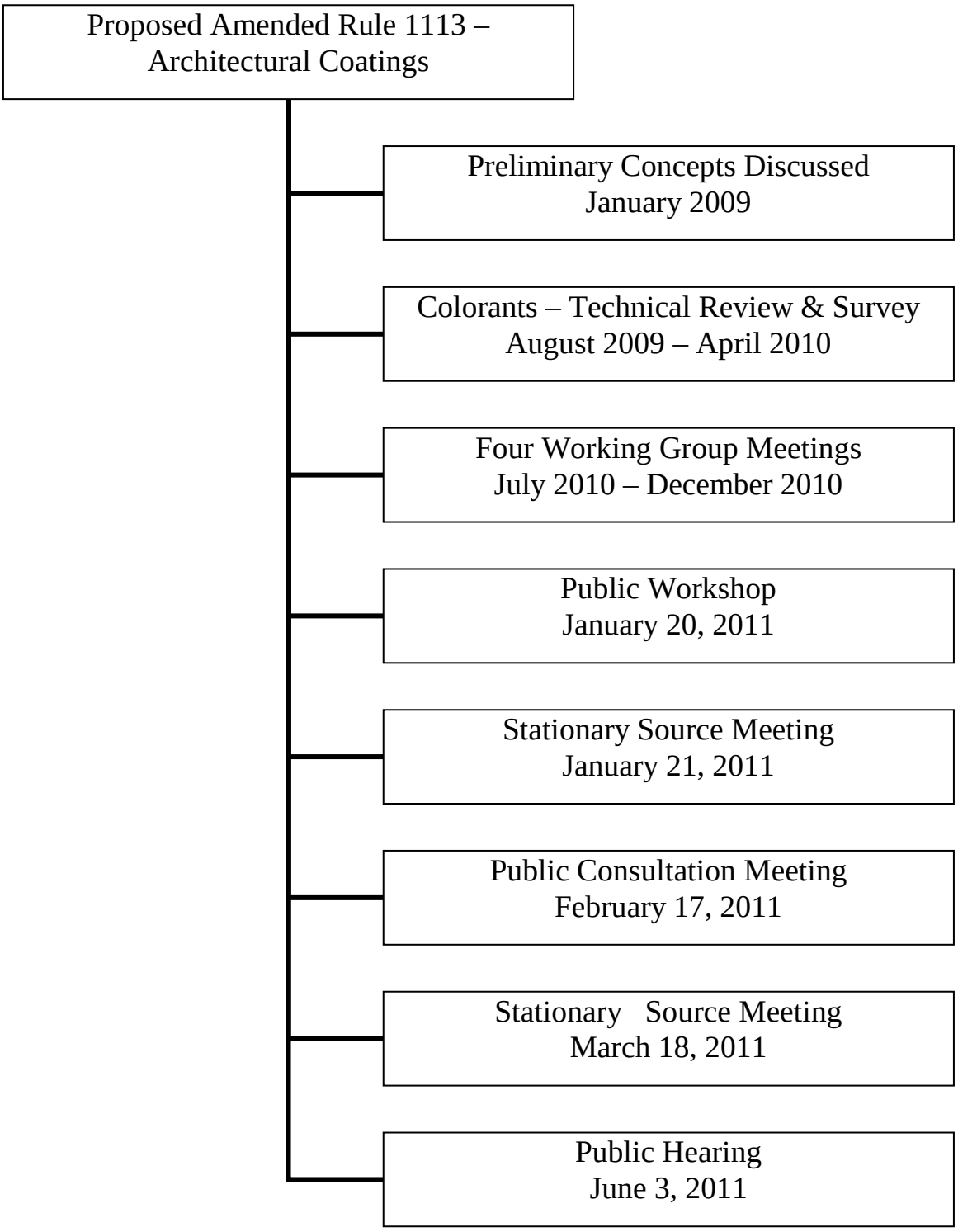
- Add American Society for Testing and Materials (ASTM) E 284 Standard Terminology of Appearance.
- Add ASTM C67, C97/97M, C140 for water repellency of Reactive Penetrating Sealers.
- Add ASTM E96/96M for water vapor transmission of Reactive Penetrating Sealers.
- Add the National Cooperative Highway Research Report 244 (1981), "Concrete Sealers for the Protection of Bridge Structures" for chloride screening of Reactive Penetrating Sealers.
- Add ASTM E2176 for selection and use of Stone Consolidants.
- Propose changes to the Small Container Exemption (SCE):
  - Clarify that the exemption only applies to the VOC limits; and
  - Prohibit "bundling" of the coatings sold on the retail shelves, effective July 1, 2011.
- Remove outdated rule language, including exemptions that have expired or requirements that have surpassed their effective date.
- Amend the exemptions for stains used above 4,000 feet to include use or sale in such areas for such use.
- Remove exemption for adding 10% VOC by volume to lacquers, since it is no longer necessary to prevent blushing on cool days with high humidity.

A T T A C H M E N T B

RULE DEVELOPMENT PROCESS FOR

PROPOSED AMENDED RULE 1113 – ARCHITECTURAL COATINGS

RULE DEVELOPMENT PROCESS



A T T A C H M E N T C

KEY CONTACTS FOR
PROPOSED AMENDED RULE 1113 – ARCHITECTURAL COATINGS

KEY CONTACTS

KEY CONTACTS LIST	
Catherine F. Jacobson	3M
Leslie Berry	American Chemistry Council
David Darling	American Coatings Association
Jim Kantola	Akzo Nobel
Michael Butler	BEHR Process Corporation
Dana Autenrieth	Benjamin Moore Paints
Gerald E Thompson	BonaKemi USA, Inc
Lisa King	BonaKemi USA, Inc
Sue Gornick	BP
Dane Jones, Ph.D.	Cal Poly, SLO
Max Wills, Ph.D.	Cal Poly, SLO
Barry Marcks	Caltrans
Tom Whitelock	Can-Am Coatings
Jim Nyarady	CARB
Romesh Kumar	Clariant
Dean Bell	CPS Color Equipment Inc.
Bart Wilbanks	CPS Color Equipment Inc.
Barry Barman	CSI Services, Inc.
Bob Sypowicz	Deft Finishes
Elke Jensen	Dow Corning Corporation
Robert Wendoll	Dunn-Edwards Paints
Emily Taylor	DuPont
Ayaz Khan	Elementis
Jason Stalk	Ellis Paint Company
Joseph Tashjian	Ellis Paint Company
Howard Berman	Environmental Mediation, Inc.
Daniel Goldberg	Evonik Degussa Corporation
John Lund	Ferro
James Dunn	Ferro
Lisa A. Presutti	Fluid Management, Inc.
Ben Gavett	Golden Artists Colors, Inc
Aaron Mann	JFB Hart
Burt Osen	LASCT
Daniel B. Pourreau, Ph.D	Lyondell
Joe Salvo	Miracle Sealants
Henry Lum	Modern Masters
Jim Rogers	Modern Masters
Carol Yip Kaufman	MWD
Janet Bell	MWD

KEY CONTACTS LIST	
John Wallace	MWD
James Heumann	Northrop Grumman
Mark Huck	The Office of Historic Preservation
Joe Malato	Pacific Polymers & Schnee-Morehead Inc.
Wayne Nelson	PPG Architectural Finishes, Inc
Dwayne Fuhlhage	Prosoco
Rita Loof	Radtech International North Americas
Claude Florent	Rainguard
Doug Raymond	Raymond Regulatory Resources (3R), LLC
Laurel Jamison	Rudd Company, Inc.
Mike Murphy	Rust-Oleum
Madelyn Harding	Sherwin-Williams Company
John A. Fidler	Simpson Gumpertz & Heger
Zacharie Muepo	Southern California Gas Company
Mike Gernon	Taminco
Mike Hakos	Taminco
Ben York	Texture Coat of America
Mark Gierki	Texture Coat of America
Dustin Kaatz	Tnemec Corporation
Kyle Frakes	Tnemec Corporation
Michael Schmeida	Tremco CS&W Division
Joseph C. Bellas	Universal Studios
Stanley Tong	US EPA
Nicole Law	US EPA
Tina Glomstead	Valspar
Hamid Pourshirazi	Vista Paint
Joseph D Pfeiffer	The Vintage Floor Company

A T T A C H M E N T D

RESOLUTION FOR

PROPOSED AMENDED RULE 1113 – ARCHITECTURAL COATINGS

RESOLUTION NO. 2011-

A Resolution of the Governing Board of the South Coast Air Quality Management District (AQMD) certifying the Final Environmental Assessment prepared for Proposed Amended Rule 1113.

A Resolution of the AQMD Governing Board adopting Amended Rule 1113 - Architectural Coatings.

WHEREAS, the AQMD Governing Board finds and determines that Proposed Amended Rule 1113 – Architectural Coatings, is considered a "project" pursuant to the California Environmental Quality Act (CEQA); and

WHEREAS, the AQMD has had its regulatory program certified pursuant to Public Resources Code Section 21080.5 and has conducted CEQA review and analysis pursuant to such program (Rule 110); and

WHEREAS, the AQMD staff prepared a program Environmental Assessment (EA) setting forth the potential environmental consequences of adopting Proposed Amended Rule 1113 - Architectural Coatings, which was released for a 30-day public review period; and

WHEREAS, it is necessary that the adequacy of the EA be determined by the AQMD Governing Board prior to its certification; and

WHEREAS, two comment letters were received and responses to these comments have been prepared and included in the Final EA; the Draft EA has been revised such that it is now a Final EA; and

WHEREAS, the Final EA has been completed in compliance with CEQA and Rule 110; and

WHEREAS, the Final EA concluded that the proposed project does not have the potential to generate significant adverse impacts. Since no significant adverse impacts were identified, no mitigation measures are necessary or required; and

WHEREAS, the staff report, the Final EA and the Socioeconomic Impact Analysis, this June 3, 2011 Board letter, and other supporting documentation was presented to the AQMD Governing Board and that the Board has reviewed and considered the entirety of this information prior to approving the project; and

WHEREAS, the AQMD Governing Board obtains its authority to adopt, amend, or repeal rules and regulations from Sections 39002, 40000, 40001, 40440, 40441, 40702, and 41508 of the California Health and Safety Code; and

WHEREAS, the AQMD Governing Board has determined that a need exists to amend Rule 1113 - Architectural Coatings to achieve further VOC emission reductions for architectural coatings by implementing Control Measure MCS-07 of the 2007 AQMP in order to achieve federal PM2.5 and ozone standards in 2014 and 2024, respectively; and

WHEREAS, the AQMD Governing Board has determined that Rule 1113 - Architectural Coatings, as proposed to be amended, is written and displayed so that its meaning can be easily understood by persons directly affected by them; and

WHEREAS, the AQMD Governing Board has determined that Rule 1113 - Architectural Coatings, as proposed to be amended, is in harmony with, and not in conflict with, or contradictory to, existing statutes, court decisions, or state or federal regulations; and

WHEREAS, the AQMD Governing Board has determined that Rule 1113 - Architectural Coatings, as proposed to be amended, does not impose the same requirements as any existing state or federal regulation, and the proposed amended rule is necessary and proper to execute the powers and duties granted to, and imposed upon, the AQMD; and

WHEREAS, the AQMD Governing Board in amending the regulation, references the following statutes which the AQMD hereby implements, interprets or makes specific: Health and Safety Code Sections 40001(a) (air quality standards and enforcement of federal standards), 40440(a) (rules to carry out plan), 40440(b)(1) (BARCT), 40702 (adopt regulation to execute duties), and Federal Clean Air Act Sections 116 (state standards at least as stringent as federal standards); and

WHEREAS, the AQMD Governing Board determines that there is a problem that Proposed Amended Rule 1113 - Architectural Coatings will alleviate, (i.e., the South Coast Air Basin does not meet state or federal standards for ozone) and the proposed amendment will promote the attainment or maintenance of such air quality standards; and

WHEREAS, the AQMD Governing Board has determined that Proposed Amended Rule 1113 - Architectural Coatings should be adopted because the proposed amended rule provides the best balance between cost-effectiveness and air quality benefits; and

WHEREAS, the AQMD Governing Board has determined that the Socioeconomic Impact Assessment is consistent with the provisions of the March 17, 1989 and October 14, 1994, Board Resolution for rule adoption and Health and Safety Code Sections 40440.8, 40728.5 and 40920.6; and

WHEREAS, the AQMD Governing Board has reviewed and considered the staff's findings related to cost and employment impacts of Proposed Rule 1113 – Architectural Coatings set forth in the socioeconomic impact assessment, and hereby finds and determines that cost and employment impacts are as set forth in that assessment; and

WHEREAS, the AQMD Governing Board has actively considered the Socioeconomic Impact Assessment and has made a good faith effort to minimize such impacts; and

WHEREAS, the proposed amendments to Rule 1113 – Architectural Coatings help achieve emission reductions of VOCs from the various coating categories, estimated to be up to 4.4 ton/day, and that even after considering the Socioeconomic Impact Assessment, the adoption of such amendments is necessary for achieving the federal and state standards for ozone and for implementing the AQMP; and

WHEREAS, a public hearing has been properly noticed in accordance with all provisions of Health and Safety Code, Section 40725; and

WHEREAS, the AQMD Governing Board finds and determines, taking into consideration the factors in §(d)(4)(D) of the Governing Board Procedures, that the modifications adopted which have been made to Rule 1113 – Architectural Coatings since notice of public hearing was published do not significantly change the meaning of the proposed amended rule within the meaning of Health and Safety Code §40726 and would not constitute significant new information pursuant to CEQA Guidelines §15088.5.

WHEREAS, the AQMD Governing Board has held a public hearing in accordance with all provisions of law; and

WHEREAS, the AQMD specifies the manager of Rule 1113 as the custodian of the documents or other materials which constitute the record of proceedings upon which the adoption of this proposed amendment is based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California.

NOW, THEREFORE, BE IT RESOLVED, that the AQMD Governing Board does hereby approve the written responses to the comments to the Draft EA, and certify the Final EA for Proposed Amended Rule 1113 - Architectural Coatings, which was completed in compliance with CEQA and Rule 110 provisions; and find that the Final EA was presented to the AQMD Governing Board, whose members reviewed, considered, and approved the information therein prior to acting on Proposed Amended Rule 1113 - Architectural Coatings; and

BE IT FURTHER RESOLVED, that the AQMD Governing Board does hereby amend, pursuant to the authority granted by law, Rule 1113 - Architectural Coatings, as set forth in the attached, and incorporated herein by this reference.

DATE:_____ _____

CLERK OF THE BOARD

A T T A C H M E N T E

RULE LANGUAGE FOR

PROPOSED AMENDED RULE 1113 – ARCHITECTURAL COATINGS

Single underline text shows new language added to the existing rule language.
Double underline text shows new language added to the rule subsequent to the Set Hearing.
~~*Italicized Strikeout*~~ text shows new deletions from the rule subsequent to the Set Hearing.
~~Underline Strikeout~~ text shows language proposed for addition to the Set Hearing Package, which is now being deleted from the Public Hearing Package.

(Adopted Sept. 2, 1977)(Amended Dec. 2, 1977)(Amended Feb. 3, 1978)
(Amended Sept. 5, 1980)(Amended Apr. 3, 1981)(Amended July 3, 1981)
(Amended by California Air Resources Board Oct. 21, 1981)
(Amended Aug. 5, 1983)(Amended Mar. 16, 1984)(Amended Aug. 2, 1985)
(Amended Nov. 1, 1985)(Amended Feb. 6, 1987)(Amended Jan. 5, 1990)
(Amended Feb. 2, 1990)(Amended Nov. 2, 1990)(Amended Dec. 7, 1990)
(Amended Sept. 6, 1991)(Amended March 8, 1996)(Amended August 9, 1996)
(Amended November 8, 1996)(Amended May 14, 1999; Vacated)
(Amended July 20, 2001)(Amended December 6, 2002)(Amended December 5, 2003)
(Amended July 9, 2004)(Amended June 9, 2006)(Amended July 13, 2007)
(PAR June 3, 2011)

PROPOSED AMENDED RULE 1113. ARCHITECTURAL COATINGS

(a) Applicability

This rule is applicable to any person who supplies, sells, markets, offers for sale, or manufactures any architectural coating ~~for use~~ in the District that is intended to be field applied to stationary structures or their appurtenances, and to fields and lawns; ~~mobile homes, pavements or curbs;~~ as well as any person who applies, stores at a worksite, or solicits the application of any architectural coating within the District. The purpose of this rule is to limit the VOC content of architectural coatings used in the District or to allow the averaging of such coatings, as specified, so their actual emissions do not exceed the allowable emissions if all the averaged coatings had complied with the specified limits.

(b) Definitions

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

(1) AEROSOL COATING PRODUCT means a pressurized coating product containing pigments or resins that dispenses product ingredients by means of a propellant, and is packaged in a disposable can for hand-held application, or for use in specialized equipment for ground marking and traffic marking applications.

(2) ALUMINUM ROOF COATINGS are roof coatings containing at least 0.7 pounds per gallon (84 grams per liter) of coating as applied, of elemental aluminum pigment.

(3) APPURTENANCES are accessories to a stationary structure, including, but not limited to: hand railings, cabinets, bathroom and kitchen fixtures, fences, rain-gutters and down-spouts, window screens, lamp-posts, heating

and air conditioning equipment, other mechanical equipment, large fixed stationary tools, signs, motion picture and television production sets, and concrete forms.

(4) ARCHITECTURAL COATINGS are any coatings applied to stationary structures and their appurtenances, to fields and lawns.~~mobile homes, to pavements, to curbs~~.

(5) BELOW-GROUND WOOD PRESERVATIVES are wood preservatives formulated to protect below-ground wood.

(6) BITUMINOUS COATING MATERIALS are black or brownish coating materials, soluble in carbon disulfide, consisting mainly of hydrocarbons and which are obtained from natural deposits, or as residues from the distillation of crude petroleum oils, or of low grades of coal.

(7) BITUMINOUS ROOF PRIMERS are primers formulated for or applied to roofing that incorporate bituminous coating materials.

(8) BOND BREAKERS are coatings formulated for or applied between layers of concrete to prevent the freshly poured top layer of concrete from bonding to the substrate over which it is poured.

~~(9) CLEAR BRUSHING LACQUERS are clear wood finishes, excluding clear lacquer sanding sealers, formulated with nitrocellulose or synthetic resins to dry by solvent evaporation without chemical reaction and to provide a solid, protective film, which are intended exclusively for application by brush, and which are labeled as specified in paragraph (d)(7).~~

~~(10)~~(9) CLEAR WOOD FINISHES are clear and semi-transparent coatings, including lacquers and varnishes, applied to wood substrates, including floors, decks and porches, to provide a transparent or translucent solid film.

~~(11)~~(10) COATING is a material which is applied to a surface in order to beautify, protect, or provide a barrier to such surface.

~~(12)~~(11) COLORANTS are solutions of dyes or suspensions of pigments.

~~(13)~~(12) CONCRETE-CURING COMPOUNDS are coatings formulated for or applied to freshly poured concrete to retard the evaporation of water. Concrete-curing compounds manufactured and used for roadways and bridges (does not include curbs and gutters, sidewalks, islands, driveways and other miscellaneous concrete areas) are those concrete-

curing compounds that meet ASTM Designation C309, Class B, and meet a loss of water standard of less than 0.15-kg/m^2 in 24 hours as determined by the California Transportation Department, California Test 534.

(13) CONCRETE SURFACE RETARDERS are coatings containing one or more ingredients such as extender pigments, primary pigments, resins, and solvents that interact chemically with the cement to prevent hardening on the surface where the retarder is applied, allowing the mix of cement and sand at the surface to be washed away to create an exposed aggregate finish.

(14) DRIVEWAY SEALERS are coatings that are applied to worn asphalt driveway surfaces in order to:

(A) Fill cracks;

(B) Seal the surface to provide protection; or

(C) Restore or preserve the surface appearance.

~~(14)~~(15) DRY-FOG COATINGS are coatings which are formulated only for spray application so that when sprayed, overspray droplets dry before falling on floors and other surfaces.

~~(15)~~(16) EXEMPT COMPOUNDS (See Rule 102-Definition of Terms.)

(17) FAUX FINISHING COATINGS are coatings that meet one or more of the following subcategories:

(A) GLAZES, which are coatings designed for wet-in-wet techniques used to create artistic effects, including but not limited to dirt, old age, smoke damage, simulated marble and wood grain finishes, decorative patterns, color blending, and wet edge techniques.

(B) DECORATIVE COATINGS, which are coatings used to create a gonioapparent appearance, such as metallic, iridescent, or pearlescent appearance, that contain at least 48 grams of pearlescent mica pigment or other iridescent pigment per liter of coating as applied (at least 0.4 pounds per gallon).

(C) JAPANS, which are pure concentrated pigments, finely ground in a slow drying vehicle used by Motion Picture and Television Production Studios to create artistic effects, including but not limited to, dirt, old age, smoke damage, water damage, and simulated marble and wood grain.

(D) TROWEL APPLIED COATINGS, which are coatings applied by trowel that are used to create aesthetic effects, including, but not

limited to polished plaster, clay, suede and dimensional, tactile textures.

(E) CLEAR TOPCOATS, which are clear coatings used to enhance, seal and protect a Faux Finishing coating that meets the requirements of subsection (b)(18)(A), (B), (C) or (D). These clear topcoats must be sold and used solely as part of a Faux Finishing coating system, and must be labeled in accordance paragraph (d)(7).

~~(16)~~(18) FIRE-PROOFING ~~EXTERIOR~~ COATINGS are opaque coatings formulated to protect the structural integrity of ~~outdoor~~ steel and other ~~outdoor~~ construction materials and listed by Underwriter's Laboratories, Inc. for the fire protection of steel.

~~(17) FIRE-RETARDANT COATINGS are coatings labeled and formulated to retard ignition and flame spread, that has been fire tested and rated by a testing agency approved by building code officials for use in bringing building and construction materials into compliance with federal, state and local building code requirements. The fire-retardant coating and the testing agency must be approved by building code officials. The fire-retardant coating shall be tested in accordance with ASTM Test Method E 84, incorporated by reference in paragraph (c)(4) or listed by Underwriter's Laboratories, Inc. as fire-retardant coatings with a flame spread index of less than 25.~~

~~(18)~~(19) FLAT COATINGS are coatings that register a gloss of less than 15 on an 85-degree meter or less than 5 on a 60-degree meter.

~~(19)~~(20) FLOOR COATINGS are opaque coatings that are formulated for or applied to flooring; including but not limited to garages, decks, and porches, and clear coatings formulated for or applied to concrete flooring, but do not include Industrial Maintenance Coatings.

(21) FORM RELEASE COMPOUNDS are coatings designed for or applied to a concrete form to prevent the freshly poured concrete from bonding to the form. The form may consist of metal, wood, or some material other than concrete.

~~(20)~~(22) FORMULATION DATA is the actual product recipe which itemizes all the ingredients contained in a product including VOCs and the

quantities thereof used by the manufacturer to create the product. Material Safety Data Sheets (MSDS) are not considered formulation data.

(23) GONIOAPPARENT means a change in appearance with a change in the angle of illumination or the angle of view, as defined according to ASTM E 284.

~~(21)~~(24) GRAMS OF VOC PER LITER OF COATING OR COLORANT, LESS WATER AND LESS EXEMPT COMPOUNDS, is the weight of VOC per combined volume of VOC and coating or colorant solids and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds} = \frac{W_s - Ww - Wes}{Vm - Vw - Ves}$$

Where:

Ws	=	weight of volatile compounds in grams
Ww	=	weight of water in grams
Wes	=	weight of exempt compounds in grams
Vm	=	volume of material in liters
Vw	=	volume of water in liters
Ves	=	volume of exempt compounds in liters

For coatings that contain reactive diluents, the Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds, shall be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds} = \frac{Ws - Ww - Wes}{Vm - Vw - Ves}$$

Where:

Ws	=	weight of volatile compounds emitted during curing, in grams
Ww	=	weight of water emitted during curing, in grams
Wes	=	weight of exempt compounds emitted during curing, in grams
Vm	=	volume of the material prior to reaction, in liters
Vw	=	volume of water emitted during curing, in liters
Ves	=	volume of exempt compounds emitted during curing, in liters

~~(22)~~(25) GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{Ws - Ww - Wes}{Vm}$$

Where: Ws = weight of volatile compounds in grams

Ww = weight of water in grams

Wes = weight of exempt compounds in grams

Vm = volume of the material in liters

~~(23)~~(26) GRAPHIC ARTS COATINGS (Sign Paints) are coatings formulated for hand-application by artists using brush or roller techniques to indoor and outdoor signs (excluding structural components) and murals, including lettering enamels, poster colors, copy blockers, and bulletin enamels.

~~(24)~~(27) HIGH-TEMPERATURE INDUSTRIAL MAINTENANCE COATINGS are industrial maintenance coatings formulated for or applied to substrates exposed continuously or intermittently to temperatures above 400 degrees Fahrenheit.

~~(25)~~(28) INDUSTRIAL MAINTENANCE COATINGS are coatings, including primers, sealers, undercoaters, intermediate coatings and topcoats, formulated for or applied to substrates, including floors, that are exposed to one or more of the following extreme environmental conditions:

(A) ~~i~~Immersion in water, wastewater, or chemical solutions (aqueous and non-aqueous solutions), or chronic exposure of interior surfaces to moisture condensation;

(B) ~~a~~Acute or chronic exposure to corrosive, caustic or acidic agents, or similar chemicals, chemical fumes, chemical mixtures, or solutions;

(C) ~~r~~Repeated exposure to temperatures in excess of 250 degrees Fahrenheit;

(D) ~~r~~Repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial solvents, cleaners, or scouring agents; or

(E) ~~e~~Exterior exposure of metal structures.

~~(26)~~(29) INTERIOR STAINS are stains labeled and formulated exclusively for use on interior surfaces.

~~(27) JAPANS/FAUX FINISHING COATINGS are glazes designed for wet-in-wet techniques used as a stain or glaze to create artistic effects, including but not limited to, dirt, old age, smoke damage, and simulated marble and wood grain.~~

~~(28)~~(30) LACQUERS are clear or pigmented wood finishes, including clear lacquer sanding sealers, formulated with nitrocellulose or synthetic resins to dry by evaporation without chemical reaction.

~~(29)~~(31) LOW-SOLIDS COATINGS are coatings containing one pound or less of solids per gallon of material.

~~(30)~~(32) MAGNESITE CEMENT COATINGS are coatings formulated for or applied to magnesite cement decking to protect the magnesite cement substrate from erosion by water.

(33) MANUFACTURER is any person, company, firm, or establishment who imports, blends, assembles, produces, packages, repackages, or re-labels an architectural coating, not including retail outlets where labels or stickers may be affixed to containers or where colorant is added at the point of sale.

(34) MARKET means to facilitate sales through third party vendors, including but not limited to catalog or ecommerce sales that bring together buyers and sellers. For the purposes of this rule, market does not mean to generally promote or advertise coatings.

~~(31)~~(35) MASTIC COATINGS are coatings formulated to cover holes and minor cracks and to conceal surface irregularities, and applied in a thickness of at least 10 mils (dry, single coat).

~~(32)~~(36) METALLIC PIGMENTED COATINGS are ~~decorative~~ coatings, excluding ~~industrial maintenance and~~ roof coatings, containing at least 0.4 pounds per gallon (48 grams/liter) of coating, as applied, of elemental metallic pigment (excluding zinc). Effective July 1, 2012, metallic pigmented coatings are decorative coatings, excluding industrial maintenance and roof coatings, containing at least 0.4 pounds per gallon (48 grams/liter) of coating, as applied, of elemental metallic pigment (excluding zinc).

~~(33)~~(37) MULTI-COLOR COATINGS are coatings which exhibit more than one color when applied and which are packaged in a single container and applied in a single coat.

~~(34)~~(38) NONFLAT COATINGS are coatings that are not defined under any other definition in this rule and that register a gloss of 5 or greater on a 60 degree meter and a gloss of 15 or greater on an 85 degree meter according to ASTM Test Method D 523 as specified in paragraph (e)(6).

~~(35) NONFLAT HIGH GLOSS COATINGS are coatings that register a gloss of 70 or above on a 60 degree meter according to ASTM Test Method D 523 as specified in paragraph (e)(6).~~

(39) NON-SACRIFICIAL ANTI-GRAFFITI COATINGS are clear or opaque Industrial Maintenance Coatings formulated and recommended to deter adhesion of graffiti and to resist repeated scrubbing and exposure to harsh solvents, cleansers, or scouring agents used to remove graffiti.

(40) PEARLESCENT means exhibiting various colors depending on the angles of illumination and viewing, as observed in mother-of-pearl.

(41) PIGMENTED means containing colorant or dry coloring matter, such as an insoluble powder, to impart color to a substrate.

~~(36)~~(42) POST-CONSUMER COATINGS are finished coatings that would have been disposed of in a landfill, having completed their usefulness to a consumer, and does not include manufacturing wastes.

~~(37)~~(43) PRE-TREATMENT WASH PRIMERS are coatings which contain a minimum of 1/2 percent acid, by weight, applied directly to bare metal surfaces to provide necessary surface etching.

~~(38)~~(44) PRIMERS are coatings applied to a surface to provide a firm bond between the substrate and subsequent coats.

~~(39)~~(45) PRODUCT LINE is a line of coatings reported under one product number and name and subject to one coating VOC limit as specified in ~~paragraph~~ subdivision (c)~~(2)~~ Table of Standards.

~~(40)~~(46) QUICK-DRY ENAMELS are non-flat, high gloss coatings which comply with the following:

(A) Shall be capable of being applied directly from the container by brush or roller under normal conditions, normal conditions being ambient temperatures between 60°F and 80°F; and

(B) When tested in accordance with ASTM D 1640 they shall: set-to-touch in two hours or less, dry-hard in eight hours or less, and be

tack-free in four hours or less by the mechanical test method. Effective July 1, 2011, coatings classified as quick-dry enamels are subsumed by the non-flat coating category.

~~(41)~~(47) QUICK-DRY PRIMERS, SEALERS, AND UNDERCOATERS are primers, sealers, and undercoaters which are intended to be applied to a surface to provide a firm bond between the substrate and subsequent coats and which are dry-to-touch in one-half hour and can be recoated in two hours (ASTM D 1640). Effective July 1, 2011, coatings classified as quick-dry primers, sealers, and undercoaters are subsumed by the primer, sealer, undercoater category.

(48) REACTIVE DILUENT is a liquid which is a VOC during application and one in which, through chemical and/or physical reaction, such as polymerization, becomes an integral part of the coating.

(49) REACTIVE PENETRATING SEALERS are clear or pigmented coatings 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 meet the following criteria:

(A) Used only for reinforced concrete bridge structures for transportation projects within 5 miles of the coast or above 4,000 feet elevation or for restoration and/or preservation projects on registered historical buildings that are under the purview of a restoration architect.

(B) Penetrate into concrete and masonry substrates and chemically react to form covalent bonds with naturally occurring minerals in the substrate.

(C) Line the pores of concrete and masonry substrates with a hydrophobic coating, but do not form a surface film.

(D) Improve water repellency at least 80 percent after application on a concrete or masonry substrate. This performance must be verified on standardized test specimens, in accordance with one or more of the following standards: ASTM C67, or ASTM C97, or ASTM C140.

(E) Not reduce the water vapor transmission rate by more than 2 percent after application on a concrete or masonry substrate. This

performance must be verified on standardized test specimens, in accordance with ASTM E96/E96M.

(F) Meet the performance criteria listed in the National Cooperative Highway Research Report 244 (1981), surface chloride screening applications, for products labeled and formulated for vehicular traffic.

(50) RECYCLED COATINGS are coatings formulated such that 50 percent or more of the total weight consists of secondary and post-consumer coatings and 10 percent or more of the total weight consists of post-consumer coatings, and manufactured by a certified recycled paint manufacturer.

~~(42)~~(51) RESTORATION ARCHITECT is an architect that has a valid certificate of registration as an architect issued by the California State Board of Architectural Examiners or the National Council of Architectural Registration Boards and working on registered historical restoration and/or preservation projects.

(52) RETAIL OUTLET means any establishment at which architectural coatings are sold or offered for sale to consumers.

~~(43)~~(53) ROOF COATINGS are coatings formulated for application to exterior roofs for the primary purpose of preventing penetration of the substrate by water, or reflecting heat and ultraviolet radiation.

~~(44)~~(54) RUST PREVENTATIVE COATINGS are coatings formulated for use in preventing the corrosion of metal surfaces in residential and commercial situations.

(55) SACRIFICIAL ANTI-GRAFFITI COATINGS are non-binding, clear coatings which are formulated and recommended for applications that allow for the removal of graffiti primarily by power washing.

~~(45)~~(56) SANDING SEALERS are clear wood coatings formulated for or applied to bare wood for sanding and to seal the wood for subsequent application of coatings. Until July 1, 2013, ~~T~~to be considered a sanding sealer a coating must be clearly labeled as such.

~~(46)~~(57) SEALERS are coatings applied to either block materials from penetrating into or leaching out of a substrate, to prevent subsequent coatings from being absorbed by the substrate, or to prevent harm to subsequent coatings by materials in the substrate.

~~(47)~~(58) SECONDARY (REWORK) COATINGS are fragments of finished coatings or finished coatings from a manufacturing process that has

converted resources into a commodity of real economic value, but does not include excess virgin resources of the manufacturing process.

~~(48)~~(59) SHELLACS are clear or pigmented coatings formulated solely with the resinous secretions of the lac insect (laccifer lacca). Shellacs are formulated to dry by evaporation without a chemical reaction providing a quick-drying, solid, protective film for priming and sealing stains and odors; and for wood finishing excluding floors effective January 1, 2007.

~~(49)~~(60) SOLICIT is to require for use or to specify, by written or oral contract.

~~(50)~~(61) SPECIALTY PRIMERS are coatings formulated for or applied to a substrate to seal fire, smoke or water damage; or to condition excessively chalky surfaces. An excessively chalky surface is one that is defined as having chalk rating of four or less as determined by ASTM D-4214 – Photographic Reference Standard No. 1 or the Federation of Societies for Coatings Technology "Pictorial Standards for Coatings Defects".

(62) STAINS are opaque or semi-transparent coatings which are formulated to change the color but not conceal the grain pattern or texture.

(63) STATIONARY STRUCTURES include but are not limited to, homes, office buildings, factories, mobile homes, pavements, curbs, roadways, racetracks, and bridges.

(64) STONE CONSOLIDANTS are coatings that are labeled and formulated for application to stone substrates to repair historical structures that have been damaged by weathering or other decay mechanisms. Stone Consolidants must meet the following criteria:

(A) Used only for restoration and/or preservation projects on registered historical buildings that are under the purview of a restoration architect.

(B) Penetrate into stone substrates to create bonds between particles and consolidate deteriorated material.

(C) Specified and used in accordance with ASTM E2167.

~~(51)~~(65) SWIMMING POOL COATINGS are coatings specifically formulated for or applied to the interior of swimming pools, including but not limited to water park attractions, ponds and fountains, ~~and~~ to resist swimming pool chemicals.

~~(52)~~(66) SWIMMING POOL REPAIR COATINGS are chlorinated, rubber-based coatings used for the repair and maintenance of swimming pools over existing chlorinated, rubber-based coatings.

~~(53)~~(67) TINT BASE is an architectural coating to which colorants are added.

~~(54)~~(68) TRAFFIC COATINGS are coatings formulated for or applied to public streets, highways, and other surfaces including, but not limited to, curbs, berms, driveways, and parking lots.

~~(55)~~(69) UNDERCOATERS are coatings formulated for or applied to substrates to provide a smooth surface for subsequent coats.

~~(56)~~(70) VARNISHES are clear or pigmented wood finishes formulated with various resins to dry by chemical reaction.

~~(57)~~(71) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102 – Definition of Terms. For the purpose of this rule, tertiary butyl acetate (~~T~~tBAc) ~~is not a VOC~~ shall be considered exempt as a VOC only for purposes of VOC emissions limitations or VOC content requirements and will continue to be a VOC for purposes of all recordkeeping, emissions reporting, photochemical dispersion modeling, and inventory requirements which apply to VOCs, when used in industrial maintenance coatings, including zinc-rich industrial maintenance coatings and non-sacrificial anti-graffiti coatings.

~~(58)~~(72) WATERPROOFING SEALERS are coatings which are formulated for the primary purpose of preventing penetration of porous substrates by water.

~~(59)~~(73) WATERPROOFING CONCRETE/MASONRY SEALERS are clear or pigmented sealers that are formulated for sealing concrete and masonry to provide resistance against water, alkalis, acids, ultraviolet light, ~~*and*~~ or staining.

(74) WOOD PRESERVATIVES are coatings formulated to protect wood from decay or insect attack by the addition of a wood preservative chemical registered by the California Environmental Protection Agency.

~~(60)~~(75) WORKSITE means any location where architectural coatings are stored or applied.

~~(61)~~(76) ZINC-RICH INDUSTRIAL MAINTENANCE PRIMERS are primers formulated to contain a minimum of 65 percent metallic zinc

powder (zinc dust) by weight of total solids for application to metal substrates.

(c) Requirements

~~(1) Except as provided in paragraphs (c)(2), (c)(3), (c)(4), and specified coatings averaged under (c)(6), no person shall supply, sell, offer for sale, manufacture, blend, or repackage any architectural coating for use in the District which, at the time of sale or manufacture, contains more than 250 grams of VOC per liter of coating (2.08 pounds per gallon), less water, less exempt compounds, and less any colorant added to tint bases, and no person shall apply or solicit the application of any architectural coating within the District that exceeds 250 grams of VOC per liter of coating as calculated in this paragraph.~~

~~(2)~~(1) Except as provided in paragraphs (c)(3), (c)(4), and designated coatings averaged under (c)(6), no person shall supply, sell, offer for sale, market ~~for sale,~~ manufacture, blend, ~~or~~ repackage, apply, store at a worksite, or solicit the application of ~~for use within the District,~~ any architectural coating within the District:

(A) That is listed in the Table of Standards 1 ~~which~~ and contains VOC (excluding any colorant added to tint bases) in excess of the corresponding VOC limit specified in the table, after the effective date specified~~, and no person shall apply or solicit the application of any architectural coating within the District that exceeds the VOC limit as specified in this paragraph.~~; or

(B) That is not listed in the Table of Standards 1, and contains VOC (excluding any colorant added to tint bases) in excess of 250 grams of VOC per liter of coating (2.08 pounds per gallon), less water, less exempt compounds, until January 1, 2014, at which time the limit drops to 50 grams of VOC per liter of coating, less water, less exempt compounds (0.42 pounds per gallon).

(2) No person within the District shall add colorant at the point of sale that is listed in the Table of Standards 2 and contains VOC in excess of the corresponding VOC limit specified in the Table of Standards 2, after the effective date specified.~~No person shall apply or solicit the application within the District of any industrial maintenance coatings, except anti-graffiti coatings, for residential use or for use in areas such as office space~~

and meeting rooms of industrial, commercial or institutional facilities not exposed to such extreme environmental conditions described in the definition of industrial maintenance coatings; or of any rust preventative coating for industrial use, unless such a rust preventative coating complies with the Industrial Maintenance Coating VOC limit specified in the Table of Standards.

TABLE OF STANDARDS 1
VOC LIMITS

Grams of VOC Per Liter of Coating, Less Water and Less Exempt Compounds

COATING CATEGORY	Ceiling Limit*[1]	Current Limit[2]	Effective Date							
			1/1/03	1/1/04	1/1/05	7/1/06	7/1/07	7/1/08	1/1/12	1/1/14
Bond Breakers	350	350								
Clear Wood Finishes	350	275				275				
Varnish	350	275				275				
Sanding Sealers	350	275				275				
Lacquer	680	550275			275					
Clear Brushing Lacquer	680				275					
Concrete-Curing Compounds	350	100					100			
Concrete-Curing Compounds For Roadways and Bridges**[3]	350	350								
Concrete Surface Retarder	250	250								50
Driveway Sealer	400	100							50	
Dry-Fog Coatings	400	150					150			50
Faux Finishing Coatings										
Clear topcoat		350							200	100
Decorative Coatings	700	350								
Glazes	700	350								
Japan	700	350								
Trowel Applied Coatings	700	350							150	50
Fire-Proofing Exterior Coatings	450	350								150
Fire-Retardant Coatings***										
Clear	650									
Pigmented	350									
Flats	250	10050						50		
Floor Coatings	420100	50	100			50				
Form Release Compound	250	250								100
Graphic Arts (Sign) Coatings	500	500								150
Industrial Maintenance (IM) Coatings	420	100		250		100				
High Temperature IM Coatings	420	420	420							
Non-Sacrificial Anti-Graffiti Coatings		100								
Zinc-Rich IM Primers	420340	100	340			100				
Japans/Faux Finishing Coatings	700	350								
Magnesite Cement Coatings	600	450								
Mastic Coatings	300	300								100
Metallic Pigmented Coatings	500	500								150

COATING CATEGORY	Ceiling Limit*[1]	Current Limit[2]	Effective Date							
			~~1/1/03~~	~~1/1/04~~	~~1/1/05~~	~~7/1/06~~	~~7/1/07~~	7/1/08	1/1/12	1/1/14
Multi-Color Coatings	~~420~~	250								
Nonflat Coatings	~~250~~150	50	~~150~~			~~50~~				
~~Nonflat High Gloss~~	~~250~~		~~150~~				~~50~~			
~~Pigmented Lacquer~~	~~680~~	~~550~~			~~275~~					
Pre-Treatment Wash Primers	~~780~~420	420	~~420~~							
Primers, Sealers, and Undercoaters	~~350~~200	100	~~200~~			~~100~~				
~~Quick-Dry Enamels~~	~~400~~		~~250~~			~~150~~	~~50~~			
~~Quick-Dry Primers, Sealers, and Undercoaters~~	~~350~~		~~200~~			~~100~~				
Reactive Penetrating Sealers		350								
Recycled Coatings	~~250~~	250	~~250~~							
Roof Coatings	~~300~~250	50	~~250~~		~~50~~					
Roof Coatings, Aluminum	~~500~~	100			~~100~~					
Roof Primers, Bituminous	350	350	~~350~~							
Rust Preventative Coatings	~~420~~400	100	~~400~~			~~100~~				
Stone Consolidant		450								
Sacrificial Anti-Graffiti Coatings		100							50	
Shellac										
Clear	~~730~~	730								
Pigmented	~~550~~	550								
Specialty Primers	350	100				~~250~~	~~100~~			
Stains	~~350~~250	100	~~250~~				~~100~~			
Stains, Interior	250	250								
Swimming Pool Coatings										
Repair	~~650~~	340	~~340~~							
Other	~~340~~	340								
Traffic Coatings	~~250~~	~~150~~100					~~100~~			
Waterproofing Sealers	~~400~~250	100	~~250~~			~~100~~				
Waterproofing Concrete/Masonry Sealers	400	100				~~100~~				
Wood Preservatives	~~350~~	350								
~~Below Ground~~	~~350~~									
~~Other~~	~~350~~									

~~*~~1. The specified ceiling limits are applicable to products sold under the Averaging Compliance Option.

2. The specified limits remain in effect unless revised limits are listed in subsequent columns in the Table of Standards.

~~**~~3. Does not include compounds used for curbs and gutters, sidewalks, islands, driveways and other miscellaneous concrete areas.

~~*** The Fire-Retardant Coating category will be eliminated on January 1, 2007 and subsumed by the coating category for which they are formulated.~~

TABLE OF STANDARDS 1 (cont.)
VOC LIMITS

Grams of VOC Per Liter of Material

COATING	Limit
Low-Solids Coating	120

TABLE OF STANDARDS 2
VOC LIMITS FOR COLORANTS

Grams of VOC Per Liter of Colorant
Less Water and Less Exempt Compounds

COLORANT	Limit[4]
Architectural Coatings, excluding IM Coatings	50
Solvent-Based IM	600
Waterborne IM	50

4. Effective January 1, 2014.

(3) Coating Categorization

(A) If anywhere on the container of any coating listed in ~~the~~ either Table of Standards, on any sticker or label affixed thereto, or in any sales or advertising literature, any representation is made that the coating may be used as, or is suitable for use as, a coating for which a lower VOC standard is specified in the table or in paragraph (c)(1), then the lowest VOC standard shall apply.

(B) The provisions of paragraph (c)(3)(A) shall not apply to a coating described in part as a flat, nonflat or primer-sealer-undercoater coating, or represented in part for use on flooring, provided that all of the following requirements are met:

(i) The coating meets the definition of a specific coating category for which a higher VOC standard is specified in the Table of Standards, and

(ii) The coating is labeled in a manner consistent with the definition and all the specific labeling requirements for that specific coating category, and

(iii) The coating is suitable and only recommended for the intended uses of that specific coating category.

(4) Sell-Through Provision

~~(A)~~ Any coating that is manufactured prior to the effective date of the applicable limit specified in the Table of Standards, and that has a VOC content above that limit (but not above the limit in effect on the date of manufacture), may be sold, supplied, offered for sale, or applied for up to three years after the specified effective date. The manufacturer shall maintain sales and distribution records, as

applicable, for any coating manufactured prior to the effective date if that coating volume is not included in an approved Averaging Compliance Option [specified in paragraph (c)(6) of this rule] Program that includes the same coating manufactured on or after the effective date. Such records shall clearly indicate the date of manufacture (or date code or batch code) and volume of coating sold or distributed to distinguish between those coatings subject to the provisions of this paragraph and those subject to the provisions of Appendix A section (K). These records shall be made available to the Executive Officer upon request and shall be maintained for a period of at least three years after the end of a compliance period of the Averaging Compliance Option Program.

~~(B) Any coating in containers of one quart or less that is manufactured prior to the expiration of the exemption under subparagraph (g)(1)(A) which has a VOC content above that limit specified in the Table of Standards, or shellac manufactured prior to January 1, 2007 and represented for use on wood flooring may be sold, supplied, offered for sale, or applied for up to one year after the effective date specified in the Table of Standards or the shellac definition. A manufacturer using this small container sell-through provision shall submit an annual report to the Executive Officer within three months of the end of the appropriate sell-through period. The report shall contain information as required by the Executive Officer to monitor the use of small containers under this provision. The manufacturer shall also provide written notice of the one year sell-through expiration date to their distribution chain. These records shall be made available to the Executive Officer upon request and shall be maintained for a period of at least three years.~~

(5) All architectural coating containers used to apply the contents therein to a surface direct from said container by pouring, siphoning, brushing, rolling, padding, ragging or other means, shall be closed when not in use. These architectural coating containers include, but should not be limited to: drums, buckets, cans, pails, trays or other application containers.

(6) Averaging Compliance Option

Until January 1, 2015, ~~I~~in lieu of specific compliance with the applicable limits in the Table of Standards, manufacturers may average designated coatings such that their actual cumulative emissions from the averaged coatings are less than or equal to the cumulative emissions that would have been allowed under those limits over a compliance period not to exceed one year.

(A) ~~On or after January 1, 2001, t~~The following coatings may be averaged until December 31, 2011: bituminous roof primers; floor coatings; industrial maintenance coatings; interior stains; metallic pigmented coatings; primers, sealers, and undercoaters; ~~quick-dry primers, sealers, and undercoaters;~~ roof coatings; ~~quick-dry enamels;~~ rust preventative coatings; ~~roof coatings;~~ sanding sealers; specialty primers; stains; waterproofing concrete/masonry sealers; waterproofing sealers; ~~industrial maintenance coatings;~~ varnishes; zinc-rich industrial maintenance primers; as well as flats and nonflats (excluding recycled coatings).

~~(B) On or after July 1, 2006, the following coatings in addition to those designated in subparagraph (c)(6)(A) may be averaged: bituminous roof primers; fire retardant coatings, high gloss nonflats, metallic pigmented coatings, zinc-rich industrial maintenance primers, interior stains; waterproofing concrete/masonry sealers; varnishes; and sanding sealers.~~

(B) Effective January 1, 2012, only the following coatings may be averaged: floor coatings; industrial maintenance coatings; interior stains; metallic pigmented coatings; rust preventative coatings; sanding sealers; stains; varnishes; as well as flats and nonflats (excluding recycled coatings).

(C) Manufacturers using the Averaging Compliance Option shall:

(i) Comply with the averaging provisions contained in Appendix A, as well as maintain all records for the Averaging Compliance Option (ACO) Program and make these records available to the Executive Officer upon request, for a period of at least three years after the end of the compliance period; and

(ii) Use only the sell-through provision in Appendix A for each coating included in the ACO Program in lieu of the sell-through provision of subparagraph (c)(4).

(7) No person shall apply or solicit the application within the District of any industrial maintenance coatings, except non-sacrificial anti-graffiti coatings, for residential use or for use in areas such as office space and meeting rooms of industrial, commercial or institutional facilities not exposed to such extreme environmental conditions described in the definition of industrial maintenance coatings.

(8) General Prohibition

No person shall supply, sell, market, offer for sale, manufacture, blend, or repackage any architectural coating in the District subject to the provisions of this rule with any materials that contain in excess of 0.1% by weight any Group II exempt compounds listed in Rule 102. Cyclic, branched, or linear, completely methylated siloxanes (VMS) are not subject to this prohibition. This provision is effective January 1, 2012 except that products manufactured prior to the effective date may be sold until January 1, 2013.

(d) Administrative Requirements

(1) Containers for all coatings subject to this rule shall display the date of manufacture of the contents or a code indicating the date of manufacture. The manufacturers of such coatings shall file with the Executive Officer of the District and the Executive Officer of the Air Resources Board an explanation of each code.

(2) Containers for all coatings subject to the requirements of this rule shall carry a statement of the manufacturer's recommendation regarding thinning of the coating. This requirement shall not apply to the thinning of architectural coatings with water. The recommendation shall specify that the coating is to be employed without thinning or diluting under normal environmental and application conditions, unless any thinning recommended on the label for normal environmental and application conditions do~~es~~ not cause a coating to exceed its applicable standard.

(3) Each container of any coating subject to this rule shall display the maximum VOC content of the coating, as supplied, and after any thinning as recommended by the manufacturer. The VOC content of low-solids coatings shall be displayed as grams of VOC per liter of material

(excluding any colorant added to the tint bases) and the VOC content of any other coating shall be displayed as grams of VOC per liter of coating (less water and less exempt compounds, and excluding any colorant added to tint bases). VOC content displayed may be calculated using product formulation data, or may be determined using the test method in subdivision (e). VOC content calculated from formulation data shall be adjusted by the manufacturer to account for cure volatiles (if any) and maximum VOC content within production batches. Effective January 1, 2014, the VOC shall be displayed on the coating container such that the required language is:

(A) Noticeable and in clear and legible English;

(B) Separated from other text; and

(C) Conspicuous, as compared with other words, statements, designs, or devices in the label as to render it likely to be read and understood by an ordinary individual under customary conditions of purchase or use.

~~(4) The coating container label or container for quick-dry primers, sealers, and undercoaters and quick-dry enamels shall include the words "Quick-Dry" or shall list the following:~~

~~(A) The recoat time for quick-dry primers, sealers, and undercoaters, or~~

~~(B) The dry-hard time for quick-dry enamels.~~

~~Containers and container labels shall not contain the words "Quick-Dry" unless the material meets the dry-times specified in the respective definitions or the material complies with the respective general VOC limit for enamels or primers, sealers, and undercoaters.~~

~~(5)~~(4) The labels of all rust preventative coatings shall include the statement "For Metal Substrates Only" prominently displayed~~, effective January 1, 2003~~.

~~(6)~~(5) ~~Effective January 1, 2003, t~~The labels of all specialty primers shall prominently display one or more of the following descriptions:

(A) For fire-damaged substrates.

(B) For smoke-damaged substrates.

(C) For water-damaged substrates.

(D) For excessively chalky substrates.

~~(7)~~(6) The labels of concrete-curing compounds manufactured and used for roadways and bridges shall include the statement "FOR ROADWAYS

AND BRIDGES ONLY (Not for Use on Curbs and Gutters, Sidewalks, Islands, Driveways and Other Miscellaneous Concrete Areas)" prominently displayed~~, effective July 1, 2007~~.

~~(8) Each manufacturer of the following coating categories shall, on or before April 1 of each calendar year submit an annual report to the Executive Officer:~~

~~(A) Recycled coatings, including the gallons repackaged and distributed in the District.~~

~~(B) Shellacs~~

~~(C) Specialty primers.~~

~~The report shall specify the number of gallons of each coating within the category sold in the District during the preceding calendar year as well as their coating VOC content, and shall describe the method used by the manufacturer to calculate such sales.~~

(7) Effective January 1, 2012, the labels of all Clear Topcoat for Faux Finishing coatings shall prominently display the statement "This product can only be sold as a part of a Faux Finishing coating system".

~~(9)~~(8) A manufacturer, distributor, or seller of a coating meeting the requirements of this rule, who supplies that coating to a person who applies it in a non-compliant manner, shall not be liable for that non-compliant use, unless the manufacturer, distributor, or seller knows that the supplied coating would be used in a non-compliant manner.

~~(10)~~(9) Manufacturers of recycled coatings shall submit a letter to the Executive Officer certifying their status as a Recycled Paint Manufacturer.

(e) Test Methods

For the purpose of this rule, the following test methods shall be used:

(1) VOC Content of Coatings and Colorants

The VOC content of coatings subject to the provisions of this rule shall be determined by:

(A) U.S. EPA Reference Test Method 24 (Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings, Code of Federal Regulations Title 40, Part 60, Appendix A) with the exempt compounds' content determined by Method 303 (Determination of Exempt Compounds) in the South Coast Air Quality Management District's

(SCAQMD) "Laboratory Methods of Analysis for Enforcement Samples" manual, or

(B) Method 304 [Determination of Volatile Organic Compounds (VOC) in Various Materials] in the SCAQMD's "Laboratory Methods of Analysis for Enforcement Samples" manual.

(C) Exempt Perfluorocarbons

The following classes of compounds:

cyclic, branched, or linear, completely fluorinated alkanes

cyclic, branched, or linear, completely fluorinated ethers with no unsaturations

cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations

sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine

will be analyzed as exempt compounds for compliance with subdivision (c), only when manufacturers specify which individual compounds are used in the coating formulations. In addition, the manufacturers must identify the U.S. EPA, CARB, and SCAQMD approved test methods, which can be used to quantify the amount of each exempt compound.

(2) Acid Content of Coatings

The acid content of a coating subject to the provisions of this rule shall be determined by ASTM Test Method D 1613-85 (Acidity in Volatile Solvents and Chemical Intermediates Used in Paint, Varnish, Lacquer, and Related Products).

(3) Metal Content of Coatings

The metallic content of a coating subject to the provisions of this rule shall be determined by Method 318 (Determination of Weight Percent Elemental Metal in Coatings by X-Ray Diffraction) in the SCAQMD's "Laboratory Methods of Analysis for Enforcement Samples" manual.

~~(4) Flame Spread Index~~

~~The flame spread index of a fire-retardant coating subject to the provisions of this rule shall be determined by ASTM Test Method E 84-05 (Standard Test Method for Surface Burning Characteristics of Building Materials), or the most recent version, after application to an organic or inorganic substrate, based on the manufacturer's recommendations.~~

~~(5)~~(4) Drying Times

The set-to-touch, dry-hard, dry-to-touch, and dry-to-recoat times of a coating subject to the provisions of this rule shall be determined by ASTM Test Method D 1640 (Standard Test Methods for Drying, Curing, or Film Formation of Organic Coatings at Room Temperature). The tack-free time of a coating subject to the provisions of this rule shall be determined by ASTM Test Method D 1640, according to the Mechanical Test Method.

~~(6)~~(5) Gloss Determination

The gloss shall be determined by ASTM Test Method D 523 (Specular Gloss).

(6) Gonioapparent Characteristics for Coatings

A coating will be determined to have a gonioapparent appearance by ASTM E 284 (Standard Terminology of Appearance).

(7) Water Repellency for Reactive Penetrating Sealers shall be determined by any of the following:

(A) ASTM C67 (Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile);

(B) ASTM C97/97M (Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone);

(C) ASTM C140 (Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units).

(8) Water Vapor Transmission for Reactive Penetrating Sealers shall be determined by ASTM E96/96M (Standard Test Methods for Water Vapor Transmission of Materials).

(9) Selection and Use of Stone Consolidants shall be determined by ASTM E2176 (Standard Guide for Selection and Use of Stone Consolidants).

(10) Chloride Screening for Reactive Penetrating Sealer shall be determined using the National Cooperative Highway Research Report 244 (1981), "Concrete Sealers for the Protection of Bridge Structures".

~~(7)~~(11) Equivalent Test Methods

Other test methods determined to be equivalent after review by the Executive Officer, CARB, and the U.S. EPA, and approved in writing by the District Executive Officer may also be used.

~~(8)~~(12) Multiple Test Methods

When more than one test method or set of test methods are specified for any testing, 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 the rule.

~~(9)~~(13) All test methods referenced in this subdivision shall be the version most recently approved by the appropriate governmental entities.

~~(f) Technology Assessment~~

~~The Executive Officer shall conduct a technology assessment for the future VOC limit as specified in paragraph (c)(2) for flat coatings by July 1, 2007. In conducting the assessment, the Executive Officer shall consider any applicable future CARB surveys on architectural coatings and shall report to the Governing Board as to the appropriateness of maintaining the future VOC limit.~~

~~(g)~~(f) Exemptions

(1) Until December 31, 2013, ~~T~~the provisions of this rule shall not apply to~~:~~

~~(A) A~~any architectural coatings in containers having capacities of one liter (1.057 quart) or less, excluding clear wood finishes, varnishes, sanding sealers, lacquers, and pigmented lacquers ~~and~~, provided that the provisions in the subparagraphs below are met. Effective January 1, 2014, the provisions of the Table of Standards and paragraph (c)(1) of this rule shall not apply to any architectural coatings in containers having capacities of one liter (1.057 quart) or less, excluding clear wood finishes, varnishes, sanding sealers, lacquers, and pigmented lacquers, provided the provisions in the subparagraphs below are met:

(A) ~~t~~The manufacturer ~~submits an annual report to the Executive Officer within three months of the end of each calendar year~~reports the sales in the Rule 314 Annual Quantity and Emissions Report. ~~The report shall contain information as required by the Executive Officer to monitor the use of the small container exemption.~~ The loss of this exemption due to the failure of the manufacturer to submit ~~an annual~~ the Rule 314 Annual Quantity and Emissions ~~r~~Report shall apply only to the manufacturer. ~~Effective July 1, 2006 clear wood finishes, including varnishes and sanding sealers; and lacquers, including pigmented lacquers, in containers having capacities of one quart or less shall no longer be exempt from the requirements of this rule.~~

(B) The coating containers are not bundled together to be sold as a unit that exceeds one liter (1.057 quarts), excluding containers packed together for shipping to a retail outlet.

(C) The label or any other product literature does not suggest combining multiple containers so that the combination exceeds one liter (1.057 quarts).

Subparagraphs (f)(1)(B) and (f)(1)(C) are effective July 1, 2011. Products otherwise qualifying for the one liter (1.057 quart) exemption, manufactured prior to this effective date of July 1, 2011, may be sold until January 1, 2012.

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

~~(B)~~(A) Architectural coatings supplied, sold, offered for sale, marketed, manufactured, blended, repackaged or stored in this District for shipment outside of this District or for shipment to other manufacturers for repackaging.~~; or~~

~~(C)~~(B) Emulsion type bituminous pavement sealers.~~; or~~

~~(D)~~(C) Aerosol coating products.

~~(E)~~(D) Use of stains and lacquers in all areas within the District at an elevation of 4,000 feet or greater above sea level or sale in such areas for such use.

~~(2) Notwithstanding the provisions of paragraph (c)(2), a person or facility may add up to 10 percent by volume of VOC to a lacquer to avoid blushing of the finish during days with relative humidity greater than 70 percent and temperature below 65 degrees Fahrenheit, at the time of application provided that:~~

~~(A) The coating is not applied from April 1 to October 31 of any year.~~

~~(B) The coating contains acetone and no more than 550 grams of VOC per liter of coating (275 grams of VOC per liter of coating after January 1, 2005), less water and exempt compounds, prior to the addition of VOC.~~

~~(3) The January 1, 2005 VOC limit for lacquers shall not be applicable until January 1, 2007 and the July 1, 2008 VOC limit for flat coatings shall not be applicable to any manufacturer which meets all of the following criteria:~~

~~(A) The total gross annual receipts are $2,000,000 or less, and~~

~~(B) The total number of employees is 100 or less, and~~

~~(C) The manufacturer requesting this exemption files a written request with the Executive Officer annually which includes, but is not limited to:~~

~~(i) The total gross annual receipts for each of the last three years.~~

~~(ii) The total number of employees for each of the last three years.~~

~~For the purposes of determining the total gross annual receipts and the total number of employees, a manufacturer shall include data from all facilities (both within and outside of the District) which they own, operate, have an ownership interest, or are legally affiliated. If a manufacturer exceeds the criteria specified in subparagraphs (g)(3)(A) or (g)(3)(B) any time after the initial request is filed with the Executive Officer, this exemption shall be immediately terminated, the manufacturer shall forfeit any future eligibility for this exemption, and the manufacturer shall be considered in violation of this rule for each and every day that lacquers or flat coatings which do not comply with the respective VOC limit in the Table of Standards are supplied, sold, or offered for sale within the District. The loss of this exemption due to the manufacturer exceeding the criteria in subparagraphs (g)(3)(A) or (g)(3)(B) shall apply only to the manufacturer.~~

~~(4)~~(3) The provisions of paragraph (c) shall not apply to facilities which apply coatings to test specimens for purposes of research and development of those coatings.

~~(5) The July 1, 2006 VOC limit for nonflats, primers, sealers, and undercoaters, quick-dry enamels, waterproofing concrete/masonry sealers and rust-preventative coatings shall not be applicable until July 1, 2008 to any manufacturer which meets all of the following criteria:~~

~~(A) The total gross annual receipts are $5,000,000 or less, and~~

~~(B) The total number of employees is 100 or less, and~~

~~(C) The manufacturer requesting this exemption files a written request with the Executive Officer annually which includes, but is not limited to:~~

~~(i) The total gross annual receipts for each of the last three years.~~

~~(ii) The total number of employees for each of the last three years.~~

~~For the purposes of determining the total gross annual receipts and the total number of employees, a manufacturer shall include data from all facilities (both within and outside of the District) which they own, operate, have an ownership interest, or are legally affiliated. If a manufacturer exceeds the criteria specified in subparagraphs (g)(5)(A) or (g)(5)(B) any time after the initial request is filed with the Executive Officer, this exemption shall be immediately terminated, the manufacturer shall forfeit any future eligibility for this exemption, and the manufacturer shall be considered in violation of this rule for each and every day that nonflats, primers, sealers, and undercoaters, quick-dry enamels, and rust-preventative coatings do not comply with the respective VOC limit in the Table of Standards are supplied, sold, or offered for sale within the District. The loss of this exemption due to the manufacturer exceeding the criteria in subparagraphs (g)(5)(A) or (g)(5)(B) shall apply only to the manufacturer.~~

~~(6) Effective January 1, 2005 through December 31, 2006, roof coatings with a VOC content of 100 grams per liter or less that are certified under the U.S. EPA Energy Star Program shall not be subject to the VOC limit in the Table of Standards.~~

APPENDIX A: Averaging Compliance Option (ACO) Provision

(A) The manufacturer shall demonstrate that actual emissions from the coatings being averaged are less than or equal to the allowable emissions, for the specified compliance period using the following equation:

$$\sum_{i=1}^{n} GiMi \leq \sum_{i=1}^{n} GiViLi$$

Where:

$\sum_{i=1}^{n} GiMi$ = Actual Emissions

$\sum_{i=1}^{n} GiViLi$ = Allowable Emissions

Gi = Total Gallons of Product (i) subject to Averaging;

Mi = Material VOC content of Product (i), as pounds per gallon; {as defined in paragraph (b)(22)}

Vi = Percent by Volume Solids and VOC in Product (i), {as defined in paragraph (b)(21)}

$$\frac{Vm - Vw - Ves}{Vm}$$

For Non-Zero VOC Coatings:

$$= \frac{\text{Material VOC}}{\text{Coating VOC}}$$

For Zero VOC coatings:

= % solids by volume

Li = Regulatory VOC Content Limit for Product (i), as pounds per gallon; {as listed in ~~paragraph~~ subdivision (c)~~(2)~~ Table of Standards}

The averaging is limited to coatings that are designated by the manufacturer. Any coating not designated in the ACO Program shall comply with the VOC limit in the Table of Standards. The manufacturer shall not include any quantity of coatings that it knows or should have known will not be used in the District.

In addition to the requirements specified in Section (A), a manufacturer shall not include in an ACO Program or supply, sell, offer for sale, manufacture, blend, or repackage for use within the District any architectural coating with a VOC content in excess of the ~~maximum VOC content in effect, immediately prior to July 1, 2001~~ ceiling limit in the Table of Standards or the VOC content limits specified in the National VOC Emission Standard, whichever is less. ~~Manufacturers that submitted the required 2005 annual report for clear wood finish containers of one quart or less, may include in an ACO Program varnishes and sanding sealers so long as these coatings sold in such containers do not exceed the applicable National Standard of 450 grams of VOC per liter of coating less water and less exempt compounds, in lieu of the otherwise applicable VOC limit of 350 grams per liter.~~

(B) ACO Program

At least six months prior to the start of the compliance period, manufacturers shall submit an ACO Program, which is subject to all the provisions of Rule 221 – Plans and Rule 306 – Plan Fees, to the Executive Officer. Averaging may not be implemented until the ACO Program is approved in writing by the Executive Officer.

Within 45 days of submittal of an ACO Program, the Executive Officer shall approve, disapprove or deem the ACO Program incomplete. The ACO Program applicant and the Executive Officer may agree to an extension of time for the Executive Officer to take action on the ACO Program.

(C) General Requirements

The ACO Program shall include all necessary information for the Executive Officer to make a determination as to whether the manufacturer may comply with the averaging requirements over the specified compliance period in an

enforceable manner. Such information shall include, but is not limited to, the following.

1. An identification of the contact persons, telephone numbers, and name of the manufacturer who is submitting the ACO Program.
2. An identification of each coating that has been selected by the manufacturer for inclusion in this ACO Program that exceeds the applicable VOC limit in the Table of Standards, their VOC content specified in units of both grams of VOC per liter of coating, and grams of VOC per liter of material and the designation of the coating category.
3. A detailed demonstration showing that the projected actual emissions will not exceed the allowable emissions for a single compliance period that the ACO Program will be in effect. In addition, the demonstration shall include VOC content information for each coating that is below the compliance limit in the Table of Standards. The demonstration shall use the equation specified in paragraph (A) of this Appendix for projecting the actual emissions and allowable emissions during each compliance period. The demonstration shall also include all VOC content levels and projected volume to be sold and distributed, as applicable, within the District for each coating listed in the ACO Program during each compliance period. The requested data can be summarized in a matrix form.
4. A specification of the compliance period(s) and applicable reporting dates. The length of the compliance period shall not be more than one year nor less than six months.
5. An identification and description of specific records to be used to calculate emissions and track coating volume for the ACO Program and subsequent reporting. This shall include a detailed explanation as to how the records are to be used to demonstrate compliance with the averaging requirements of the ACO Program. Such records or electronic versions (if hardcopy originals are not generated) shall be made available to the Executive Officer upon request. These records shall include records from each of the following categories:
   (a) ~~p~~Product formulation records (including both coating and material VOCs):
      (1) ~~l~~Lab reports [including percent weight of non-volatiles, water, and exempts (if applicable); density of the coating;

and raw laboratory data] of test methods conducted as specified in paragraph (e)(1) of the rule or

(2) pProduct formulation data, including physical properties analyses, as applicable, with a VOC calculation demonstration; and

(b) pProduction records consisting of batch tickets including the date of manufacture, batch weight and volume; and

(c) dDistribution records:

(1) cCustomer lists or store distribution lists or both (as applicable) and

(2) sShipping manifests or bills of lading or both (as applicable); and

(d) sSales records consisting of point of sale receipts or invoices to local distributors or both, as applicable.

If the manufacturer requests to demonstrate compliance with the ACO Program by using records other than those specifically listed above, those records must be approved by the U.S. EPA, CARB, and the Executive Officer before an ACO Program can be approved. The Executive Officer may request additional records, as necessary, as a condition of approving the ACO Program or to verify compliance.

6. A statement, signed by a responsible party for the manufacturer, certifying that all information submitted is true and correct, and that records will be made available to the Executive Officer upon request.

(D) Reporting Requirements

1. For every single compliance period, the manufacturer shall submit to the Executive Officer a mid-term report listing all coatings subject to averaging during the first half of the compliance period, detailed analysis of the actual and allowable emissions at the end of the mid-term, and if actual emissions exceed allowable emissions an explanation as to how the manufacturer intends to achieve compliance by the end of the compliance period. The report shall be signed by the responsible party for the manufacturer, attesting that all information submitted is true and correct. The mid-term report shall be submitted within 45 days after the midway date of the compliance period. A manufacturer may request, in writing, an extension of up to 15 days for submittal of the mid-term report.

2. Within 60 days after the end of the compliance period or upon termination of the ACO Program, whichever is sooner, the manufacturer shall submit to the Executive Officer a final report, providing a detailed demonstration of the balance between the actual and allowable emissions for the compliance period, an update of any identification and description of specific records used by the manufacturer to verify compliance with the averaging requirement, and any other information requested by the Executive Officer to determine whether the manufacturer complied with the averaging requirements over the specified compliance period. The report shall be signed by the responsible party for the manufacturer, attesting that all information submitted is true and correct, and that records will be made available to the Executive Officer upon request. A manufacturer may request, in writing, an extension of up to 30 days for submittal of the final report.

(E) Renewal of an ACO Program

An ACO Program automatically expires at the end of the compliance period. The manufacturer may request a renewal of the ACO Program by submitting a renewal request that shall include an updated ACO Program, meeting all applicable ACO Program requirements. The renewal request will be considered conditionally approved until the Executive Officer makes a final decision to deny or approve the renewal request based on a determination of whether the manufacturer is likely to comply with the averaging requirements. The Executive Officer shall base such determination on all available information, including but not limited to, the mid-term and final reports of the preceding compliance period. The Executive Officer shall make a decision to deny or approve a renewal request no later than 45 days from the date of the final report submittal, unless the manufacturer and the Executive Officer agree to an extension of time for the Executive Officer to take action on the renewal request.

(F) Modification of an ACO Program

A manufacturer may request a modification of the ACO Program at any time prior to the end of the compliance period. The Executive Officer shall take action to approve or disapprove the modification request no longer than 45 days from the

date of its submittal. No modification of the compliance period shall be allowed. An ACO Program need not be modified to specify additional coatings to be averaged that are below the applicable VOC limits.

(G) Termination of an ACO Program

1. A manufacturer may terminate its ACO Program at any time by filing a written notification to the Executive Officer. The filing date shall be considered the effective date of the termination, and all other provisions of this rule including the VOC limits shall immediately thereafter apply. The manufacturer shall also submit a final report 60 days after the termination date. Any exceedance of the actual emissions over the allowable emissions over the period that the ACO Program was in effect shall constitute a separate violation for each day of the entire compliance period.
2. The Executive Officer may terminate an ACO Program if any of the following circumstances occur:
   (a) The manufacturer violates the requirements of the approved ACO Program, and at the end of the compliance period, the actual emissions exceed the allowable emissions.
   (b) The manufacturer demonstrates a recurring pattern of violations and has consistently failed to take the necessary steps to correct those violations.

(H) Change in VOC Limits

If the VOC limits of a coating listed in the ACO Program are amended such that its effective date is less than one year from the date of adoption, the affected manufacturer may base its averaging on the prior limits of that coating until the end of the compliance period immediately following the date of adoption.

(I) Labeling

Each container of any coating that is included in an ACO Program, and that exceeds the applicable VOC limit in the Table of Standards shall display the following statement: "This product is subject to the averaging provisions of SCAQMD Rule 1113". A symbol specified by the Executive Officer may be used as a substitute.

(J) Violations

The exceedance of the allowable emissions, as defined in Appendix A, Section (A), at the end of any compliance period shall constitute a separate violation for each gallon of each coating product line that is over the VOC limit specified in the Table of Standards for each day of the compliance period. However, any violation of the requirements of the ACO Provision of this rule, which the violator can demonstrate, to the Executive Officer, did not cause or allow the emission of an air contaminant and was not the result of negligent or knowing activity may be considered a minor violation (pursuant to District Rule 112).

(K) Sell-Through Provision

A coating that is included in an approved ACO Program that does not comply with the specified limit in the Table of Standards may be sold, supplied, offered for sale, or applied for up to three years after the end of the compliance period specified in the approved ACO Program. This section of Appendix A does not apply to any coating that does not display on the container either the statement: "This product is subject to architectural coatings averaging provisions of the SCAQMD Rule 1113" or a designated symbol specified by the Executive Officer of the SCAQMD.

A T T A C H M E N T F

FINAL STAFF REPORT FOR
PROPOSED AMENDED RULE 1113 – ARCHITECTURAL COATINGS

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Staff Report
Proposed Amended Rule 1113– Architectural Coatings

May 2011

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ACRONYMS USED IN THIS REPORT

ACA American Coatings Association

AQMD South Coast Air Quality Management District

AQMP Air Quality Management Plan

ASTM American Society for Testing and Materials

Avg Average

BARCT Best Available Retrofit Control Technology

CARB California Air Resources Board

CEQA California Environmental Quality Act

EIP Economic Incentive Program

EPA United States Environmental Protection Agency

GC/MS Gas Chromatography/Mass Spectrometry

g/L Grams per Liter

IM Industrial Maintenance

NOx Oxides of Nitrogen

NSAG Non-Sacrificial Anti-Graffiti Coatings

OEHHA Office of Environmental Health Hazard Assessment

PAR Proposed Amended Rule

PPE Personal Protective Equipment

ppd Pounds per day

PSU Primer, Sealer, & Undercoater

SAG Sacrificial Anti-Graffiti Coatings

SCM Suggested Control Measure

SIP State Implementation Plan

SWA Sales Weighted Average

tBAc Tertiary-Butyl Acetate

tpd Tons per day

tpy Tons per year

UV/EB Ultraviolet/Electron Beam

VOC Volatile Organic Compound

WPCMS Waterproofing Concrete/Masonry Sealer

EXECUTIVE SUMMARY

Rule 1113 - Architectural Coatings, was originally adopted by the AQMD on September 2, 1977, to regulate the Volatile Organic Compound (VOC) emissions from the application of architectural coatings, and has since undergone numerous amendments. The 2007 Air Quality Management Plan (AQMP), specifically Control Measure CM#2007 MCS-07 – Application of All Feasible Measures, explicitly lists coating and solvent rules to achieve additional VOC reductions. Rule 314 – Fees for Architectural Coatings, was adopted on June 6, 2008 requiring manufacturers to pay fees, as well as report sales and emissions of architectural coatings into the AQMD. Based on the 2008 and 2009 sales data collected from Rule 314, documents from CARB, numerous site visits, technical research, and working group meetings, staff has developed PAR 1113 in regard to the following:

- Remove outdated language;
- Clarify existing definitions and requirements;
- Include ~~N~~new categories with VOC limits;
- Reduce the VOC content limits of certain architectural coating categories;
- Limit the VOC content of previously unregulated colorants used to tint coatings at the point of sale;
- Limit categories eligible for the Averaging Compliance Option (ACO) with eventual phase-out;
- Revise the Small Container Exemption (SCE) to address bundling and clarify exemption; and
- Prohibit the storage of non-compliant coatings at worksites.

Staff has held four working group meetings with stakeholders over the past six months, as well as met with individual architectural coating manufacturers and the American Coatings Association (ACA), previously the National Paints and Coatings Association. Based on the ACA's recommendation, staff conducted extensive surveys on the use of colorant. The current proposal incorporates and addresses numerous comments and concerns expressed by the stakeholders.

Staff proposes the following amendments to achieve emission reductions and clarify rule implementation issues for improved enforceability:

- Change the applicability of the rule by eliminating the phrase "for use," including "market for sale" and adding language to include "storing coatings at worksites."

- Add 20 definitions; amend ~~12~~ 13 definitions, and delete 3 definitions:

    - Add – Concrete Surface Retarders; Driveway Sealers; Faux Finishing subcategories: Glazes, Decorative Coatings, Trowel Applied Coatings, and Clear Topcoats; Form Release Compounds; Gonioapparent; Manufacturer; Market; Non-Sacrificial Anti-Graffiti Coating; Pearlescent; Pigmented; Reactive Penetrating Sealers; Restoration Architect; Retail Outlet; Sacrificial Anti-Graffiti Coatings; Stationary Structures; Stone Consolidants; and Worksite.

  - Amend – Architectural Coatings; Faux Finishing Coatings; Fire Proofing Coatings; Floor Coatings; Japans/Glazes; Metallic Pigmented Coatings; Product Line; Quick Dry Enamels; Quick Dry Primers, Sealers, Undercoaters; Sanding Sealers; Swimming Pool Coatings; Varnishes; ~~and~~ Volatile Organic Compounds; and Waterproofing Concrete/Masonry Sealers.

  - Delete – Clear Brushing Lacquers; Fire Retardant Coatings, and Non-Flat High Gloss Coatings.

- Clarify the requirements in paragraphs (c)(1) and (c)(2).

- Establish a VOC limit for the following new coating categories:

  - Concrete Surface Retarders; Driveway Sealers; Trowel Applied Faux Finishes; Clear Topcoats for Faux Finishes; Reactive Penetrating Sealers and Stone Consolidants.

- Reduce the VOC limit on the following categories:

  - Default; Dry-Fog Coatings; Fire-Proofing Coatings; Form Release Compounds; Graphic Arts Coatings; Mastic Coatings; and Metallic Pigmented Coatings.

- Add VOC limits for colorants added at the point of sale.

- Propose changes to the ACO provision:

  - Lower ceiling limits;

  - Limit coating categories that can be averaged; and

  - Phase-out provision by January 1, 2015.

- Add a general prohibition against the use of Group II exempt solvents, other than cyclic, branched, or linear, completely methylated siloxanes (VMS).

- Include specific labeling requirements to improve the visibility of the VOC content.

- Remove reporting requirements that are now redundant with Rule 314.

- Add American Society for Testing and Materials (ASTM) E 284 Standard Terminology of Appearance.

- Add ASTM C67, C97/97M, C140 for water repellency of Reactive Penetrating Sealers.

- Add ASTM E96/96M for water vapor transmission of Reactive Penetrating Sealers.

- Add the National Cooperative Highway Research Report 244 (1981), “Concrete Sealers for the Protection of Bridge Structures” for chloride screening of Reactive Penetrating Sealers.

- Add ASTM E2176 for selection and use of Stone Consolidants.
- Propose changes to the Small Container Exemption (SCE):
    - Clarify that the exemption only applies to the VOC limits; and
    - Prohibit "bundling" of the coatings sold on the retail shelves.
- Remove outdated rule language, including exemptions that have expired or requirements that have surpassed their effective date.
- Amend the exemptions for stains used above 4,000 feet to include use or sale in such areas for such use.
- Remove exemption for adding 10% VOC by volume to lacquers, to prevent blushing on cool days with high humidity.

The overall estimated emission reductions from the proposed amendment are 4.4 tons per day (tpd) by January 1, 2016, and the overall cost effectiveness is estimated to be $~~5,910~~6,211 per ton.

PAR1113 will partially implement CM#2007 MCS-07.

BACKGROUND

Architectural coatings are one of the largest non-mobile sources of VOC emissions in the AQMD. Rule 1113 is applicable to manufacturers, distributors, specifiers, and end-users of architectural coatings. These coatings are used to enhance the appearance of and to protect stationary structures and their appurtenances, including homes, office buildings, factories, pavements, curbs, roadways, racetracks, bridges, other structures; and their appurtenances, on a variety of substrates. Architectural coatings are typically applied using brushes, rollers, or spray guns by homeowners, painting contractors, and maintenance personnel. Rule 1113 was first adopted in 1977, and has undergone numerous amendments, most recently on July 15, 2007, to address the metallic pigmented coatings category. Although successive amendments to Rule 1113 contributed to significantly reduced emissions, architectural coatings continue to be one of the largest sources of VOC emissions in the AQMD, with the exception of consumer products and mobile sources.

The 2007 AQMP projected that the 2010 Annual Average Emissions for architectural coatings would be 23 tons per day (tpd), with a Summer Planning Inventory of 27 tpd. That estimate is based on the California Air Resources Board (CARB) 2001 survey of coatings sold in California in calendar year 2000; assuming 45% of those coatings were sold in the AQMD. The survey was updated in 2006 with 2004 sales data.

According to more recent Rule 314 data for products shipped in 2008 and 2009, the emissions in the AQMD that can be attributed to architectural coatings were 15 tpd and 12 tpd, respectively, and do not include VOC emissions from colorants added at the point of sale. Staff notes that the

Rule 314 data has not been fully audited, and volumes and emissions may be under or over-reported. The data may be revised upon more detailed audits and subsequent compliance reviews. Furthermore, Rule 314 data indicates coating sales volumes exemplifying impacts of the decline in economic activity, particularly the local real estate market, which is the biggest driver for architectural coating usage. Table 1 summarizes sales and emissions collected for Rule 314 for 2008 and 2009, as well as the 2005 CARB survey of coatings sold in the 2004 calendar year.

Table 1: Total Sales and Emissions by Type

Year	Total Annual Sales Volume			Percentage	
	Total	SB	WB	SB	WB
2008	39,006,780	2,815,527	36,191,253	7.2%	92.8%
2009	34,117,105	2,025,777	32,091,328	5.9%	94.1%
	-12.5%	-28.0%	-11.3%		
2004	44,304,827	7,607,795	36,697,032	17.2%	82.8%
Year	**Total Emissions (tpd)**			**Percentage**	
	Total	**SB**	**WB**	**SB**	**WB**
2008	15.05	6.51	8.54	43.3%	56.7%
2009	11.64	4.77	6.87	41.0%	59.0%
	-22.7%	-26.7%	-19.6%		
2004	49.4	28.9	20.5	58.5%	41.5%

Table 1 demonstrates that while the recession has impacted the volume of coatings sold, there has been a sharper decrease in emissions relative to sales volumes. This can partially be attributed to the Rule 314 fee structure which charges a higher fee for higher-VOC coatings. It may also be the result of increased consumer demand for low-VOC products. There has been a significant shift in the marketplace over the past decade as consumers are seeking out low-VOC products, utilizing low-VOC colorants, and are willing to pay a premium for those products. The 2005 CARB survey is used to indicate the higher volume sales in 2004, with an adjustment for volumes and emissions representing the South Coast only; however, the 2004 sales volume does not necessarily represent the upper bounds of paint sales or economic activity, although it does reflect pre-recession volumes.

The 2007 AQMP, specifically Control Measure CM#2007 MCS-07 – Application of All Feasible Measures, explicitly lists coating and solvent rules to achieve additional VOC reductions. PAR1113 will partially implement CM#2007 MCS-07.

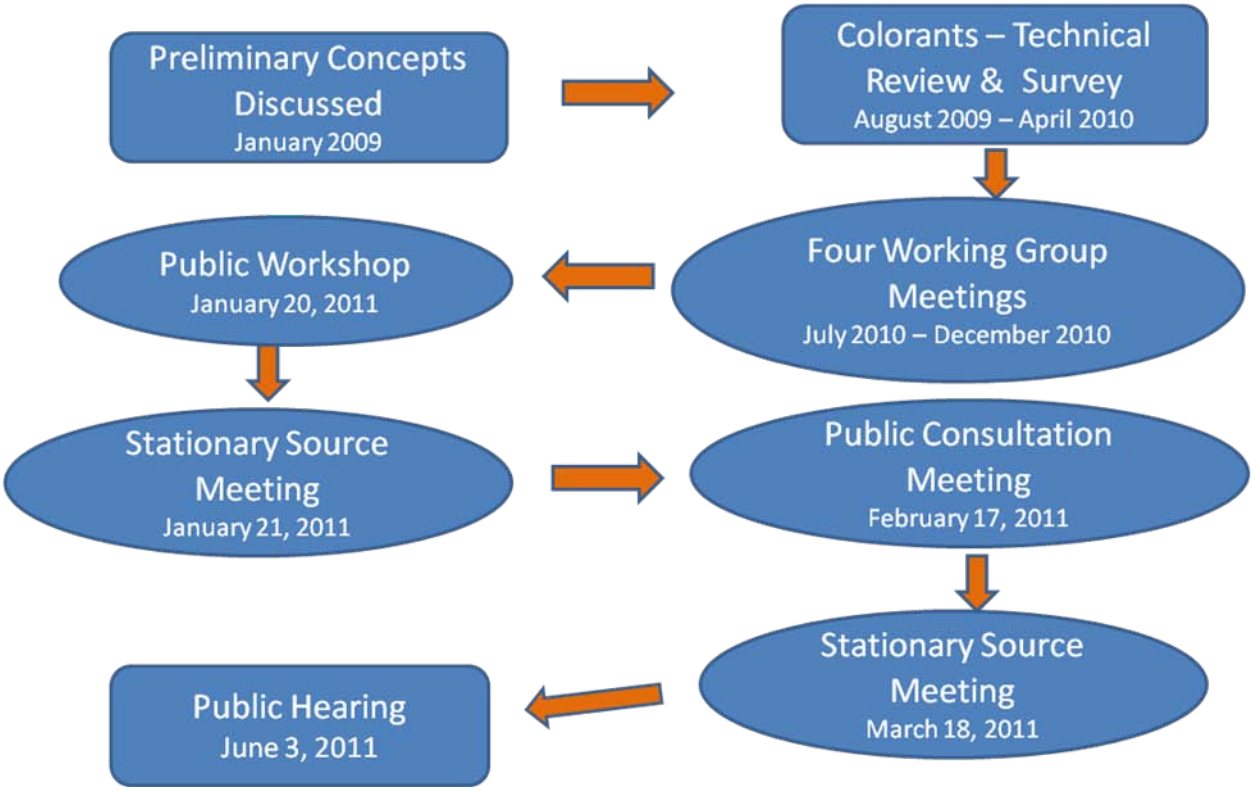
RULE DEVELOPMENT PROCESS

Staff initiated outreach with stakeholders regarding the intent to amend Rule 1113 almost 18 months prior to the announcement of the first working group meeting in the summer of 2010. Initially, during the January 2009 regulatory meeting of the Paint and Related Materials session of the American Society for Testing and Materials (ASTM), staff presented preliminary concepts including regulating colorants and looking for further VOC reductions. The concepts were discussed with representatives from ACA and several major coating manufacturers at the meeting.

In August 2009, staff began working on several surveys to determine the type of colorants that are currently being used to tint coatings at the point of sale for architectural and industrial maintenance applications. The goal was to gather information from manufacturers and retail outlets on the use and their experience with near zero-VOC colorants. The surveys were conducted while researching the feasibility of setting a VOC limit on colorants. The surveys were sent out in April 2010, after incorporating feedback from small and large manufacturers of coatings, pigment (colorant) suppliers, and the ACA. The first survey was a general survey sent to 288 contacts on the AQMD Rule 1113 subscribers list that are identified as architectural coatings manufacturers. According to Rule 314 reporting, there are approximately 200 manufacturers selling architectural coatings in the AQMD. The second survey was a targeted survey sent to 35 coating manufacturers who are listed on the AQMD Super-Compliant Coatings Manufacturers List. The third and final survey was sent electronically to 11 architectural coating retail sales contacts in the Rule 1113 subscribers list. In addition, hard copies of the survey were circulated to retail locations throughout the AQMD. The surveys were anonymous; therefore, no data from specific companies were recorded. The results of the surveys can be found in Appendix A of this report.

In addition, over the past six months, staff held four working group meetings, a Public Workshop and a Public Consultation Meeting, see Figure 1, including several meetings with three sub-groups for more in-depth discussions on Anti-Graffiti Coatings, Faux Finishing Coatings, and VOC Test Methods. Numerous stakeholders participated both in person and via teleconference. Over the course of the discussions, the ACA and the manufacturers provided feedback on rule language, requirements, and appropriate effective dates for the rule proposal. Additionally, staff met individually with local and national manufacturers, both large and small, to discuss the proposal and obtain feedback on the status of technology and desired implementation dates.

FIGURE 1: RULE DEVELOPMENT FLOW CHART



STAFF ASSESSMENT FOR THE PROPOSED AMENDMENTS

APPLICABILITY

To improve the enforceability of the rule, staff is proposing to alter the applicability section by removing the phrase "for use" in subdivision (a). The proposed change is based on the reasonable assumption that a coating sold in the AQMD is going to be used in the AQMD. The change will strengthen rule enforceability by clarifying that compliance staff can require a retail outlet to remove coatings that are labeled as non-compliant from their shelves. In recent years, staff has found a considerable amount of non-compliant coatings being offered for sale at both small and large retailers. There have also been instances of retailers incentivizing the sale of these higher-VOC products through drastic price reductions in order to eliminate their inventory. This change will help ensure that non-compliant coatings are not being sold in the AQMD resulting in lower emissions from the application of architectural coatings.

A new requirement being proposed in the applicability section is to prohibit non-compliant coatings from being stored at a worksite. It is a reasonable assumption that coatings stored at a worksite are going to be used at that location. The proposed amendment will result in a reduction of non-compliant coatings used at worksites. Staff has worked with manufacturers to ensure that the change in applicability would not affect coatings supplied, sold, offered for sale, marketed, manufactured, blended, repackaged or stored in the District for shipment to another jurisdiction.

During the Public Workshop, a member of the public voiced concerns regarding contractors work trucks containing non-compliant coatings. The concern regarded who would be liable for non-compliant coatings stored in a contractors work truck located at a facility owner or operator. Staff considered this scenario and based on the rule language, the facility would not be liable provided the non-compliant coatings were not specified by the facility and the non-compliant coatings were not being applied at the facility. The contractor or truck owner would be responsible for those non-compliant coatings and not the facility. This is similar to how current provisions in the rule are enforced. If a contractor is applying a non-compliant coating, the contractor, specifier and possibly the architect may be liable, but not the coating manufacturer.

Staff is proposing to add the phrase "markets" in the applicability and requirement sections to address mail order coatings and e-commerce companies such as Amazon and E-Bay who do not sell the coatings themselves but market them for sale on their website. Promotion or advertisements of architectural coatings are not included in the definition of "market."

Staff is also proposing to add the phrase "fields and lawns" to clarify that field marking coatings and coatings used on lawns are architectural coatings. The phrase "to mobile homes to pavements, to curbs" will be removed from the applicability section and included in the new definition for a stationary structure. The proposed changes are for rule clarification.

DEFINITIONS

For rule clarification, staff is proposing several new or amended definitions and is proposing to delete several definitions. This section does not include definitional changes to coating categories; those are included in the next section labeled Coating Categories and VOC Limit Changes.

Architectural Coatings

Staff is proposing to add the phrase "fields and lawns" and remove the phrase "to mobile homes to pavements, to curbs" from the definition. The new definition for a stationary structure will include that language along with "roadways, racetracks, and bridges." The proposed change is for rule clarification.

Manufacturer

Staff is proposing a definition for a manufacturer as a result of confusion regarding the Rule 314 requirement that requires *manufacturers* to report their sales annually to the AQMD. During initial rule implementation, there was some confusion over who was responsible for reporting the coating sales. Rule 314 applies to coating manufacturers, but does not define a manufacturer. In instances where coatings are toll manufactured for a private labeler, there was confusion as to who was responsible for the reporting and fees. Staff crafted the definition of a manufacturer in the PAR 1113 with assistance from the working group members. In addition, staff will provide further clarification as to who is responsible for reporting in the instance of a toll manufacturer, when Rule 314 is amended later this year.

Market
Staff is proposing to include a definition for "market" since this term is now included in the applicability section of the rule. The purpose of the definition is to specify that Rule 1113also applies to e-commerce and catalog sales, but not promotion or advertising of coatings.

Pigmented
Staff is proposing to include a definition for "pigmented," as it is currently referenced in the following places in the rule: lacquers, metallic pigmented coatings, shellacs, waterproofing concrete/masonry sealers, and in the proposed definition of varnish.

Quick-Dry Enamel, Quick-Dry Primer, Sealer, and Undercoater & High-Gloss Nonflats
Staff is proposing to subsume the Quick Dry Enamel category into the Non-Flat Category since the two are the essentially the same. In the past, there was a distinction between Quick-Dry Enamels and Non-Flat Coatings because they had different VOC limits, labeling requirements, and ceiling limits in the ACO. On July 1, 2006, the VOC limit for Non-Flat Coatings were reduced to 50 g/L, then on July 1, 2007, the VOC limits for High-Gloss Non-Flat Coatings and Quick-Dry Enamels were reduced to 50 g/L, and the three year sell through period expired on July 1, 2010. To simplify the rule and the Table of Standards, staff is proposing to subsume the Quick-Dry Enamel Category, and eliminate the labeling requirements in paragraph (d)(4). Similarly, staff is proposing to subsume the Quick-Dry Primers, Sealers, and Undercoaters category into the Primers, Sealers, and Undercoaters category.

Staff is also proposing to eliminate the Non-Flat High Gloss Coating category. This category was added in 2006 to allow for a longer phase-in period for the 50 g/L limit for high-gloss non-flat coatings versus non-flat coatings. Now that the VOC limit for the Non-Flat and the High-Gloss Non-Flat coatings are the same, staff would like to simplify the rule by eliminating the High-Gloss category. The sell through period has also expired for this category.

Retail outlet
Staff is proposing to add a definition for retail outlet because this term was added to the exemption section. See the section on applicability for a discussion as to why this definition was necessary.

Restoration Architect
Staff is proposing to add a definition for a restoration architect since two new categories are going to be limited to restoration and/or preservation projects on registered historical buildings that are under the purview of a restoration architect.

Stationary Structure
Staff is proposing to add a definition for a stationary structure which includes, but is not limited to, homes, office buildings, factories, mobile homes, pavements, curbs, roadways, racetracks, or bridges. This will clarify both the applicability section and definition of architectural coatings.

Volatile Organic Compound
Due to a partial SIP disapproval by the EPA, staff is proposing to clarify that the exemption for tertiary-Butyl Acetate (tBAc) is limited to the VOC content. Staff received guidance from the EPA on this new requirement. Since there are currently no specific reporting requirements for VOCs under Rule 1113, there will be no additional reporting requirements for tBAc. The proposed change to the tBAc exemption will only affect any required state or federal reporting requirements.

Worksite
Staff is proposing to add a definition for worksite because of the change in the applicability section to prohibit non-compliant coatings from being stored at worksites. See the section on applicability for further information.

COATING CATEGORIES

The following section contains new coating categories with VOC limits, amended definitions for existing coating categories and proposed reductions of current VOC limits for existing categories. Staff has a sizeable source of data on coatings that were sold in the AQMD as a result of Rule 314 reporting, which has been in place since 2008. It should be noted that the Rule 314 data has not been validated at this time, so there may be revisions in the future. Additionally, staff noted the significant decline in sales that the coatings industry experienced during 2008 and 2009. Coating sales are beginning to recover, and while they may not soon reach the peak realized during the housing boom, the 2008 and 2009 sales volumes do not portray an accurate account of the emissions that will result from the application of architectural coatings in the future. For this reason, staff relied on the 2005 CARB coating survey of coatings sold in California in 2004, using the assumption that 45% of those coatings were sold in the AQMD. The 2004 coating sales do not represent the height of the housing/coating boom, but is considered a more accurate estimate of the level where coating sales may eventually reach. While staff is confident that the coating sales volume should rebound to at least 2004 levels, the same assumption does not apply to the VOC levels. For this reason, the data analysis includes an estimate of the VOC reductions based on the 2004 sales volume from the CARB survey and the sales weighted average (SWA) VOC based on the latest data available from Rule 314, which is the 2009 sales data that serves as baseline emissions. The emission reduction estimates rely on the difference between the baseline emissions and the overall emissions for the proposed VOC limits. This approach is also consistent with the AQMP, as the baseline emissions from architectural coatings is based on an earlier CARB survey.

Table 2 summarizes sales volume and SWA VOC from the 2004 CARB survey, as well as 2009 Rule 314, with separate columns for data that excludes and includes sales in the ACO and under the SCE. This table illustrates the differences in sales volumes and SWA VOC for the different data set.

TABLE 2: CARB DATA/RULE 314 DATA SUMMARY

CATEGORY	2004 CARB Data		2009 Rule 314 Data		2009 Rule 314 Data*	
	Sales	SWA VOC	Sales	SWA VOC	Sales	SWA VOC
Concrete Surface Retarders	-	-	574	0	574	0
Default	-	-	127,072	97	127,081	97
Dry Fog coatings	169,968	233	89,116	62	89,116	62
Fire Proofing Coatings	5,630	124	16,188	157	16,188	157
Form Release Compounds	145,625	233	26,691	143	26,691	143
Graphic Arts Coatings	pd	350	7,459	157	7,459	157
Metallic Pigmented Coatings	20,250	301	10,405	176	10,461	178
Primers, Sealers, & Undercoaters	4,682,569	128	3,312,237	44	3,401,446	47
Specialty Primers	908,998	281	79,601	74	369,150	285

* Includes ACO and SCE but not sell through or low solids coatings

VOC LIMIT CHANGES

Staff has conducted a comprehensive review of all the coating categories that are being proposed for VOC reductions, including the performance properties of each specific coating category, and found future compliant coatings to have equivalent performance as currently used coatings. The review included consideration of performance results based on ASTM Test Methods, including but not limited to coverage, dry times, service life, fire rating and heat resistance based on data listed on technical or product data sheets. There is no one coating characteristic that defines service life, but based on discussions with manufacturers, a combination of coating characteristics provide an expected service life. This information was obtained through discussions with manufacturers. Additional information was also obtained from the manufacturers that produce the future compliant coatings.

Anti-graffiti coatings

Staff formed a separate Working Group to specifically address Anti-Graffiti Coatings. Based on those discussions, staff is proposing to separate this category into two new categories, Sacrificial Anti-Graffiti Coatings (SAG) and Non-Sacrificial Anti-Graffiti Coatings (NSAG). This change is intended to clarify the coating category for anti-graffiti coatings, but is not expected to result in emission reductions. It became evident upon reviewing the Rule 314 data that there was confusion on how to categorize these types of coatings. SAG coatings would currently fall under the default category with a VOC limit of 250 g/L but are typically very low-VOC coatings. They are paraffinic or wax-based coatings that are applied to surfaces and then washed off once the surface is defaced. NSAG, also known as permanent anti-graffiti coatings, are currently categorized as Industrial Maintenance (IM) coatings because they are high performance coatings that can withstand abrasive cleaning. The VOC limits for SAG coatings are being proposed at

50 g/L and the NSAG coatings are proposed to remain as a subset of IM coatings with a VOC limit of 100 g/L. Staff has conducted site visits where high-end NSAG coatings have been applied which are projected to have a 30 year service life. In addition, staff is clarifying that tBAc is considered an exempt solvent for NSAG coatings, since under the current Industrial Maintenance Coatings; tBAc is considered an exempt solvent.

The other type of anti-graffiti coatings that have been reported in Rule 314 are coatings designed to cover graffiti. These coatings are low cost flat, non-flat or recycled coatings mostly used by cities to cover-up graffiti. These types of coatings would still be categorized as flat, non-flat or recycled coatings.

Clear Brushing Lacquers

Staff is proposing to subsume the clear brushing lacquers into the lacquer category, since the VOC limit of 275 g/L has been the same as the general lacquer category for more than three years, and the sell through period is no longer applicable.

Concrete Surface Retarders

One of the two most common coatings that fall into the default category is concrete surface retarders. Staff is proposing to create a separate category for concrete surface retarders with a VOC limit of 50 g/L, the current default limit is 250 g/L.

Concrete surface retarders are applied to freshly poured cement in order to prevent the surface from hardening. They are used so that the top layer can be washed away to expose the aggregate finish. Concrete surface retarders are included in the EPA Federal Register 40 CFR Part 59 National Volatile Organic Compound Emission Standards for Architectural Coatings (Federal AIM Rule) with a VOC limit of 780 g/L; they are not included in the CARB Suggested Control Measure (SCM). Based on the data in Rule 314, there were only two manufacturers reporting coatings that were reported such that they could be identified as concrete surface retarders. There were two coatings reported in 2008 and two in 2009, one coating has a VOC content of 643 g/L, the remaining were reported as zero-VOC. In addition, there is another manufacturer that distributes concrete surface retarders into California with VOC content of 6 g/L. Staff is not projecting any emission reductions for the addition of this category and the VOC limit of 50 g/L was set at the level that these coatings are currently formulated. Based on the 2008 calendar year data from Rule 314, there would be a slight emission reduction of 0.5 pounds per day (ppd). In 2009, all coatings that could be identified as concrete surface retarders were reported as zero-VOC.

Default Category

Rule 1113 has always had a default category for coatings that do not fit into any of the categories in the Table of Standards. This differs from the approach of the CARB SCM and the Federal AIM Rule where coatings default into the Flat or Non-Flat category if there is not a defined category for a coating. Based on past staff rule interpretations, the coatings that currently fall into the default category are concrete curing compounds, form release compounds, dry erase, magnetic board and chalk board coatings. Staff is proposing to carve out categories for the first two. The other coatings are generally sold in small containers, and are such niche products that they do not warrant a category carve out at this time.

The current VOC limit for the default category is 250 g/L. This limit has been in place since the rule was adopted on September 2, 1977. Historically, the default category VOC limit was one of the lowest VOC limits in the Table of Standards. Today, the default limit is one of the highest limits. If Rule 1113 followed the state or federal coatings rule convention, coatings would default to the 50 g/L Flat or Non-Flat limit in Rule 1113. Staff originally proposed to reduce the VOC limit from 250 g/L to 100 g/L, but based on feedback received from several coating manufacturers during the Public Workshop, PAR1113 proposes a 50 g/L limit for the default category. Since other coatings regulations, including the CARB SCM implementing by several air districts and the EPA, default to the lower-VOC limit of the flat or non-flat category, the manufacturers felt it would eliminate confusion if Rule 1113 followed that same model with a VOC limit of 50 g/L.

According to the Rule 314 data for the default category, in 2008 the sales weighted average (SWA) was less than 50 g/L, and in 2009 the SWA was less than 100 g/L as summarized in Table 3. The SWA drops to 26 g/L in 2008 and 69 g/L in 2009 once the coating categories that staff is carving out in this rule amendment are removed as shown in Table 4. Staff intends to work with manufacturers who are currently reporting their coatings under the default category as there has been confusion regarding what coatings should be categorized as default. Staff is not projecting any VOC reductions from the VOC limit reduction. The change is being proposed for additional clarification and alignment with other similar regulations.

TABLE 3: RULE 314 DATA FOR ALL REPORTED DEFAULT COATINGS

Year	VOC (g/L)						Total Gal.	Total # of Prod.	Above Proposed Limit		Below Proposed Limit	
	Limit	Proposed	SWA	Max	Avg	Min			Total Gal.	# of Prod.	Total Gal.	# of Prod.
2008	250	100	46	702	71	0	164,640	243	30,330	49	134,310	194
2009	250	100	97	483	101	0	127,072	135	57,633	57	69,439	78

TABLE 4: RULE 314 DATA FOR DEFAULT WITHOUT FORM RELEASE AND CONCRETE SURFACE RETARDERS

Year	VOC (g/L)						Total Gal.	Total # of Prod.	Above Proposed Limit		Below Proposed Limit	
	Limit	Proposed	SWA	Max	Avg	Min			Total Gal.	# of Prod.	Total Gal.	# of Prod.
2008	250	100	26	702	69	0	139,724	227	11,274	46	128,451	181
2009	250	100	69	483	101	0	102,427	131	33,188	55	69,239	76

Driveway sealers

In the 2007 amendment to the SCM, Driveway Sealers were included with a VOC limit lower than Rule 1113. The AQMD has reviewed that VOC limit and has determined that it is also at a minimum Best Available Retrofit Control Technology (BARCT) for the AQMD. Pursuant to H&S Code Section 40440 (b)(1), the AQMD is required to adopt that limit at a minimum as BARCT. In addition to the VOC limits in California, the Ozone Transport Commission, the multi-state organization created to develop and implement regional solutions to the ground-level

ozone problem in the Northeast and Mid-Atlantic regions, adopted the VOC limits in the 2007 SCM. Table 5 lists the 6 California Air Districts that have already adopted the SCM and the dates they were adopted.

TABLE 5: AIR DISTRICTS THAT HAVE ADOPTED CARB SCM

District	Rule Number	Adopted Date
Bay Area Air Quality Management District	Rule 8-3	July 1, 2009
San Joaquin Valley Air Pollution Control District	Rule 4601	December 17, 2009
Ventura County Air Pollution Control District	Rule 74.2	January 12, 2010
Imperial County Air Pollution Control District	Rule 101 & Rule 424	February 23, 2010
Eastern Kern Air Pollution Control District	Rule 410.1A	March 11, 2010
Placer County Air Pollution Control District	Rule 218	October 14, 2010

CARB included this category after an evaluation of their 2004 Architectural Coatings Surveys data indicated that 100% of Driveway Sealers were at or below 50 g/L. In addition, they wanted to distinguish Driveway Sealers from Roof Coatings for future surveys. AQMD staff is proposing to include Driveway Sealers with a VOC limit of 50 g/L. Currently, Driveway Sealers would be categorized under the Waterproofing Sealer category with a VOC limit of 100 g/L. Staff is not projecting any emission reductions from this coating category.

Dry Fog Coatings

Dry-fog (dry-fall) coatings are applied by spray application only, so that the overspray droplets dry before falling on floors and other surfaces. Overspray generated during atomization of a typical protective coating or paint, can collect on adjacent surfaces or fall, potentially damaging surfaces not intended to be coated, resulting in extensive clean-up procedures. Dry-fog coatings were developed to reduce the amount of clean-up effort necessary, particularly when spraying overhead surfaces like ceilings inside plants or other facilities. With dry-fog coatings, the overspray releases all of its solvents (dries) as it falls through the air, such that it is dry when it contacts the surface(s) below. This minimizes the need for installation of protective coverings and allows the contractor to literally sweep-up or vacuum the overspray from these surfaces once the application is complete. The VOC limit for this category is currently 150 g/L.

According to the Rule 314 data as seen in Table 6, Dry Fog coatings have a SWA of 70 g/L and 62 g/L for the 2008 and 2009 calendar year, respectively. Most of the coatings sold in the AQMD are significantly below the 150 g/L limit. The technology to formulate the coatings below 50 g/L is currently available and being used in the AQMD.

TABLE 6: RULE 314 DATA FOR DRY FOG COATINGS

Year	VOC (g/L)						Total Gal.	Total # of Prod.	Above Proposed Limit		Below Proposed Limit	
	Limit	Proposed	SWA	Max	Avg	Min			Total Gal.	# of Prod.	Total Gal.	# of Prod.
2008	150	50	70	141	65	10	99,896	28	57,670	16	42,226	12
2009	150	50	62	394	93	14	89,116	32	41,541	20	47,575	12

Additionally, Table 7 demonstrates potential emission reductions by lowering the VOC limit from 150 g/L to 50 g/L, based on the Rule 314 data, and the 2005 CARB survey of coatings sold in 2004.

TABLE 7: ESTIMATED EMISSION REDUCTIONS FROM DRY-FOG COATINGS

Coating Category	Current VOC Limit (g/L)	Proposed VOC Limit (g/L)	CARB Sales Volume 2004 (gal)	Rule 314 SWA VOC 2009 (g/L)	Emission Reductions (tpy)
Dry Fog Coatings	150	50	169,968	62	7

PERFORMANCE PROPERTIES

Dry fog coatings serve a unique function and therefore have different performance criteria than most other coating categories. These coatings are applied to ceilings, hence scrub and abrasion resistance are not critical to the service life of the coating, but dry time is a very important characteristic. Staff did evaluate coverage and projected service life of the coatings and found no appreciable difference between existing dry fog coatings and PAR 1113 compliant dry fog coatings. PAR 1113-compliant dry fog coatings based on technical data sheet review have greater practical coverage, less solids, higher fire rating and do not need solvent for clean up (i.e., are waterborne). PAR 1113-compliant dry fog coatings dry thickness is less, but the PAR 1113 non-compliant appear to be slightly skewed by one company that reported a broad range of coating thickness (two to five mils). The median dry thickness of PAR 1113 non-compliant and PAR 1113-compliant dry fog coatings is the same at two mils.

The average service life for PAR 1113-compliant dry fog coatings is shorter six years versus nine for PAR 1113 non-compliant dry fog coatings. The service life data was not typically on technical sheets, but obtained from e-mail or phone conversations with coating manufacturers. The PAR 1113 non-compliant dry fog coatings were skewed greatly by one coating with a 20 year service life and another with a single year service life. The median of both PAR 1113 non-compliant and PAR 1113-compliant dry fog coatings is the same at six years.

Faux Finishing/Japans

Staff is proposing to expand and enhance the definition of the Faux Finishing/Japan category. In recent years, there has been a sharp increase in decorative coatings being marketed to the homeowner such as, metallic coatings, suede coatings, plasters, etc. The current definition in Rule 1113 reflects the work that is done for studio painting with Japans and Glazes. Based on feedback during the initial working group meeting, staff developed a specific sub-group to discuss the Faux Finishing/Japan categorization. With the assistance from manufacturers involved with the sub-group, staff has developed the following five distinct subcategories of coatings that create these effects:

Japans - traditionally used by professional artist for developing studio sets

Glazes – used for some commercial and residential decorative finishes

Decorative Coatings – used by consumers and sold at typical retail outlets

Trowel Applied Coatings – used by consumers and sold at typical retail outlets but with significantly lower-VOC levels than typical decorative coatings

Clear topcoat – used to protect the Faux Finishing Coatings

Staff is proposing to add definitions for the five subcategories that will fall under the Faux Finishing category and amend the definition for Japan Coatings.

In addition, staff is also proposing to add a definition for gonioapparent, and pearlescent, as well as a test method to measure the appearance of a coating. This proposal is to assist with rule enforcement and prevent circumvention. As an example, in 2002, Rule 1113 was amended to allow mica to be included in the metallic pigmented coating definition. The intent was to allow flexibility for the use of the mica pigments that create a pearlescent or metallic look. There is also a different grade of mica which serves as an extender or filler in coatings. By 2006, some manufacturers increased the concentration of the mica used as a filler, then claimed the coatings were metallic or metal fortified coatings. At that time, metallic coatings had a VOC limit of 500 g/L, while non-flat coatings had a VOC limit of 150 g/L or 50 g/L depending on the gloss level. The gonioapparent requirement and test method is being proposed to demonstrate that a coating is pearlescent in order to prevent similar rule circumvention.

While Faux coatings are a relatively small volume category, there has been significant growth with many major manufacturers marketing faux finishing products to the consumer market. As discussed in the definition section, the Rule 1113 definition reflects what is occurring at the film studios; therefore, the Rule 314 data was not as useful for determining an appropriate VOC limit for the subcategories of Faux Finishes. Staff based the proposed limits on discussions with the manufacturers who primarily produce these types of coatings. The VOC limits shown in Table 8 are based on those discussions.

TABLE 8: FAUX & JAPAN VOC LIMITS

	Current Limit	Proposed Limit 07/01/11	Proposed Limit 01/01/14
Faux			
Clear topcoat	350	200	100
Decorative Coatings	350		
Glaze	350		
Japans	350		
Trowel Applied Coatings	350	150	50

PERFORMANCE PROPERTIES

All of the subcategories, other than Japans and Glazes, are new categories. Staff chose to use the current limit for the Japan/Faux category for all subcategories, but is proposing to drop the limit for two of the subcategories within several months of rule adoption. This short time frame reflects the fact that coatings are already available at the proposed VOC level. For instance, many trowel applied coatings are very near zero-VOC. Trowel applied coatings do not require the same flow characteristics as traditional architectural coatings and therefore inherently contain

lower levels of VOCs. Staff received feedback from several manufacturers that the majority of the trowel applied coatings at formulated well below 50 g/L, but there are a few products formulated at 150 g/L. Staff is proposing to set the VOC limit at 150 g/L effective January 1, 2012 and then further reduce the VOC limit of this subcategory to 50 g/L, effective January 1, 2014.

The other VOC limit that is being proposed to be lowered for a subcategory is the clear topcoats. Under the current Rule, staff has interpreted that the clear topcoats fall under either the flat or nonflat category with a 50 g/L limit. During the rule development process, manufacturers made the case that a separate clear topcoat category was necessary and that current technology reflects a need for a higher VOC limit. Staff is proposing to lower the VOC limit to 200 g/L effective January 1, 2012. The majority of clear topcoats that are currently available range between 150 g/L – 200 g/L. Staff is proposing to further reduce the VOC limit of this subcategory to 100 g/L, effective January 1, 2014. Staff is also adding language to require that the clear topcoat must be sold, labeled, and used, solely as part of a Faux Finishing coating.

Staff is not projecting emission reductions from the Faux Finishing category.

PERFORMANCE PROPERTIES

Several coatings that will fall under the subcategories in PAR1113, including decorative coatings, trowel applied coatings and the clear topcoats have unique properties and characteristics that require separate categories and VOC limits. Currently, the confusion over the faux finishing coatings resulted in mis-categorization by the manufacturers as mastic coatings, metallic pigmented coatings or default coatings. Based on evaluating the data collected under Rule 314, staff is unable to discern the total emissions for these products, but based on a detailed review of product names as well as discussions with the manufacturers, the total emissions from the faux finishing subcategories is fairly low. Overall, the intent of this rule change is to provide rule clarification and not achieve VOC reductions.

Staff did discuss the overall performance characteristics of the faux coating subcategories and based on feedback from the manufacturers, concluded that performance characteristics of the faux coatings subcategories should not be affected by the proposed clarification.

Based on the current categorization by the manufacturers of these products, staff is proposing to allow for a VOC limit of 200 g/l for the Clear Topcoats and a final VOC limit of 100 g/l, based on manufacturers' feedback reflecting available technology. While some products may meet the final limit today, other manufacturers are in the process of reformulating the Clear Topcoats to achieve the 100 g/L limit effective January 1, 2014. These limits were set based on some manufacturers' recommendations, with support that the reformulated products will not impact performance.

An interim VOC limit is also being proposed for the trowel applied coatings, since some manufacturers indicated there are a few coatings that currently have a VOC content near 150 g/L. The VOC limit will be reduced down to 50 g/L effective January 1, 2014 allowing ample time for reformulation of the few products that currently exceed the 50 g/L VOC limit. A performance analysis of the high-VOC coatings versus the coatings that meet the future VOC limit is complicated by the nature of these coatings. Trowel applied coatings can be applied at

various film thicknesses depending on the desired final appearance. The coating coverage can vary greatly but that is not an indication that one coating is superior, it is a reflection of the desired look. Typical coating properties such as durability, scrub and hardness are not necessarily critical features of trowel applied coatings, these coatings are selected primarily for their unique finish. The feedback received regarding the higher VOC content of the select trowel applied coatings is the need for additional open time, which manufactures feel they can overcome by 2014 for the few products that do not meet the 50 g/l level.

These VOC limits were developed with input from the manufacturers who produce the majority of the faux coatings and are based on what is currently available in the marketplace. These are specialty categories with unique performance and application properties so a standard analysis does not necessarily reflect the attributes of the coating. Based on feedback from the manufacturers, staff is confident that the final VOC limits will be achievable without a loss of performance for the faux subcategories.

Fire-Proofing Exterior Coatings

Staff is proposing to remove the term "exterior" both from the name of fire-proofing exterior coatings as well as from the definition. Fire-proofing coatings help to prevent catastrophic failure of buildings due to fires. This is to address instances where the steel structure of a building requires touch up after the structure was enclosed in the building envelope. The way the definition is currently written, this would be prohibited. Staff would like to clarify the definition to allow this type of coating operation.

In addition to the definitional change, staff is proposing to lower the VOC limit from 350 g/L to 150 g/L, effective January 1, 2014. This is a comparably small volume category; however, the data clearly shows that the proposed 150 g/L limit is achievable as shown in Table 9. Furthermore, with the expansion of the definition to include interior steel, the volume for this category could increase in the future.

TABLE 9: RULE 314 DATA FOR FIRE-PROOFING COATINGS DATA

Year	VOC (g/L)						Total Gal.	Total # of Prod.	Above Proposed Limit		Below Proposed Limit	
	Limit	Proposed	SWA	Max	Avg	Min			Total Gal.	# of Prod.	Total Gal.	# of Prod.
2008	350	150	154	344	174	1	21,084	12	9,614	6	11,470	6
2009	350	150	157	350	151	0	16,188	21	7,435	12	8,753	9

Additionally, Table 10 demonstrates potential emission reductions by lowering the VOC limit from 350 g/L to 150 g/L, based on the Rule 314 data, and the 2005 CARB survey of coatings sold in 2004.

TABLE 10: ESTIMATED EMISSION REDUCTIONS FROM FIRE PROOFING COATINGS

Coating Category	Current VOC Limit	Proposed VOC Limit	CARB Sales Volume	Rule 314 SWA VOC 2009	Emission Reductions (tpy)

	(g/L)	(g/L)	2004 (gal)	(g/L)	
Fire Proofing Coatings	350	150	5,630	157	3

PERFORMANCE PROPERTIES

Both PAR 1113 non-compliant and PAR 1113-compliant fire proofing coatings are solvent-based and tend to be epoxy coatings. No coverage data was found on coverage for fire proofing coatings in technical data sheets. Fire proofing thickness varies greatly because there are two types of fire proofing coatings: those tested by pooled hydrocarbon or jet fire test (UL 1709 and API 2218) and those tested by cellulosic tests (UL 263 and ASTM E119) for occupied buildings. The pooled hydrocarbon or jet fire tests are more stringent and require greater thickness. The cellulosic test are less stringent and do not require coatings to be as thick as those tested by hydrocarbon or jet fire tests. Manufacturers typically stated that their products would last the life of the structure coated unless damaged. The fire rating was slightly longer for PAR 1113-compliant fire proofing coatings (four hours versus three hours) for PAR 1113 non-compliant fire proofing coatings. One PAR 1113-compliant fire proofing coatings skewed the solid content higher than the PAR 1113 non-compliant fire proofing coatings.

Only one coating technical sheet had directions for clean-up (a solvent composed of 50 to 100 percent xylene and 10 to 25 percent ethylbenzene), but since all of the fireproof coatings are solvent-based, it is likely that all would require solvent for clean-up. These technical data sheets may be updated to comply with Rule 1143 requirements that call for clean-up with aqueous, soy-based, or exempt solvent based cleaning solvents.

Form Release Compounds

The other most common coating that falls into the default category is form release compounds. Staff is proposing to create a separate category for form release compounds with a VOC limit of 100 g/L, effective January 1, 2014. The current default limit is 250 g/L.

Form release compounds are applied to concrete forms in order to prevent the freshly poured concrete from bonding to the form. Form release compounds are included in the Federal AIM rule and the SCM with a VOC limit of 450 g/L and 250 g/L, respectively. According to the Rule 314 data, there were three manufacturers reporting sales of form release coatings in 2008 and four in 2009. Table 11 shows sales data and VOC information for form release compounds. Table 12 shows an estimate of the potential emission reductions for the products reported in Rule 314 (2008 & 2009 calendar years) and in the CARB survey of coatings sold in the 2004 calendar year.

TABLE 11: RULE 314 DATA FOR FORM RELEASE COMPOUNDS

Year	VOC (g/L)						Total Gal.	Total # of Prod.	Above Proposed Limit		Below Proposed Limit	
	Limit	Proposed	SWA	Max	Avg	Min			Total Gal.	# of Prod.	Total Gal.	# of Prod.
2008	250	100	138	246	122	0	24,756	9	21,256	4	3,500	5
2009	250	100	146	238	113	0	26,691	6	24,445	2	2,246	4

TABLE 12: ESTIMATED EMISSION REDUCTIONS FROM FORM RELEASE COMPOUNDS

Coating Category	Current VOC Limit (g/L)	Proposed VOC Limit (g/L)	CARB Sales Volume 2004 (gal)	Rule 314 SWA VOC 2009 (g/L)	Emission Reductions (tpy)
Form Release	250	100	145,625	146	59

PERFORMANCE PROPERTIES

During the rule development process, there was concern from several manufacturers of form release compounds regarding the proposed VOC limit. The trend for these types of coatings is not to convert to waterborne due to the risk of rust forming on metal forms. Manufacturers have had greater success with bio-based oils, which are typically soy or canola oil with minor additives. Initially the manufacturers were uncertain of the VOC content of the bio-based oil. The AQMD laboratory and a third party laboratory analyzed several samples and found the bio-based oils to contain very low-VOCs. For many years, bio-based oils have been certified as less than 25 g/L under the AQMD Clean Air Solvent program for solvent cleaning operations. The bio-based oils are also non-toxic and not hazardous. This demonstrates the advantage of technology transfer for reducing the VOC content of architectural coatings.

Form release coatings are not typical coatings. Form release coatings are used to prevent concrete from adhering to forms used to shape concrete. Since the forms are only used until concrete is dry, the service life of form release coatings are not of concern. No primer or thinners are required. About half of PAR 1113 form release coatings and half of PAR 1113 non-compliant coatings would require solvent cleaners, which include solvents formulated with exempt solvents; water can be used for the rest. Based on technical data sheets, PAR 1113 form release coatings would provide greater coverage than PAR 1113 non-compliant form release coatings.

Graphic Arts Coatings

Graphic Arts Coatings are used by artists, typically on signs or murals, using hand-applications such as brush or roller techniques. The graphic arts category is another comparably small volume category where Rule 314 data suggests the current VOC of 500 g/L is significantly higher than the SWA VOC as shown in Table 13. Although the number of products above and below the proposed limit is about 50% the volume below the proposed limit is significantly greater. In addition, graphic arts coatings are frequently sold in small containers, therefore, those products above the allowable limit that cannot be reformulated could continue to be sold under the small container exemption.

TABLE 13: RULE 314 DATA FOR GRAPHIC ARTS COATINGS

Year	VOC (g/L)						Total Gal.	Total # of Prod.	Above Proposed Limit		Below Proposed Limit	
	Limit	Proposed	SWA	Max	Avg	Min			Total Gal.	# of Prod.	Total Gal.	# of Prod.
2008	500	150	156	496	135	11	12,464	206	4,073	103	8,391	103
2009	500	150	157	496	132	0	7,459	205	2,892	101	4,567	104

Table 14 further demonstrates potential emission reductions by lowering the VOC limit from 500 g/L to 150 g/L, based on the Rule 314 data, and the 2005 CARB survey of coatings sold in 2004.

TABLE 14: ESTIMATED EMISSION REDUCTIONS FROM GRAPHIC ARTS COATINGS

Coating Category	Current VOC Limit (g/L)	Proposed VOC Limit (g/L)	CARB Sales Volume 2004 (gal)[1]	Rule 314 SWA VOC 2009 (g/L)	Emission Reductions (tpy)
Graphic Arts Coatings	500	150	7,459	157	1

1. Sales volume from Rule 314 data for Rule 314, CARB data is protected (less than 3 companies reported)

PERFORMANCE PROPERTIES

Graphic arts coating manufacturers were contacted by AQMD staff. Technical data sheets were either not available or were not provided by manufacturers. Therefore, no quantitative analysis could be made between existing and PAR 1113-compliant graphic arts coatings. Manufacturers contacted stated that graphic arts coatings that are not exposed to direct sunlight should last five or more years. Graphic art coatings exposed to direct sunlight may need to be touched up more frequently. No distinction was made between existing and PAR 1113-compliant graphic arts coatings by manufacturers in regards to service life.

Mastic Coatings

In the 2007 amendment to the SCM, the VOC limit for Mastic Coatings was lowered below the limit in Rule 1113. Table 5 lists the 6 Air Districts that have already adopted the SCM and the dates they were adopted. In addition to the VOC limits in California, the Ozone Transport Commission adopted the VOC limits in the 2007 SCM. The AQMD has reviewed that VOC limit and has determined that it is also at a minimum BARCT for the AQMD. Pursuant to H&S Code Section 40440 (b)(1), the AQMD is required to adopt that limit at a minimum as BARCT.

Mastic Coatings are formulated to cover holes and minor cracks and to conceal surface irregularities, and applied in a thickness of at least 10 mils (dry, single coat). A review of the Rule 314 data shows a large percentage of coatings reported under this category are miss-reported flat coatings, floor coatings, roof coatings, and coatings that meet the proposed trowel applied faux finish category and some that fall under other AQMD rules, such as Rule 1168 – Adhesives and Sealant Applications. Table 15 summarizes data for mastic coatings only based on staff review of the individual products reported.

TABLE 15: RULE 314 DATA FOR MASTIC COATINGS - REVISED

Year	VOC (g/L)						Total Gal.	Total # of Prod.	Above Proposed Limit		Below Proposed Limit	
	Limit	Proposed	SWA	Max	Avg	Min			Total Gal.	# of Prod.	Total Gal.	# of Prod.
2008	300	100	119	294	120	0	114,938	44	46,313	14	68,625	30
2009	300	100	136	294	80	0	37,925	53	21,414	12	16,511	41

Table 16 summarizes the proposed emission reductions from lowering the VOC limit.

TABLE 16: ESTIMATED EMISSION REDUCTIONS FROM MASTIC COATINGS

Coating Category	Current VOC Limit (g/L)	Proposed VOC Limit (g/L)	CARB Sales Volume 2004 (gal)[1]	Rule 314 SWA VOC 2009 (g/L)	Emission Reductions (tpy)
Mastic Coatings	300	100	304,678	136	83

The CARB SCM lowered the VOC limit for Mastic Coatings to the limit 100g/L, which is the same VOC limit for Concrete/Masonry Sealers Category. The justification was that the Mastic Coatings will fit into several different categories including Concrete/Masonry Sealers, Flat Coatings, Industrial Maintenance coatings, or Faux Finishing Coatings. CARB found no justification for a higher VOC limit for Mastic coatings and will consider deleting the category in the future. In an effort to be consistent with the SCM, staff is proposing to lower the VOC limit from 300 g/L to 100 g/L.

PERFORMANCE PROPERTIES

Based on the Technical Report for the CARB 2007 SCM, product information sheets indicate that Mastic Texture coatings that meet the proposed VOC limit are available that possess performance characteristics similar to higher-VOC coatings. The Technical Support Document for the Proposed Amendments to the Suggested Control Measure for Architectural Coatings is referenced and can be found at: http://www.arb.ca.gov/coatings/arch/docs.htm.

Metallic Pigmented Coatings

Metallic Pigmented Coatings are decorative coatings used by homeowners, businesses, and theme parks to create a metallic look on various surfaces. The intent of the coating category is for an aesthetic appearance, and not to provide a protective coating such as an industrial maintenance coating. The current limit of the Metallic Pigmented Coating is 500 g/L.

Over the years, there has been significant rule circumvention within the metallic pigmented coating category due to the high limit. One instance is discussed in the definitions section for Faux Coatings of this report. Another instance became apparent where manufacturers were advertising metallic pigmented coatings as industrial maintenance coatings. Staff sent a compliance advisory in an email on August 17, 2006 (Attachment A) to curtail this practice, but recently came across two examples of this type of circumvention. Staff is proposing to amend the definition to specify that metallic pigmented coatings are decorative coatings, not including industrial maintenance coatings.

Regarding the VOC limit reduction, in the past, the high-VOC limit for this category was justified because solvent was needed for the metal flake to properly align. With the existence of low- and even zero-VOC metallic coatings, it is clear that this technological barrier has been overcome. Waterborne and high end two-component metallic pigmented coatings are currently

available. Even though the lower-VOC limit will not result in significant emission reductions, it is anticipated that it will result in fewer instances of rule circumvention. Table 1~~8~~7 shows VOC information, sales data, and products distribution above and below the proposed limit, substantiating an allowable VOC limit reduction.

TABLE 17: RULE 314 DATA FOR METALLIC PIGMENTED COATINGS

Year	VOC (g/L)						Total Gal.	Total # of Prod.	Above Proposed Limit		Below Proposed Limit	
	Limit	Proposed	SWA	Max	Avg	Min			Total Gal.	# of Prod.	Total Gal.	# of Prod.
2008	500	150	177	498	258	0	11,950	58	3,881	37	8,069	21
2009	500	150	176	498	260	0	10,405	59	3,395	39	7,011	20

Figures 2 -4 show a breakdown of the metallic pigmented coatings reported under Rule 314 for the 2009 calendar year:

FIGURE 2: MPC VOLUME/PRODUCT COUNT BY VOC CONTENT

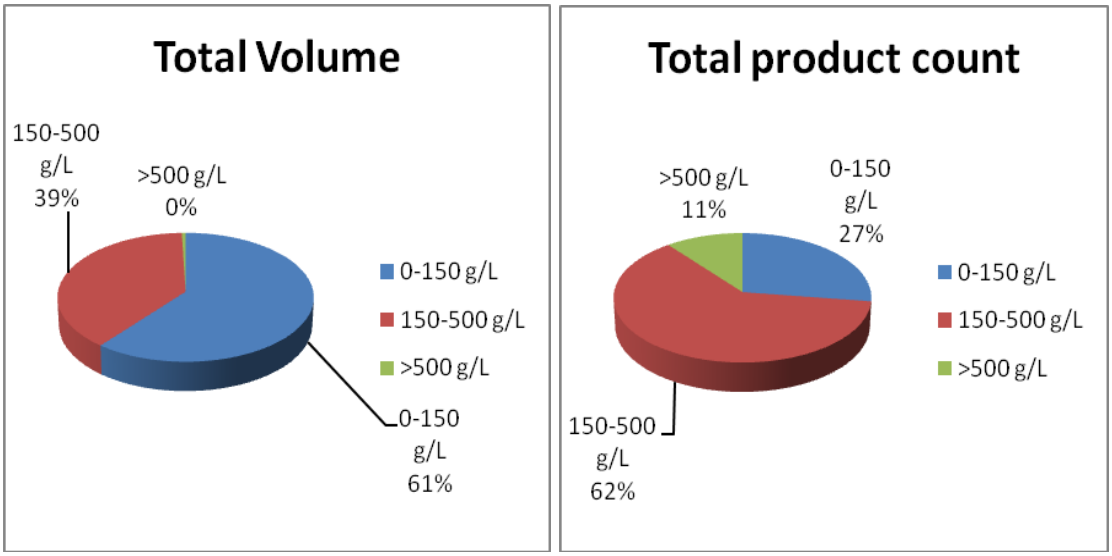


FIGURE 3: MPC TOTAL VOLUME BREAKDOWN

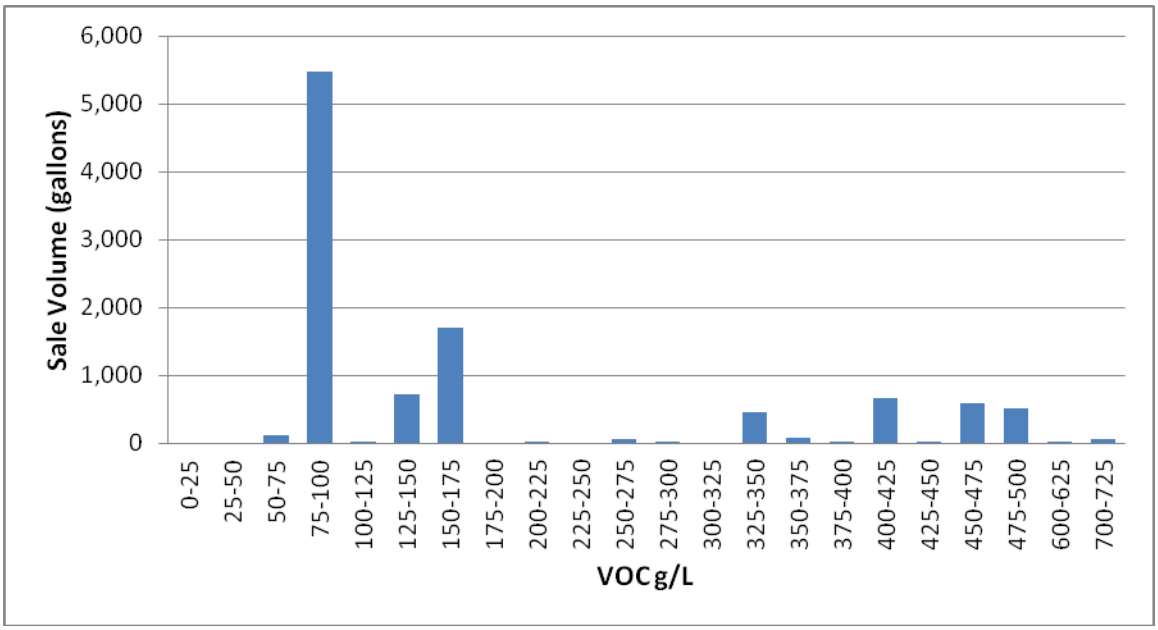


FIGURE 4: MPC TOTAL PRODUCT COUNT BREAKDOWN

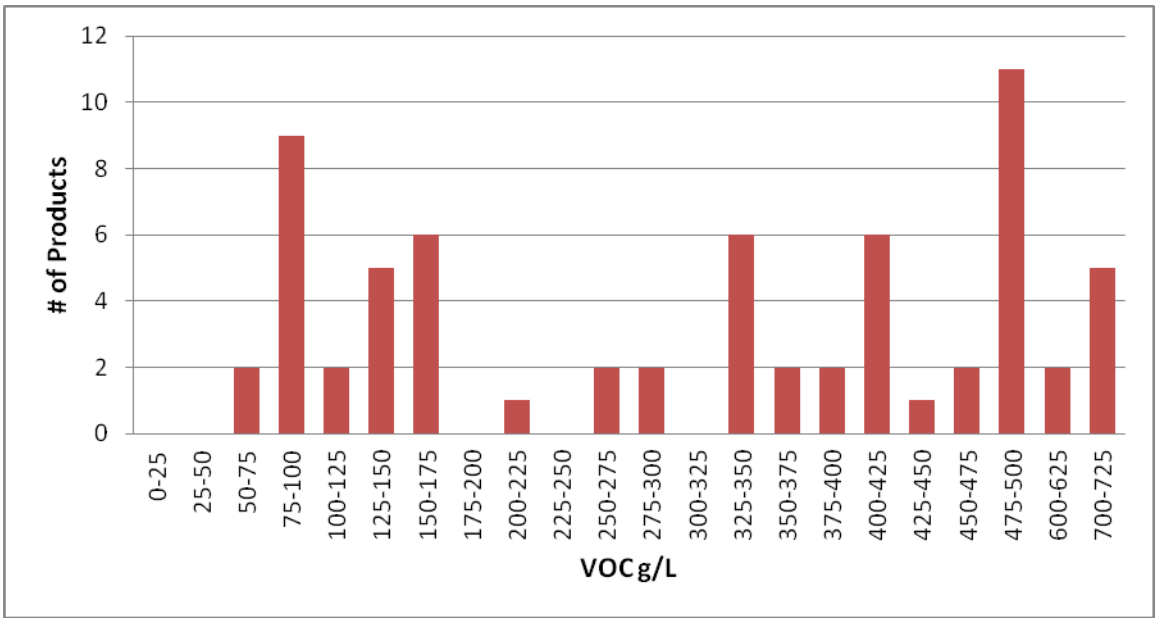


Table 1~~9~~8 summarizes potential emission reductions by lowering the VOC limit from 500 g/L to 150 g/L, based on the Rule 314 data, and the 2005 CARB survey of coatings sold in 2004.

TABLE 18: ESTIMATED EMISSION REDUCTIONS FROM METALLIC PIGMENTED COATINGS

Coating Category	Current VOC Limit (g/L)	Proposed VOC Limit (g/L)	CARB Sales Volume 2004 (gal)	Rule 314 SWA VOC 2009 (g/L)	Emission Reductions (tpy)
Metallic Pigmented Coatings	500	150	20,250	176	5

PERFORMANCE PROPERTIES

Based on a review of technical data sheets, PAR 1113 coatings would have an eight percent reduction in coverage (341 square feet per gallon versus 372 square feet per gallon) when compared to PAR 1113 non-compliant coatings. PAR 1113-compliant metallic pigmented coatings would need less solvent thinner, solvent cleaner, and priming before coating when compared to PAR 1113 non-compliant metallic pigmented coatings. Solid content was not available for PAR 1113-compliant metallic pigmented coatings. The lifespan of compliant metallic pigmented coatings were provided by e-mail or over phone conversations with manufacturers. Based on the information provided, PAR 1113-compliant metallic pigmented coatings would have a longer service life (12 years versus four years) when compared to PAR 1113 non-compliant metallic pigmented coatings.

Staff received feedback that the VOC limit of the Metallic Pigmented Coatings should be retained at 500 g/L to accommodate High Temperature IM Coatings. Staff considers coatings that meet the definition of a Metallic Pigmented Coating used in IM application to be IM coatings due to the most restrictive clause in paragraph (c)(3)(A). Staff sent out a compliance advisory to this effect in an email on August 17, 2006. The revised PAR1113 definition of Metallic Pigmented Coatings will exclude IM Coatings. Therefore, when the VOC limit for the Metallic Pigmented Coatings are reduced to 150 g/L effective January 1, 2014, the most restrictive clause will not apply to the metal containing High Temperature IM Coatings. Those coatings will still be allowed at the 420 g/L VOC limit and not the lower Metallic Pigmented Coating limit of 150 g/L.

Staff evaluated the product datasheets for five High-Temperature IM coatings that were submitted as examples of coatings that could not be formulated at the 420 g/L VOC for High Temperature IM Coatings. Of those coatings, only one had been sold in the AQMD according to the 2009 Rule 314 data and it has a VOC content of 450 g/L. Those coatings are considered IM coatings under Rule 1113 and could be reformulated from the 500 g/L VOC limit for Metallic Pigmented Coatings to the 420 g/L using exempt solvents.

Staff evaluated the Rule 314 data for aluminum containing High Temperature IM coatings and found two coatings that are formulated below 420 g/L that are comparable to the coatings submitted for consideration. Both can withstand temperatures up to 750° F, the coating submitted for consideration could withstand temperatures from 400° F to 1,000° F, the coating that has been sold in the AQMD only withstands a dry heat of 400° F. One of the two coatings found in Rule 314 recommends a higher film thickness and therefore has lower theoretical coverage. The other coating is in line with the coatings submitted for consideration.

Pigmented Varnish

Staff is proposing to include the word "pigmented" in the definition of a varnish. This change will be similar to the definition of a lacquer, which also includes "pigmented." This change is to address varnishes that have added pigments. Varnishes and lacquers contain a higher percentage of resin and form a film. Conversely, stains penetrate wood, and typically require a top coat.

Reactive Penetrating Sealers

Staff is proposing to add a category for Reactive Penetrating Sealers in response to comments from the California Department of Transportation and the California Office of Historical Preservation. The definition will mirror the CARB SCM with an additional restriction that these coatings are only for use on reinforced concrete bridge structures for transportation projects within 5 miles of the coast or above 4,000 feet elevation or restoration and/or preservation projects on registered historical buildings that are under the purview of a restoration architect. With the added restriction, usage for this category is expected to be very small, approximately 290 gallons per year. The proposed VOC limit for this category is 350 g/L; the estimated foregone emissions are 0.001 tpd. Staff intends to monitor this category through the Rule 314 Annual Quantity and Emissions Reports to ensure that sales do not exceed the estimated usage, and may consider sales caps for this category if actual sales are well above the estimated usage.

Sanding Sealer

Staff is proposing to delete the labeling requirement, effective July 1, 2013, on the sanding sealers for enforcement purposes.

Stone Consolidants

Staff is proposing to add a category for Stone Consolidants in response to comments from the California Office of Historical Preservation. The definition will mirror the CARB SCM with an additional restriction that these coatings are only for use on restoration and/or preservation projects on registered historical buildings that are under the purview of a restoration architect. Usage for this category is expected to be very small, approximately 142 gallons per year. The proposed VOC limit for this category is 450 g/L; the estimated foregone emissions are 0.001 tpd. Staff intends to monitor this category through the Rule 314 Annual Quantity and Emissions Reports to ensure that the sales do not exceed the estimated usage, and may consider sales caps for this category if actual sales are well above the estimated usage.

Swimming Pool Coatings

For clarification, staff is proposing to include water park attractions, ponds and fountains to the definition of a swimming pool coating.

Waterproofing Concrete/Masonry Sealers (WPCMS)

Currently, the VOC limits for WPCMS, waterproofing sealers, and sealers are all at 100g/l. Staff is proposing to change the definition of WPCMS by changing the conjunction 'and' to 'or' to better reflect current usage of this coating category. WPCMS coatings that would not fit the current narrow definition would have been regulated as a waterproofing sealer or as a sealer, both of which have the same VOC limits as WPCMS. As a result, this proposed change would better describe the WPCMS coating category but not affect the VOC limit the expanded definition would be subject to.

REQUIREMENTS

For rule clarification, staff is proposing to rearrange paragraphs (c)(1) and (c)(2). Currently, paragraph (c)(1) contains the default limit for coating categories not included in the Table of Standards and (c)(2) contains further requirements regarding the Table of Standards. Much of the language was redundant between the two paragraphs. In addition, PAR 1113 includes a separate Table of Standards for coatings and for colorants. Staff reorganized and combined the requirements in (c)(1) and (c)(2) and created subparagraphs to address the default limit and the VOC limits. Paragraph (c)(1) and its subparagraphs now contain the requirements for coatings that fall under one of the categories in the Table of Standards, which is now referred to as Table of Standards 1, and the requirements for coatings that fall under the default VOC limit. Paragraph (c)(2) now contains the VOC limit requirements for colorants as listed in Table of Standards 2. The requirements for Industrial Maintenance coatings, which was in paragraph (c)(2) have been moved to (c)(7) as a standalone requirement.

VOC LIMIT ON COLORANTS

VOC emissions from colorants, pigments added at the point of sale that impart the selected color, have specifically been excluded from Rule 1113, both in terms of the baseline emissions and any VOC restrictions. Currently used universal colorants contain ethylene and propylene glycols and have a VOC content ranging from 400 g/L to 600 g/L. Since 1996, staff has been aware of the availability of low-VOC colorants for waterborne coatings. Staff evaluated the availability of low-VOC colorants for the November 1996 amendments to Rule 1113, but deemed that the percentage of VOC added as a result of the colorant was not a significant factor compared to the relatively high-VOC limits. Therefore, the initial staff proposal to regulate colorants was not included. Since that time, with the implementation of lower-VOC limits as a result of three major rule amendments, especially for the coatings typically used by consumers to paint their homes, the existing colorants can significantly increase the VOC content of the coatings as applied. In addition, the new generation of low-VOC colorants is formulated to be free of Alkylphenol ethoxylates (APEO), which are toxic to aquatic life and are endocrine disruptors, and free of formaldehyde forming chemicals.

Table ~~20~~19 summarizes the results of a study conducted by the AQMD on a series of base coatings (flat coatings with a listed VOC content of 0 g/L)that were either tinted with “zero” VOC colorants or conventional colorants. Separate samples were purchased of a base coating without colorant and a base coating tinted to a deep color. The coatings were tested by AQMD Modified Method 313-91 [Determination of Volatile Organic Compounds VOC by Gas Chromatography-Mass Spectrometry] in the AQMD's "Laboratory Methods of Analysis for Enforcement Samples" manual.

TABLE 19: LABORATORY RESULTS FROM COLORANT STUDY

Coating	Coating Description	VOC of Coating (g/L)	
		Base	Tinted
Coating Tinted with Conventional Colorant ≈500 g/L			
Coating A	Neutral Base Tinted Orange	< 10	90
Coating G	Base 5 Tinted Orange	< 10	70
Coating H	Deep Base Tinted Orange	10	120
Coating Tinted with near zero-VOC colorant ≈10 g/L			
Coating B	Base 2 Tinted Orange	< 10	< 10
Coating C	White Base Tinted Blue	< 10	10
Coating D	Ultra Deep Base Tinted Orange	-	< 10
Coating E	Base 2 Tinted Red	10	10
Coating F	Ultra Deep Base Tinted Orange	< 10	< 10

As noted above, colorants can add significant VOC emissions to a coating (Coatings A, G, & H), and that low-VOC colorants are commercially available and marketed today (Coatings B, C, D, E & F).

Over the years, there have been significant improvements to both the near zero-VOC colorants and the colorant dispensers. The VOC content of colorants has been regulated in the European Union for over five years. The approach taken in Europe is to regulate the whole paint, including the colorant added at the point of sale.

In 2008, a major coating manufacturer based in the United States made the decision to switch to near zero-VOC colorants in an attempt to formulate the best possible paint and limit the release and exposure to VOCs. To accomplish that goal, they decided to move away from the conventional high-VOC glycol containing universal colorants that have been standard in the industry for decades. In addition to the new near zero-VOC colorant, a new dispenser was designed that would keep the dispenser tip from clogging with dried colorant, mainly with a humidification system comprised of a wet sponge that rests against the dispenser tip.

Conventional universal colorants are formulated with high concentrations of surfactants in order to be compatible with both waterborne and solvent-based coatings. These surfactants can have negative effects on the coatings, especially when highly tinted. According to the 2009 Rule 314 data, 94% percent of coatings sold to the consumer in the AQMD were waterborne. The types of coatings that are typically tinted at the point of sale are flat, non-flat, and occasionally primers, 99.6% of which were reported as waterborne in 2009. The only notable exception is stains, which are sometimes also tinted at the point of sale.

To satisfy market demands for truly zero-VOC architectural coatings, manufacturers have been striving toward colorants that are as close to zero-VOC as possible. The major issue that is encountered when solvents are removed is tip drying in the dispenser, which may result in mistints. This issue can be resolved with the addition of humectants or plasticizers that keep the tips from drying. Unlike solvent, the humectants do not evaporate and leave the paint film.

In August 2009, staff began working on several colorant surveys to determine the type of colorants that are currently being used to tint coatings at the point of sale for architectural and industrial maintenance applications. The goal was to gather information from manufacturers and retail outlets on their use and experience comparing traditional colorants with near zero-VOC colorants. The surveys were conducted while researching the feasibility of setting a VOC limit for colorants. The surveys were sent out in April 2010, after incorporating feedback from small and large manufacturers of coating pigments (colorants), and the ACA. The first survey was a general survey sent to 288 contacts on the AQMD Rule 1113 subscribers list that are identified as architectural coating manufacturers. According to Rule 314 reporting, there are approximately 200 manufacturers selling architectural coatings in the AQMD. The second survey was a targeted survey sent to 35 coating manufacturers who are listed on the AQMD Super-Compliant Coatings Manufacturers List. The third and final survey was sent electronically to 11 architectural coating retailer sales contacts on the Rule 1113 subscribers list. In addition, hard copies of the survey were circulated to retail locations throughout the AQMD. The surveys were anonymous; therefore, no data from specific companies was recorded. The results of the survey can be found in Appendix A of this report.

According to the survey results, the biggest hurdle to switching to a near zero-VOC colorant is the dispenser which adds the colorant to the paint can. The colorants themselves are not an issue, since near zero-VOC colorants have been used for tinting at the factory for decades. One of the benefits of solvents contained in conventional colorants is to keep the dispenser tip from clogging as quickly. However, based on frequency of use, conventional solvent-containing colorants can also lead to clogged tips, which can lead to mistints, resulting in extra costs and wasted product. Traditional and re-designed dispensing machines require routine maintenance for proper performance. Typically, a daily 10 minute routine maintenance with a tool similar to a paperclip to clear the tip is sufficient. Clogged dispenser tips are a bigger issue for retailers who do not use the colorants as often, or for specific colors that are not used often, regardless if waterborne or solvent-based.

However, there may be numerous reasons for mistints. A recent article about The Home Depot described how they have virtually eliminated mistints by adding bar code scanners at each dispensing unit. Different colors require different bases; their biggest source of mistints was when retail staff pulled the wrong base. The bar code scanners eliminated this issue, hence virtually eliminating mistinting.

Staff visited several local retail outlets and found a near zero-VOC colorant being used in a conventional carousal dispenser. The retail staff stated that they do not use that dispenser often and have to clear the dispenser tips prior to tinting a coating if it had not been used for a few days. AQMD staff also found a near zero-VOC colorant being used at a major big box retail outlet. The staff at that store explained that customers were extremely happy with the new

colorant, because it is a more concentrated colorant that provides greater hiding power. The newer, improved near zero-VOC colorant system results in fewer coats to achieve the same coverage, hence less paint being used by the consumer, and less time is required per painting project. The retail staff explained that they do conduct more maintenance, 10 minutes each morning to clear the tip. The dispenser that included a humidification system, and therefore was supposed to be equipped with a sponge, which was missing, simply had a cover that slips over the tip when it is not being used.

Staff also spoke with several colorant dispenser manufacturers. According to them, the biggest improvement that can be made to avoid mistints is to switch to an automated dispenser. One of the manufacturers has designed an automated dispenser that is comparable in price to the manual carousal dispenser. Retrofits can also be made to dispensers to mitigate the tip drying issue, including caps and sponges to keep the tips from drying.

Staff initially proposed a 10 g/L VOC limit on colorants with an effective date of January 1, 2013. This limit was proposed based on the feedback received regarding colorants that approach zero-VOC. Several coating manufacturers and manufacturers of the dispensing equipment have indicated that increasing the VOC level to 50 g/L will help mitigate the tip drying issues, as well as the potential film property issues. Additionally, the dispenser manufacturer provided feedback that the addition of some solvent may help with lubricity and dispensing accuracy. Staff revised the proposal to a 50 g/L VOC limit with an effective date of January 1, 2014.

Aside from regulatory pressure or a switch to low-VOC colorants, manufacturers and retailers have been transitioning to more sophisticated dispensing equipment that is equipped with pumps with greater sensitivity, humidification systems, and other advancements. A new trend is to tint small paint samples, where the dispenser has to be capable of delivering a small fraction of an ounce of colorant. According to dispenser manufacturers, all of the new dispensers are capable of delivering near zero-VOC colorants, so a switch to a dispenser capable of tinting a sample size of paint will also be capable of dispensing near zero-VOC colorants.

Staff estimates that the baseline emissions from the use of conventional colorants are 3 tpd. This assumes that 80% of the flat and non-flat coatings sold in the AQMD are tinted at the point of sale with an average of 4 ounces of colorant containing 325 g/L VOC of Material. The volume estimate is conservative, as other coating categories are also tinted but to a lesser extent, i.e. primer, specialty primers, and stains. The volume of colorant added and the average VOC was based on feedback from members of industry. The volume of colorant added varies widely depending on the desired color; light or pastel colors require as little as 0.5 ounce while deep colors can require up to 12 ounces. Staff used the most recent CARB survey for the volume of flat and non-flat coatings that will be tinted. CARB conducts a survey of architectural coatings sold into California every four or five years. The most recent survey data is from 2005 indicating total coatings sold in California during 2004. The 2004 sales do not represent the height of the volume of coatings sold, which more than likely occurred in 2006 during the peak real estate activity. As the economy recovers, staff estimates that the emission reductions that can be achieved will be higher than those indicated from the 2008 and 2009 data.

The current emissions inventory for architectural coatings does not include colorants; they are an unregulated source of emission. Table 2~~1~~0 summarizes the current emissions inventory

estimated from colorants and the estimated reductions, based on the proposed VOC limit of 50 g/L.

TABLE 20: ESTIMATED EMISSION REDUCTIONS FROM COLORANTS

	CARB Sales Volume 2004 (gal)[1]	**Emission Inventory (tpd)[2]**	**Emission Reductions (tpy)**	**Emission Reductions (tpd)**
Flat & Non-Flat	25,608,202	3.0	1,018	2.8

1. Assumes 80% of the volume is tinted at the point of sale.
2. Assumes an average of 4 ounces of colorant added per gallon, at VOC of Material 325 g/L.

AVERAGING COMPLIANCE OPTION

In November 1996, the AQMD Governing Board amended Rule 1113 to include an Averaging Compliance Provision (ACO) as a flexibility option providing a more cost-effective and flexible approach for manufacturers *to transition compliant product lines* into the marketplace. To use the ACO successfully, a manufacturer must be able to distribute sufficient volumes of products with VOC content below applicable limits in order to offset the excess emissions from products with VOC content above the limits. One limitation of the ACO, as discussed during the 1996 adoption and 1999 amendment of the ACO, is it requires a manufacturer to have a broad array of commercial products, with sufficient volume of sales of products that are below the applicable VOC limit. Staff has heard from many manufacturers who feel that the ACO program has become anti-competitive; lower-VOC products, typically with a higher cost, cannot compete with the higher-VOC, lower cost, averaged products. The numbers of manufacturers who utilize the ACO has decreased from 10 manufacturers in 2007, to 6 manufacturers electing to utilize the ACO for the 2011 compliance period.

There are alternative products for most, if not all of the high-VOC coatings that are currently being averaged, that are below, and in some cases well below the current VOC limit. Manufacturers have invested substantial funds for reformulation and commercial introduction of these low-VOC product lines and expect them to remain in the marketplace due to the market demand for low-VOC coatings. This trend is clearly reflected in the emissions data summarized in Table 1.

Recently, the Environmental Protection Agency (EPA) expressed concern over the ACO in Rule 1113 which resulted in a partial disapproval of the State Implementation Plan (SIP). They stated that the ACO does not follow the recommendations of the EPA's Economic Incentive Program (EIP) guidance. The EPA finds that the ACO does not fulfill the EIP's environmental benefit principle, and it exceeds the maximum recommended averaging period of 30 days or less. Staff is proposing to phase-out the ACO by January 1, 2015, and is working with EPA to reduce the number of categories included in the ACO in lieu of the environmental benefit. The ACO provision allows manufacturers to offset 100% of the emissions from coatings above the VOC limits with coatings below the VOC limits. An environmental benefit could be implemented by only allowing, for example, 90% of the emissions from coatings above the limit to be offset, while the remaining 10% of emissions would be considered an environmental benefit. Staff is working with the EPA to satisfy their recommendations without overly burdening the manufacturers who have relied on the flexibility provided by the ACO. Staff is not proposing to

limit the ACO period to 30 days; that would be overly burdensome and effectively eliminate the ACO. Instead, staff is proposing to limit the eligible categories and eventually phase-out the ACO over a longer time period, as a transition period for manufacturers who participate in the ACO program.

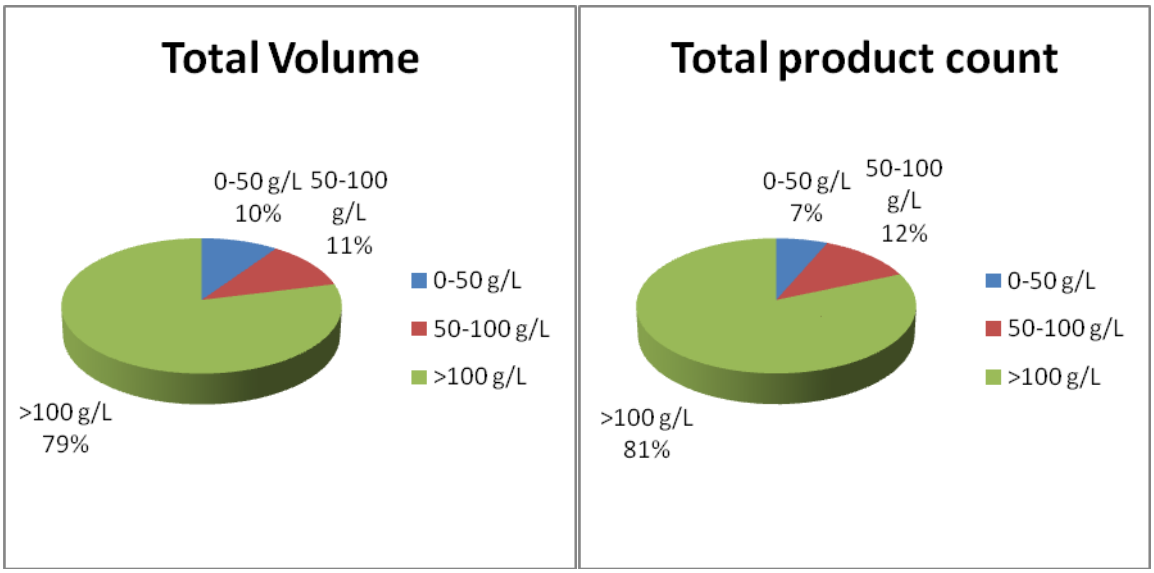
Staff is proposing to lower the maximum allowable ceiling limits to the 2003 Rule 1113 VOC limits, and reduce the number of categories eligible for the ACO, which could provide a greater environmental benefit than the 10% proposed by the EPA. Furthermore, this approach reflects the currently available technology and minimizes any "anti-competitive" impacts from this flexibility provision. Staff is proposing to remove the following categories from the averaging provision since the categories are being subsumed in the proposed amendment: fire retardant coatings, high gloss nonflats, quick dry primers, sealers, and undercoaters and quick dry enamels. The following categories are also being proposed for removal since they are not being averaged to a large extent: bituminous roof primers, roof coatings, waterproofing concrete/masonry sealers, waterproofing sealers, and zinc rich industrial maintenance primers.

To reflect the removal of coating categories in the ACO, the ceiling limits in the Table of Standards will be removed for the coating categories that are no longer included in the ACO. Ceiling limits will only be included for those coatings that are still eligible to be included in the ACO.

Staff is also proposing to remove Specialty Primers and PSU's from averaging. Staff has been approached by many manufacturers who have had technological breakthroughs resulting in low- and near zero-VOC specialty primers (average $20 /gallon). Those manufacturers are unable to compete with lower-priced specialty primers (average $15 /gallon) with a higher-VOC content that are sold through the ACO; therefore, staff is proposing to eliminate this category from the ACO to stimulate greater market penetration of the new generation of low-VOC specialty primers. Staff is proposing to remove the PSU's to address potential rule circumvention that may occur if manufacturers re-categorize the Specialty Primers to PSU's.

Figure 5 summarizes the Specialty Primers data based on Rule 314 submittals for the calendar year 2009. The figures clearly demonstrate that the majority of the sales are the high-VOC averaged products.

FIGURE 5: TOTAL VOLUME/PRODUCT COUNT BY VOC CONTENT – SPECIALTY PRIMERS



Figures 6 and 7 demonstrate the sales of Specialty Primers by VOC content. These figures also clearly show the preponderance of the high-VOC averaged specialty primers sold under the ACO.

FIGURE 6: SPECIALTY PRIMER VOLUME PRODUCT BREAKDOWN

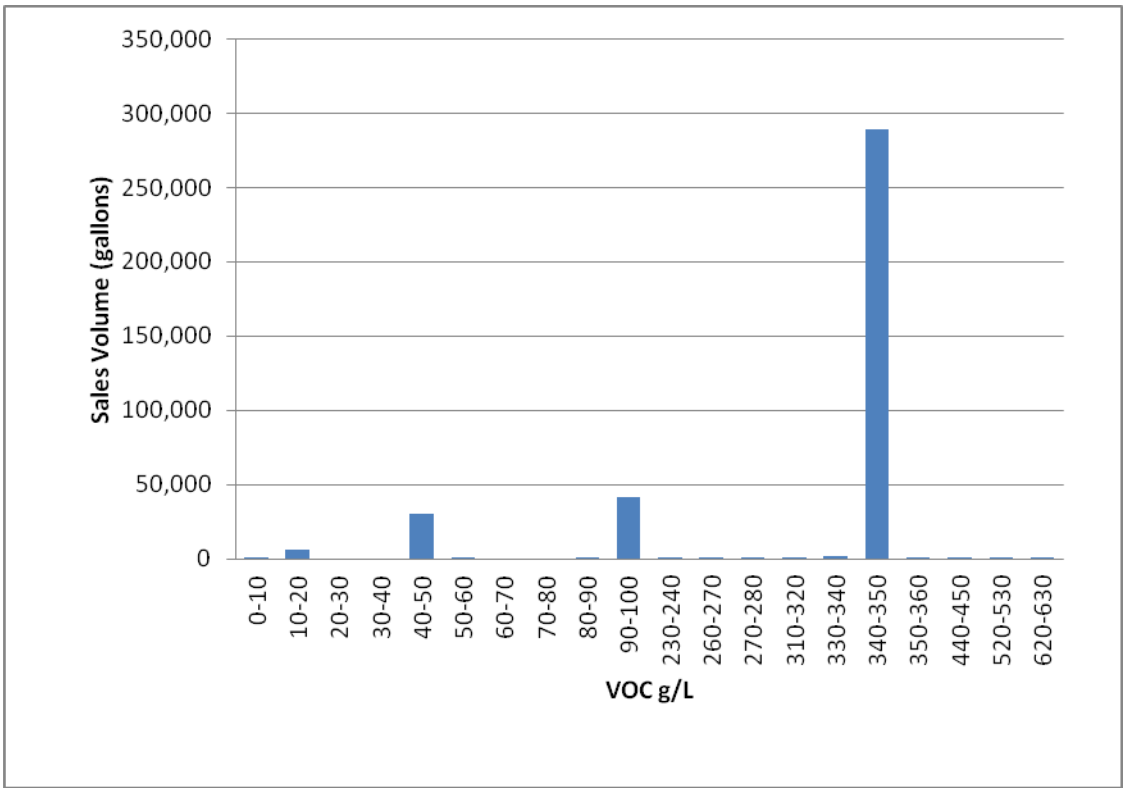


FIGURE 7: SPECIALTY PRIMER PRODUCT COUNT BREAKDOWN

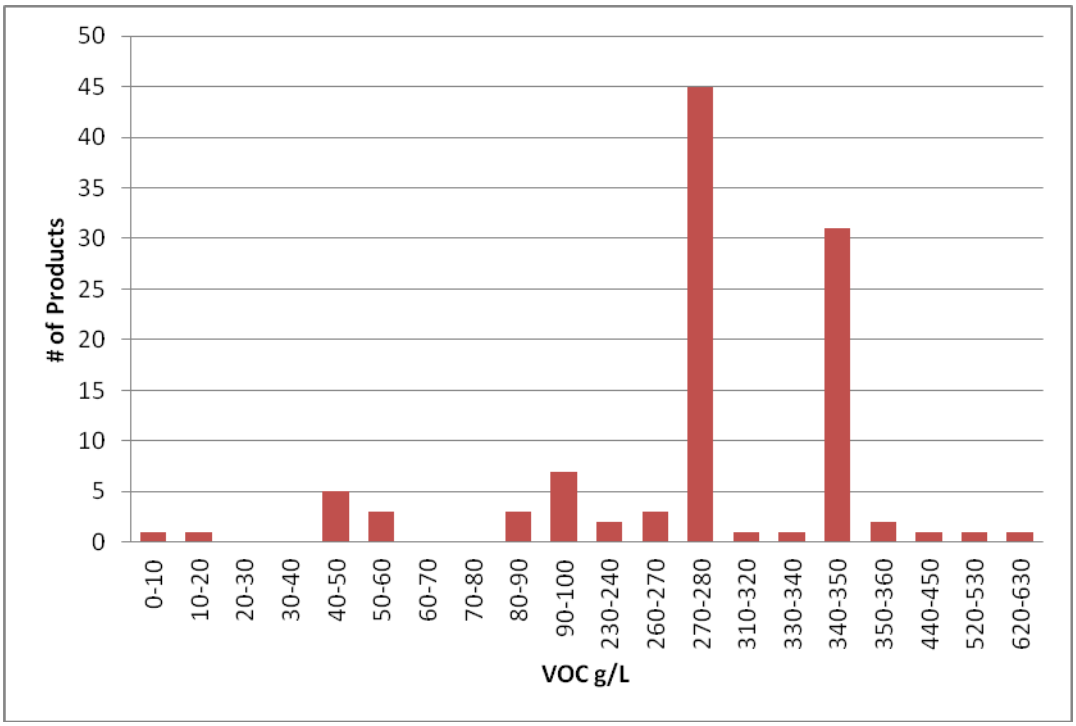


Table 2~~2~~1 shows the gallons of Specialty Primers and PSU's both above and below the VOC limit. The gallons above the VOC limit represent averaged products and are from the Final Reports that a manufacturer participating in the ACO program must submit. The table also shows the sales weighted average VOC of coatings for the products above and below the VOC limit.

TABLE 21: TOTAL GALLONS AND SWA VOC OF SPECIALTY PRIMERS AND PSU

Category	Year	Total Gallons VOC <=100 g/L	SWA VOC Coating (g/L)	Total Gallons VOC >100 g/L	SWA VOC Coating (g/L)
Specialty Primer	2009	78,396	43	248,380	342
PSU	2009	3,308,069	70	121,107	121

While almost all audited ACO plans show an emissions benefit (i.e., their Actual vs. Allowable Emissions ratio is below 1), this proposal is to address potential anti-competitive impacts that may be occurring as a result of the ACO The emission reductions summarized in Tables 21 and 22 represent reductions that are beyond the reductions that were anticipated to be achieved when the VOC limit of the coating categories were reduced to a VOC limit of 100 g/L. The emission reductions claimed when the VOC limits were reduced assumed that the products were formulated to meet the 100 g/L VOC limits, and did not take credit for products that are in the

marketplace with VOC content below the limits. This is clearly illustrated in the SWA VOC data in Table 18, which is well below the current limit. Previously, this credit was used to offset the emissions from the higher-VOC products included in the ACO plans.

Table 2~~3~~2 demonstrates potential emission reductions that are achieved by removing the PSU and Specialty Primers category from the ACO. Staff is relying on 2009 ACO Final Reports for the emission reductions calculation since that is the latest complete set of reviewed data available. The 2009 calendar year is also the first year where all of the VOC limit reductions had occurred and the ability for companies to average was also diminished. Further, the volume of waterproofing concrete/masonry sealers (WPCMS) is also included in the calculation in Table 19 since they were included in the 2009 ACO plans:

TABLE 22: POTENTIAL EMISSION REDUCTIONS FROM REMOVING PSU, SPECIALTY PRIMERS & WPCMS FROM ACO

Year	Total Gallons VOC >100 g/L	Emissions (tpy)	Emissions (tpd)
2009	371,741	326	0.9

Table 2~~4~~3 summarizes potential emission reductions that are achieved by completely phasing out the ACO by 2015:

TABLE 23: POTENTIAL EMISSION REDUCTIONS FROM ACO PHASE OUT

Year	Total Gallons Above VOC Limits	Emissions (tpy)	Emissions (tpd)
2009	928,134	112	0.3

Numerous manufacturers, including some that participate in the ACO, support the elimination of the ACO, since they have successfully developed and brought to the marketplace, products with a VOC content below the existing limit, and on numerous occasions, have commented that they will continue to offer the low-VOC products based on a shift in consumer demand for lower-VOC products.

REQUIREMENTS AND PROHIBITIONS

General Prohibition Class II Exempt Compounds

Staff is proposing to add a general prohibition against the use of Class II exempt compounds listed in Rule 102 – Definition of Terms, in excess of 0.1%, other than cyclic, branched, linear, or completely methylated siloxanes (VMS). Staff recognizes that Group II compounds have potential toxic health risks as well as being contributors to upper-atmosphere ozone depletion and other potential environmental impacts.

VOC Labeling Requirement

Staff is proposing to strengthen the labeling requirements for the VOC content on coatings. Staff has worked closely with manufacturers to craft a requirement that would have the least fiscal impact, while still having the desired effect. It is frequently difficult for consumers and AQMD staff to locate VOC information on coating labels. The compromise reached is to separate the VOC information so that it is not buried within a paragraph, and that the language be conspicuous such that it is likely to be read and understood by an ordinary individual under customary conditions of purchase or use. Staff will allow three years for this requirement to take effect so that manufacturer will not have to destroy any labels that have already been printed.

EXEMPTIONS

Small Container Exemption

The Small Container Exemption (SCE) was adopted to allow for small niche applications that may not be able to meet the lower limits in the Table of Standards. Both the Federal AIM Rule and the CARB SCM contain a SCE. There are areas where staff acknowledges that a higher-VOC product may actually result in lower emissions, such as touching up a widget, including a fence, a door, or a window, that was originally coated in a shop with a high-VOC coating, rather than re-painting the entire widget. In addition, there are areas where specialty coatings are used in very small volumes, and a lower-VOC alternative is not available. One example is a primer used on recycled rubber floors in order to paint stripes for sporting activities. Coatings will typically not stick to the rubber without this high-VOC primer. Very small quantities are required to prepare the flooring for the painting the stripes. The emissions that result from this primer is much lower than if a wood floor was installed that required regular staining and sealing. The SCE is also useful for transitional purposes when the VOC limits in Rule 1113 are lowered.

Staff initially proposed phasing out the SCE, however based on numerous comments and concerns, has reconsidered the complete phase-out, as well as requiring a VOC ceiling limit and quantity restrictions. The feedback that staff received during the rule development process is that the SCE is essential and should not be limited. Manufacturers and the ACA stated they would prefer a greater financial disincentive in the form of an increased fee in Rule 314 to any restrictions to this exemption. Staff will work on the increased fee later this year when Rule 314 is amended.

Staff is proposing to clarify the rule language to indicate that coatings sold in small containers are not entirely exempt from Rule 1113, but only exempt per the Table of Standards and paragraph (c)(1), (i.e. the VOC limits). This change will ensure that the labeling requirements apply, including VOC information. The VOC content of the coating is not only essential for enforcement staff, but also for the consumers trying to make informed decisions when purchasing coatings.

Staff is also proposing to change the small container exemption for one quart or less to one liter or less. This is intended to provide consistency with the units used to describe the VOC content, grams per liter, and is consistent with the SCM and the Federal AIM Rule. One liter is equal to 1.057 quarts.

Another issue being addressed in this amendment is the "bundling" of coatings sold at retail outlets. There have been multiple instances where rule circumvention has been found in regard to the SCE. The first example is a manufacturer who sold 20 quarts inside a 5-gallon bucket. The intent was for the consumer to empty the quarts into the bucket, essentially enabling the manufacturer to sell 5-gallons of a high-VOC coating under the SCE. In another example, a manufacturer bundled four quarts into a "contractors pack," essentially allowing the manufacturer to sell one gallon of a high-VOC coating under the SCE. The intent of the anti-bundling language is to prevent the manufacturer from marketing and selling multiple containers in excess of one liter, but not from shipping multiple containers to a retail outlet, or from preventing the retail outlet from boxing or bagging multiple small containers together.

The prohibition of bundling is also not intended to apply to multi-component coatings where one part is not functional without the other part. The small container exemption would only apply to multi-component coatings if the volume sold as combined pursuant to manufacturers' instructions is less than one liter (1.057 quart). In other words, to qualify for the small container exemption, Part A plus Part B must be less than or equal to one liter.

Shipment Outside the District

The rule contains an exemption for coatings sold in the District for shipment outside of the District or for shipment to other manufacturers for repackaging. Staff expanded this exemption to include coatings that are supplied, offered for sale, marketed, manufactured, blended, repackaged or stored in the District for shipment outside of the District. After several working group discussions, staff believes that the rule should not be prescriptive, and that a manufacturer may follow any procedure to demonstrate that a non-compliant coating is for shipment outside of the District. For example, a manufacturer to supply a notification for the next step in their supply chain, i.e. the direct downstream recipient that the coatings are not intended to be used within the AQMD. Manufacturers can accomplish this in numerous ways such as: preprinted slips on the pallet, a statement on the product label, i.e. "not compliant in AQMD" or "not intended for sale in SCAQMD," or provide electronic warnings that the coatings are not intended for use in the AQMD. A manufacturer may choose to notify the direct downstream recipient with every shipment or whenever there is a change to a product that may affect the compliance status of the product.

RULE CLEAN-UP

Fire-retardant coatings

The fire-retardant category was subsumed into the coating category for which they are formulated effective January 1, 2007. Staff is proposing to eliminate all references and requirements to fire-retardant coatings.

Rust preventative/IM coatings

Staff is striking out the language in paragraph (c)(2) that includes requirements for rust preventative coatings used for industrial use. Since rust preventative coatings and industrial maintenance coatings now have the same VOC limits, this requirement is unnecessary.

Remove reporting requirements

With the adoption of Rule 314, the reporting requirements in Rule 1113 are now redundant. Staff is proposing to eliminate the reporting for small containers sales, recycled coatings, shellacs, and specialty primers.

Test Methods
Staff is removing the reference to the Flame Spread Index. This method was cited in the definition of Fire-Retardant Coatings, which has been removed.

General
Staff is proposing to remove the effective dates that have now passed (i.e. past phase-in dates for labeling of rust preventative coatings, specialty primers and concrete curing compounds for roadways and bridges). In addition, provisions that have passed their sunset have been struck (i.e. the small business exemptions and the technology assessment for flat coatings).

SUMMARY OF POTENTIAL EMISSION REDUCTIONS

Table 2~~5~~4 estimates the VOC reductions that may potentially result from the proposed VOC reductions based on Rule 314 data, and the 2005 CARB survey of coatings sold in 2004.

TABLE 24: SUMMARY OF EMISSION REDUCTIONS BY CATEGORY

Coating Category	Current VOC Limit	Proposed VOC Limit	Emission Reductions (tpy)
Dry Fog coatings	150	50	7
Fire Proofing Coatings	350	150	3
Form Release Compounds	250	100	59
Graphic Arts Coatings	500	150	1
Mastic Coatings	300	100	83
Metallic Pigmented Coatings	500	150	5
Total (tpy)			158
Total (tpd)			0.4

Table 2~~6~~5 summarizes the potential emission reductions projected from the proposed rule change based on effective dates:

TABLE 25: SUMMARY OF EMISSION REDUCTIONS

Rule Change	Emission Reductions (tpd)		
	2012	2014	2015
Remove PSU & Specialty Primer from ACO (see Table 22)[1]	0.9	0	0
Reduce VOC Limits (see Table 25)[2]	0	0.4	0
Limit VOC of Colorants (see Table 20)[3]	0	2.8	0
Phase out ACO (see Table 23)[1]	0	0	0.3
Total Emission Reductions (tpd)	4.4		
Total Emission Reductions (tpy)	1,614		

1. 2009 ACO Final Report Data.
2. Sales volume for 2005 CARB data, SWA VOC from 2009 Rule 314 Data.
3. Sales volume from 2005 CARB data.

The overall estimated emission reductions from the proposed amendment are 4.4 tons per day (tpd) by January 1, 2015.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

The proposed amendments to Rule 1113 - Architectural Coatings has been reviewed pursuant to CEQA and an appropriate CEQA document has been prepared, and will be considered for certification concurrently with the consideration for adoption of PAR 1113.

COST EFFECTIVENESS

Table 2~~7~~6 summarizes the cost effectiveness of reducing the VOC content of the coating categories.

TABLE 26: COST EFFECTIVENESS OF VOC LIMIT REDUCTIONS

Category	Incremental Cost	Emission Reductions (tpy)	Gallons Affected Annually	Cost/ton
Dry Fog	$0.91	7	79,211	$11,090
Fire Proofing	$2.97	3	2,586	$2,845
Form Release	$0	59	133,371	$0
Graphic Arts	$4.77	1	2,424	$11,975
Mastic Coatings	$5.68	83	172,032	$11,742
Metallic Pigmented	$13.19	5	4,601	$12,952
Total Emission Reductions (tpy)		**158**		
Total Emission Reductions (tpd)		**0.4**		
Total Annual Cost			**$1,129,318**	
Overall Cost Effectiveness			**$7,172**	

Table 2~~8~~7 summarizes the estimated cost effectiveness of limiting the VOC content of colorants used at the point of sale.

TABLE 27: COST EFFECTIVENESS OF VOC LIMIT ON COLORANTS

Estimated Emission Reduction (tpy)	1,018
Estimated Emission Reduction (tpd)	2.8
Annual Incremental Cost for Daily Maintenance	$6,270,700
Annual Incremental Cost for Dispenser Maintenance	$66,300
Incremental Cost for Colorant	$1,800,576
Total Annual Cost	$8,137,577
Overall Cost Effectiveness	$7,990

The following assumptions were used when estimating the cost effectiveness of the VOC limit on colorants:

- All retailers will increase their maintenance by 10 minutes a day, regardless if they upgrade their dispenser, with an estimated labor cost of $30 per hour. Staff has received feedback that this maintenance is already conducted with the use of conventional

colorants, and based on the type of dispenser used, may not be necessary. The new dispensers with caps and humidification units may actually have fewer clogs than traditional colorants used in dispensers without caps or humidification units. As a worst case scenario, staff is assuming that the estimated 3,436 retailers will perform an additional 10 minutes of daily labor. The number of retailers is based on Distributors Lists reported under Rule 314 in the AQMD. This is likely an overestimate since many of the distributors that are reported are not actually retail outlets.

- Small retailers will keep their old dispensers. Small retailers who do not sell a considerable amount of paint will not make the investment to automated units. Staff visited a local retailer who is currently using a conventional carousel colorant dispenser using a colorant labeled as zero-VOC. The clerk at the store stated that they did need to clear the dispenser tips if the dispenser has not been used for awhile. Those dispensers are capable of handling the proposed 50 g/L colorants. The assumption regarding the increased daily maintenance was based on this feedback, the feedback from other retail staff and several dispenser manufacturers.

- Medium retailers and manufacturers with retail outlets may purchase new equipment, if they do not already have dispensers capable of handling near zero-VOC colorants. These businesses rely on paint sales and it will be worth the capital investment to purchase dispensing equipment that is designed to handle near zero-VOC colorants. Many medium retailers are already making the switch or made the switch to newer colorant dispensers, but not necessarily due to the near zero-VOC colorant. The new trend is to tint small paint samples, where the dispenser has to be capable of delivering a small fraction of an ounce of colorant. According to dispenser manufacturers, all of the new generations of dispensers are capable of handling near zero-VOC colorants, so a switch to a dispenser capable of tinting a sample size of paint will also be capable of dispensing near zero-VOC colorants. Staff did not include an incremental cost for replacement units as feedback from coating manufacturers and dispenser manufacturers have indicated either that there is no increase in the cost of dispensers capable of delivering low-VOC colorants or that market demand has actually lowered the cost of new dispensers. Staff did include an increase in annual maintenance for dispensers using low-VOC colorant at $300/year. This additional cost can be for additional calibrations or other maintenance.

- Big Box Retailers who sell the majority of coatings (e.g., The Home Depot and Lowe's) are in the process, or have already switched to equipment capable of dispensing near zero-VOC colorants. The switch in equipment was not the result of the proposed changes to the rule, so other than the 10 minutes of maintenance per day, staff is not including any incremental cost increase.

- Based on feedback from colorant manufacturers, the cost of colorants will increase by approximately 5% for the short term, but over time, low-VOC colorants will likely be less expensive than conventional colorants due to the reduction in the amount of glycols and the cost that varies based on the price of crude oil. As a worst case scenario, staff assumed an increase of $1.80 per gallon of colorant for the cost effectiveness analysis.

Table 28 summarizes the cost effectiveness of removing the Specialty Primers, PSU's and Waterproofing Concrete/Masonry Sealers (WPCMS), effective January 1, 2012. The table also summarizes the cost effectiveness of the phase-out of the ACO, effective January 1, 2015.

TABLE 28: COST EFFECTIVENESS OF CHANGES TO ACO

Category	Incremental Cost	Emission Reductions (tpy)	Gallons Affected Annually	Cost/ton
Specialty Primer	$4.79	319	248,380	$3,732
PSU	-$3.07	6	121,107	-$66,110
WPCMS	$3.28	1	2,254	$4,939
Total Emission Reductions		326		
Total Annual Cost for Limiting Categories				**$824,850**
Overall Cost Effectiveness for Limiting Categories				**$2,531**
Phase-out	-$0.07	112	928,134	-$613
Total Annual Cost for Phase Out				**-$68,583**
Total Annual Cost for changes to ACO				**$756,257**
Overall Cost Effectiveness for change to ACO				**$1,727**

The cost analysis of the ACO phase out is based on the average incremental cost for the compliant coatings versus the high-VOC averaged coatings in the following categories: clear wood finishes, flat coatings, non-flat coatings, and rust preventative coatings. For some of these coating categories, the manufacturers charge a premium for the high-VOC averaged coatings. Those coatings are not readily available as only manufacturers who can maintain an ACO plan can offer these coatings for sale within the AQMD; hence there is little competition to drive down the cost. This is different from the usual scenario where the low VOC coatings are typically more expensive, partially so that manufacturers can recoup the research and development costs of formulating the new low-VOC coating.

Table 29 summarizes the overall cost effectiveness of the proposed amended rule.

TABLE 29: OVERALL COST EFFECTIVENESS

Category	Total Annual Cost	Emissions Reduction (tpy)	Emissions Reduction (tpd)	Cost/ton
VOC Limit Reductions	$1,129,318	158	0.4	$7,172
VOC limit on Colorant	$8,137,577	1,018	2.8	$7,990
ACO Changes	$756,257	438	1.2	$1,727
Total	$~~9,046,010~~10,023,152	1,614	4.4	
Overall Cost Effectiveness				**$6,211**

LEGISLATIVE AUTHORITY

The California Legislature created the AQMD in 1977 (The Lewis Presley Air Quality Management Act, Health and Safety Code Section 40400 et seq.) as the agency responsible for developing and enforcing air pollution controls and regulations in the Basin. By statute, the AQMD is required to adopt an AQMP demonstrating compliance with all state and federal ambient air quality standards for the Basin [California Health and Safety Code Section 40440(a)]. Furthermore, the AQMD must adopt rules and regulations that carry out the AQMP [California Health and Safety Code Section 40440(a)].

AQMP AND LEGAL MANDATES

The California Health and Safety Code requires the AQMD to adopt an AQMP to meet state and federal ambient air quality standards in the South Coast Air Basin. In addition, the California Health and Safety Code requires the AQMD to adopt rules and regulations that carry out the objectives of the AQMP.

DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE

Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the AQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the hearing. The draft findings are as follows:

Necessity - The AQMD Governing Board has determined that a need exists to amend Rule 1113 - Architectural Coatings to clarify rule language, reduce emissions from the use of architectural coatings, including previously unregulated colorants that are used to tint the coatings at the point of sale, and improve rule compliance.

Authority - The AQMD Governing Board obtains its authority to adopt, amend, or repeal rules and regulations from Health and Safety Code Sections 39002, 40000, 40001, 40440, 40702, and 41508.

Clarity - The AQMD Governing Board has determined that the proposed amendments to Rule 1113 - Architectural Coatings, are written and displayed so that the meaning can be easily understood by persons directly affected by them.

Consistency - The AQMD Governing Board has determined that PAR 1113 - Architectural Coatings, is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, federal or state regulations.

Non-Duplication - The AQMD Governing Board has determined that the proposed amendments to Rule 1113 - Architectural Coatings do not impose the same requirement as any existing state or federal regulation, and the proposed amendments are necessary and proper to execute the powers and duties granted to, and imposed upon, the AQMD.

Reference - In adopting these amendments, the AQMD Governing Board references the following statutes which the AQMD hereby implements, interprets or makes specific: Health and Safety Code Sections 40001 (rules to achieve ambient air quality standards), 40440(a) (rules to carry out the Air Quality Management Plan), and 40440(c) (cost-effectiveness), 40725 through 40728 and Federal Clean Air Act Sections 171 et sq., 181 et seq., and 116.

REFERENCES

40 CFR Part 59, Subpart D – National Volatile Organic Compound Emission Standards for Architectural Coatings, September 11, 1998.

COMMENTS AND RESPONSES

The following are the comment letters and emails, which have paragraphs numbered to reference staff responses. The body of the comment letters and emails has been copied below in their entirety, including any omissions or syntax errors. The public comments were received during the commenting period from January 20, 2011 to February 1, 2011. Additional comment letters received after the close of comments are also included.

The following are comments from the American Coatings Association – Comment Letter #1.

AmericanCoatings ASSOCIATION

January 28, 2011

Ms. Heather Farr
Office of Planning, Rule Development, and Area Sources
South Coast Air Quality Management District (SCAQMD)
21865 Copley Drive
Diamond Bar, CA 91765

RE: January 20, 2011, SCAQMD Public Workshop on Proposed Amended Rule 1113: Architectural Coatings; ACA Comments

Dear Ms. Farr:

The American Coatings Association (ACA) [1] appreciates the recent changes that staff has made to the proposed rule amendments, and submits the following comments on the Draft January 12, 2011, Proposed Amended Rule 1113.

1. Given the unexpected massive reduction in VOC emissions from architectural coatings, drastic amendments to Rule 1113 are not needed at this time

ACA believes that given the reported Rule 314 emissions data for 2008 and 2009, SCAQMD has already met – and exceeded by half -- its AQMP goal, so there is no reason or it is not necessary to enact stringent amendments to Rule 1113 at this time. If the District wants to amend Rule 1113, ACA suggests partnering with industry to amend the rule for the purposes of general cleanup, improving clarity and consistency, and harmonizing Rule 1113 with the ARB 2007 SCM in the manner we proposed at the working group meeting, and even possibly set reasonable limits for colorants. We see no necessity, however, for amending the rule at this time to impose lower limits on VOC content or restrict flexibility provisions, especially since the latest Rule 314 data indicate that emissions from this category are less than half the amount projected in the District's emissions inventory for this timeframe. 1-1

This trend is partly due to recessionary impacts on sales, but also due to market-driven low VOC technology transfer beyond what is required. Further, the trend in average material VOC content indicates that even if sales volumes increase, emissions will not return to former levels (2004

[1] The American Coatings Association (ACA) is a voluntary, nonprofit trade association working to advance the needs of the paint and coatings industry and the professionals who work in it. The organization represents paint and coatings manufacturers, raw materials suppliers, distributors, and technical professionals. ACA serves as an advocate and ally for members on legislative, regulatory and judicial issues, and provides forums for the advancement and promotion of the industry through educational and professional development services.

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average MVOC: 97 g/L; 2008: 34 g/L; 2009: 30 g/L). Bottom line, the District has met its planning goals and industry should be given credit via less aggressive amendments to Rule 1113.

If, over ACA's objection, the District proceeds forward with the severe proposed amendments to Rule 1113, we respectfully submit the following comments for your consideration.

1-1 con't

2. Small Container Exemption

The small container exemption is critical given the fact that the SCAQMD Rule 1113 limits are the most stringent in the US. This exemption provides a "safety valve" or a last resort option that allows for traditional product in problem situations when the limits in categories become more stringent or a category goes away. It is important to note that district staff consistently mentioned that if companies cannot meet lower limits they can always use the small container exemption – this is not the case anymore – as limits get lower and lower end users need a "relief valve".

There are also a host of niche coatings that manufacturers can now sell in small containers that would need to be categorized if the small container exemption is modified or removed. These include:

- Tile touchup
- Porcelain tub/sink touchup
- Magnetic coatings (turns wall into magnet)
- Chalkboard coatings (turns wall into chalkboard)
- White board coatings (turns wall into a white board)]
- Camouflage coatings
- Projection TV. coatings (turns wall into projection TV. screen)
- Wood stains and wood stain markers
- Appliance touch-up
- Samples
- Touch-up for wood products (allow proper repairs following installation of kitchen cabinets, bathroom vanities, doors and millwork).
- Coatings that are not manufactured as architectural coatings but may become subject to Rule 1113 by virtue of being applied to stationary structures or their appurtenances; e.g., hobby paints, artist colors, marine varnish, and various kinds of touch-up paints.

1-2

An example is that many Original Equipment Manufacturing (OEM) product manufacturers will send small container "touch-up" product so that products can be touched-up in the field – this is very common since the shop applied product may be oil based and Rule 1113-compliant product is water based, so the coatings are not equivalent from a performance, application, and appearance perspective. This will result in a patchy appearance and increased corrosion of the

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touched up areas. This could also result in a negative impact on the overall emissions due to an earlier repainting to address these performance and appearance problems.

Given the excess emission reductions, and the need for this "safety valve" ACA recommends the District not amend the small container exemption beyond adding "anti-bundling" language. ACA partnered with the District by providing suggested language, and we request the District partner with Industry and retain the small container exemption. If over ACA's objection the District does amend the small container exemption, ACA requests the following needed changes to the proposed rule:

- Given the niche products above it is likely that additional categories will be needed, ACA suggests flat coatings and stains be added exempted as well.
- Bundling language is problematic: "or" should be "and" in (f)(1)(B).
- ACA suggests the following edit:

"The provisions of the Table of Standards and paragraph (c)(1) of this rule shall not apply to any architectural coatings in containers having capacities of one quart liter or less, excluding clear wood finishes and pigmented lacquers, until December 31, 2012, provided that the ~~following~~ conditions **in Sections A and B below** are met." ..... and Waterproofing Concrete/Masonry Sealers, provided that the ~~following~~ conditions **in Sections A and B below** are met."

- ACA requests the anti-bundling language allow small containers be sold in shipping boxes.
- For categories that may be excluded from small container exemption, a three-year sell through is needed so that products in the pipeline and on shelves can be sold and not disposed of as hazardous waste.
- If the amended rule were to require labeling of small containers, a minimum three-year transition period is needed.
- ACA suggests the rule be consistent with 2007 SCM – "one liter (1.057 quart) or less".
- If the District does not add Conversion Varnish and Conjugated Oil Varnish categories to Rule 1113, ACA requests that these be included in the small container exemption.

1-2 con't

3. **Markets for Sale** - this terminology is confusing. The definition of "market" is covered by current rule (to supply, sell, offer for sale). Since this could pull in Ebay, Craigslist, Amazon, where they notified of the change and implications? ACA is also concerned about national, state and regional TV, print and radio ad campaigns that could be problematic from a "markets for sale" perspective.

1-3

3

4. **District deleted "for use"** – the assumption that products sold in District are used in the District is problematic as a basis for enforcement – ACA believes that the District is overreaching and does not have authority to do so. We are especially concerned about warehouse materials/products being shipping through the District, these must be exempted. This deletion also pulls in homeowners into the rule – ACA does not believe that homeowners understand this implication. A full CEQA analysis should be performed to determine the fiscal impact and compliance cost for homeowners. 1-4

5. **Worksite Definition and "stores at worksite"** - ACA suggests deleting "vehicle" from definition so this does not apply to contractor vehicles. Further, "regular maintenance" occurs at almost every building, and it does not seem logical that the District intended to pull in every building. Further, the definition should not apply to manufacturing sites and job shops (for example OEM surface coating operations). 1-5

6. **"Manufacturer"** definition should exclude repackaging and relabeling at stores. 1-6

7. **Quick-Dry Enamel and Quick Dry Primer** – needs to be transitioned like other CA Air Districts have done – ACA suggests the following:

"Effective January 1, 2013, the Quick-Dry Primer, Sealer, and Undercoater category and Quick Dry Enamel category are eliminated and coatings meeting either definition will be subject to the VOC limit for the applicable category in the Table of Standards, except in [most restrictive and sell through provisions]." 1-7

8. **Nonflat High Gloss Coatings** – similar to the Quick-Dry Enamel and Quick-Dry Primer categories – ACA suggests the following transition language:

"Effective July 1, 2011, the Nonflat High Gloss Coatings category is eliminated and coatings meeting this definition will be subject to the VOC limit for the Nonflat coatings category, except in [most restrictive and sell through provisions]." 1-8

9. **Default Limit** – this should be set at 50 g/L to eliminate the potential for arbitrary and capricious categorization of "default" products. Also ACA suggests dropping the language "and less any colorant added to tint bases until January 1, 2014, at which time the limit drops to 100 grams of VOC per liter of coating (0.83 pounds per gallon)." 1-9

10. **Section (c)(2)** – ACA suggests deleting the language "except anti-graffiti coatings" 1-10

11. **Colorants** – ACA suggests listing the limit for Solvent Borne Industrial Maintenance Coatings (600 g/L) first, then the limit for All Other Architectural Coatings (50 g/L) next. In 1-11

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addition, ACA suggests that the rule needs to be clarified that colorant limits apply only to colorants added at the point of sale.

ACA once again requests a higher colorant limits for IR Heat Reflective Pigment Colorant Dispersions, since heat reflective wall coating technology is based upon the use of Complex Inorganic Color Pigment Technology (CICP). The colorants that contain these unique pigments are only available from a few specialized colorant suppliers. The CICP pigments are very high in density and formulation of commercially viable machine dispensable colorants is very challenging. The CICP colorants have been found to be more prone to settling, caking, clogging, and canister collaring than conventional colorants when used in automated colorant dispensing equipment. This is the case even at conventional VOC levels of 450-550 grams per liter. Lowering the VOC level of these special colorants to below 50 grams per liter VOC will be very problematic. Because of the added environmental benefits of heat reflective coating (described below) and the fact that this a specialized niche, it is proposed that a limit of 400 grams per liter VOC be considered for this important class of colorants. 1-11 cont'd

It is important to note that the performance of CICP pigment containing heat reflective wall coatings have been validated by the U.S. Department of Energy. The many benefits of this technology are becoming more widely known and accepted. By reducing the heat uptake of buildings, the cooling energy demands are reduced. This means less electricity needs to be generated by power plants for this purpose resulting in reduced power plant emissions. Also important is that this reduction occurs during the peak demand daylight hours. Because the CICP IR pigments are incredibly durable, these coatings do not need to be repainted due to color fading for many years longer than ordinary paint. This translates into eliminating the VOC emissions that would have occurred due to the skipped painting cycle requirements.

12. **Faux-Finishing/Japan -** ACA suggests setting the limit for the clear topcoat at 200 g/l then lowering this to 150 g/l since these clear coats are not "typical" they are required to provide long term color and gloss stability and protection for the color coats, also adequate open time is needed to create the faux finish appearances. In addition, there is a typo in Definition (17) Clear Topcoats - needs to be finished. 1-12

13. **Stone Consolidants (450 g/l) -** consistent with the 2007 SCM, this category and limits should be added to Rule 1113 since they are needed for preservation of historic buildings in the SCAQMD. The landmark Wilshire Boulevard Temple in downtown Los Angeles is a prime example of a historic structure in need of this technology. The exterior is literally falling apart one grain at a time. The California Office of Historic preservation has stated its opinion that they must be consulted as part of the Rule 1113 CEQA review due to the potential for substantial adverse change to historical resources under their jurisdiction. ACA will be submitting CEQA comments in this regard. 1-13

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14. **Reactive Penetrating Sealers (350 g/l)** – The Reactive Penetrating Sealer niche category was created in the CARB 2007 SCM and needs to be added to Rule 1113 for infrastructure protection. ACA is aware that Caltrans has completed a report in April 2010 entitled "Report on Non-Film Concrete/Masonry Waterproofing Products". This report indicates that Caltrans recently determined that Rule 1113 compliant alternatives lack the performance necessary for infrastructure protection and are requesting this category be adopted. ACA will be submitting CEQA comments in this regard since effective salt screening products are needed near the ocean in SCAQMD especially considering the use of pretensioned concrete structural components, in which it is vital to protect the reinforcement cables from corrosion. Since the Rule 1113 revision is a project with regional significance and has the potential to impact transportation infrastructure, we believe that the District is obligated to formally consult with Caltrans as well as the California Office of Historic preservation as part of its CEQA analysis. 1-14

15. **Conversion Varnish(725 g/l)/Conjugated Oil Varnish (450 g/l)** – These are very specialized small "niche" high-end coatings with unique properties that are needed in specific applications, and are generally applied only by professional contractors. ACA requests SCAQMD include these in Rule 1113. If can't include in Rule 1113, ACA requests the District add these to small container exemption. 1-15

16. **Tub and Tile Refinishing (420 g/l)** – ACA suggests adding this category and limit consistent with the 2007 SCM, however please note that a manufacturer of these products is working on 150 g/l product. Staff has stated that these products fall under IM, however IM are prohibited from interior use. 1-16

17. **Primers, Sealers & Undercoaters (PSU)**

ACA is concerned that SCAQMD is considering whether to lower the VOC limit for the Primer, Sealer & Undercoater category, since products in this category are extremely important functional coatings that must perform well in adhering to substrates, and are often a last resort in solving difficult application issues. Also, these products are designed for a wide range of substrates and exposure conditions. While coatings manufacturers may be able to meet the 50 g/L limit for Flats and Non-Flats, they must have good PSU coatings to do so. Of course, when a primer fails, not only the primer must be replaced – new topcoats are necessary, too. This causes increased emissions and excess consumption of energy and material resources. ACA will be submitting CEQA comments with regards to this issue. 1-17

The District mentioned that when they lowered to PSU category limits to 100 g/l that they acknowledged the fact that lower VOC PSUs needed greater surface preparation, have less tolerance, and painters need to follow instructions that's why they included a long

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implementation timeframe. With 50 g/L topcoats, lowering the PSU limit further is very problematic.

While primers at lower VOC contents may be available for all substrates, their performance limitations make them inadequate as substitutes for higher VOC, better performing products. Consequently, such substitutions lead to higher rates of coating system failure or reduced longevity, or necessitate multiple primer coats that would otherwise be unnecessary. To the extent that better performing, lower VOC primers might be formulated with new technologies just becoming available, the lab work and field tests would require a period of time much longer than a year and a half.

Also, this category represents the 3rd largest category, and a limit of 50 g/l would eliminate 60% of available products on the market – nearly 550 products – in roughly a year and a half. This amount of time is insufficient to reformulate and test this number of products. District data also suggests that with every step lower in VOC content, performance attributes suffer accordingly. There is a tradeoff and we must expect a performance drop with lower VOC contents, but this is not acceptable with PSU coatings. It is clear from the bimodal data (or inverse bell curve) results indicate the need for higher VOC PSUs for specific applications including wood, metal, masonry and concrete tilt-up. Most PSUs at or below 50 g/L are applied to interior drywall. Critical substrates that need the 100 g/l limit include: non-bituminous roof primers, exterior wood (especially wood with high tannin extractives e.g., redwood and cedar); stucco; exterior concrete and masonry (especially with high alkalinity, efflorescence, or heavy surface chalking); and interior substrates that are smoke-, fire-, or water-damaged. Also, certain types of primers perform significantly better at higher VOC levels, including thin-film elastomeric primers, and the higher performing multi-purpose primers that can be used on various substrates including metal.

1-17 cont'd

In addition, a review of the District selected products that meet the proposed 50 g/L limit (see Attachment A) there are several problematic issues with the 50 g/L products:

- several products are meant for interior use only
- several products require two coats are recommended for metals and wood with tannins;
- several products do not mention use on metal or wood
- several mention use on primed and previously painted metal
- several are two component epoxies which are problematic for consumer use (ease of use, pot life issues)
- several are elastomeric coatings
- several mention use of higher VOC block fillers for masonry, metal primers, and sealers for wood
- none are intended for use in a roofing or waterproofing environment

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18. Non-bituminous Roof Primer (100 g/l) – If over ACA's objection the District lowers the limit for the PSU category to 50 g/l, ACA supports the 3M comments and recommends the District include a new category for Non-bituminous Roof Primers since the 50 g/l PSU identified do not include any non-bituminous roof primers.

As noted above, several of the identified primers are intended for interior applications. As such, they are subjected to conditions that are significantly less harsh that those experienced outdoors. Of the products that are listed for exterior use, none are intended for use in a roofing or waterproofing environment. There are non-bituminous rood primers on the market for use on low-slope (*i.e.,* approximately horizontal, or "flat") roofs, such as those on commercial and industrial buildings. These coatings are used to maintain and restore existing roof membranes. They extend the life of the existing roof for 10-20 years, thus delaying the cost and disposal issues associated with replacing a roof.

On low-slope roofs, ponding water occurs. Ponding water, combined with the thermal cycling that roofs undergo, can lead to coating and/or primer adhesion failure if the primer is not durable. The coating blisters and delaminates, and water can leak into the building at these failure points. In order for the primer/coating system to be effective, the primer must adequately adhere to the overcoat as well as to the existing roof membranes, the conditions of which are highly variable due to weathering effects. Because of the highly variable substrate conditions, achieving and maintaining the desired adhesion is very challenging and requires sufficient VOCs.

ACA requests the District create a product category of (non-bituminous) roof coating primers, with a VOC limit of 100 g/L. Overall, the volume of primers I question is relatively small but is important in order to ensure the successful performance of the low-VOC roof coating (and the delivering of the attendant cost and environmental benefits).

1-18

19. Specialty Primers – CARB is the process of completing a technology assessment to analyze any technical issues between new waterbased and traditional oil based products. This work is to be completed later this summer, ACA suggests adding a statement in the Board Resolution that staff address any CARB findings and recommendations.

As with the Primer Sealer category, specialty primers are critical to blocking stains. In addition, a review of the District selected products that meet the proposed 50 g/L limit (see Attachment A) there are several problematic issues with the 50 g/L products:

- several products do not mention use on metal or wood
- several products are meant for interior use only
- several mention use of higher VOC block fillers for masonry, metal primers, stain killer, and sealers for wood
- not for masonry, galvanized or zinc coated surfaces or use only on painted metal

1-19

8

20. **Sell Through Provision** – this provision should apply not only to changes in VOC limits, but also changes to definitions and labeling requirements. ACA suggest the following edit:

"Any coating that is manufactured prior to the effective date of **a new rule provision** ~~the applicable limit specified in the Table of Standards,~~ **and that was compliant at the date of manufacture** ~~has a VOC content above that limit (but not above the limit in effect on the date of manufacture),~~ may be sold, supplied, offered for sale, or applied for up to three years after the specified effective date….."

1-20

21. **Metallic Pigmented -** a review of the District selected products that meet the proposed 150 g/l limit (see Attachment A) there are several problematic issues with the 150 g/l products:

- One product is a high-solids mastic – 90% solids
- One product is not a metal pigmented coating but a primer and the product says it's less than 180 g/l.
- Another is not a metallic pigmented coating it is a 2 part polyurethane

1-21

22. **Sanding Sealers** – ACA suggests the following transitional language:

" SANDING SEALERS are clear wood coatings formulated for or applied to bare wood for sanding and to seal the wood for subsequent application of coatings. Until January 1, 2013, to be considered a sanding sealer a coating must be clearly labeled as such."

1-22

23. **Retail Outlet Definition** – it is unclear what this term "supplied" means – we need additional clarification.

1-23

24. **Sale or Use of Stains and Lacquers in Areas above 4,000 feet** – ACA requests the District provide a list of zip codes where these products may be sold and used.

1-24

25. **Waterproofing Concrete/Masonry Sealers –** ACA suggests including "excluding stains" as follows:

"WATERPROOFING CONCRETE/MASONRY SEALERS are clear or pigmented sealers, including concrete lacquers that are formulated for sealing concrete and masonry to provide resistance against water, alkalis, acids, ultraviolet light, and staining, or enhancing appearance **excluding stains."**

1-25

26. **VOC Definition -** clarify that reporting is not for coatings manufacturers but for TBAC manufacturers.

1-26

9

27. **Economic burden** – district needs to consider cost per ton for categories in which less than 1 lb/day emission reductions would be achieved. Denominator very small – costs very high. Manufacturers have same reformulation costs for minor incremental changes as they do for major reformulations. 1-27

28. **Addition of "fields and lawns"** is problematic – raises more issues than resolves and impact other AIM rules. 1-28

29. **Enforcement** – what is the impact of adding the words "each gallon of" to the fine matrix 1-29

30. **Concrete Lacquers** – this term should be defined 1-30

31. **Swimming Pool Coatings** – the current limit is missing from Table 1 1-31

32. **Averaging –** the timing of when the various coatings can be averaged does not make sense, also the District should add Zinc Rich Primers since these are sold by the job. 1-32

33. **Gonioapparent Characteristics for Coatings** – Method E284 only defines this term, it does not state how to determine it. 1-33

34. **Exemption of TBAC and DMC**

ACA once again requests exemption of TBAC and DMC for AIM coatings. With regards to TBAC, the survey indicated that 50% of manufacturers that are using TBAC in IM formulations; Those currently not using TBAC – 25% are conducting research; 54% are conducting research on using TBAC for other categories of coatings.

If TBAC and DMC cannot be exempted for all AIM coatings at this time, ACA requests an initial limited exemption in those product categories such as exterior applications (Concrete Curing Compounds, Concrete Surface Retarders, Driveway Sealers, Form Release, Fire Proofing Exterior, Roof coatings and primers, swimming pool coatings, traffic coatings, waterproofing concrete/masonry) and in indoor application where vapors are vented outside the house and coatings are applied by licensed contractors wearing respiratory protection (such as the tub & tile refinishing category as well as others). 1-34

DMC should be exempted for Industrial Maintenance coatings since these coatings are applied outside by professional contractors. TBAC/DMC should be exempted for Anti-Graffiti coatings since this category was pulled from the Industrial Maintenance category were TBAC was already exempted.

10

It is important to note that many other CA Air Districts have exempted TBAC and DMC and others have exempted these compounds with requirements for permits and necessary information to perform a health risk assessment.

If SCAQMD has done any recent risk assessment analysis for Tbac or DMC for use in AIM coatings – ACA requests information on assumptions used in these assessments.

1-34 cont'd

35. Reactivity

ACA suggests SCAQMD work with the coatings industry to develop a Reactivity-based Alternative Compliance Option (RACO) that would allow a company to achieve compliance with Rule 1113 VOC limits by means of a District-approved RACO program. A manufacturer's RACO program would apply reactivity criteria to the VOC content of covered products and ensure equivalent or lower ozone formation potential compared to products complying on a mass VOC basis. ACA suggests this discussion topic be added to a future working group meeting.

1-35

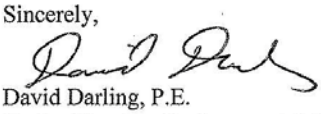
36. Atmospheric Availability Credit

ACA again requests that the District account for the fact that certain coatings components remain in the substrate or coating structure and therefore are not "available" for ozone formation. While the ACA PACES work continues and a draft report is expected soon, ACA would like to discuss how the atmospheric availability issues can be addressed in Rule 1113. Hopefully, either the VOC calculation or the VOC inventory can be adjusted accordingly.

Thank you for the opportunity to comment. If you have any questions or need any further information on the issues discussed here, please feel free to contact me at (202) 462-6272.

1-36

Sincerely,



David Darling, P.E.
Senior Director, Environmental Affairs

*** Sent via email ***

11

Responses to Comment Letter #1

Response to Comment 1-1
Staff concurs that the coatings industry has made great strides in lowering the VOC emissions from architectural coatings. Staff agrees that this can in part be attributed to market demands as well as the financial incentives in Rule 314. Table 1 of the Staff Report summarizes sales and emissions data for 2008 and 2009, and clearly shows that in addition to the reduction in the VOC content, the coatings industry has experienced several years of depressed sales due to the economic recession. Even with these reduced emissions, the coatings industry is one of the largest sources of VOC emissions under the AQMD's purview. The colorants alone, which are currently not included in the emission inventory for architectural coatings, account for 3 tons per day of VOC emissions. Due to the extreme non-attainment status for the AQMD, staff is under a directive to achieve all feasible emission reductions, as included in the 2007 Air Quality Management Plan (AQMP), specifically Control Measure CM#2007 MCS-07 – Application of All Feasible Measures. This control measure explicitly lists coatings and solvents rules to achieve additional VOC reductions. During the rule development process, staff has conducted considerable outreach and research to determine reductions that are feasible and achievable. Through this process, staff received extensive and well supported comments that resulted in extended implementation dates and the elimination of several coating categories from the proposed VOC limit reductions. The current proposal is reasonable, achievable, and cost-effective and it reflects full implementation of currently available technology.

Response to Comment 1-2
Staff spent considerable time and effort in studying and evaluating the small container exemption (SCE), and recognizes the benefits of the SCE for manufacturers and end users for niche products, as well as repair, touch-up and maintenance. Based on comments received, staff has revised the rule language and is not proposing to further limit the categories that can use this exemption or to phase out the exemption at this time. This change addresses the concerns pertaining to additional categories, as well as the touch-up and issues represented by original equipment manufacturers.

Staff does not agree that this exemption is a necessary safety valve for the VOC limits in Rule 1113. Aside from a few niche categories or new categories that may be developed, there are ample products available in the market place that meet the VOC limits in Rule 1113. Staff will continue monitoring the sales of products in small containers, and plans to revisit either limiting or phasing out the exemption in the future.

Over the years, enforcement staff has encountered considerable rule circumvention due to this exemption, resulting in removal of the clear wood finish category from the SCE in 2006. Based on comments received, staff has revised the initial proposal which would have limited the eligible categories, and is proposing to clarify that while coatings in small containers do not need to comply with the VOC limit requirements, they do need to comply with other rule requirements, such as the labeling requirements. Further the proposal prohibits bundling of containers practiced by some manufacturers to sell multiple small containers in one package. The current proposal further incorporates additional clarifications to address comments from industry.

Response to Comment 1-3
Staff has included a definition for the term 'market' that limits the term to third-party vendors who solely bring together buyers and sellers, including but not limited to catalogs, and e-commerce businesses (e.g., EBay, Amazon). The definition also explicitly indicates that for the purpose of Rule 1113, 'market' does not include promoting or advertising coatings. Staff has contacted potential affected parties (Grainger, EBay, Craigslist, McMaster-Carr, & Amazon) and forwarded PAR1113 for their information.

Response to Comment 1-4
Staff feels that it is indeed reasonable to assume that a coating sold in retail outlets within the District will be used in the District. However, that assumption is rebuttable for situations where a local manufacturer or distribution warehouse makes or stores a coating, staff has further clarified that when evidence shows coatings supplied, sold, offered for sale, marketed for sale, manufactured, blended, repackaged or stored in the District are for shipment outside of the District, they would be exempt. This exemption fully covers the coatings industry's concern regarding coatings stored in the AQMD.

In regard to the comment on the implication of the rule change on homeowners, Rule 1113 has always applied to any person who specifies or uses architectural coatings, including homeowners. Based on limited enforcement resources, which are more efficiently utilized where a large amount of coatings are sold, stored or may be used, inspectors generally do not make compliance stops at private residences; however, enforcement staff would investigate if there were public nuisance complaints regarding odors from the use architectural coatings at a private residence, and based on the findings from the investigation, may issue notices to homeowners. As a result, staff does not anticipate any environmental impacts resulting from this rule change due to any fiscal impacts on homeowners.

Response to Comment 1-5
An exemption for non-compliant coatings stored in work trucks would create a loophole in the proposed rule language. Worksites frequently store their coatings in trailers which could be interpreted as a work truck. Worksites could simply store all coatings in a truck or trailer to circumvent the rule language. Staff is not proposing to exempt work trucks but did include clarification in the staff report regarding who would be responsible for non-compliant coatings stored in work trucks. Further, the definition of worksite has been revised to indicate any location where architectural coatings are stored and applied, based on comments from the public.

Staff is not proposing to exempt manufacturing sites or job shops considering that coatings operations for maintenance purposes are performed at those facilities. The building that houses a manufacturing operation where non-Rule 1113 coating operations occur would still need to be painted and maintained. The provision would apply to the architectural coatings that are used to paint the building e.g. floors, wall, doors, etc. Non-compliant products that are not for use at the facility but are stored for sale or shipment outside the AQMD, would be exempt under paragraph (f)(2)(A):

> *Architectural coatings supplied, sold, offered for sale, marketed, manufactured, blended, repackaged or stored in this District for shipment outside of this District or for shipment to other manufacturers for repackaging.*

Response to Comment 1-6
Staff addressed industry's concern with the definition of manufacturer by exempting retail outlets where labels or stickers may be affixed to containers or where colorant is added at the point of sale. Staff does not feel that a further exemption for repackaging or re-labeling is necessary. It is a common practice for manufacturers to repackage or re-label (add their own label) coatings that were produced by another manufacturer (e.g., toll manufactured coatings). In those instances, whomever's name is on the label is considered the manufacturer. When a non-compliant coating is found in the field, it is the manufacturer whose name is on the label that is ultimately responsible for that coating. For this reason, staff does not intend to exempt repackaging or relabeling in the definition of a manufacturer.

Response to Comment 1-7
Staff addressed the concern regarding Quick Dry Enamels and Quick Dry PSUs by including an effective date of July 1, 2011. While the change is proposed to take place shortly after rule adoption, it will not result in a change in the VOC limit or the labeling of the products. Coatings can still be labeled as quick dry enamels, but for the purpose of Rule 1113, those coatings will be considered non-flat coatings effective July 1, 2011. Since there are no impacts of this change, a longer implementation period is not included.

Response to Comment 1-8
The comment includes a request for a phase-in period of July 1, 2011 for the elimination of the non-flat high gloss category. Since there is no VOC or labeling implication for the removal of the non-flat high gloss category, staff is not proposing any phase out period. Coatings can still be labeled as non-flat high gloss coatings, but for the purposes of Rule 1113, those coatings will be considered non-flat coatings. The proposed change is for rule simplification since there are currently no differences in the VOC limits or labeling requirements between non-flat coatings and non-flat high gloss coatings.

Response to Comment 1-9
Staff agrees with industry's proposal to lower the VOC limit for the default category to 50 g/L and has revised the proposed rule language accordingly.

Response to Comment 1-10
For rule clean up purposes, the requirement which was included in paragraph (c)(2) has been moved to paragraph (c)(7). This requirement states that industrial maintenance coatings, except non-sacrificial anti-graffiti coatings, shall not be applied or solicited for residential use unless they would be exposed to the extreme environmental conditions described in the definition of an industrial maintenance coating. The comment is to remove the clause "except non-sacrificial anti-graffiti coatings" since a separate category has been established for those coatings. Since the Non-Sacrificial Anti-Graffiti Coating category is included as a subcategory for Industrial Maintenance Coatings, staff feels this language is still necessary to be included.

Response to Comment 1-11
Based on the comment regarding the Table of Standards 2, revised PAR 1113 includes proposed VOC limits for architectural coatings, excluding IM, Waterborne IM Coatings and Solvent-Based IM coatings. In addition, staff has added language to clearly state that the VOC limits for colorants only apply to colorant added at the point of sale.

Staff contacted several manufacturers of heat reflective or complex inorganic color pigment (CICP) technology who stated that these colorants can be formulated and are available with a VOC content of less than 50 g/L. Furthermore, based on a discussion and subsequent emails with the manufacturer that expressed concern about the VOC content of colorants with CICPs, they do not add these colorants at a point of sale, so PAR1113 would not apply to their specific use. Lastly, staff agrees with the energy savings benefits of heat reflective coatings.

Response to Comment 1-12
Based on feedback from industry, staff has proposed to increase the proposed VOC limit for clear topcoats used in Faux Coatings System from 50 g/L to 100 g/L. Staff has received feedback that this limit is feasible. In addition, the omission in the definition has been addressed. The missing language was for the labeling requirements for clear topcoats.

Response to Comment 1-13
PAR1113 includes a definition for Stone Consolidants that limits the use of these products only when used for restoration and/or preservation projects on registered historical buildings that are under the purview of a restoration architect. This category also includes a proposed VOC limit of 450 g/L, as requested. Staff intends to monitor this category through the Rule 314 Annual Quantity and Emissions Reports to ensure that sales do not exceed the estimated usage, and may consider sales caps for this category if actual sales are well above the estimated usage.

Response to Comment 1-14
PAR1113 includes a definition for Reactive Penetrating Sealers that limit the use of these products only when used for restoration and/or preservation projects on registered historical buildings that are under the purview of a restoration architect or for use on reinforced concrete bridge structures for transportation projects located within 5 miles of the coast or above 4,000 feet elevation. Staff shared the proposed definition with the interested parties and did not receive any negative feedback. This category also includes a proposed VOC limit of 350 g/L. Staff intends to monitor this category through the Rule 314 Annual Quantity and Emissions Reports to ensure that sales do not exceed the estimated usage, and may consider sales caps for this category if actual sales are well above the estimated usage.

Response to Comment 1-15
Staff has conducted research on the need for an additional coating category with a higher VOC limit for specific types of Clear Wood Finishes referred to as Conversion Varnishes. There has been extensive research on this coating category, including a technology assessment conducted in 2004 and 2005. The results of that assessment supported the 275g/L VOC limit, which was implemented on July 1, 2006. Details of that study can be found on the AQMD website at: http://www.aqmd.gov/hb/2006/February/060236a.html. In addition, staff has received feedback from manufacturers that there are compliant waterborne clear wood finishes that perform as well if not better than the high-VOC counterparts.

One reason for this request is that Clear Wood Finishes are not allowed under the Small Container Exemption. They were excluded from this exemption due to rule circumvention that resulted in significant excess emissions. Since conversion varnishes were one of the major

coating types utilized for coating hardwood floors in the past, allowing this type of clear wood finish to again be sold in the AQMD would, eliminate the emission reductions achieved by removing these coatings from the small container exemption. In addition, the application of conversion varnishes releases formaldehyde, and therefore has some health and safety issues that would be created compared to the waterborne products in use today. For these reasons, staff is not proposing to add a high-VOC category for conversion varnishes.

Staff also considered the need for an additional category for conjugated oil varnishes. These are solvent-based, high-VOC Clear Wood Finishes that cannot be reformulated to a lower-VOC limit due to the nature of the oils they are composed of. Based on research conducted, including reviewing variance requests seeking relief, staff did not find sufficient evidence that a high-VOC Clear Wood Finish is needed at this time since there are sufficient compliant waterborne technologies available. This is demonstrated by the fact that there have not been any variance requests for Clear Wood Finishes with a VOC content higher than the Rule 1113 limit.

Response to Comment 1-16
Staff has researched the tub and tile category and has not found sufficient evidence of the need for a separate category. These coatings currently fall under the IM category with a VOC limit of 100 g/L. Previous staff analysis clearly shows a preponderance of acrylic, epoxy, and urethane-based coatings that can be used for tub and tile refinishing. In addition, these coatings are typically sold in small containers, since most tub and tile coverage area is limited to no more than 100 square feet. Coatings sold in small containers are exempt from the VOC limits in Rule 1113, thus providing additional flexibility for manufacturers of these coatings. The rule language that prohibits the application of IM coatings for residential use only applies to coatings that do not meet the extreme environmental conditions described in the definition of IM coatings. Since tub and tile coatings do meet the definition of IM coatings, especially under the abrasion resistance requirements, they are permitted for use in residential settings.

Response to Comment 1-17
Based on comments received pertaining to the originally-proposed VOC limit of 50 g/L for PSUs, staff has reconsidered the proposal and is not proposing any additional VOC reductions limit for PSUs at this time.

Response to Comment 1-18
See response to 1-17.

Response to Comment 1-19
Based on comments received pertaining to the originally-proposed VOC limit of 50 g/L for specialty primers (SP), staff has reconsidered the proposal and is not proposing any additional VOC reductions limit for SPs at this time.

Response to Comment 1-20
Based on feedback received during working group meetings, staff extended effective dates for rule changes sufficiently such that an additional sell through period is not necessary. In regard to the labeling requirements, manufacturers requested a three year period to implement the change so they could use their current labels. If the rule included an additional three years to sell through of old labels, the rule change would not be effective for six years. Staff feels that the

proposed three years to implement the change is sufficient without an additional sell through period. A similar change is the labeling change for sanding sealers. This change will re-categorize coatings from the PSU category to the Clear Wood Finish category. Since 2006, Clear Wood Finishes are no longer included in the small container exemption. Staff proposed an effective date of July 1, 2013 for this change to allow a two year transition, which should be sufficient to sell through products that are currently on retail shelves.

Response to Comment 1-21
The list of coatings provided for review only encompass a selection of the coatings currently available at the proposed VOC limit and should not be considered all-inclusive. As presented in the numerous working group meetings, there are 18 manufacturers that have reported the sales of 63 products that are categorized as metallic pigmented coatings. Staff can provide the comprehensive list of these products upon request.

As for the 3 products mentioned, the coating that is referred to as a mastic in the product data sheet does not meet the Rule 1113 definition of a mastic. The coating is applied at a maximum of 7 – 10 mils in one or two coats. The Rule 1113 definition specifies that the coating is applied at least 10 mils dry in a single coat. That coating would fall under the metallic pigmented coating category. The primer is not a metallic pigmented coating, but an acid blocking primer specified for certain metallic pigmented coatings, that page was inadvertently included with the other coatings. The last product mentioned is a high performance, zero VOC acrylic polyurethane which can include metallic pigments resulting in a coating that meets the definition of a metallic pigmented coating. Those coatings have been in use at local theme park to create metallic effects. Staff has reevaluated the last coating included in the list and interprets that coating to be an IM coating. Even though this coating could meet the definition of a MPC based on the metallic content, the coating is a polyurethane which could be tinted to several colors, including a clear or a metallic, the specified usage is for IM applications. The product data sheet states that the intended application is for theme parks, industrial maintenance and heavy equipment applications. Many of the products used at theme parks are IM coatings due to the extreme conditions created by the number of daily visitors, typically requiring coatings that withstand “repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial solvents, cleaners, or scouring agents” as well as “exterior exposure of metal structures”.

Response to Comment 1-22
PAR1113 includes language to address the necessary transition time for the proposed change to the definition of sanding sealers. This change will re-categorize some PSUs to sanding sealers; therefore, they will no longer fall under the small container exemption. The extended transition time will allow ample time for those select coatings to be phased out.

Response to Comment 1-23
Staff agrees with the comment and has removed the word ‘supplied’.

Response to Comment 1-24
The following list includes the cities and communities within the AQMD that may qualify for the exemption in paragraph (f)(2)(D):

CITY NAME	ZIP CODE
Lancaster	93536
Castaic	91384
Angelus Oaks	92305
Valyermo	93563
Mentone	92359
Idyllwild	92549
Cabazon	92230
Banning	92220
Lebec	93243
Big Bear City	92314
San Bernardino	92407
Lytle Creek	92358
Cedarpines Park	92322
Sylmar	91342
Yucaipa	92399
Crestline	92325
Palmdale	93550
Mt Baldy	91759
Lake Hughes	93532
Forest Falls	92339
Acton	93510
Running Springs	92382
Wrightwood	92397
San Bernardino	92404
Santa Clarita	91390
Newhall	91321
Tujunga	91042
La Canada Flintridge	91011
Morongo Valley	92256
White Water	92282
Mountain Center	92561
Palm Springs	92264
Palm Springs	92262

Note: Most of the zip codes listed are not completely above 4,000 feet, therefore, a more precise indication of the areas above 4,000 feet can be found by referencing the map included as Appendix B. An interactive map will also be included on the website www.aqmd.gov.

Response to Comment 1-25

Staff concurs with the comments~~. Staff is not revising the definition for waterproofing concrete/masonry sealers at this time and therefore the language to 'excluding stains' is not necessary.~~ and has revised the definition for waterproofing concrete/masonry sealer.

Response to Comment 1-26
Staff has provided clarification in the staff report (Definitions section, page 9) regarding the implications of the change in the VOC definition pertaining to reporting of tBAc.

Response to Comment 1-27
Based on comments pertaining to possible costs of lower-VOC limits, as well as the associated environmental benefits, staff has revised PAR1113 to include only those categories that are cost-effective. The 2007 AQMP, Control Measure MCS-07, indicates that cost-effectiveness cannot be determined because "all feasible" measure are not known. Nonetheless, MCS-07 commits that the District will continue to analyze the potential cost impact associated with implementing the control measure, conduct research on the newest control technologies, and provide cost effectiveness information. There, a thorough cost-effectiveness of the proposed amendments was conducted and a summary of overall cost-effectiveness is included in the Staff Report, more detailed data is included in the Socioeconomic Impact Analysis Report.

Response to Comment 1-28
Staff included the phrase 'including but not limited to' in regard to the inclusion of fields and lawns. This addition is for rule clarification, as this is a frequently asked question of staff, and is not expected to have any implications on other architectural coatings rules.

Response to Comment 1-29
The change in Appendix A subdivision (J) is to clarify that the penalties for violating the provisions of the ACO apply to every gallon of each product line sold above the VOC limit and not just for each product line sold above the limit. This proposed revision is for clarification, since based on discussions during the development of the ACO Guidance document, staff always intended the violation to apply to each and every gallon of coating sold above the VOC limit if a manufacturer violates any provisions of the ACO.

Response to Comment 1-30
Based on the comment, staff has removed the phrase 'concrete lacquer' from the proposed amended definition of waterproofing concrete/masonry sealers.

Response to Comment 1-31
Staff has addressed the omission in the proposed amended rule language.

Response to Comment 1-32
Staff has addressed the inconsistency in the proposed phase out dates in the ACO. Staff is not proposing to include zinc rich primers to the list of categories that can be averaged since no manufacturer has, or is currently listing zinc rich primers in their averaging plan. Manufacturers must submit the coatings they are proposing to average at the beginning of an ACO period. New coatings must be submitted for review and approval prior to averaging them, and would be considered a modification to the previously approved plan. The ACO provision does not work well when a manufacturer adds coatings on a job-by-job basis and the ACO needs to be well planned to ensure that the actual emissions at the end of the compliance period are below the allowable emissions.

Response to Comment 1-33

Staff is still proposing to keep the method which defines the term gonioapparent; the ASTM method provides a technical definition of gonioapparent which can be measured in a laboratory. The definition states that gonioapparent material change in appearance with change in illumination angle or viewing angle. This can be demonstrated in a laboratory by using multi-angle color measurements.

Response to Comment 1-34
Current Rule 1113 – Architectural Coatings considers tBAc as an exempt VOC when used to formulate industrial maintenance coatings only, considering that these coatings are typically applied by professional painting contractors that use personal protective equipment (PPE), including appropriate respirators. At this time, staff does not believe that it is necessary to expand the categories that can use tBAc as an exempt VOC. Staff is not confident that contractors applying the suggested broad range of coatings are trained in the use of PPE, and would use the appropriate respirators.

Further, in regards to Dimethyl Carbonate (DMC), staff is not proposing any exemptions since, in September 2009, the AQMD's Governing Board rejected delisting DMC due to potential health concerns expressed by the public. Additionally, AQMD staff is working with the California Air Resources Board staff on a consumer/worker exposure health assessment for DMC, which is still in the draft stage. If and when this final health assessment recommends the exemption of DMC as a VOC, the AQMD will consider a proposal to exempt DMC.

In regard to the comment that permits could be required prior to allowing the use of DMC for architectural coatings operations, currently, the use and application of architectural coatings does not require any AQMD permits, thus this approach would not be feasible..

Response to Comment 1-35
Over the past 15 years, AQMD staff has been, and continues to participate in discussions at the federal and state level, to discuss alternative ozone control strategies, including the use of a reactivity-based approach. However, as discussed over the past two years, uncertainty in some Maximum Incremental Reactivity (MIR) values, enforcement, toxics, and formation of fine particulate less than 2.5 micrometers in diameter (PM2.5) continue to be areas that need additional assessment. Staff is studying the viability of a reactivity-based ozone control strategy by actively participating in research projects pertaining to establishing maximum incremental reactivity (MIR) values for different VOCs. For example, staff is actively participating in the North American Research Strategy for Tropospheric Ozone (NARSTO) work related to reactivity. Staff also continues to participate in the following committees: Applications Benefits, Near Term Science, Toxics, Atmospheric Chemistry and PM. Further, staff recognizes the low MIR values associated with the compounds that are considered exempt under the traditional VOC mass-based regulatory scheme as well as the potential flexibility of an alternate ozone control strategy. In concept, staff is not opposed to a reactivity-based approach to control ozone, but based on the state of the science and other comments received, there are several concerns. For example, one of the main concerns is that there may be toxicity associated with some VOC-containing compounds that have a relatively low MIR value. Other issues that need to be considered include the potential for secondary organic aerosol formation, specific consensus methodology, and enforceability. Further, CARB staff has indicated that, effective and efficient enforcement of the aerosol coatings rule, which is a reactivity-based control approach,

has been an issue over the past few years, especially with regard to formulation data and analytical limitations. The EPA is also in the process of developing a "toolkit" that will address SIP equivalency and will include additional enforceability guidelines for a reactivity-based approach. Thus, staff plans to continue working closely with CARB, USEPA, the American Chemistry Council, other industry members and the public to address and resolve these issues prior to proposing a reactivity-based ozone control strategy.

Response to Comment 1-36
The AQMD appreciates the opportunity to continue working with industry on the Paint and Coatings Exposure Study (PACES), and closely monitors the progress. As these studies fully evaluate the fate and availability of solvents used in architectural coatings, and are finalized, the AQMD staff is open to discussions as to how the results may be incorporated into future planning activities and/or regulations.

The following are comments from the Lynondell – Comment Letter #2.

As the developer of TBAC (tert-butyl acetate), Lyondell Chemical submits the following comments on the proposed amendments to rule 1113.

The US EPA exempted TBAC from the VOC definition in 2004, in recognition of its negligible photochemical reactivity (MIR = 0.17g ozone/g). TBAC is now VOC exempt in 49 states and 21 California counties and can be used in 14 other counties that do not regulate VOCs. In 2009, Environment Canada exempted TBAC in architectural coatings and automotive refinishing operations. In 2006, the SCAQMD staff also exempted TBAC in industrial maintenance coatings and zinc-rich primers in rule 1113. The exemption of TBAC was limited to these two categories because OEHHA staff expressed concerns that TBAC may pose a chronic risk to humans due to its metabolism to tert-butanol (TBA). However, no regulatory agency, including OEHHA, has listed tert-butanol (or TBAC) as a carcinogen or reproductive toxin.

There is no evidence that either TBAC or TBA poses a chronic risk to humans. Since 2006, several high quality toxicity studies been conducted on TBAC and its metabolite TBA. These studies confirm that neither compound is genotoxic[1] or poses an acute or chronic risk to humans. In 2010, the Pathology Working Group reviewed the male rat kidney data from the 1995 NTP chronic study that showed a dose dependent increase in benign tumors following TBA ingestion.[2] The PWG concluded unanimously that "under the conditions of this study, TBA-related renal changes in rats posed no risk for humans, and it would be inappropriate to extrapolate TBA-associated renal proliferative changes in rats to humans." The PWG is the fifth panel of toxicologists to independently come to this conclusion since 2003.[3,4,5,6]

[1] McGregor, D.B., et.al. (2005). The mutagenicity testing of tertiary-butyl alcohol, tertiary-butyl acetate, and methyl tertiary-butyl ether in Salmonella typhimurium. *Mutat. Res*. 565:181–189 [2] Hard, G., Cohen, S., Regan, K., Pletcher, J., Bruner, R. (2010). Pathology Working Group Review of Selected Histopathologic Changes in the Kidneys of Rats Assigned to Toxicology and Carcinogenicity Studies of t-Butyl Alcohol in F344/N Rats NTP Study No. 05142-03. [3] NSF International (2003) tert-Butyl Alcohol Oral Risk Assessment Document [4] NSF International (2008) tert-Butyl Acetate Oral Risk Assessment Document.

Other studies have shown that TBAC is not a reproductive or developmental toxicant and that the mouse thyroid tumors observed in the 1995 TBA chronic study were caused by a mode of action to which humans are not susceptible.[7] It is now clear that OEHHA's concerns were unfounded and that TBAC does not pose a health risk when used in architectural coatings. This is particularly evident for coatings applied outdoors by professional contractors and for DIY products that are used infrequently. Therefore, it is not protective of human health or the environment to continue to deny the VOC exemption for TBAC. In fact, it promotes the use of acetone, which is extremely flammable, and PCBTF whose chronic toxicity has not been evaluated. The exemption of TBAC would reduce product hazards, not increase them.

Solvent-based architectural coatings fall into the following categories 1) niche DYI products that are used only occasionally by consumers, and 2) commercial products used by professional contractors. Consumers do not use solvent-based paints occupationally so chronic exposure does not occur. This is acknowledged by the SCAQMD in previous rule 1113 documents:[8]

"Since the application of architectural coatings does not occur continuously over a long period of time, carcinogenic risk and long-term (chronic) non-carcinogenic effects will not be analyzed since they are both based on long-term exposure."

Furthermore, indoor air quality testing[9] using ASTM D5116 Small Chamber Test and Modified California Specification 01350 Test Methods shows that TBAC-based consumer trim paint and floor varnish cannot pose a long-term exposure risk to consumers because 99.9% of the TBAC evaporates in the first 24 hours and residual air concentrations are below the analytical detection limit of 0.3 parts per billion (1.3µg/m3) after 14 days. This level is 30 times below the TBAC odor threshold and 1,000 times below the chronic RfC (safe level). Without chronic overexposure there is no chronic risk, even if a chronic hazard from TBAC actually existed. Therefore, OEHHA's speculative concern about TBAC's chronic toxicity is not only unfounded, but also irrelevant to consumer use of TBAC-containing architectural paints and coatings.

As for contractor use of architectural coatings, they fall into the following categories 1) exterior application, and 2) interior application. Exterior application provides sufficient ventilation to

[5] Shipp, AM., McDonald, T., Vanlandingham, C., 2005. Hazard Narrative for Tertiary-Butyl Alcohol (TBA) CAS Number 75–65– 0, API Publication 4743. [6] Independent Peer assessment for TBAC (2009): http://www.tera.org/Peer/TBAC/index.html [7] Blanck O., Fowles J., Schorsch F., Pallen C., Espinasse-Lormeau H., Schulte-Koerne E., Totis M., and Banton M. (2010). Tertiary butyl alcohol in drinking water induces phase I and II liver enzymes with consequent effects on thyroid hormone homeostasis in the B6C3F1 female mouse. *J. Appl. Toxicol*. 30:125-132 [8] http://www.aqmd.gov/ceqa/documents/2006/aqmd/is_nop/IS_1113.doc

[9] Research Triangle Park Laboratories report 08-106, June 23 2008. RTP labs is compliant with ISO 17025 Standard for laboratories, is a State of Pennsylvania Registered Laboratory and Federal Drug Enforcement Agency & North Carolina Controlled Substances Registered Analytical Laboratory and conducts indoor air quality testing for LEEDS and Green Seal (GS-11) product certifications. http://www.rtp-labs.com/

prevent acute and chronic overexposure to solvents. Interior application of solvent-based coatings can lead to overexposure but is usually avoided through the use of respiratory protection and/or forced ventilation of the space. This is commonly done in operations like tub & tile and kitchen cabinet refinishing. Leading suppliers of tub, tile, and cabinet refinishing paints such as NAPCO ltd. provide professional training of the safe application of these coatings and supply a full line of personal protective equipment, supplied air, and fume exhaust equipment and accessories.[10] Their products also bear labels that warn users of the potential hazards of solvent vapors and suggest NIOSH-approved respiratory protection when using their products. Finally, the OSHA PEL for TBAC is 200ppm which is equal or higher than many of the solvents safely used today.

In summary, it is not health protective to further delay the exemption of TBAC due to unfounded chronic toxicity concerns, especially in consumer products that are used infrequently or in commercial products applied by contractors trained in the safe handling of solvent-based coatings. The use of TBAC instead of more reactive, flammable, and hazardous solvents will allow suppliers to formulate lower VOC products for both consumers and contractors without affecting cost, performance, or compromising worker or consumer safety. It will also reduce 314 fees for a number of producers during this recession and lower the cost of low-VOC coating products for contractors and consumers.

Therefore, we request that TBAC be exempted for all coating categories in rule 1113 and, if not, at least in exterior coatings applied by contractors. These include concrete curing compounds, concrete surface retarders, driveway sealers, form release coatings, fire proofing exterior, roof coatings and primers, swimming pool coatings, traffic coatings, and waterproofing concrete/masonry coatings.

Response to Comment Letter #2

See Response to Comment 1-34 in regard to the ACA's comment to expand the VOC exemption of tertiary butyl acetate. In response to the comment pertaining to indoor use of tub and tile coatings, these products are categorized under the Industrial Maintenance Coatings, as discussed in response 1-16, and therefore can be formulated with tBAc as an exempt solvent. Additionally, as detailed in response to comment #1-1, 95% of the architectural coatings sold in 2009 are waterborne, and are formulated with a very small amount of VOCs, resulting in significant VOC emission reductions. Therefore, staff does not believe that tBAc needs to be exempted for categories other than Industrial Maintenance Coatings.

The following are comments from the Bonakemi, USA Inc – Comment Letter #3.

January 19, 2011

Ms. Heather Farr and Members of the Board
Planning, Rule Development and Area Sources
SCAQMD
21865 E. Copley Drive
Diamond Bar, CA 91765

Re: Proposed Amended Rule 1113 – Architectural Coatings dated January 12, 2011

Dear Ms. Farr and Members of the Board:

BonaKemi USA, Inc. is pleased to have the opportunity to participate and comment on the Proposed Amended Rule 1113 – Architectural Coatings.

BonaKemi USA, Inc. ("Bona") is the market leader in the U.S. of waterborne technology for use in wood coatings. Amongst the products we manufacture are semi-transparent stains, sanding sealers, quick-dry sealers, gym floor paints and varnishes, all of which are regulated under Rule 1113.

Over all, we agree with the proposed changes to Rule 1113. We acknowledge the challenges the South Coast Air Quality Management District has to provide the district with lowering the overall VOC emissions within the district. We appreciate that the District has worked with manufacturers to ensure that that the goals of the district are achieved, while looking at the fiscal impact on manufacturers. We concur with the compromise made in the implementation timing of the amendments; the labeling of products with the VOC content; and the reduction of categories which have a small container exemption.

Yours very truly,

Gerald E. Thompson
Director of Operations and Innovation
BonaKemi USA, Inc.

BonaKemi USA, Inc.
4275 Corporate Center Drive
Monroe, NC 28110-1314
800.872.5515
www.bonakemi.com

Response to Comment Letter #3

Staff appreciates and concurs with the comments from Bonakemi USA, Inc.

The following are comments from the Northrop Grumman Aerospace Systems – Comment Letter #4.

I spoke at the PAR 1113 Public Workshop at the SCAQMD today and place into writing my comments here:

As a matter of good faith and policy, we review our contractor's list of materials that they propose to bring onsite for our approval. One of the approvals pertains to reviewing for compliance with Rule 1113. Once a contractor comes on site, we periodically inspect what we can see at the job site. This hob [sic] site can be construed to have the same definition as the "worksite" in the PAR 1113 definitions. Referencing the Jan 12, 2011 draft of PAR 1113 definition (70), a "WORKSITE means any location where construction or regular maintenance occurs, including architectural coating application."

Our concern with the definition of worksite as proposed is that this could include vehicles the contractor brings to our job site where they perform the activities applicable to Rule 1113. We don't want to get too involved in the inspection or oversight of those vehicles outside of overt evidence of inadequacies. Presumably they may have materials in their trucks that we have not reviewed and we don't want to potentially be liable at least in the public relations arena for what they won't even use at our site, presumably taking potentially non-compliant product to another job not at our facility.

We propose to modify the definition of the proposed added definition (70) of "worksite" (added words are bolded & italicized) to the following: "WORKSITE means any location ***off-vehicle*** where construction or regular maintenance occurs, including architectural coating application."

We feel the added term will protect our facility from liability derived from a non-Northrop Grumman contractor's actions which we attempt to scrutinize before they even come on-site to our facility. It would be unduly difficult for us to review what a contractor might have on their truck for other non-Northrop Grumman job sites/worksites. We feel the intent of the SCAQMD to not allow non-compliant product within the District is still followed while preventing undue liability on Northrop Grumman

Response to Comment Letter #4

See Response to Comment 1-5.

The following are comments from the Radtech International North Americas – Comment Letter #5.

RadTech International is pleased to comment on the proposed amendments to Rule 1113. RadTech supports the district's efforts to improve air quality in the Basin without sacrificing a healthy business climate and believes that the implementation of UV/EB technology can accomplish both goals.

We urge the district to provide incentives to companies who reduce their emissions, in the form of regulatory flexibility and reduced burdens to validate compliance with rule requirements. To this end, we request that the district insert a definition for UV/EB in the rule. It is essential to incorporate the test method for UV/EB materials approved by ASTM (D-5403-93). Failure to do so will put the burden on each end user to petition district staff in a case by case basis. This process is burdensome to businesses who would rather spend their time and resources on making their businesses successful. We are concerned that there is a disconnect between the district's rule proposal and they districts actual practice for testing samples for enforcement purposes. District staff has commented that GCMS methodology will not be incorporated in the rule at this time due to opposition from EPA. However, district staff has commented that coating samples are routinely tested at the district lab using GCMS equipment. Inconsistent test methods not only create confusion amongst the regulated community but are also problematic for companies who could be subject to penalties if the numbers don't match. We ask the district to partner with industry by adding language that would express a commitment from the district to assist industry in obtaining approval of emission factors from the agency's sister agencies. 5-1

We have grave concerns with the elimination of the Alternative Compliance Option in Rule 1113. Our industry has relied on this option to offer flexibility to customers who may not find UV/EB well applicable to all areas of their process. The ACO allows for a company to reduce emissions beyond district requirements in one category while exceeding VOC limits in another category for which they may not be able to find compliant coatings. 5-2

echo [sic] concerns raised by composite manufacturers that the proposal assumes that Hazardous Air Pollutants can be directly compared to VOC's. Some of the UV/EB raw materials are referred to as "monomers" but, they are not necessarily VOC's from an air quality regulation perspective as they crosslink and become part of the substrate. Further clarification is needed in this area. 5-3

As mentioned during the Stationary Source Committee meeting, we urge the retention of the "for use in the district" language in the rule. Manufacturers could have a product in the district for use out of state or even outside of the country. Elimination of the language implies products sold for use outside the district will be subject to the rule and deemed non-compliant. 5-4

Response to Comment Letter #5

Response to Comment 5-1

Staff does not see a need at this time to include a definition of ultraviolet/electron beam (UV/EB) cure coatings. Rule 1113 does not include definitions for particular coating chemistries such as UV curable coatings. In general, architectural coatings fall under the category which the coating is developed for or the substrate it is being applied to (e.g. a floor coating).

Currently, Rule 1113 relies on EPA Reference Method 24 to determine the VOC content of coatings, as this is the only method accepted by the US EPA. Method 24 reference ASTM D 5403, Standard Test Methods for Volatile Content of Radiation Curable Materials, as the specific test method for determining the VOC content of UV/EB coatings.

In regard to the Gas Chromatography-Mass Spectrometry (GC/MS) method, AQMD Laboratory staff uses this method to confirm the VOC content of low-VOC waterborne coatings; this method is not used for UV/EB coatings. Furthermore, the AQMD has formed a working group to address VOC Test Methodology concerns and plans to continue working with the EPA, CARB and members of industry to address the concerns with the VOC test methodology.

Response to Comment 5-2
First, the ACO applies to a coating manufacturer and not an end user as implied by the commentator. In addition, there are currently no UV/EB coatings included in an ACO plan nor has there been any interest from a UV/EB coating manufacturer to average a UV/EB coating or to use a UV/EB coating to average any other high-VOC coatings. Furthermore, all coatings manufacturers, including those that manufacturer UV/EB coatings, can submit an ACO plan for approval until January 1, 2015.

Staff is proposing to limit the ACO provision to coating categories that are currently being averaged, which does not include any UV/EB technology. In addition, the phase out of the ACO provision will likely benefit UV/EB technology, which is typically more costly than conventional architectural coatings. By eliminating the availability of high-VOC, low-cost, solvent based averaged coatings, UV/EB coatings will be more competitive on a cost basis. Further, staff has found that there are compliant coatings for every category; hence, a manufacturer would not need an ACO to allow the use for an otherwise unavailable coating.

Response to Comment 5-3
This comment is irrelevant to PAR1113 and appears to be a carry-over from a letter submitted by Radtech for PAR 1162/1132.

Response to Comment 5-4
See response 1-4.

The following are comments from the 3M – Comment Letter #6.

3M appreciates the opportunity to provide comments on the South Coast Air Quality Management District's Proposed Amended Rule 1113 (Architectural Coatings), dated January 12, 2011.

3M supports the comments being submitted by the American Coatings Association (ACA). In addition, we offer the following comments on a specific element of the District's proposal.

ACA has voiced in its written and verbal comments serious concerns with lowering the VOC limit of primers to 50 g/L. 3M would also like to urge the District to maintain the primer VOC limit of 100 g/L.

We have evaluated the future compliant primers/sealers listed on the District's website. It should be noted that a significant number of these products are intended for interior applications. As such, they are subjected to conditions that are significantly less harsh that those experienced outdoors. Of the future compliant primers/sealers that are listed for exterior use, none are intended for use in a roofing or waterproofing environment.

3M manufactures roof coatings and roof coating primers for use on low-slope (*i.e.*, approximately

horizontal, or "flat") roofs, such as those on commercial and industrial buildings. These coatings are used to maintain and restore existing roof membranes. They extend the life of the existing roof for 10-20 years, thus delaying the cost and disposal issues associated with replacing a roof. In addition, 3M's coatings can be used to change a roof from a dark color to a light color, thereby reflecting (rather than absorbing) the sun's heat and decreasing the energy usage of the building.

On low-slope roofs, ponding water occurs. Ponding water, combined with the thermal cycling that roofs undergo, can lead to coating and/or primer adhesion failure if the primer is not durable. The coating blisters and delaminates, and water can leak into the building at these failure points. In order for the primer/coating system to be effective, the primer must adequately adhere to the overcoat as well as to the existing roof membranes, the conditions of which are highly variable due to weathering effects. Because of the highly variable substrate conditions, achieving and maintaining the desired adhesion is very challenging and requires sufficient VOCs.

3M would like to note that our roof coating primers are typically applied at a rate that is an order of magnitude less than the roof coatings applied over them. Roof coatings have a 50 g/L VOC limit; we request that the District allow a relatively small volume of primer to have up to 100 g/L VOC in order to ensure the successful performance of the low-VOC roof coating (and the delivering of the attendant cost and environmental benefits).

Again, 3M urges the District to maintain the primer VOC limit of 100 g/L. If the District decides nevertheless to lower the VOC limit for primers, 3M requests that the District create a product category of (non-bituminous) roof coating primers, with a VOC limit of 100 g/L. We would be happy to work with the District to develop a category definition and to provide any additional information that may be needed.

Response to Comment Letter #6

See response to 1-17.

The following are comments from the Tnemec – Comment Letter #7.

Re: January 20 Public Workshop Comments

Dear Heather,

Thank you for the opportunity to participate in the Rule 1113 Public Workshop. Tnemec Company recognizes the need for environmental stewardship and VOC reductions in California. We support VOC limits for architectural and industrial maintenance coatings based on technically feasible field proven coatings technology. We offer the following comments regarding the proposals for revisions to Rule 1113:

General Comments

Staff has done a reasonably good job at working with stakeholders on development of the rule language and has been responsive to stakeholder comments. I appreciate staffs efforts in this area. We agree with staff's approach to regulating colorants and support the proposed limits. We also support staff's overall desire to "clean-up" the rule and eliminate the sales of non-compliant coatings at retail sales outlets. There still remain a couple of items to address with this rule before we can support the proposed Rule 1113. 7-1

Retail Sales Restrictions

The elimination of the "for use in the district" language in section (c)(1) prohibits any activity related to supplying, selling and manufacturing non-compliant coatings in the district. However the exemption in (f)(2) only applies to coatings that are sold in the district. The consequence of these two sections is a prohibition of manufacturing, offering for sale, marketing for sale, blending, or repackaging coatings in the district for shipment outside the district which staff has indicated is not their intent. This also results in the district overstepping their authority in the regulation of interstate commercial transactions. I propose that section (f)(2) exemption be revised to include manufacturing, offering for sale, marketing for sale, blending, and repackaging activities for shipment outside the district. 7-2

Faux Finish

I do not support the staff's proposed VOC limit for the faux finish clear coat. The clear coat is needed to provide exterior performance of certain metallic faux finish colors. The staff erroneously indicates that these clear coats would fall into the default flat or non-flat categories when in fact these coating are unique class of products. In situations where exterior exposure of the metallic coating is desired a clear coat is needed to provide long term color and gloss retention. This is not to be confused with industrial maintenance coatings which are restricted to exterior exposure of metal substrates. I would be happy to provide staff with examples of these applications. I propose a VOC limit of 100 grams per liter for the faux finish clear coat. Considering that the clear coat is used only in small number of specialty situations where exterior performance is needed the overall emissions impact of this change would negligible. 7-3

Exemption of DMC

Tnemec requests the exemption of dimethyl carbonate, DMC, for the IM coatings category. DMC has been exempted in essentially every other state in the US. We need to have flexibility in our choice of solvents to continue to develop coatings that meet the stringent VOC requirements of the SCAQMD. The same justification for exemption of TBAc for IM coatings is applicable for DMC.

Professional industrial coating applicators are under the jurisdiction of the California Division of Occupational Safety and Health regulations to control worker exposure to solvents in a number of different ways including PPE and engineering controls. DMC can be used safely with existing available PPE which is already used for exposure to the other substances contained in industrial coatings. 7-4

Exposure to chemical substances does not equate to risk. I request that the staff conduct a peer reviewed risk assessment on DMC to characterize the potential health effects of the substance based on sound scientific principles and to determine if it can be added to the list of exempt solvents.

Proposed Category Limits

We believe that the lower limits in a number of categories are not justified due to the fact that the overall impact in reduction of VOC emissions is not significant. The TPD VOC reductions do not justify these lower limits especially during the currently depressed economic climate. Specifically the categories of Dry Fog Coatings, Metallic Pigmented Coatings and Fire Proofing Coatings have a very insignificant reduction on VOC based on the Staff's data. This sentiment is corroborated by a similar verbal comment made by a CARB staff member during the November 18 working group meeting. At what point does staff consider the costs to industry in making these reductions justified? This cost per ton of emission reductions for these categories is exorbitant and should require a CEQA analysis of these costs. 7-5

Response to Comment Letter #7

Response to Comment 7-1
Staff appreciates this comment.

Response to Comment 7-2
Staff agrees with this suggestion and made those changes in the proposed amended rule.

Response to Comment 7-3
Based on comments received, staff revised the proposed VOC limit for Clear Topcoats for Faux Finishes to 100 g/L.

Response to Comment 7-4
See response to comment 1-34.

Response to Comment 7-5
Staff has performed the cost-effectiveness analysis of the proposed VOC limit reductions and determined the current reductions being proposed are cost-effective. If the socioeconomic analysis showed the proposed reductions not to be cost-effective, staff would not propose the

VOC reductions. In addition, staff has conducted a comprehensive review of all the coating categories that are being proposed for VOC reductions, including the performance properties of each specific coating category, and found future compliant coatings to have equivalent performance as currently used coatings. The review included consideration of performance results based on ASTM Test Methods, including but not limited to coverage, dry times, service life, fire rating and heat resistance based on data listed on technical or product data sheets. There is no one coating characteristic that defines service life, but based on discussions with manufacturers, a combination of coating characteristics provide an expected service life. This information was obtained through discussions with manufacturers. Additional information was also obtained from the manufacturers that produce the future compliant coatings.

The following are comments from the PPG Architectural Finishes, Inc. – Comment Letter #8.

It is recommended that the Primers, Sealers, and Undercoaters category remain at remain at 100 gpl. There are areas in SCAQMD which contain a number of historic homes, for example Pasadena and Redlands. These homes are wood and reducing the voc on primers potentially would eliminate the primers needed to maintain these homes.	8-1
The 4000 foot exemption for stains and lacquers should be revised to allow sale of the products anywhere in the district if these products are going to be used exclusively above 4000 feet. Most of the contractors who do architectural painting above 4000 feet in the San Bernardino Mountains purchase their coatings at contractor stores in San Bernardino or the surronding area. If the exemption was revised to read "Sale of stains and lacquers for use in all areas within the District at an elevation of 4000 feet or greater above sea level" it would allow these coatings to be purchased by painters at their regular suppliers location.	8-2

Response to Comment Letter #8

Response to Comment 8-1
See response to comment 1-17.

Response to Comment 8-2
Staff disagrees with this comment. If the sale of stains were exempted anywhere in the District, then there would essentially be no VOC limits on stains. If a contractor wishes to use a stain that exceeds the VOC limit in Rule 1113, they will have to purchase that stain in the area where they are exempt, i.e. above 4,000 feet. If this exemption was further expanded, rule enforcement would be more difficult as high-VOC stains would be available everywhere. In addition, staff has found a significant quantity of compliant stains being sold at elevations above 4,000 feet, and intends to conduct additional research on the need for this exemption.

The following are comments from the Rust-Oleum – Comment Letter #9.

Rust-Oleum Corporation
11 Hawthorn Parkway • Vernon Hills, IL 60061 • 847·367·7700 • Fax 847·816·2300

RUST-OLEUM CORPORATION

January 28, 2011

Heather Farr
Office of Planning, Rule Development and Source Areas
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Re: Rule 1113 Proposed Amendments dated January 12, 2011

Dear Ms. Farr:

I am writing on behalf of Rust-Oleum Corporation to offer comments on the proposed amendments to Rule 1113 dated January 12, 2011. Specifically, I would like to comment on the proposed lowering of the VOC limit for specialty primers from 100 g/l to 50 g/l and the proposed elimination of the specialty primer category from those coatings which may be used in the Averaging Compliance Option (ACO).

Zinsser Company, Inc., merged with Rust-Oleum Corporation as of January 1, 2009. Zinsser brand primers are well known throughout the country and are still sold under the Zinsser name. After the VOC limit for specialty primers was lowered from 350 g/l to 250 g/l in the District as of July 1, 2006, Zinsser solvent based primers could no longer sold in the District. The only companies who could sell 350 g/l specialty primers in the District were those companies that were able to take advantage of the ACO program. Zinsser could not use the ACO program and therefore lost several million dollars in sales of specialty primers in the District.

The VOC limit for specialty primers was further reduced to 100 g/l as of July 1, 2007. Zinsser's only option in regaining the lost business was to develop low VOC primers. To do this, Zinsser had to use water base technology. It took several years and a substantial investment of resources to develop the low VOC specialty primers. As a result of these research and development efforts, Zinsser introduced its Smart Prime low VOC specialty primer in early 2009 and later that year introduced its Bulls Eye Zero specialty primer. Both of these specialty primers have VOC contents of less than 50 g/l.

These low VOC specialty primers have most of the same performance characteristics of the 350 g/l solvent based specialty primers, but they are more costly to make and therefore sell at higher prices than the solvent based specialty primers. Also, contractors are use to using solvent based primers and are reluctant to switch over to water based products. As long as the solvent based specialty primers are available in the District, contractors will gravitate toward using them. As a result, only 10% of the sales of specialty primers in the District last year were for products having less than 50 g/l VOC, while sales of specialty primers having VOC levels in the range of 340 g/l to 350 g/l were ten times higher, according to the District's

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RUST-OLEUM CORPORATION

numbers. Again, sales of these high VOC products are only available to those few companies that can use the ACO program.

As long as sales of high VOC specialty primers are allowed in the District, there is no incentive for contractors to use the low VOC primers. This results in an unfair economic advantage to those few companies that can use the ACO program. For these reasons, Rust-Oleum supports staff's recommendation that the category of specialty primers be eliminated from the ACO program and that the VOC limit for specialty primers be lowered from the current 100 g/l to 50 g/l. With the inclusion of specialty primers in the small container size exemption, there will still be products available to address those small trouble areas such as wood knots and tannic stains while the currently available low VOC specialty primers may be used on all other surfaces to be primed.

Very truly yours,

Michael Murphy
Corporate Counsel

An RPM Company

Response to Comment Letter #9

Staff appreciates and concurs with the comments from Rust-Oleum. However, with consideration for the high volume of PSUs and Specialty Primers, as well as the higher cost of products that meet the 100 g/L VOC level and 50 g/L VOC level, staff has revised the original

proposal and is not proposing the 50 g/L VOC limit. PAR1113 will retain the current VOC limit of 100 g/L for both PSUs and Specialty Primers.

The following are comments from The Sherwin-Williams Company – Comment Letter #10.

The Sherwin-Williams Company is pleased to have this opportunity to comment on Proposed Amendments to Rule 1113, Architectural Coatings dated PAR January 11, 2011. Sherwin-Williams is one of the largest coating manufacturers in the world, with about $8 billion in sales and over 3500 company-owned stores as the exclusive distributors of the Sherwin-Williams branded products. We employ over 30,000 people worldwide, with over 1,000 in the State of California. In addition to the SW brand, we distribute coatings under some of the most well recognized and respected brands in the marketplace, including Thompson's® Water Seal®, Minwax®, Dutch Boy®, Martin Senour®, Krylon®, H&C®, Kool Seal®, and Uniflex®.

After serious consideration of the Proposed Amendments to Rule 1113, Architectural Coatings dated PAR January 11, 2011, we have several issues with the proposed limits for the primer, sealer, and undercoater category and for the metallic pigmented coating category.

Primers, Sealers and Undercoaters

The proposed limit of 50 g/l less water and exempt solvents for primers, sealers, and undercoaters is inadequate to meet all of the performance requirements for which these products are purchased and used.

It is noteworthy that the data collected by the District on this category clearly shows a bimodal relationship of VOC contents and sales, with many products being sold under 50 g/l but with many other products being sold under 100 g/l. This clearly indicates that there are specific performance parameters that are not being met at 50 g/l. A few examples are discussed below.

One specific area needing higher VOC contents are clear waterborne sealers used directly on wood substrates to prepare the substrate for varnish – these cannot be formulated at 50 g/l. We currently sell such a waterborne sealer (<100 g/L) for use on bare hardwood floors prior to application of waterborne varnish. The primary function of these acidic, waterborne base coats is to prevent discoloration of acidic woods (especially white oak) when waterborne varnish is applied. The waterborne varnishes are alkaline and cause a tannin reaction when applied directly to acidic woods. This results in objectionable darkening of the wood. When we reformulated the 200 g/L sealer to meet SCAQMD's 100 g/L PSU limit, we lost some properties, but we were able to retain adequate properties to offer for sale the reformulated product. We do not believe we can lower the VOC from <100 to < 50 g/L. Potential problems include formula instability, film-formation problems under foreseeable conditions of use, and issues with flow and leveling. 10-1

If SCAQMD lowers the PSU limit to 50 g/L and we cannot successfully reformulate this type of sealer to meet that limit, the only option available to consumers and professional applicators will be to use a neutral colored, solvent-based stain prior to application of waterborne varnish. The unintended consequence of this would be to significantly increase VOC emissions, since such stains can have a VOCmaterial of 275 g/l, and the waterborne sealers complying at <100 g/l have VOCmaterial of about 35 g/l.

Another special product falling in the primer, sealer, and undercoater category which can not meet a 50 g/l limit is our Moisture Vapor Barrier primer. This special primer is designed to

reduce the loss of moisture through walls and ceilings, and has an ultra low permeability rating [less than 1]. Such performance is a HUD requirement for module homes. It is used on exterior walls and ceilings in lieu of moisture vapor barrier insulation. We know of only one resin type which can achieve the needed performance. This resin, and the resulting coating, are very expensive -- this automatically limits the use. None of the primers for which data pages were supplied by the District meet the stringent performance required of this vapor barrier primer.

Another example of the performance that can be achieved with the primers meeting a 100 g/l limit, which is lost at lower VOCs, are primers that can be used on new concrete and masonry. While our data page recommendations for the SW Harmony® Interior Latex Primer is that if the coating application cannot wait the 30 days for new concrete **Masonry, Cement, Block** to fully cure, then the user needs to prime the surface with SW PrepRite® Masonry Primer [which has a VOC content of <100 g/l].

It is important to remember that primers, sealers, and undercoaters are critical for a successful painting application. If this initial coating is inadequate or underperforming, the entire coating system may fail and require additional attention, usually requiring removal by sanding of the previous coats [which can create hazardous sanding dust (crystalline silica)], and a new application of both the primer and the topcoat(s). These steps result in significant excess emissions. Considering that a 90 g/l primer will only emit about 37 g/l VOCs, the reduction from <100 g/l to <50 g/l can not provide significant emission reductions, but can very significantly impact performance.

Each of these specific examples show there are only two alternatives to satisfy the performance requirement for this category:

Option 1 -- maintain the current 100 g/l limit for the entire category

Option 2 – develop new special subcategories to meet the performance requirements that are not met. We are quite willing to assist in that development.

For all of these reasons, **we recommend that the limit for primers, sealers, and undercoater continue at 100 g/l.**

10-1 cont'd

Metallic Pigmented Coatings

Metallic pigmented coatings have traditionally been formulated in solventborne systems with, primarily, aluminum metal. Aluminum flakes come in two varieties: flaking and nonflaking. At the proposed limit of 150 g/l waterborne systems could be attempted. However, it is our experience that the water compatible aluminum pigments are pasted or slurried in aromatic solvent, exempt mineral spirits and propylene glycol ether. Leafing aluminum pigments are generally not available, probably due to treatments needed to make the pigments compatible with water.

10-2

Some of the challenges of formulating a water borne aluminum include:

1. The inherent incompatibility of water and aluminum
2. The lack of variety of pigment (leafing vs non-leafing)
3. The availability of resins for the various end uses to match the performance of our current aluminum coatings

Generally, solvents in aluminum coatings tend to be of the less reactive variety, e.g. mineral spirits, xylene, and toluene. t-Bac has a somewhat reactive nature, with two oxygen's and the double bonded carbon; thus, its usefulness with aluminum pigmented coatings is minimal. In addition, since the metallic pigmented coatings are not a sub-class of industrial maintenance, t-Bac is not an exempt compound in metallic pigmented coatings. Acetone has a tendency to reduce viscosity wherever it is used and would

not be a viable alternative solvent for coatings that already have a strong tendency to be very low in viscosity.

All of our Silver-Brite® metallic pigmented coatings are high performance coatings meant to provide a chrome appearance and to provide extremely high performance. And the aluminum pigment is the primary protective component in these coatings.

In addition, we sell a number of high temperature metallic pigmented coatings, which meet both the definition and the limit for metallic pigment coatings and for high temperature industrial maintenance coatings. Currently, such products can be categorized either way and still be compliant. However, if the limit for metallic pigmented coatings is lowered, we need an exception to the "lowest limit must apply" section of the rule for these high temperature industrial maintenance coatings to be able to be sold. Requiring us to reformulate them to reduce the level of aluminum pigment [which provides important performance properties and visual characteristics] is unreasonable. For example, we have a line of high temperature industrial maintenance coatings, the colors of which can be used up to 800 ^{o}F, but the aluminum version can be used up to 1000 ^{o}F. It provides additional high temperature performance. 10-2 cont'd

In evaluating the few products which the District believes represent the low VOC versions of metallic pigmented coatings for which Product Data Sheets were provided to us by the District, we note the following comments:

With the exception of the Carbomastic 15 & 15 FC and Deft products, which are discussed in detail below, all of these products seem to be intended as effect coatings primarily in the decorative consumer market. These would use non-leafing aluminum pigment and would not meet the performance expectations of our customers.

Deft®

Deft® 36 Series—Zero VOC Acrylic Polyurethane does not seem to belong in the metallic pigmented coating category. In addition, it is noteworthy that the pot life of this system is 1-2 hours, in contrast to our products which have 8 hour pot life.

ModernMasters®

1. The ModernMasters® Effects™ Water Based Metallic Paints are meant to tarnish over time when exposed to the elements. This is a completely different type of product from any that we offer for sale. This is meant as a decorative, faux type of finish.
2. The ModernMasters® Metalic Paint Collection are waterborne products with VOCs under 180 g/l [according to the data sheet] but which require the use of a clear topcoat [VOC under 200 g/l] for durability in exterior applications and in interior high traffic areas.

Neither of these products have the high performance properties [including exterior durability, and non-tarnishing] of the SW Silver-Brite® line of Aluminum pigmented coatings.

Carboline®

The Carboline® Carbomastic® 15 and Carbomastic® 15 FC are high-solids mastics, rather than standard coatings. With a solids content of 90%, one would expect the VOC to be on the low side, but it is not an appropriate substitute for our Silver-Brite® line of metallic pigmented coatings. These products are comparable to the SW Epoxy Mastic Aluminum II, which has a VOC of 180 g/l. However, they are not comparable to the full line of aluminum pigmented coatings [at SW these are our Silver-Brite® coatings] nor do they satisfy the performance requirements of those products. In addition, the pot life is only 30 minutes [for Carbomastic® 15 FC] and only 2 hours [for Carbomastic® 15]. Again, these products do not provide a performance match to the SW Silver-Brite® products.

Scuffmaster

1. Neither Enviro Metal Paint ™ is not for use in exterior environments. In addition, it is brush or roll applied and can not be spray applied. This limits the quality of the finish that can be achieved. In addition it has a "textured" finish and comes in a variety of colors, suitable for low performance environment, such as a home. There is no indication of the level of metal pigment present in the coating, especially in the different colored coatings. There is no performance data provided on the Technical Data Sheet, which indicates that this is not considered a high performance coating like our SilverBrite line of Aluminum pigmented coatings.
2. Solid Metal is also not for use in exterior environments. Although it can be spray applied, a clear topcoat is recommended. And although it is recommended for commercial applications, the performance characteristics are still not considered appropriate for "tough" uses.

10-2 cont'd

Evaluation of the information on Scuffmaster website [see next page] reveals that neither of these is considered a high performance coating. On the left side is a section showing information by product, with the Enviro Metal and the Solid Metal products being categorized based on performance results under the "pretty" category, not the "tough category." Neither meet the stringent requirements of the industrial environments recommended for the SW Silver-Brite® line of products. Other products on the Scuffmaster website indicate "tough" performance, but do not provide any performance information on the product data sheets. In addition, their primary uses appear to be commercial applications, not industrial. Both of these indicate clearly that even these other products, meant to meet "tough" challenges, do not equal the performance properties of the SW Silver-Brite® Aluminums.

In summary, none of the metallic pigmented coatings found by the District at low VOCs will perform equivalent to those currently on the market that require higher VOCs. The targeted market of the products that were found is different and the performances indicated by the manufacturers do not meet the requirements for this category.

Response to Comment Letter #10

Response to Comment 10-1
See response 1-17.

Response to Comment 10-2
Staff has always considered the Metallic Pigmented Coatings to be decorative not protective coatings. Staff has included this interpretation in other staff reports and has distributed rule interpretations in response to this type of rule circumvention. To address this issue going forward, staff has amended the definition of a Metallic Pigmented Coating to clearly indicate that the category excludes IM coatings. The coatings of concern that are addressed in this comment letter, staff would interpret as High Temperature Industrial Maintenance Coatings with a VOC limit of 420 g/L. Staff does not consider those coatings to be Metallic Pigmented Coatings. Those products will have to be reformulated from 500 g/L to 420 g/L to be sold in the AQMD. This is not a change in the proposed language.

Staff did evaluate the product datasheets provided by Sherwin Williams, see summary table below, and found that only one of the five products (Silver-Brite® Aluminum Paint) was sold in the AQMD according to Rule 314 data from 2009. That product is currently formulated at 450

g/L. This product is a High-Temp IM Coating and will have to be reformulated to 420 g/L. Sherwin Williams will be able to utilize tBAc in the re-formulation since tBAc is an exempt when used in IM coatings.

Manufacturer	Name	VOC Coating	Performance Properties
SHERWIN-WILLIAMS	SILVER-BRITE(R) Aluminum Paint		High Temp IM Coating - dry heat 400°F
SHERWIN-WILLIAMS	Silver-Brite Heavy Duty Rust Resistant AL Paint	480	High Temp IM Coating - dry heat up to 400°
SHERWIN-WILLIAMS	KEM HI-Temp Heat-Flex 11 450	475	High Temp IM Coating - dry heat 500°F intermittent, 600°F heat resistance
SHERWIN-WILLIAMS	KEM HI-Temp Heat-Flex 800	470	High Temp IM Coating - dry heat 1,000°F intermittent, heat resistance 1000°F
SHERWIN-WILLIAMS	Industrial Al Paint	475	High Temp IM Coating - dry heat 400°F

Staff also investigated other aluminum-containing products reported as high-temperature IM coatings in Rule 314 and found the following:

Manufacturer	Name	VOC Coating	Performance Properties
INTERNATIONAL PAINT	INTERTHERM 751CSA COLDSPRAY ALUMINIUM PT A	420	Thermal Cyclical Conditions up to 750°F
PPG PROTECTIVE AND MARINE COATINGS	PSX 892HS ALUMINUM	274	Engineered Siloxane - operating range up to 750°F

Based on this assessment, staff does not feel there is a need to keep the VOC limit of the MPC at 500 g/L or expand the definition to include IM coatings.

The following are comments from BP – Comment Letter #11.

I apologize for not submitting comments by the January 28th deadline, however, after careful review of the rule, BP would like to suggest changes to the definitions for High-Temperature Industrial Maintenance Coatings and Industrial Maintenance Coatings.

(b)(27) HIGH-TEMPERATURE INDUSTRIAL MAINTENANCE COATINGS are industrial maintenance coatings formulated for or applied to substrates exposed continuously or intermittently to temperatures above ~~400~~ 250 degrees Fahrenheit.

(b)(28)(C) INDUSTRIAL MAINTENANCE COATINGS ... Repeated exposure to temperatures ~~in excess of~~ up to 250 degrees Fahrenheit.

Basis for the suggested changes:
The most commonly used Industrial Maintenance Coating is an epoxy of which there are several variations. These coatings, when formulated to 100 g/l or less, typically have a maximum temperature limit of 250F. Above that temperature, technology does not exist to formulate organic epoxy coatings and still meet the 100 g/l rule. According to the current rule, High Temperature IM coatings which have a higher VOC limit, cannot be used until substrate temperatures exceed 400F. Therefore, there is a gap between 250F and 400F where an IM coating system does not exist that is serviceable in that temperature range. Changing the language as noted above will close this technology gap and allow proper corrosion mitigation. This change is particularly important for mitigation of corrosion under insulation, a big concern in the industry.

Response to Comment Letter #11

Staff does not intend at this time to expand the definition of High Temperature IM Coatings to coatings exposed to temperatures above 250^0F, instead of 400^0F. Staff has never encountered this issue while implementing the rule and the current VOC limit for IM Coatings have been in place since 2006. Further, the Rule 1113 definition is consistent with both the CARB SCM and the Federal AIM Rule for high temperature coatings. This change could result in increased emissions as there is a large difference in the VOC limit for IM coatings versus High Temperature IM coatings, 100 g/L versus 420 g/L. Furthermore, polysiloxane-based high temperature coatings are available and in use that meet the 100 g/l VOC limit of industrial maintenance coating category.

The following are comments from Solvents Industry Group of the American Chemistry Council – Comment Letter #12.

Re: Comments on Proposed Amended Rule 1113 Architectural Coatings- Public Workshop, January 20, 2011, Main Meeting Presentation

Dear Mrs. Farr:

The Solvents Industry Group ("SIG")[1] of the American Chemistry Council is pleased to submit the following comments on the South Coast Air Quality Management District's ("South Coast" or "District") Proposed Amended Rule 1113 ("PAR 1113") Architectural Coatings ("AIM") and January 20, 2011 public workshop presentation.[2] The public workshop presentation reviewed proposed revisions to Rule 1113, including further mass-based VOC reductions to several AIM categories. SIG supports the District's goal of continued improvement in air quality through effective and efficient regulation of ozone-forming compounds, however, SIG cannot, for the reasons set forth below and in its previous comments, support PAR 1113 in its current mass-based form. Controlling potential VOC emissions from AIM coatings according to photochemical reactivity is the most scientifically-sound and effective means of addressing tropospheric ozone formation. Compared to traditional mass-based standards, reactivity-based standards more effectively reduce the ozone-forming potential of solvent-based products while providing formulators with greater flexibility to produce products that meet performance and safety specifications. [3]

I. Reactivity-Based Strategies Can More Efficiently Meet Air Quality Objectives

SIG is disappointed that once again the District failed to include a comprehensive discussion of reactivity-based ozone strategies at the workshop, and continues to ignore this more effective and efficient means of improving air quality. There are significant opportunities to further reduce ozone formation potential from AIM coatings using reactivity-based strategies, and these types of approaches can be implemented now.

The excessive burdens that would result from the District's proposed mass-based amendments and the potential benefits of utilizing a reactivity-based strategy can be demonstrated by analyzing Rule 1113's specialty primers category. As discussed further below, SIG's preliminary analysis shows that a reactivity-based compliance option can accomplish the same air quality improvement as the mass-based proposal while imposing less significant reformulation burdens on industry. 12-1

For example, the District's Draft Staff Report for PAR 1113 states that the VOC content levels of the specialty primer category in 2009 primarily fall into one of three content levels: <50 g/l (10%), 50-100 g/l (11%), and ">100 g/l" (79%). However, this is somewhat misleading, as the data also shows that virtually all of the ">100 g/l" materials actually fall in the 340-350 g/l range, and are the

[1] SIG members include The Dow Chemical Company, ExxonMobil Chemical Corporation, Shell Chemical LP, and Eastman Chemical Company.

[2] Notice of Public Workshop, http://www.aqmd.gov/prdas/Coatings/CurrentActivities/nopw1113.pdf

[3] *See* William P. L. Carter, *Development of Ozone Reactivity Scales for Volatile Organic Compounds,* 44 J. Air & Waste Mgmt. Ass'n 881 (1994); A. Russell *et al., Urban Ozone Control and Atmospheric Reactivity of Organic Gases*, 269 Science 491 (1995).

majority of the category volume (79%). The calculated sales weighted average VOC ("SWAVOC") for the category is approximately 286 g/l, not the 100 g/l indicated by the current category limit. Thus, in reality, the proposed 50 g/l limit on the District's specialty primer category would require a VOC content reduction of greater than 80%, and in a very short time. This would certainly force a technology change for the majority of the category volume and costly reformulation.

However, a reactivity-based scenario can achieve the same reduction in ozone formation that is targeted by the mass-based rule, with less significant burdens. Examination of the data and category definitions in the 2005 CARB Architectural Coatings Survey report[4] ("CARB report") shows that the District's definition of specialty primers closely matches the CARB report's definition of specialty primer, sealer and undercoater ("specialty PSU"), and that a breakdown of products into VOC categories is very similar to what the District data shows for 2009. In the CARB report, the specialty PSU product breakdown is approximately 1% 0-50 g/l, 20% 50-100 g/l, and 79% >100 g/l, and with the majority in the 301-350 g/l range. The reported SWAVOC for the specialty PSU category in the CARB report was 283 g/l. Based on those significant similarities it is reasonable to assume for analysis purposes, that the speciation of VOC materials emitted would be very similar for CARB's specialty PSU and the District's specialty primers category. 12-1 cont'd

So, from the CARB report we can surmise that the majority (96%) of emissions from the specialty PSU category are comprised of VOC species in an MIR range of 0.7 – 7.6. To be specific, one species that constitutes only 11% of the mass of emissions from the category total has an MIR of 7.6, which yields 52% of the ozone formation potential.

In contrast to the outdated mass-based approach to regulation, a reactivity-based approach would encourage the use of lower-reactivity species. In the specialty primers category, simply encouraging a change to 0.7 MIR solvents (already 74% of the mass of VOC) would reduce ozone forming potential by the equivalent of approximately 50% reduction in mass of emissions. Additional air quality improvements could be realized by either selection of VOC with even lower MIR, or by a much less onerous mass reduction that is currently proposed in PAR 1113.

A Reactivity-based Alternative Compliance Option ("RACO") for the District's specialty primers categories, and possibly other AIM coatings categories, therefore, can achieve the same mass-based air quality objective while allowing industry formulation flexibility. Thus, SIG again requests that the District work with stakeholders to develop a RACO that would allow a company to achieve compliance with Rule 1113 VOC limits by means of a District-approved RACO program.

II. Reactivity-Based Strategies are Effective and Less Burdensome to Industry

On January 18, 2011, President Obama signed Executive Order (EO) 13563, *Improving Regulations and Regulation Review*, calling on the executive branch to improve federal regulation so as to protect public health, welfare, and the environmental while simultaneously promoting economic growth, innovation, competitiveness, and job creation. In particular, *Section 1. General Principles of Regulation* states: 12-2

> Our regulatory system must protect public health, welfare, safety, and our environment while promoting economic growth, innovation, competitiveness, and job

[4] See http://www.arb.ca.gov/coatings/arch/survey/2005/Final_2005_Survey_Rpt.pdf

creation. It must be based on the best available science. It must allow for public participation and an open exchange of ideas. It must promote predictability and reduce uncertainty. *It must identify and use the best, most innovative, and least burdensome tools for achieving regulatory ends.* It must take into account benefits and costs, both quantitative and qualitative. It must ensure that regulations are accessible, consistent, written in plain language, and easy to understand. It must measure, and seek to improve, the actual results of regulatory requirements.

(Emphasis added.). Section 4, *Flexible Approaches,* further provides that:

Where relevant, feasible, and consistent with regulatory objectives, and to the extent permitted by law, each agency shall identify and consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public. These approaches include warnings, appropriate default rules, and disclosure requirements as well as provision of information to the public in a form that is clear and intelligible.

12-2 cont'd

While recognizing that SCAQMD is not subject to EO 13563, we would hope that the District, along with other regulatory agencies, would support the fundamental principles exposed therein. Indeed, all regulatory bodies should be seeking flexible approaches to protecting public health and welfare while at the same time promoting economic growth and innovation. Reactivity-based VOC regulation is precisely the type of regulation called for by the President's latest executive order. Such an approach is scientifically sound, protective of public health and the environment, more effective, both for a cost and ozone reduction perspective, than the standard mass-based approach, and provides the regulated community with needed flexibility to remain innovative and competitive. Thus, we urge you to embrace the President's call for improving the way industry is regulated and to reconsider the inclusion of RACO in the amended Rule 1113.

Response to Comment Letter #12

Response to Comment 12-1
See response to comment 1-35

In regard to the example of the Specialty Primer category that currently has a SWA VOC of 286 g/L according to the 2009 Rule 314 data~~,;~~ ~~and not 100 g/L or below that the current VOC limit would indicate. T~~the higher than expected VOC limit is due the inclusion of that category in the ACO provision. PAR1113 removes that category from the ACO on January 1, 2012. At that time, the SWA VOC will drop to or below 100 g/L. Since the Rule 1113 mass-based limits are already low, it would be difficult to craft a reactivity-based regulation that would give the manufacturer more flexibility to formulate a compliant coating and achieve the same air quality benefits.

Response to Comment 12-2
At this time, staff feels that a change to reactivity-based regulation would prove to be more burdensome to industry. Even with the current system of VOC regulations, where there are two relatively straightforward formulas to calculate the VOC content of a coating, there is considerable confusion in the coatings industry. Those two calculations, the VOC of Material and VOC of Coating, have been in place since the seventies, and there is still confusion.

Further, not all coating manufacturers are in favor of switching to a reactivity-based strategy. Based on discussions, some manufacturers feel that it would be more burdensome, as they may have to reformulate their coatings in order to meet a new standard and they would need to develop a new procedure or test method to demonstrate that their coatings meet the new standard.

Staff is working to get acceptance for an improved VOC test methodology for measuring the VOC content of an architectural coating involving Gas Chromatography. This more complicated, but more accurate test method, will need to be employed in order to implement a reactivity-based regulation. Based on discussions with CARB, effective and efficient enforcement of the aerosol coatings reactivity-based rule has been an issue for the past few years, especially in obtaining formulation data and accurate laboratory analysis. Once this method has been adopted and these issues have been resolved, staff will reconsider a reactivity-based regulation.

Staff does not agree with the statement that a reactivity-based approach is scientifically sound for both a cost and ozone reduction perspective. Changing from a mass-based to a reactivity-based regulation could prove costly to the industry, as it could result in the reformulation of currently compliant coatings. It could also prove costly due to the need to development new VOC test methods and manufacturing software capable of calculating a new VOC standard in order to demonstrate that current compliant coatings meet the new standards. In regard to ozone reduction, staff agrees that a reactivity-based approach could be a successful approach but the EPA does not currently recognize a reactivity-based ozone control strategy for architectural coatings. In addition, there are still uncertainties regarding the some MIRs and staff is concerned regarding toxicity associated with some VOC containing compounds that have a low MIR value. In addition, based on a CARB and AQMD study that evaluated qualitative contribution of solvents to secondary organic aerosols (SOA) and found that petroleum distillates used in solvent-based coatings were significantly more likely to form SOAs than solvents, including ethylene glycol and propylene glycol, that are most commonly used as co-solvents in waterborne coatings. Based on a mass-based strategy implemented over the past thirty years by the AQMD, the amount of co-solvents in architectural coatings is very small (less than 3% for flats and nonflat coatings that represent majority of the total volume), and the use of a reactivity-based strategy may be limited to a very small number of smaller volume categories, such as varnishes. Based on a paper presented to the Reactivity Industry Working Group entitled *Secondary organic aerosol formation from a large number of reactive man-made organic compounds*, the recommendation was to conduct a follow-up study to quantify the SOA formation of solvents. This has been previously recommended to the American Chemistry Council, but has not been prioritized for additional analysis as part of the PACES program. Staff does not want to move from a strategy that has produced air quality benefits to a strategy that could exacerbate other aspects of the AQMD's goal for achieving air quality standards, specifically the PM2.5 standard. Staff plans to continue to work closely with CARB, USEPA, and the American Chemistry Council (ACC) to address these issues and will continue to study the impacts of a reactivity based approach, with consideration for enforceability, toxics and PM 2.5 formation. However, based on the latest research and analysis, as well as the recommendations of the research necessary to conduct additional analysis, staff supports the continuation of a mass-based ozone control strategy.

The following are comments from Golden Artists Colors, Inc – Comment Letter #13.

Setting the "Trowel Applied" sub-category of Faux at 50 g/l is problematic. In our reformulation attempts, freeze/thaw stability has been an issue. Also, there is a "wet edge" issues with some textures, as the material has to stay wet enough on the wall to allow the applicator to work sections together seamlessly. When working a large surface, product is typically applied in sections, leaving a edge. If this dries, troweling fresh material over this boundary can create a heavy ridge, which can create unsightly "seams" in the work.

Another problem that can occur is that if product starts to dry out on the trowel or hawk, the dried particles will create streaks or "scratches" as the material is spread with the trowel, ruining the work. That said, we have been successful on formulating products at 150 g/l or less and request this as a limit.

Response to Comment Letter #13

Staff conducted a review of trowel applied products that have a VOC limit above 50 g/L limit, and found those products also do not have freeze thaw stability. This issue is not the result of the lower VOC limit. In regard to wet edge and the coating drying on the hawk, there are many trowel applied 'plaster' products that can meet the 50 g/L limit already in the marketplace. The feedback from manufacturers has generally been positive and indicated that the 50 g/L limit should be feasible by January 1, 2014 with reformulations. Staff will monitor this category for both sales volumes and VOC levels as the 50 g/L implementation date approaches.

The following are comments from The Vintage Floor Company – Comment Letter #14.

At The Vintage Wood Floor Company, Inc. we specialize in hand crafting flooring from antique reclaimed materials sourced from 100-150 year old barns. When we first started, our floors were hand finished exclusively with Waterlox finish. When the new 275 VOC rule went into effect we were forced to purchase all remaining stock from Waterlox that was made before the cutoff date. That supply has since run out and now we are forced to use less than ideal finish for our flooring. Because of the antique reclaimed nature of our floors, sanding the floors at a later date to recoat them is a severe detriment and will ruin the floor. The current ban on Waterlox because of the VOC content has been very harmful to our business as it has caused potential clients to purchase their floor from out of state vendors or worse yet vendors from within the state but outside of the restrictive SCAQMD. Given this information, we respectfully request that the Conjugated Oil Varnish category be included into the SCAQMD Rule 1113.

Response to Comment Letter #14

Staff appreciates the difficulties of losing a coating that a company relied on for coating wood flooring. Unfortunately, due to the air quality issues that have to be addressed in the AQMD, there are certain high-VOC coating chemistries that have to be excluded for the benefit of air quality, especially when lower-VOC alternative are available. There are many waterborne Clear Wood Finishes available at 275 g/L. As stated in the response to comment 1-15, the AQMD has conducted extensive research on this coating category, including a technology assessment conducted in 2004 and 2005. The results of that assessment supported the 275g/L VOC limit, which was implemented on July 1, 2006. Details of that study can be found on the AQMD website at: http://www.aqmd.gov/hb/2006/February/060236a.html.

Based on feedback from manufacturers of compliant clear wood finishes, and past technology assessments, staff feels there are sufficient compliant products available to coat the 100 – 150 year old reclaimed floors. Feedback from one manufacturer indicated that in their experience of over 20 years working with wood products, there were no special needs for 100 – 150 year old wood from barns. If The Vintage Floor Company needs to refinish a floor that was previously coated with a Conjugated Oil Varnish and the condition of the floor precludes sanding, they can apply for a variance at the AQMD Hearing Board. Since the adoption of the 275 g/L VOC limit in 2006, there have been no cases before the Hearing Board indicating a need for a higher-VOC Clear Wood Finish. This indicates that end users have found suitable replacements for Conjugated Oil Varnishes.

The following are comments from Miracle Sealants – Comment Letter #15.

I write to comment on the staff's current January 12, 2011 draft proposed amendments to Rule 1113 and the January 2011 staff report on the Rule changes as it relates to the Small Container Exemption (SCE) and stone penetrating products – as opposed to surface products.

As a local manufacturer of a penetrating stone sealer, we take exception to the elimination of the SCE for waterproofing concrete/masonry sealers as provided at Rule 1113(e)(1).

PENETRATING STONE SEALER

Just as the staff notes in its report that there are valid reasons to maintain the SCE for other products, those reasons also apply to penetrating stone sealers.

Penetrating stone sealers are not surface applications. Rather, their solvent base allows them to deeply penetrate the stone and create durable cross-linked below-the-surface barriers. These below-the-surface barriers are resistant to normal surface wear reducing the need for reapplication of any protection. The solvent-based formulation penetrates even non-porous stone which minimizes the amount of product needed to cover a stone surface. The lack of a film surface also diminishes the slipperiness of stone floors. Its deep and durable below-the-surface barrier resists penetrating oils and lessens the need for harsh chemicals to remove oils and other contaminants during daily maintenance. This same feature resists water, oil, grease, mold, mildew, and algae and promotes healthy food-friendly surfaces. In addition, the penetrating nature of the product allows for applications in a wide range of temperatures (15 to 140 degrees F; as opposed to 50 to 80 degrees F for surface treatments). 15-1

Limiting stone sealants to lower VOC water-based formulations in larger containers eliminates our ability to provide customers with clean, less slippery, durable deep-barrier protection without effectively lowering the overall harm to the environment.

ENVIRONMENTAL BENEFIT

The net environmental benefit of solvent-based penetrating products is multifold.

First, less of the solvent-based product is required than the water-based product to provide equivalent levels of initial protection. Our solvent-based 511 Impregnator stone sealer product covers an area 2 to 8 times greater than our own water-based products and the difference is even greater when compared with our competitor products. Less of the product is required because the solvent-based product penetrates and is imbedded and cross-linked in the stone. The water-based product remains at the surface and more applications are required to approximate the initial level of protection provided by the penetrating product. 15-2

Second, the need for reapplication is greatly reduced. Since the solvent-based product penetrates and is imbedded in the stone, the product is not scuffed off by wear and exposure. In most situations, only a single application of the solvent-based product is required for a lifetime of protection. By contrast, the water-based product requires frequent annual or bi-annual reapplication of its surface film because it remains on the surface and cannot significantly penetrate the stone.

Third, less solvent-based product in initial and lifetime applications means smaller containers can be used, less frequently, with less disposal residue and less overall environmental harm.

Fourth, the deep cross-linked water and oil resistant barrier created by a penetrating solvent-based stone sealer, effectively resists grease, mold, mildew, and algae which creates a healthier food-friendly surface, reduces cleaning time, and minimizes the need for harsh environmentally unfriendly chemicals to clean stains and contamination that would be difficult to remove from water-based surface film protected stone. 15-2 cont'd

MARKET REALITY

Curtailing the SCE and eliminating "bundling" of small containers ignores the reality of the current marketplace.

The dominant retailers in today's market are Home Depot, Costco, Sam's Club, and other "big box" stores. Their model is to package products in useful ways that provide extra value to customers. "Bundling" is one way of providing that value and a necessary reality for manufacturers of products. 15-3

ENVIRONMENTAL VALUE OF "BUNDLING"

Because penetrating stone products require less product for initial application and require fewer lifetime reapplications, small containers "bundled" together makes tremendous environmental sense. By allowing the penetrating stone products to be sold in smaller containers, less containers are opened with less VOC exposure and less disposal of emptied or partially emptied containers. Customers use only the limited amount they need for a particular project. 15-4

CUSTOMERS WANT "BUNDLED" SMALL CONTAINERS

Customers have told us that they want small containers. They know that penetrating stone sealants can protect more square feet with less of an initial application. They also know reapplication during a lifetime may be unnecessary. As such, they want their products in small containers so that they use the right amount without waste or unnecessary environmental harm. Bundling gives them what they want, at a value price, with the added benefit of preventing the release of unnecessary VOCs. 15-5

UNIQUE PRODUCT – STONE PENETRATION

Miracle Sealants' 511 products are unique. They are not surface applications. They penetrate the stone and provide a cross-linked deep barrier protection against oil and water staining and contamination. Surfaces are less slippery and cleanup is easier, faster, and more environmentally friendly as harsh chemicals are not needed on a regular basis to remove deep staining and contamination. The penetration of the product also reduces the amount of product required in its initial application as well as its lifetime application. 15-6

We strongly urge the staff to reconsider the elimination of the SCE and "bundling" for penetrating stone sealers that are used in the same limited fashion as the other products discussed in the staff's report. Penetrating stone sealers are unique and provide less environmental harm if they can be sold as "bundled" SCEs. They require less initial application and less lifetime application. As such, the SCE packaging is ideal and the "bundling" of these SCEs presents an environmentally sound way of marketing these limited use stone penetrating products.

Response to Comment Letter #15

Response to Comment 15-1

Staff is not proposing to remove the Small Container Exemption for Waterproofing Concrete/ Masonry Sealers.

Response to Comment 15-2
Miracle Sealants high-VOC products contain 750 g/L VOCs. Even at the claimed 2 to 8 times greater coverage, it would lead to greater emissions than a compliant 100 g/L sealer. In addition, several of Miracle Sealants compliant sealers are still solvent-based sealers formulated with exempt solvents which do not contribute to ground level ozone.

According to product datasheets, the 511 Impregnator solvent-based sealer covers between 1,000 – 4,000 square feet, depending on the substrate, and the 511 Porous Plus solvent-based sealer covers between 500 – 2,000 square feet, depending on the substrate, while the 511 waterborne sealer states that it covers between 500 – 3,000 square feet depending on substrate. Miracle Sealants own technical data seems to refute the claim that the waterborne sealers have poor coverage.

As for product longevity, the solvent-based product is recommended to be re-applied every 1-3 years for commercial flooring and 3-10 years for residential flooring. While there is no longevity information listed for the waterborne products, it is clear from the information available from Miracle Sealants, that the solvent-based products also require frequent re-application.

The point that the solvent-based product is used in smaller volumes makes this product ideal for sale under the small container exemption.

As for the cleaning recommendations, the product datasheets recommend the same cleaning procedures and products for both the waterborne and solvent-based sealers.

Response to Comment 15-3
Staff is not intending to curtail the Small Container Exemption for Waterproofing Concrete/Masonry Sealers, but is proposing to eliminate abuse of the exemption by manufacturers who package their coatings such that more than one liter is sold over the VOC limit. To allow such rule circumvention would render the purpose of the "small container" exemption meaningless. Staff has support from most manufacturers and the ACA for this rule change. During rule implementation, staff heard from many manufacturers of compliant Waterproofing Concrete/Masonry Sealers that their compliant products cannot compete with lower cost, high-VOC products sold under the Small Container Exemption. While staff is not proposing to eliminate the exemption at this time, language will be added to prevent manufacturers from selling more than one liter in a package under the exemption.

Response to Comment 15-4
A consumer who wishes to purchase more than one liter of a product over the limit can still purchase more than one container, but generally with a price penalty. This gives better flexibility than to package the containers in bundled four packs, as Miracle Sealants is currently practicing.

Response to Comment 15-5
Bundling containers such that they exceed the one liter Small Container Exemption limit is clear rule circumvention, especially when the manufacturer offers a lower price for the bundled containers. Staff is not proposing to remove the exemption, and customers are still capable of

purchasing more than a single one-liter container. Bundling containers and selling them at a discount is clear rule circumvention.

Response to Comment 15-6
Staff is not proposing to remove the exemption and customers are still capable of purchasing more than a single one-liter container.

The following are comments from Dutko – Comment Letter #16.

DUTKO

Hardwood Floors

2/11/2011

Heather Farr
Air Quality Specialist
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Subject: Special Floor Coating

Ms. Farr,

My company has been installing and refinishing hardwood floors in the SCAQMD for 20 years. We service the ultra high-end housing segment with unique floor designs and wood species. These customers demand a finish that is both durable and flexible enough to perform on a wide variety of wood species and environments. Before AIM regulations made it unavailable, we used Glitsa's conversion varnish to finish these special floors. It offers exceptional adhesion to oily woods and brings out the rich colors of these exotic species; it also allows the depth of the wood to show through with its crystal clarity. Additionally it only requires two coats as apposed to three coats in a typical waterborne finish that we use in SCAQMD. This makes for one less trip to the job in our 350 Econoline vans further reducing air emmisions.

Another benefit to using Glitsa's Gold Seal conversion varnish is that it is easy to repair the coating without having to recoat the whole floor. These conversion varnishes are definitely a niche product and require the professional contractor to apply it with a very unique application process.

It has come to our attention that the SCAQMD is considering adding a category for conversion varnishes and we would like to formally request that the district add this category to Rule 1113. Thank you for considering our request.

Sincerely,

Lawndale 310-546-3153 — Lic. #653577 — Newport Beach 949-675-3535
Fax 310-214-0252
4616 Manhattan Beach Blvd. • Lawndale, CA 90260

Response to Comment Letter #16
See response to comment 1-15.

The following are comments from The Office of Historic Preservation – Comment Letter #17.

The State Office of Historic Preservation (OHP) has broad responsibility for the implementation of federal and state historic preservation programs in California including "review and comment on the impact on historical resources of publicly funded projects and programs undertaken by other governmental agencies" as per Public Resources Code 5024.6.

As such, the California Office of Historic Preservation is registering its concern regarding the update of Rule 1113. After discussions with colleagues, I am specifically concerned regarding current restrictions imposed on stone consolidants and reactive penetrating sealers. The California Air Resources Board has addressed technical issues for these architectural product classes in the 2007 revision of the Suggested Control Measure for Architectural Coatings. CARB documented and substantiated the need for these coatings and their limited use in the staff report and associated technical support documents. I am concerned that the restrictions currently imposed by Rule 1113 will adversely affect the quality, efficacy and costs associated with the repair and protection of stone masonry on qualified historical structures of the South Coast District that are not imposed on historical structures in the rest of California.

I strongly recommend the update to Rule 1113 using the CARB 2007 revision of the Suggested Control Measure for Architectural Coatings as the responsible treatment for the preservation of stone masonry historical buildings in the South Coast Air Quality Management District.

Response to Comment Letter #17
Staff has revised the rule to include reactive penetrating sealers and stone consolidants with limited use for for restoration and/or preservation projects on registered historical buildings that are under the purview of a restoration architect. The rule will also allow for the use of reactive penetrating sealers on bridges to address concerns from the California Department of Transportation.

The following are comments from ACA – Comment Letter #18

1. Conjugated Oil Varnish - we hope that the District can add the Category and Limit (450 g/l) to Rule 1113 or to the small container exemption;

"Conjugated Oil Varnish: Effective for products manufactured on or after January 1, 2014, A clear or semi-transparent wood coating, labeled as such, excluding lacquers or shellacs, based on a natural occurring conjugated vegetable oil (Tung oil) and modified with other natural or synthetic resins; a minimum of fifty percent of the resin solids consisting of conjugated oil. Supplied as a single component product, conjugated oil varnishes penetrate and seal the wood. Film formation is due to polymerization of the oil. These varnishes may contain small amounts of pigment to control the final gloss or sheen."

2. Metallic Pigmented - as per Madelyn's comments drop IM exclusion (IM should be part of this category) and 150 g/l limit since a higher VOC limit is needed for aluminum to leaf;

3. Faux Finish - as per Madelyn's comments for the trowel category - 150 g/l limit is needed - since open time would be an issue with 50 g/l limit;

4. Sell through language - as per Madelyn's language - 3 year sell through should apply to category, limit or label changes;

5. Possession language - we support Madelyn's possession language (facilities that use AIM coatings for widgets);

6. As per Robert's comments - may help to define stationary structures and "pull" in fields etc;

7. Test method for colorants - suggest the District make this clear in Rule 1113;

8. 4000 foot exemption - make it clearer that product can be sold in the District and used above 4000 feet;

9. Stone Consolidants and Reactive Penetrating Sealers - we appreciate staff taking the time to meet with Dwayne and me, we are hopeful that the District can add these categories to Rule 1113.

Response to Comment Letter #18

Response to Comment 18-1
See responses 1-15 & 14.

Response to Comment 18-2
See responses in 10-2.

Response to Comment 18-3
Staff proposed an interim VOC limit of 150 g/L with a reduction to 50 g/L effective January 1, 2014. Based on feedback from several manufacturers who supply trowel applied faux finishes, the 50 g/L VOC limit is feasible by January 1, 2014.

Response to Comment 18-4
With the extended implementation dates, staff does not feel that sell through language is necessary. See comment 1-20 for further discussion.

Response to Comment 18-5
Staff does not feel that an exemption is needed for coatings that are subject to other Regulation XI rules. Since there is considerable cross over between Rule 1113 and other Regulation XI rules, the rule that the coating is subject to is dependent on its usage. For example, a wood coating sold at a retail outlet could be subject to Rule 1113 or Rule 1136 – Wood Products Coatings. If the manufacturer or retail outlet can demonstrate that a coating is being sold for shop application (e.g., Rule 1136), the coatings would not have to meet the Rule 1113 requirements. In addition, a coating being used at a shop for coating metal parts, would clearly fall under Rule 1107 – Coating of Metal Parts and Products; therefore, Rule 1113 would not apply. But if that same coating were used in a Rule 1113 application, e.g. painting a door frame, then Rule 1113 would apply in that instance. Every instance is unique and requires an independent compliance investigation; therefore, staff does not feel that a broad exemption is appropriate.

Response to Comment 18-6
Staff included a definition for a stationary source.

Response to Comment 18-7
Staff clarified the rule language to include colorants in the Test Method section.

Response to Comment 18-8
Staff revised the PAR 1113 to state the exemption applies to the use of stains and lacquers in all areas within the District at an elevation of 4,000 feet or greater above sea level **or sale in such areas of such use.**

Response to Comment 18-9
Staff has included categories for stone consolidants and reactive penetrating sealers.

The following are comments from Tremco Incorporated – Comment Letter #19

Tremco Incorporated
3735 Green Road Beachwood, OH 44122 216.292.5000 www.tremcosealants.com

TREMCO
Commercial Sealants & Waterproofing

Michael Schmeida, LEED® APManager of Sustainable Programs216.292.5058 (office)mschmeida@tremcoinc .com (email)

March 9, 2011

Heather Farr Office of Planning, Rule Development and Source Areas South Coast Air Quality Management District 21865 Copley drive Diamond Bar, California 91765

RE: Rule 1113 Proposed Amendments Dated February 16, 2011

Dear Ms. Farr:

I am writing on behalf of Tremco Commercial Sealants and Waterproofing (CSW) to offer comments on the proposed changes to Rule 1113 dated February 16, 2011.

Tremco CSW has a long history of selling coating products in the South Coast Air Quality Management District (SCAQMD). In our 83 years of operation, we have viewed the area covered by the SCAQMD as an important market that is consistently one of the largest territories for our organization in terms of dollar volume.

The products Tremco CSW offers for sale via our specialty, contractor-focused distribution network are intended for professional construction use in a variety of structures from multi-unit high-rise residential to schools, hospitals, office buildings and essentially any large construction. Specific to products covered by Rule 1113, we sell a comprehensive line of Waterproofing Sealers, Waterproofing Concrete and Masonry Sealers, Primer, Sealer and Undercoating materials and Mastic Coatings to make buildings dry and tight, insuring air and moisture issues are resolved and structures serve long and functional lives.

Over the last several years Tremco CSW has developed a philosophy that if products are not viable for sale in SCAQMD due to VOC issues, they are not viable for our organization in the longer term. As such, approximately 90% of our current offerings can be and are sold in SCAQMD and throughout the world. Our goal is that within the next 3 years all products across all lines will be 100% SCAQMD compliant (with many of these targeted at being “super-compliant”).

However, the above cannot be achieved without SCAQMD being fair and balanced from a sustainability perspective. Ultimately no rule is viable without taking into account all aspects of sustainability, the social, ecological and economic impacts of the regulation. This translates to minimized ecological impact (air quality improvement) while maintaining economic acceptability (life cycle costs) and maintaining the social attributes (product performance) required by the end-user and ultimately building owners.

Tremco Incorporated
3735 Green Road Beachwood, OH 44122 216.292.5000 www.tremcosealants.com

TREMCO
Commercial Sealants & Waterproofing

The above is why we are delighted that SCAQMD has developed the levels outlined in this proposed rule – levels that we believe are a balance of all three tenets of sustainability. For example, maintaining the exemption for small package sizes, specifically for primers, sealers and undercoating materials reflects this perfectly. These products are often very critical for insuring a system performs as intended long-term. Therefore, having adequate time to insure their performance in reformulation is also critical. By maintaining the exemption while holding the overall limit at 100g/L allows for this detailed development and testing to occur while insuring air quality improvements are achieved where technologies already exist. The proposed rule also allows for the unique, specialty applications that sometimes occur in construction to be addressed with proven technology. That is sustainable and sound regulation.

We applaud the approach SCAQMD has taken and look forward to continued sound regulation in the coming years that will be of benefit to all.

Michael Schmeida Director of Sustainable Programs Tremco Commercial Sealants and Waterproofing

CC: C. Houk, President- Tremco Commercial Sealants and Waterproofing

Response to Comment Letter #19
Staff appreciates and concurs with the comments from Tremco Incorporated.

A P P E N D I X A

2010 AQMD COLORANT SURVEY

AQMD Colorant Survey 2010

In the spring of 2010, the South Coast Air Quality Management District conducted a survey of Architectural Coatings Manufacturers to determine the type of colorants that are currently being used to tint coatings at the point of sale for architectural and industrial maintenance applications. This survey was conducted while researching the feasibility of setting a VOC limit on those colorants.

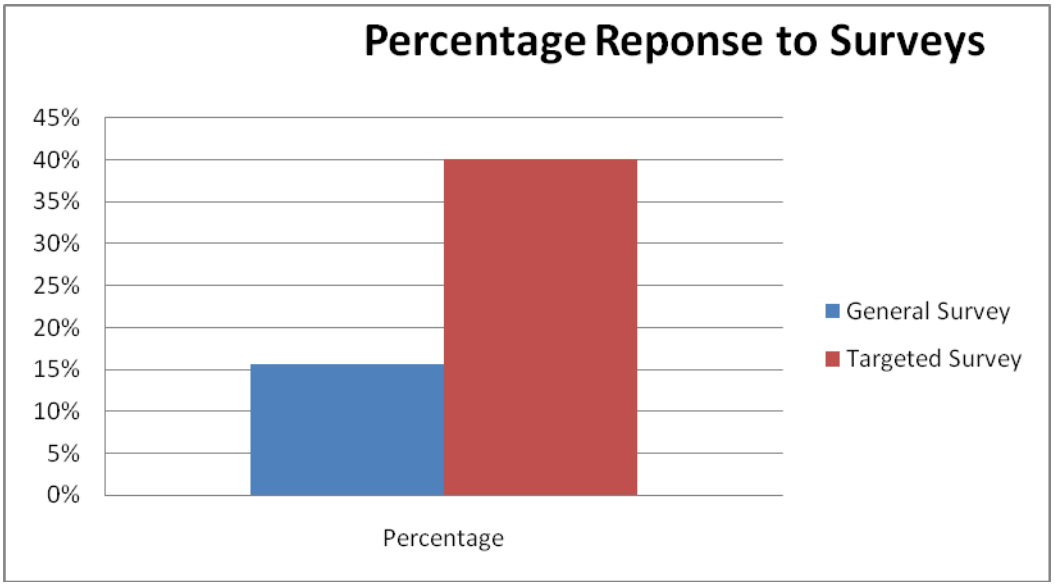
Proposed Amended Rule 1113

Table of Contents

Introduction

In early 2010 the South Coast Air Quality Management District (AQMD) released three surveys on the use of colorants to tint coatings. The AQMD is interested in the use of colorants due to their potential significant contribution on overall Volatile Organic Compound (VOC) levels of the coatings, expected to be 3-4 tons of VOCs. Currently, the AQMD does not include the point-of-sale (POS) addition of these colorants in the coatings' VOC levels.

The surveys were sent out in April, 2010, after receiving valuable feedback from some manufactures of the coatings industry, including small and large manufactures of coatings, pigment supplies, and the American Coatings Association (ACA). The first survey was a general survey sent to the 288 contacts on AQMD's Rule 1113 subscribers list that are identified as architectural coatings manufacturers. According to Rule 314 reporting, there are approximately 200 manufacturers selling architectural coatings in the AQMD. The second survey was a targeted survey sent to the 35 coating manufacturers who are listed on the AQMD's Super-Compliant Coatings Manufacturers List. The third and final survey focused on retailers. The survey was sent electronically to the 11 retailer contacts in the Rule 1113 subscribers list. In addition, hard copies of the survey were circulated to retail locations throughout the AQMD. The surveys were anonymous; therefore no data from specific companies were recorded.



Of the 288 architectural coatings manufacturers on the Rule 1113 subscribers list, 47 responded to the general survey. Of the 35 Super-Compliant Coatings Manufacturers, 14 responded to the targeted survey. The retail had 33 respondents.

This report is a summary of surveys.

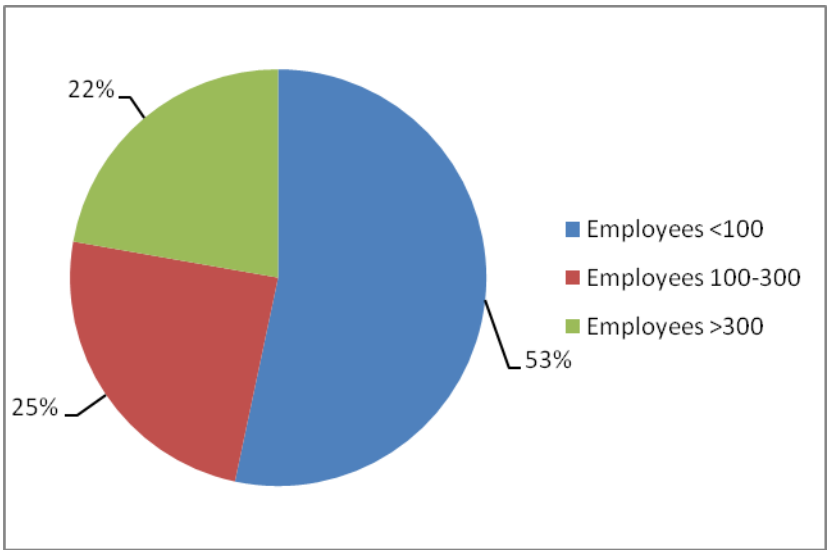
AQMD Colorant Survey

General Survey

General Survey

The general survey went out to 482 coating manufacture contacts and consisted of 19 questions and began with several basic questions, for example, total number of employees, NAICS category, and colorant use.

1. What is the total number of employees?	
Answer Options	**Response Count**
	45
answered question	**45**
skipped question	**2**



AQMD Colorant Survey

General Survey

2. What is the NAICS labor category for your business?	
Answer Options	**Response Count**
	39
answered question	**39**
skipped question	**8**

NAICS Labor Code	Description	# of Companies
325510	Architecutral Coatings	28
424950	Paint, Varnish, and Supplies Merchant Wholesalers	2
325211	Plastic Materials and Resin Manufacturing	2
325181	Alkalies and Chlorine Manufacturing	2
325131	Inorganic Dye and Pigment Manufacturing	1
339999	All Other Miscelleous Manufacturing	1
339999	All Other Miscellaneous Manufacturing	1
325998	All Other Miscellaneous Chemical Product and Preparation Manufacturing	1
2851		1

3. Does your company use colorants at the point of sale (POS) to tint coatings for sale to consumers in the AQMD?		
Answer Options	**Response Percent**	**Response Count**
Yes	37.8%	17
No	62.2%	28
answered question		**45**
skipped question		**2**

AQMD Colorant Survey

General Survey

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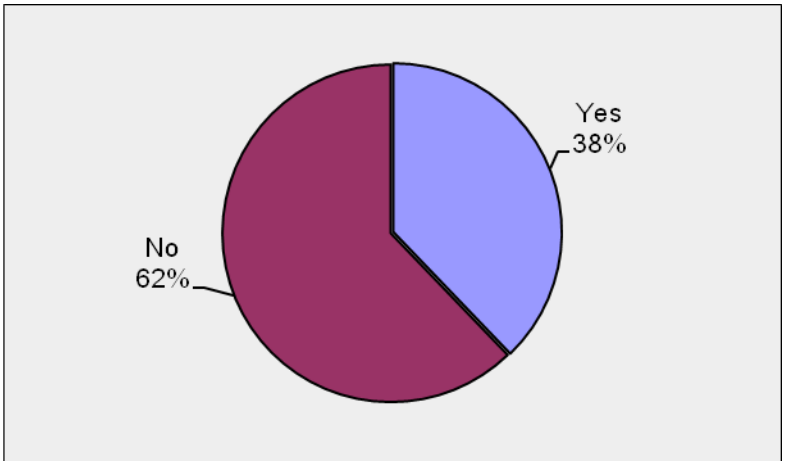


4. How many total colorant dispensers does your company have for that purpose located in the AQMD?		
Answer Options	**Response Percent**	**Response Count**
None	33.3%	5
Up to 10	33.3%	5
Up to 20	6.7%	1
Up to 50	6.7%	1
Not sure	6.7%	1
Other (please specify)	13.3%	2
170, >60		
	answered question	**15**
	skipped question	**32**

5. What percent of the volume of your coatings are tinted at the point of sale?		
Answer Options	**Response Percent**	**Response Count**
None	7.1%	1
0 – 10%	35.7%	5
10 – 20%	14.3%	2
20 – 50%	0.0%	0
> 50%	35.7%	5
Not sure	7.1%	1
	answered question	**14**
	skipped question	**33**

AQMD Colorant Survey

General Survey

6. Do you make your own colorant or purchase them from an outside source? Check all that apply.		
Answer Options	**Response Percent**	**Response Count**
Make own colorant	13%	2
Purchase from outside source	87%	13
	answered question	**13**
	skipped question	**34**

Note: respondents who answered “no” to question three automatically skipped this question.

AQMD Colorant Survey

General Survey

7. If you purchase colorant from an outside source, who is your supplier?	
Answer Options	**Response Count**
	12
answered question	**12**
skipped question	**35**

Colorant Source	# of Companies
Evonik	7
Consolidated Color	3
Plasticolors	4
Basf	1
Sierra	1
Clariant	1
Engelhart	1
Color Corporation of America	1
Elementis	2

Note: several manufacturers indicated that they purchased colorants from multiple suppliers, hence the total companies reported exceeds the response count.

8. What type(s) of colorant system(s) do you currently use and do any of them require different dispensing equipment than conventional colorants? Check all that apply.						
Answer Options	**Solvent Based IM**	**Waterborne IM**	**Solvent Based Architectural**	**Waterborne Architectural**	**Different Dispenser**	**Response Count**
Universal colorant	2	2	3	6	0	7
Colorant solely for solvent based coatings	3	0	1	0	1	3
Colorant solely for waterborne coatings	1	4	0	5	1	8
Near-zero VOC universal colorant (< 5g/L)	0	0	0	1	1	2
Near-zero VOC colorant solely for waterborne coatings	0	1	0	3	1	4
Other	0	0	0	0	0	0
Other (please specify)				1		
Whatever is in 888						
			answered question			**13**

AQMD Colorant Survey

General Survey

skipped question	**34**

9. What type of solvent is used in the colorant(s) you use? Check all that apply.

Answer Options	Petroleum Distillates	Glycols	None	Response Count
Universal colorant	2	6	1	7
Colorant solely for solvent based coatings	3	1	1	4
Colorant solely for waterborne coatings	0	4	2	6
Near-zero VOC universal colorant	0	1	2	3
Near-zero VOC colorant solely for waterborne coatings	0	2	3	5
Other	1	0	1	2
Other (please specify)				2
888, acetate esters, glycol ethers				
			answered question	**11**
			skipped question	**36**

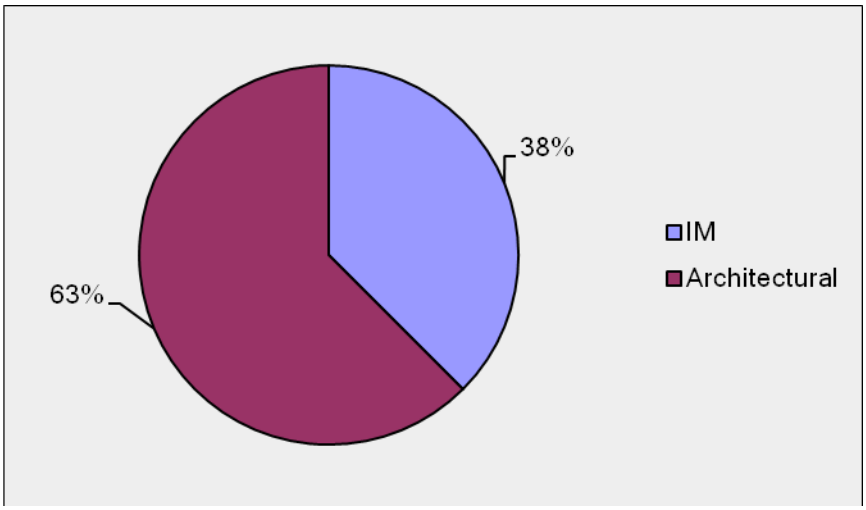
10. What is the VOC content of the colorant system(s) you currently use? Check all that apply.

Answer Options	0 - 50 g/L	50 - 100 g/L	100 - 250 g/L	> 250 g/L	Response Count
Universal colorant	1	0	0	5	6
Colorant solely for solvent based coatings	0	0	0	3	3
Colorant solely for waterborne coatings	1	1	1	3	6
Near-zero VOC universal colorant	3	0	0	0	3
Near-zero VOC colorant solely for waterborne coatings	4	0	0	0	4
Other	0	0	0	0	0
Other (please specify)					1
				answered question	**11**
				skipped question	**36**

AQMD Colorant Survey

General Survey

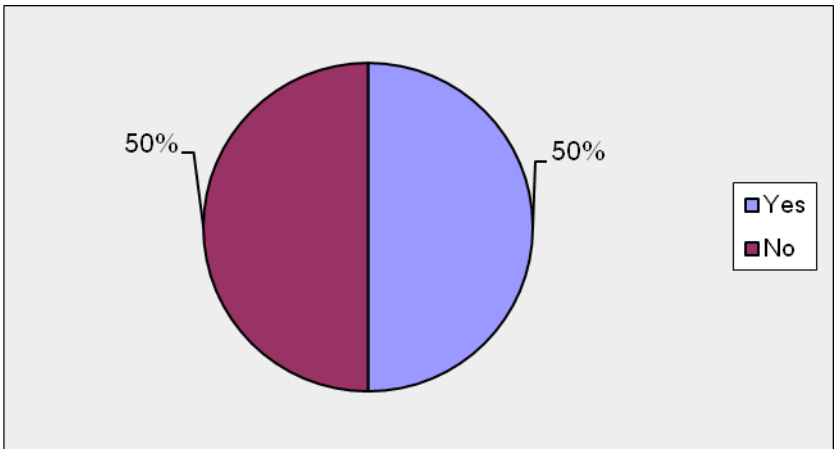
11. Are there any coating categories that your company requires conventional VOC-containing colorants to tint successfully?		
Answer Options	**Response Percent**	**Response Count**
IM	37.5%	3
Architectural	62.5%	5
Other (please specify)		2
	answered question	**8**
	skipped question	**39**

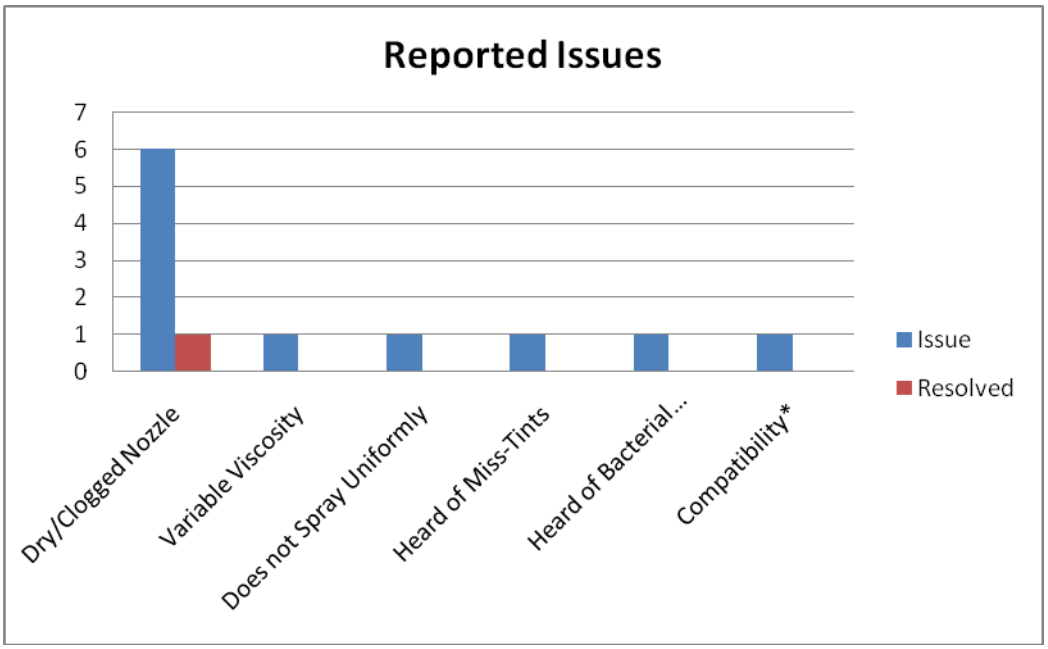


AQMD Colorant Survey

General Survey

12. Have you experienced problems associated with either dispensing equipment or coatings to which near zero-VOC (< 5g/L) colorants have been added?		
Answer Options	**Response Percent**	**Response Count**
Yes	50.0%	5
No	50.0%	5
Explain		6
	answered question	**10**
	skipped question	**37**



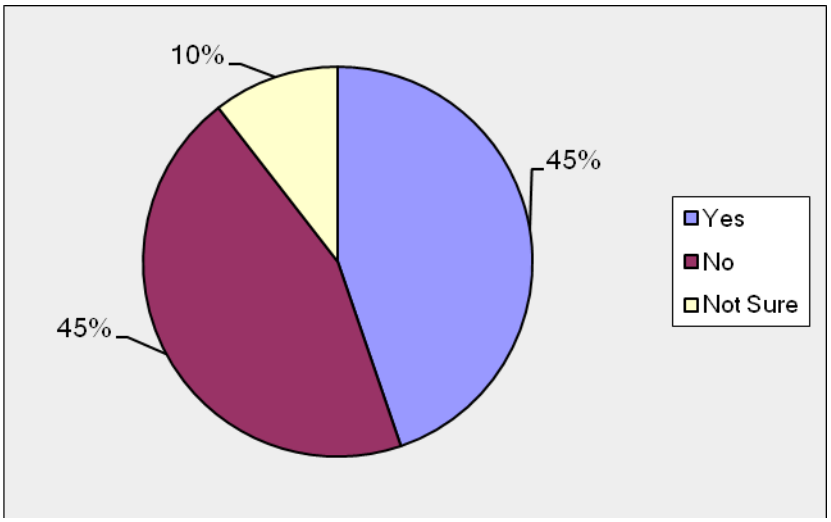


AQMD Colorant Survey

General Survey

* foam, gloss, durability, water sensitivity, & blocking

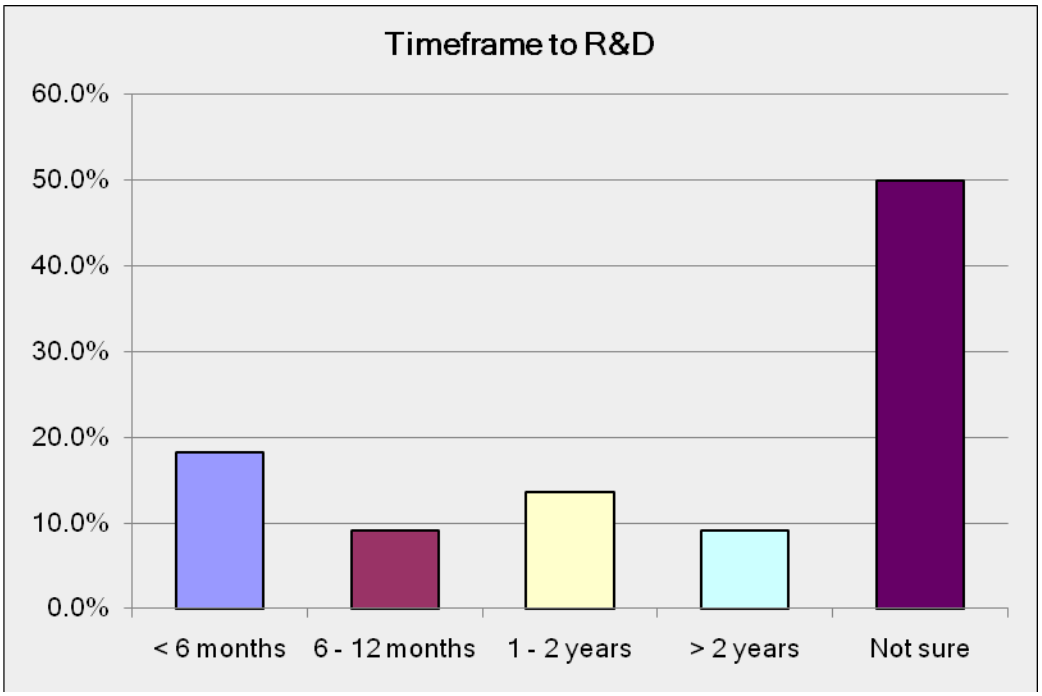
13. Do you currently use or are you conducting research and development on near zero-VOC colorants (< 5 g/L)?		
Answer Options	**Response Percent**	**Response Count**
Yes	44.7%	17
No	44.7%	17
Not Sure	10.5%	4
	answered question	**38**
	skipped question	**9**



AQMD Colorant Survey

General Survey

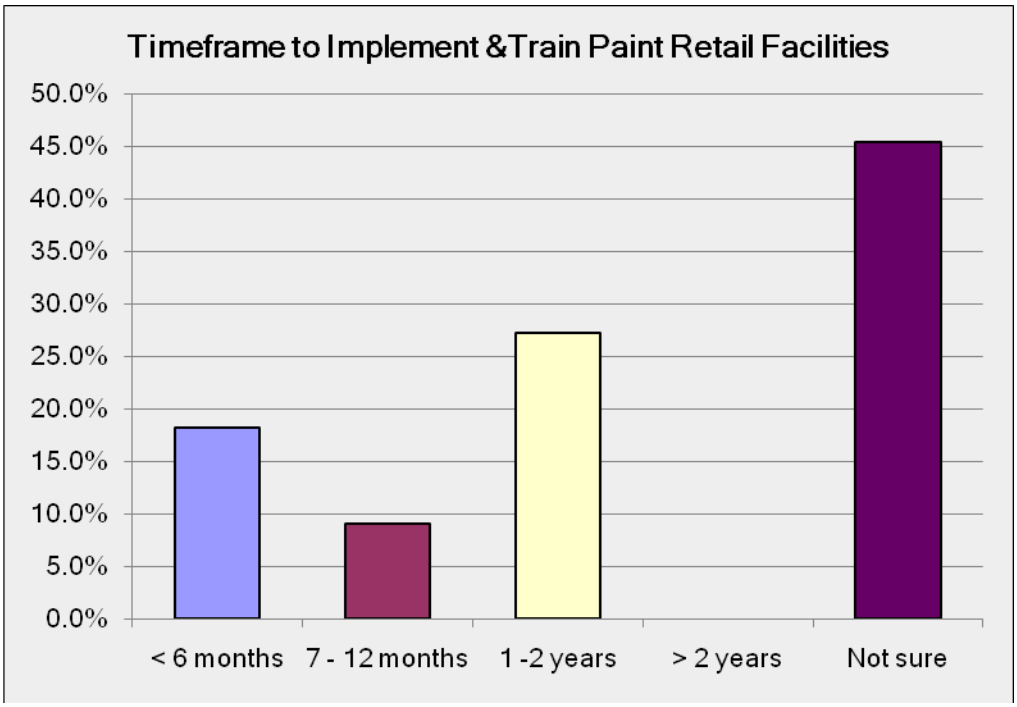
14. What was the timeframe or what is the estimated timeframe to complete the development?		
Answer Options	**Response Percent**	**Response Count**
< 6 months	18.2%	4
6 - 12 months	9.1%	2
1 - 2 years	13.6%	3
> 2 years	9.1%	2
Not sure	50.0%	11
	answered question	**22**
	skipped question	**25**



AQMD Colorant Survey

General Survey

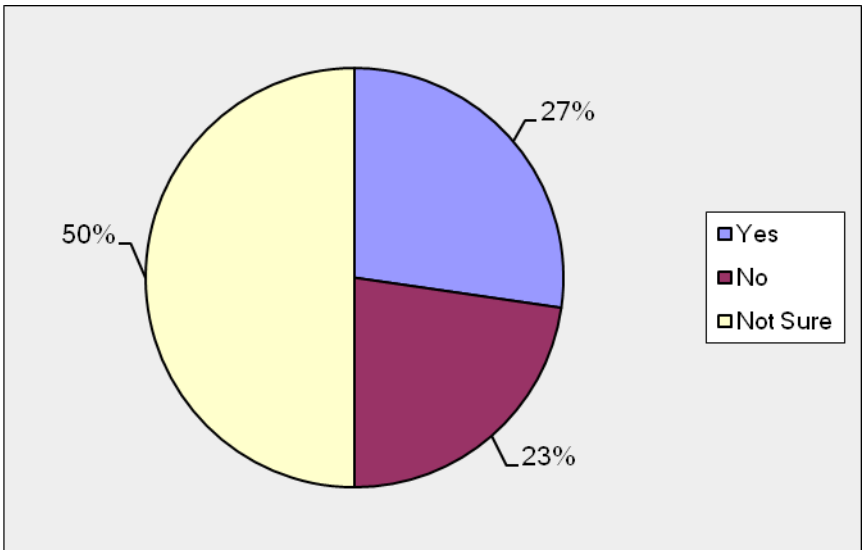
15. What was the timeframe or what is the estimated timeframe to implement and train paint retail facilities on the use of near zero-VOC (< 5 g/L) colorants once the development was/is complete?		
Answer Options	**Response Percent**	**Response Count**
< 6 months	18.2%	4
6 - 12 months	9.1%	2
1 -2 years	27.3%	6
> 2 years	0.0%	0
Not sure	45.5%	10
	answered question	**22**
	skipped question	**25**



AQMD Colorant Survey

General Survey

16. Does that colorant system require a different dispensing unit?		
Answer Options	**Response Percent**	**Response Count**
Yes	27.3%	6
No	22.7%	5
Not Sure	50.0%	11
	answered question	**22**
	skipped question	**25**

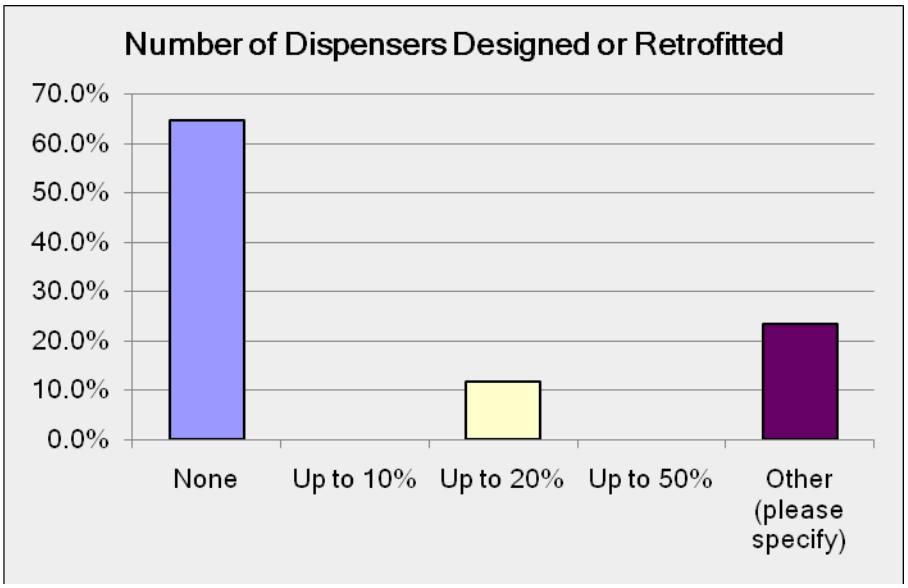


AQMD Colorant Survey

General Survey

17. How many of the colorant dispensers you currently have in the AQMD (see question 4) are designed or can be retrofitted for the use of near zero-VOC (< 5 g/L) colorants?		
Answer Options	**Response Percent**	**Response Count**
None	64.7%	11
Up to 10%	0.0%	0
Up to 20%	11.8%	2
Up to 50%	0.0%	0
Other (please specify)	23.5%	4
	answered question	**17**
	skipped question	**30**

Other (please specify)	Response Count
No dispensers in SCAQMD	**3**
All of them	**1**

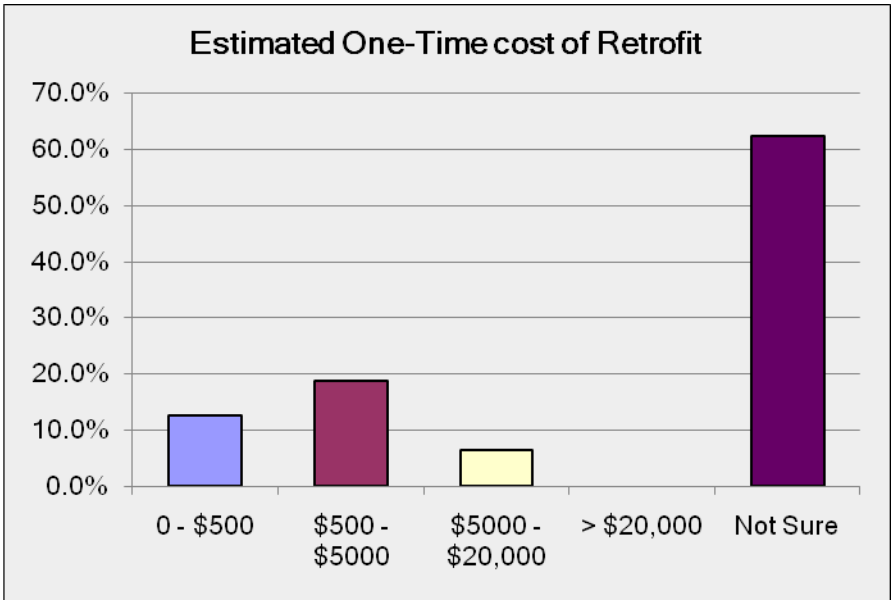


Note: the respondents who answered "no" to the previous question automatically skipped this question.

AQMD Colorant Survey

General Survey

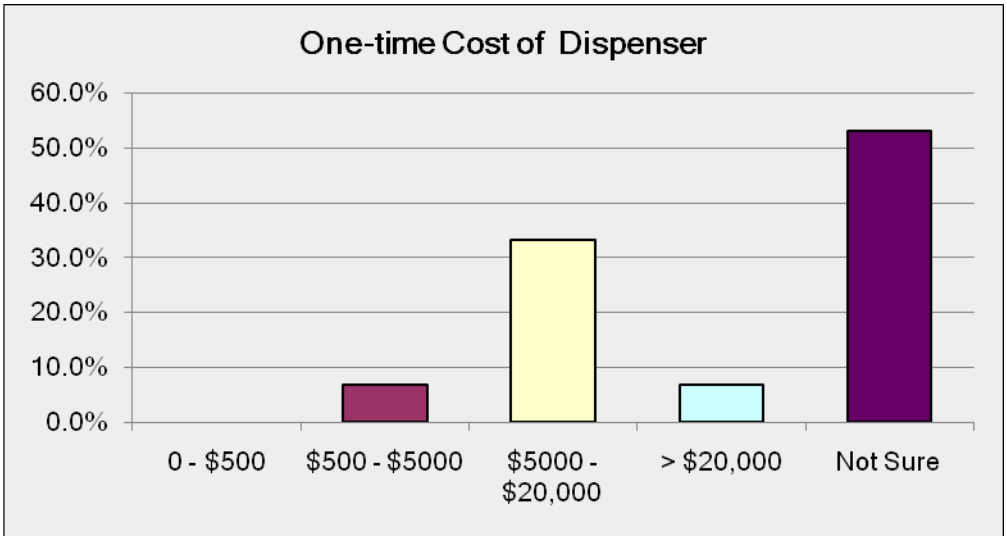
18. What is the estimated one-time cost of retrofitting a colorant dispenser?		
Answer Options	**Response Percent**	**Response Count**
0 - $500	12.5%	2
$500 - $5000	18.8%	3
$5000 - $20,000	6.3%	1
> $20,000	0.0%	0
Not Sure	62.5%	10
	answered question	**16**
	skipped question	**31**



AQMD Colorant Survey

General Survey

19. What is the one-time cost of a new near zero-VOC (< 5 g/L) colorant dispenser?		
Answer Options	**Response Percent**	**Response Count**
0 - $500	0.0%	0
$500 - $5000	6.7%	1
$5000 - $20,000	33.3%	5
> $20,000	6.7%	1
Not Sure	53.3%	8
	answered question	**15**
	skipped question	**32**



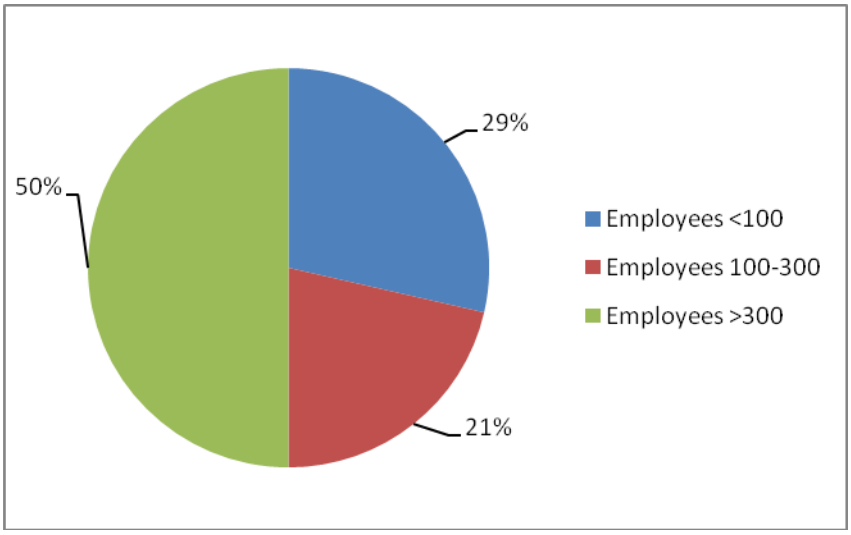
AQMD Colorant Survey

General Survey

Targeted Survey

The second survey was a targeted survey which went to the coating manufactures who are included on the AQMD Super-Compliant Manufacturers List. Those companies more likely would have already experimented with near zero-VOC colorants so could provide more insight on the transition.

1. What is the total number of employees?	
Answer Options	**Response Count**
	14
answered question	**14**
skipped question	**0**



This survey is comprised of a greater number of large companies.

2. What is the labor category for your business?	
Answer Options	**Response Count**
	12
answered question	**12**
skipped question	**2**

AQMD Colorant Survey

Targeted Survey

NAICs Code	Labor Description	# of Companies
325510	Architecutral Coatings	11
?		1

3. Does your company use colorants at the point of sale to tint coatings for sale to consumers in the AQMD?		
Answer Options	**Response Percent**	**Response Count**
Yes	50%	7
No	50%	7
	answered question	**14**
	skipped question	**0**

4. How many total colorant dispensers does your company have for that purpose located in the AQMD?		
Answer Options	**Response Percent**	**Response Count**
None	0%	0
Up to 10	40%	2
Up to 20	0%	0
Up to 50	20%	1
Not sure	0%	0
Other (please specify)	40%	2
170, >60		
	answered question	**5**
	skipped question	**9**

5. What percent of the volume of your coatings are tinted at the point of sale (POS)?		
Answer Options	**Response Percent**	**Response Count**
None	0%	0
0 - 10%	0%	0
10 - 20%	25%	1
20 - 50%	25%	1
> 50%	50%	2
Not sure	0%	0
	answered question	**4**
	skipped question	**10**

AQMD Colorant Survey

Targeted Survey

6. Do you make your own colorant or purchase them from an outside source? Check all that apply.		
Answer Options	**Response Percent**	**Response Count**
Make own colorant	50%	3
Purchase from outside source	50%	3
	answered question	**5**
	skipped question	**9**

7. If you purchase colorant from an outside source, who is your supplier?	
Answer Options	**Response Count**
	3
answered question	**3**
skipped question	**11**

Colorant Source	Response Count
Consolidated color	1
Elementis	2
Evonik	2

Note: respondents listed multiple companies; hence the response count exceeds the number who answered the question.

AQMD Colorant Survey

Targeted Survey

8. What type(s) of colorant system(s) do you currently use and do any of them require different dispensing equipment than conventional colorants? Check all that apply.						
Answer Options	**Solvent Based IM**	**Waterborne IM**	**Solvent Based Architectural**	**Waterborne Architectural**	**Different Dispenser**	**Response Count**
Universal colorant	0	0	2	2	1	2
Colorant solely for solvent based coatings	4	1	1	0	3	4
Colorant solely for waterborne coatings	0	2	0	1	1	2
Near-zero VOC universal colorant (< 5g/L)	0	0	0	0	0	0
Near-zero VOC colorant solely for waterborne coatings	0	2	0	1	1	3
Powder tinting	0	0	0	1	0	1
Other	0	1	0	0	1	1
Other (please specify)						1
Solely for Waterborne <15 g/L						
				answered question		**5**
				skipped question		**9**

None of the responding companies are using near-zero VOC universal colorants. The majority are using colorants for solvent based coatings.

9. What type of solvent is used in the colorant(s) you use? Check all that apply.				
Answer Options	**Petroleum Distillates**	**Glycols**	**None**	**Response Count**
Universal colorant	0	2	0	2
Colorant solely for solvent based coatings	3	0	0	3
Colorant solely for waterborne coatings	0	2	0	2
Near-zero VOC universal colorant	0	0	0	0
Near-zero VOC colorant solely for waterborne coatings	0	1	2	3

AQMD Colorant Survey

Targeted Survey

Powder tinting	0	0	1	1
Other	0	0	0	0
Other (please specify)				1
CONFIDENTIAL BUSINESS INFORMATION				
			answered question	**5**
			skipped question	**9**

10. What is the VOC content of the colorant system(s) you currently use? Check all that apply.

Answer Options	**0 - 50 g/L**	**50 - 100 g/L**	**100 - 250 g/L**	**> 250 g/L**	**Response Count**
Universal colorant	0	0	0	2	2
Colorant solely for solvent based coatings	0	0	0	4	4
Colorant solely for waterborne coatings	2	0	0	1	3
Near-zero VOC universal colorant	0	0	0	0	0
Near-zero VOC colorant solely for waterborne coatings	4	0	0	0	4
Powder tinting	0	0	0	0	0
Other	0	0	0	0	0
Other (please specify)					0
INDUSTRIAL COATINGS, MARINE COATINGS, & AEROSPACE COATINGS					
				answered question	**5**
				skipped question	**9**

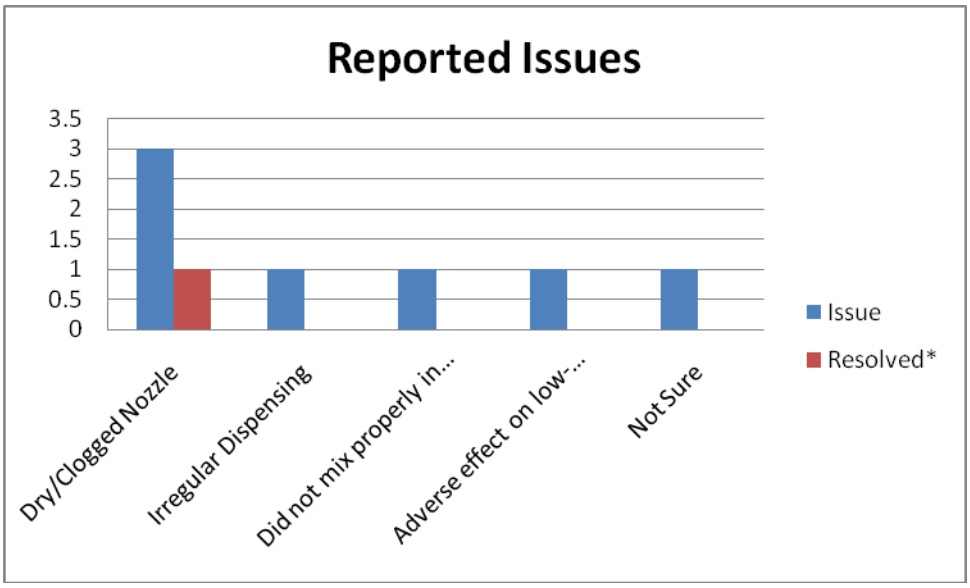
11. Are there any coating categories that your company requires conventional VOC-containing colorants to tint successfully?

Answer Options	**Response Percent**	**Response Count**
IM	75%	3
Architectural	25%	1
Other (please specify)		1
	answered question	**4**
	skipped question	**10**

AQMD Colorant Survey

Targeted Survey

12. Have you experienced problems associated with either dispensing equipment or coatings to which near zero-VOC (< 5 g/L) colorants have been added?		
Answer Options	**Response Percent**	**Response Count**
Yes	100%	4
No	0%	0
Explain		5
	answered question	**4**
	skipped question	**10**



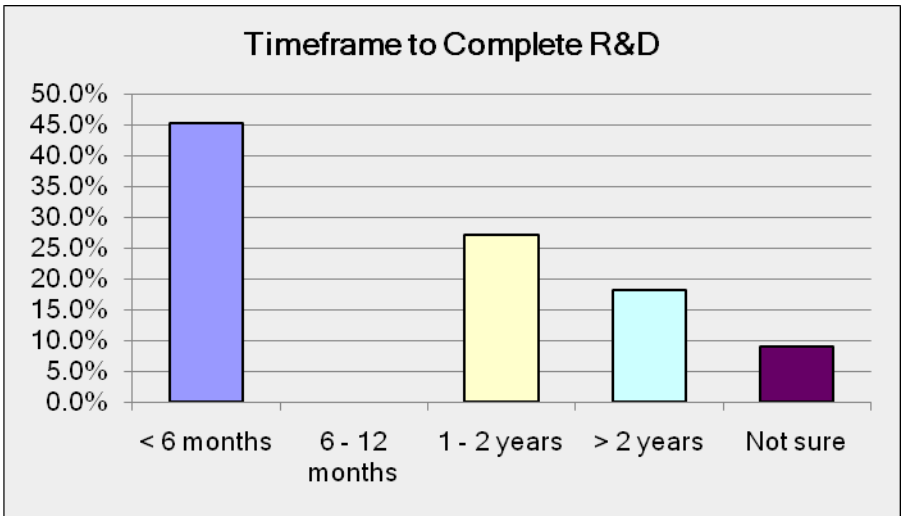
*We originally had a lot of problems related to clogging of dispensing tips, clogging/damage to dispensing unit recirculation pumps. We ended up having to change to a different line of colorant and make some minor equipment modifications to resolve this problem. This was a huge issue and took a couple of years to resolve. We are now 100% zero VOC colorants for all waterborne products. Certain lines of colorants can have adverse performance properties of the coating such as adhesion or foaming due to the high levels of surfactants in the low VOC colorants.

AQMD Colorant Survey

Targeted Survey

13. Do you currently use or are you conducting research and development on near zero-VOC colorants (< 5 g/L)?		
Answer Options	**Response Percent**	**Response Count**
Yes	100%	12
No	0%	0
Not Sure	0%	0
	answered question	**12**
	skipped question	**2**

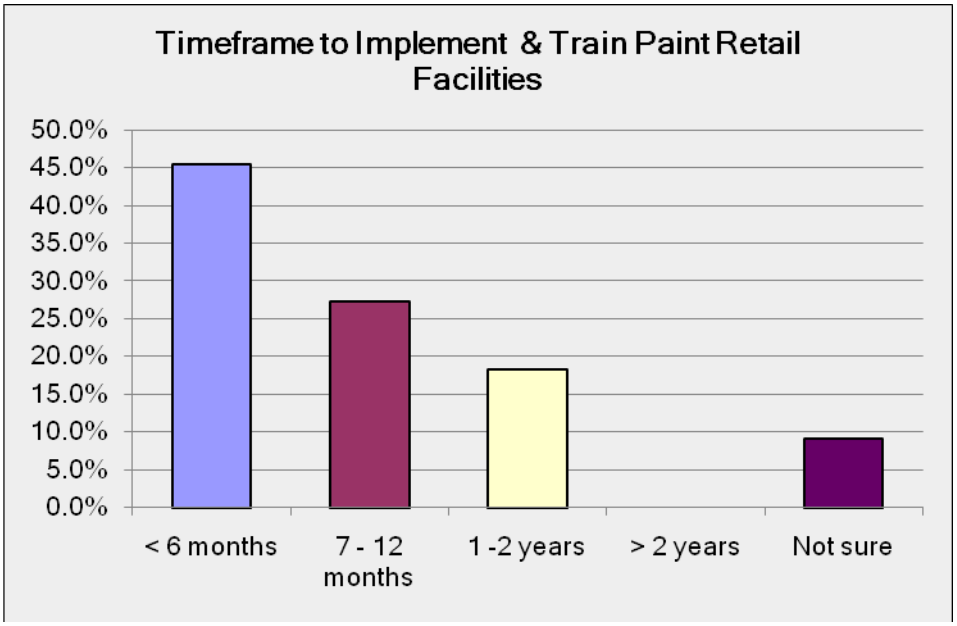
14. What was the timeframe or what is the estimated timeframe to complete the development?		
Answer Options	**Response Percent**	**Response Count**
< 6 months	45.5%	5
6 - 12 months	0.%	0
1 - 2 years	27.3%	3
> 2 years	18.2%	2
Not sure	9.1%	1
	answered question	**11**
	skipped question	**3**



AQMD Colorant Survey

Targeted Survey

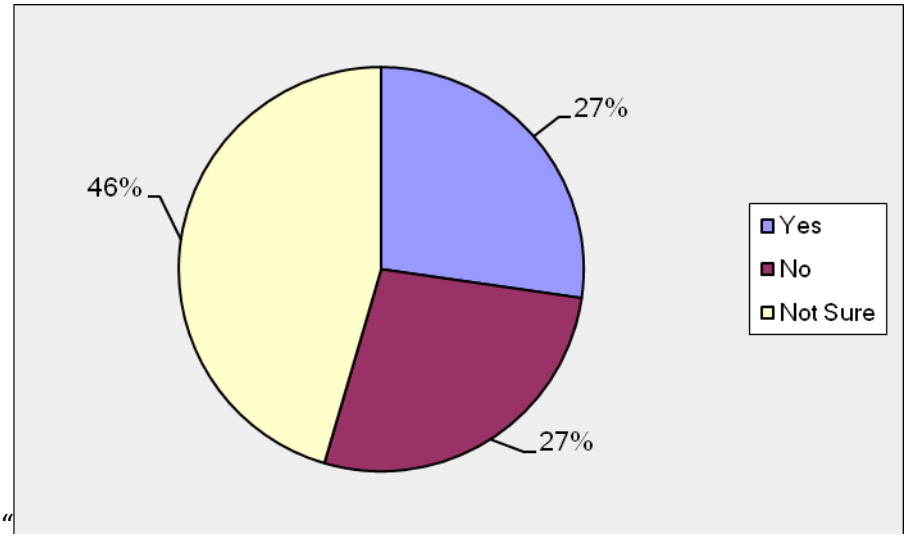
15. What were the timeframe or what is the estimated timeframe to implement and train paint retail facilities on the use of near zero-VOC (< 5 g/L) colorants once the development was/is complete?		
Answer Options	**Response Percent**	**Response Count**
< 6 months	45.5%	5
7 - 12 months	27.3%	3
1 -2 years	18.2%	2
> 2 years	0.0%	0
Not sure	9.1%	1
	answered question	**11**
	skipped question	**3**



AQMD Colorant Survey

Targeted Survey

16. Does that colorant system require a different dispensing unit?		
Answer Options	**Response Percent**	**Response Count**
Yes	27.3%	3
No	27.3%	3
Not Sure	45.5%	5
	answered question	**11**
	skipped question	**3**



17. How many of the colorant dispensers you currently have in the AQMD (see question 4) can be retrofitted for the use of near zero-VOC (< 5 g/L) colorants?		
Answer Options	**Response Percent**	**Response Count**
None	54.5%	6
Up to 10%	0.0%	0
Up to 20%	0.0%	0
Up to 50%	9.1%	1
Other (please specify)	36.4%	4
Our distributors have dispensers		
Task already completed		
Currently using zero VOC for waterborne; solvent based technology is not available		
ABOUT 60%		
	answered question	**11**

AQMD Colorant Survey

Targeted Survey

skipped question	**3**

18. What is the estimated one-time cost of retrofitting a colorant dispenser?

Answer Options	Response Percent	Response Count
0 - $500	9.1%	1
$500 - $5000	18.2%	2
$5000 - $20,000	0%	0
> $20,000	9.1%	1
Not Sure	63.6%	7
answered question		**11**
skipped question		**3**

19. What is the equipment life of the retrofitted dispenser?

Answer Options	Response Percent	Response Count
0 - 5 years	0.0%	0
5 - 10 years	18.2%	2
10 - 20 years	9.1%	1
> 20 years	0.0%	0
Not sure	72.7%	8
answered question		**11**
skipped question		**3**

20. What is the one-time cost of training for the retrofitted dispenser?

Answer Options	Response Percent	Response Count
0 - $50	18.2%	2
$50 - $100	0.0%	0
$100 - $500	9.1%	1
> $500	0.0%	0
Not sure	72.7%	8
answered question		**11**
skipped question		**3**

AQMD Colorant Survey

Targeted Survey

21. What is the additional operating and maintenance cost associated with the retrofitted dispenser?		
Answer Options	**Response Percent**	**Response Count**
0 - $50	18.2%	2
$50 - $100	0%	0
$100 - $500	0%	0
> $500	0%	0
Not sure	81.8%	9
	answered question	**11**
	skipped question	**3**

22. How many of the colorant dispensers you currently have in the AQMD are designed for use with near zero-VOC (<5 g/L) colorants?		
Answer Options	**Response Percent**	**Response Count**
None	36.4%	4
Up to 10%	9.1%	1
Up to 20%	0.0%	0
Up to 50%	0.0%	0
Not sure	36.4%	4
Other (please specify)	18.2%	2
	answered question	**11**
	skipped question	**3**

23. What is the one-time cost of a new near zero-VOC (< 5 g/L) colorant dispenser?		
Answer Options	**Response Percent**	**Response Count**
0 - $500	0%	0
$500 - $5000	0%	0
$5000 - $20,000	18.2%	2
$20,000 - $35,000	18.2%	2
> $35,000	9.1%	1
Not Sure	54.5%	6
	answered question	**11**
	skipped question	**3**

AQMD Colorant Survey

Targeted Survey

24. What is the equipment life of a new near zero-VOC (<5 g/L) colorant dispenser?		
Answer Options	**Response Percent**	**Response Count**
0 - 5 years	0.0%	0
5 - 10 years	9.1%	1
10 - 20 years	27.3%	3
> 20 years	9.1%	1
Not sure	54.5%	6
	answered question	**11**
	skipped question	**3**

25. What is the one-time cost of training for a new near-zero VOC (<5 g/L) colorant dispenser?		
Answer Options	**Response Percent**	**Response Count**
0 - $50	0.0%	0
$50 - $100	9.1%	1
$100 - $500	18.2%	2
> $500	9.1%	1
Not sure	63.6%	7
	answered question	**11**
	skipped question	**3**

26. What is the additional operating and maintenance cost associated with a new near-zero VOC (<5 g/L) colorant dispenser?		
Answer Options	**Response Percent**	**Response Count**
0 - $50	9.1%	1
$50 - $100	0%	0
$100 - $500	0%	0
> $500	9.1%	1
Not sure	81.8%	9
	answered question	**11**
	skipped question	**3**

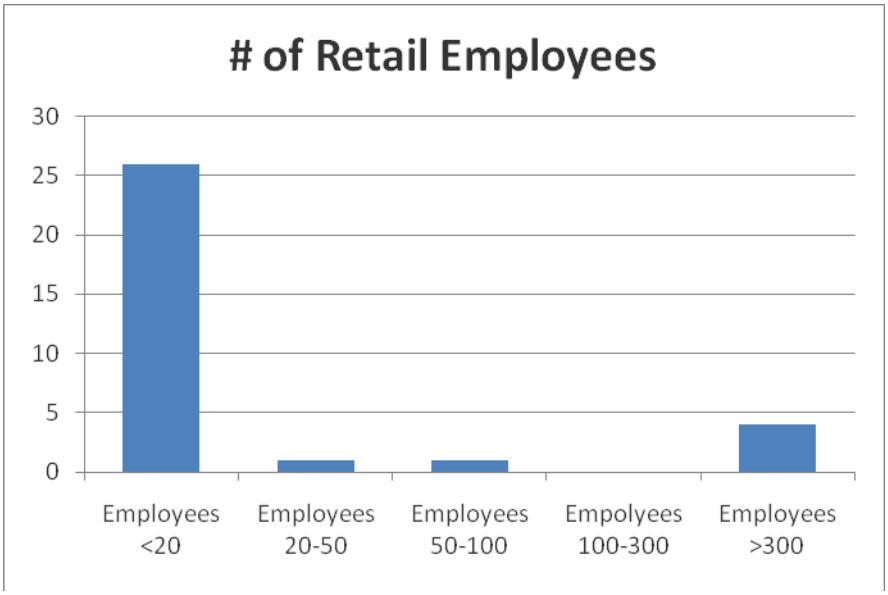
AQMD Colorant Survey

Retail Survey

Retail Survey

AQMD inspectors visited various retail stores to distribute surveys. The number of retail locations were not recorded therefore the percentage of responses are unknown.

1. What is the total number of employees?	
r Options	**Response Count**
	32
answered question	**32**
skipped question	**1**



2. How many retail locations in the AQMD?		
Answer Options	**Response Percent**	**Response Count**
1 - 5	50.0%	16
5 - 10	6.3%	2
10 - 20	0.0%	0
> 20	43.8%	14
answered question		**32**
skipped question		**1**

AQMD Colorant Survey

Retail Survey

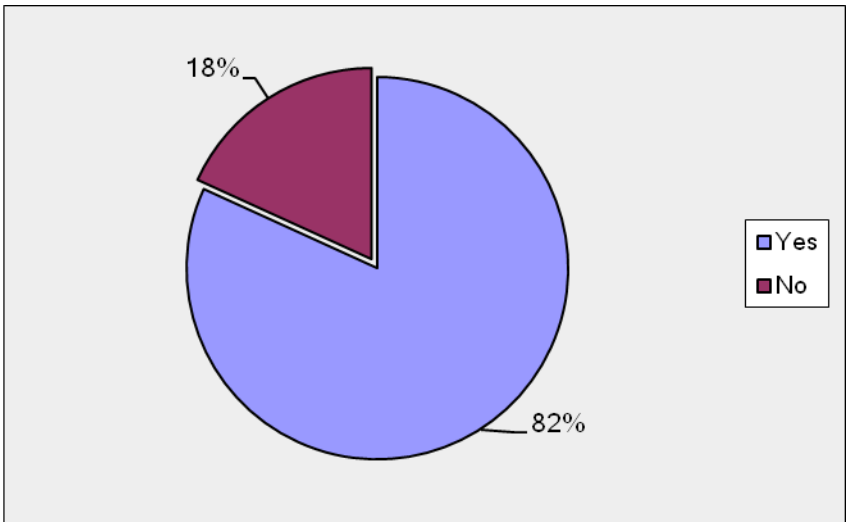
3. What is the NAICs labor category for your business?	
Answer Options	**Response Count**
	15
answered question	**15**
skipped question	**18**

NAICs Labor Category	Description	# of Retailers
444120	Paint and Wallpaper Stores	12
325510	Paint and Coating Manufacturing	1
	Retail/Wholesale	1
	Unknown	1

AQMD Colorant Survey

Retail Survey

4. Does your company use colorants at the point of sale to tint coatings for sale to consumers in the AQMD?		
Answer Options	**Response Percent**	**Response Count**
Yes	81.8%	27
No	18.2%	6
	answered question	**33**
	skipped question	**0**

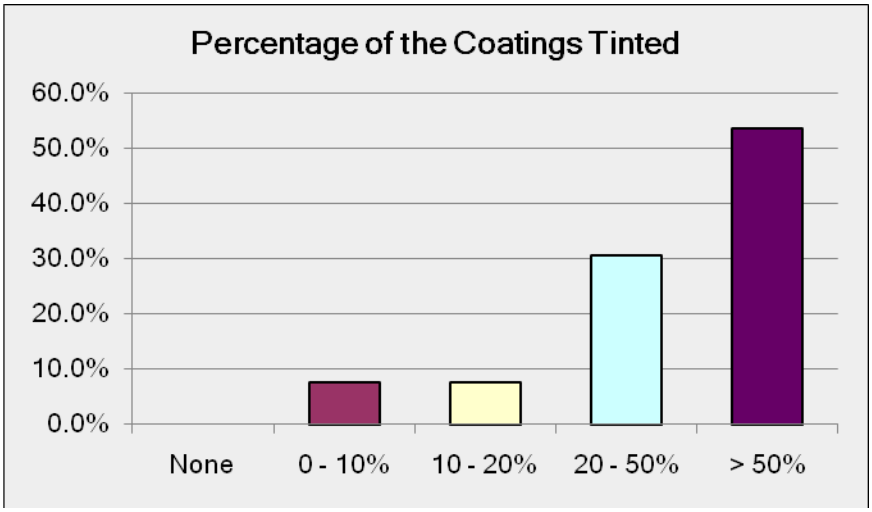


5. How many total colorant dispensers does your company have for that purpose located in the AQMD?		
Answer Options	**Response Percent**	**Response Count**
None	0.0%	0
Up to 10	85.2%	23
Up to 20	7.4%	2
Up to 50	0.0%	0
Other (please specify)	7.4%	2
>60		
>50		
	answered question	**27**
	skipped question	**6**

AQMD Colorant Survey

Retail Survey

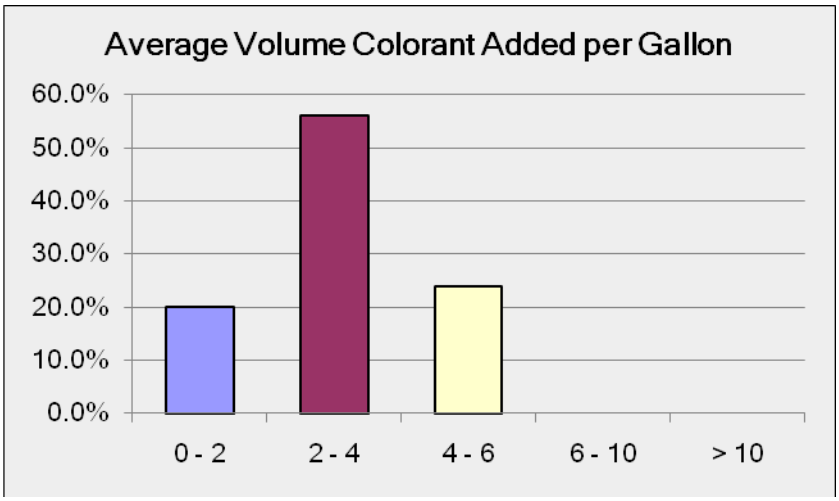
6. What percentage of the coatings that you sell, do you tint for the customer?		
Answer Options	**Response Percent**	**Response Count**
None	0.0%	0
0 – 10%	7.7%	2
10 – 20%	7.7%	2
20 – 50%	30.8%	8
> 50%	53.8%	14
	answered question	**26**
	skipped question	**7**



AQMD Colorant Survey

Retail Survey

7. What is the average volume (in ounces) of colorant added per gallon?		
Answer Options	**Response Percent**	**Response Count**
0 - 2	20.0%	5
2 - 4	56.0%	14
4 - 6	24.0%	6
6 - 10	0.0%	0
> 10	0.0%	0
	answered question	**25**
	skipped question	**8**



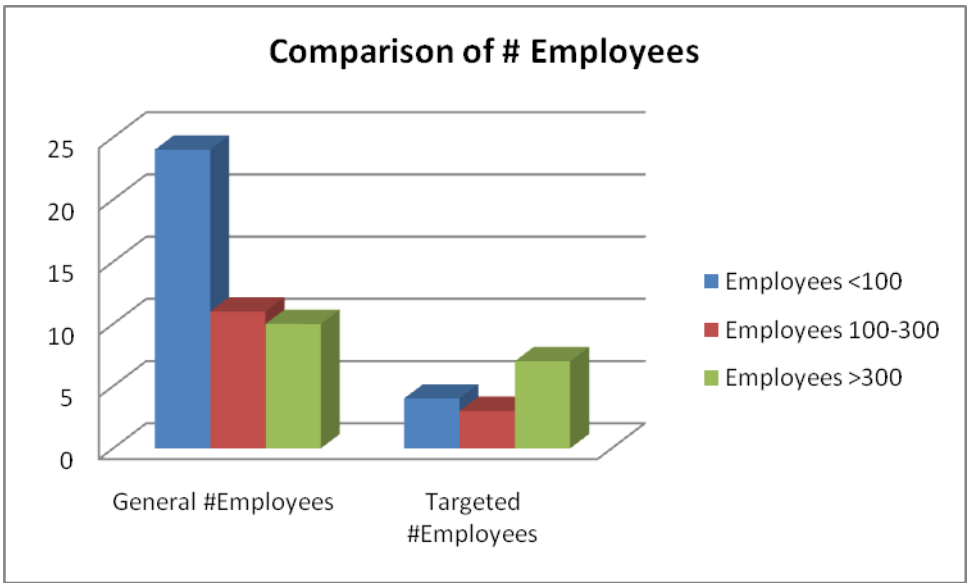
AQMD Colorant Survey

Compiled General & Targeted Surveys

Compiled Surveys

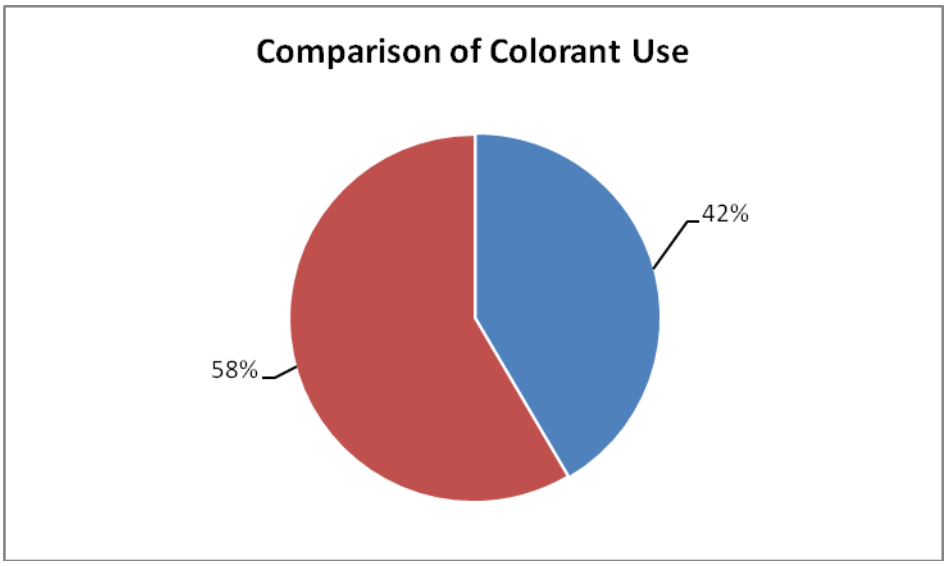
In this section, the results from the general and targeted surveys were combined by their similar questions.

What is the total number of employees?



As seen from the results above, the general survey had more companies with less than 100 empolyees, whereas the targeted survey had companies with a greater number of employees.

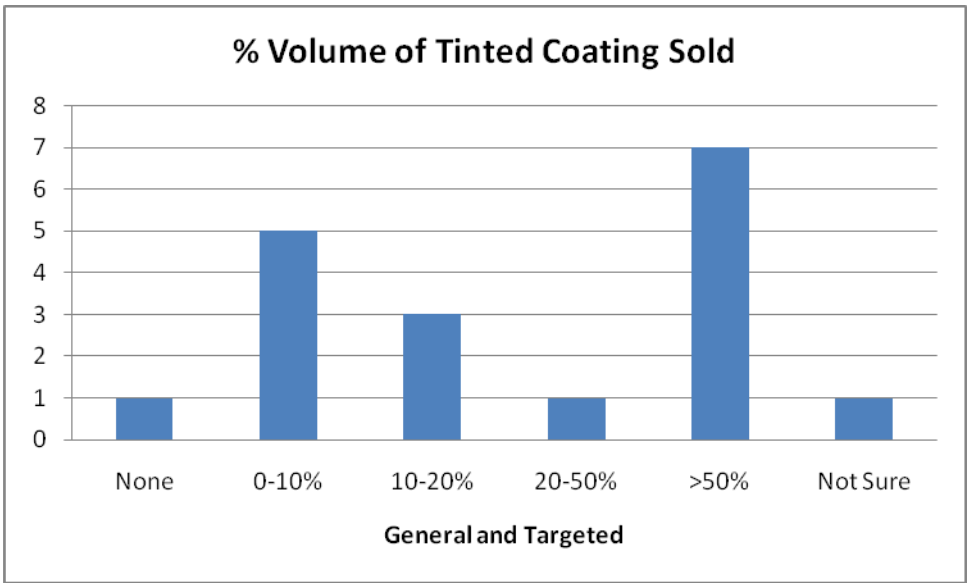
Does your company use colorants at the point of sale to tint coatings for sale to consumers in the AQMD?



AQMD Colorant Survey

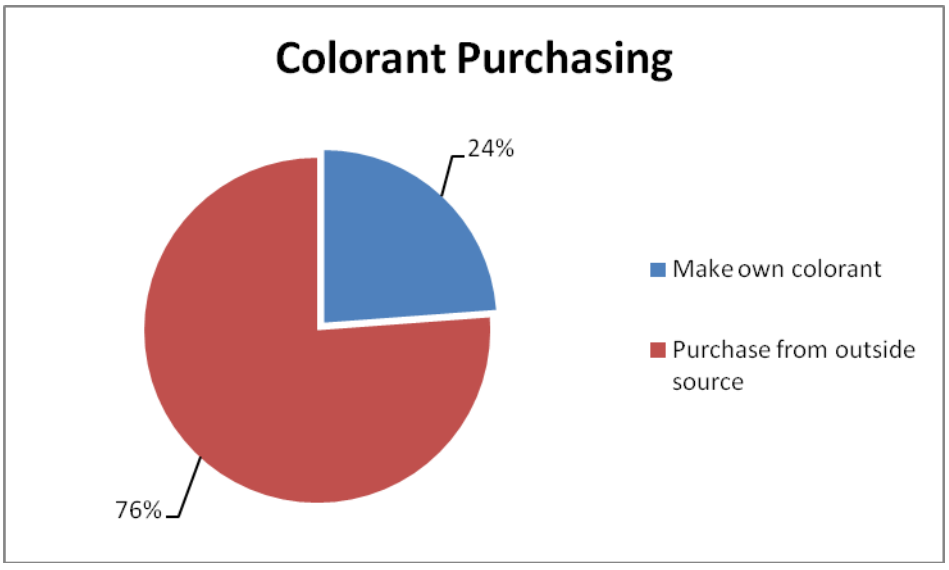
Compiled General & Targeted Surveys

What percent of the volume of your coatings are tinted at the point of sale?



When combining the general and tageted survey responses, the majority of the companies are tinting over 50% of their coatings at the point of sale.

Do you make your own colorant or purchase from an outside source?



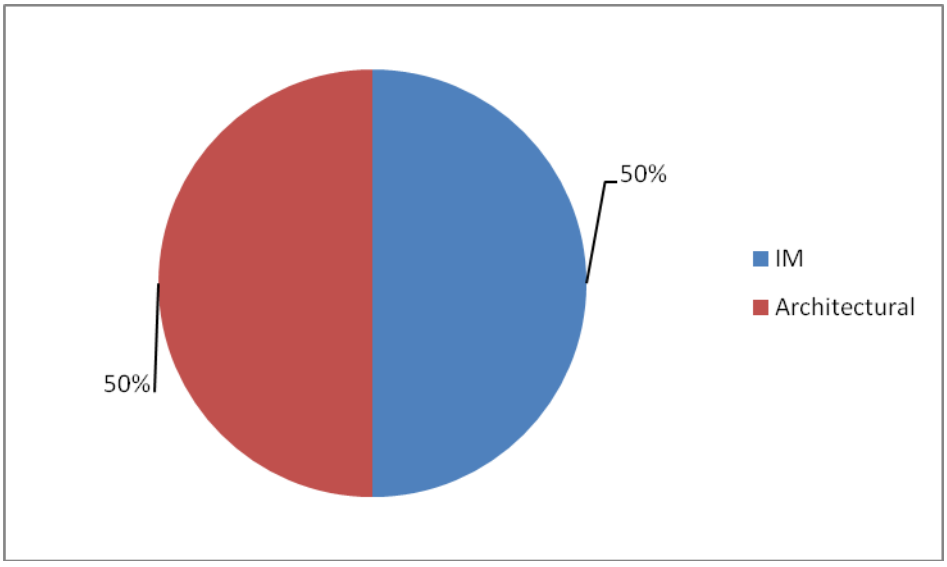
AQMD Colorant Survey

Compiled General & Targeted Surveys

What is the VOC content of the colorant system(s) you currently use? Check all that apply.

Answer Options	0 - 50 g/L	50 - 100 g/L	100 - 250 g/L	> 250 g/L
Universal colorant	1	0	0	7
Colorant solely for solvent based coatings	0	0	0	7
Colorant solely for waterborne coatings	3	1	1	4
Near-zero VOC universal colorant	3	0	0	0
Near-zero VOC colorant solely for waterborne	8	0	0	0
Other	0	0	0	0

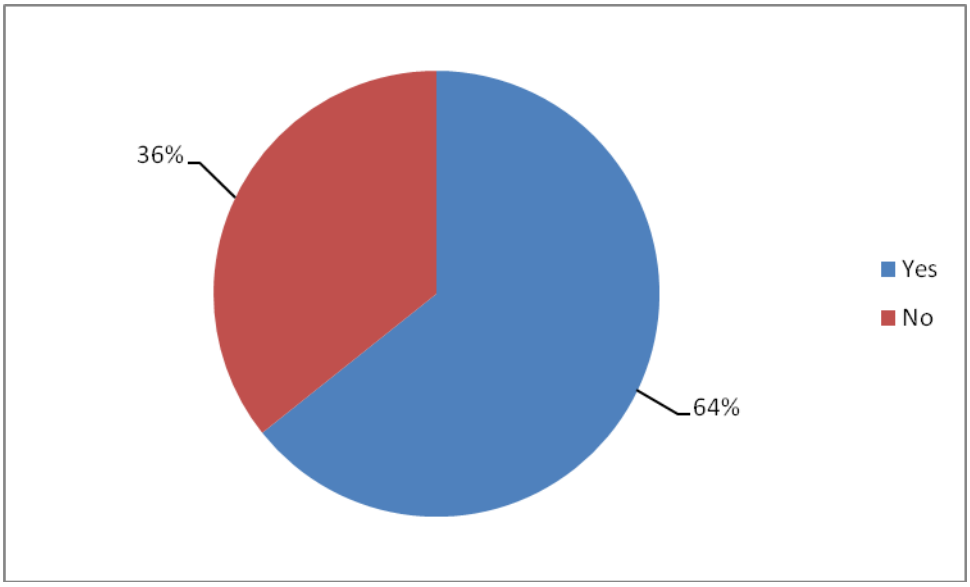
Are there any coating categories that your company requires conventional VOC-containing colorants to tint successfully?



AQMD Colorant Survey

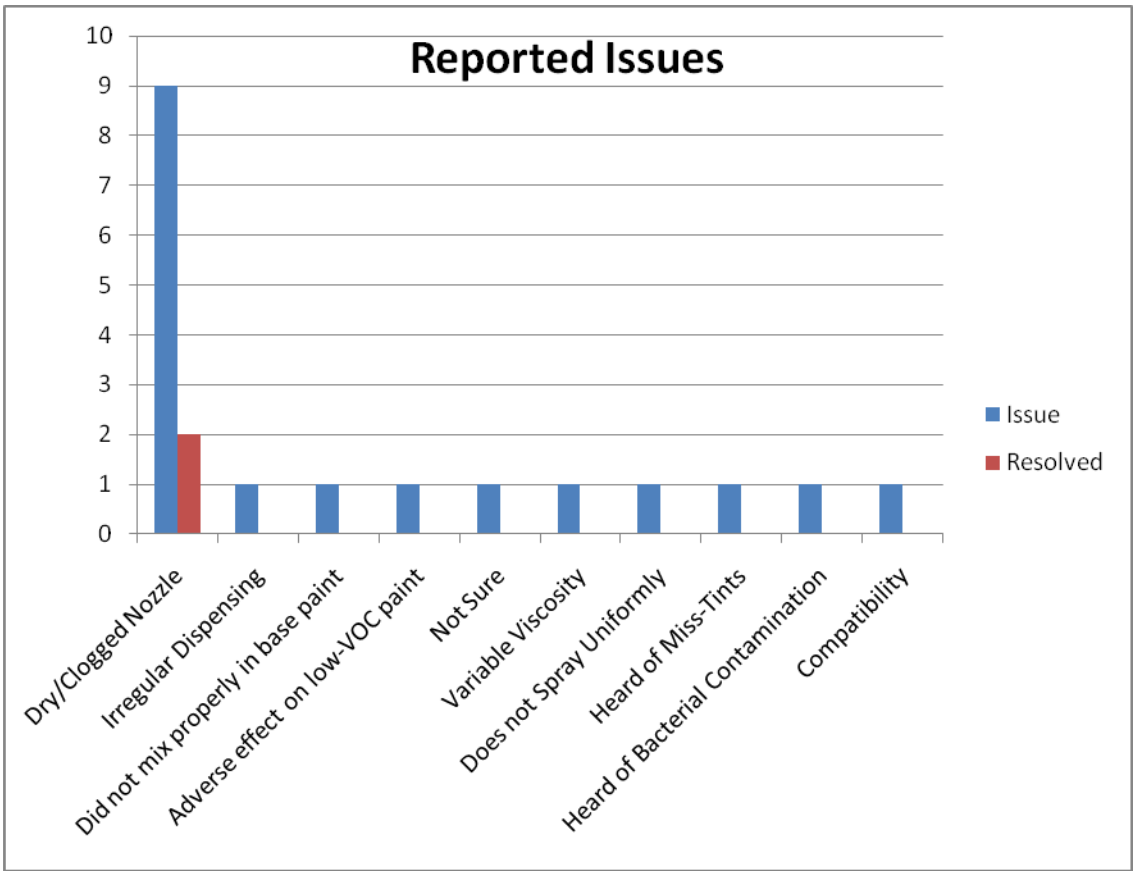
Compiled General & Targeted Surveys

Have you experienced problems associated with either dispensing equipment or coatings to which near zero-VOC (< 5g/L) colorants have been added?

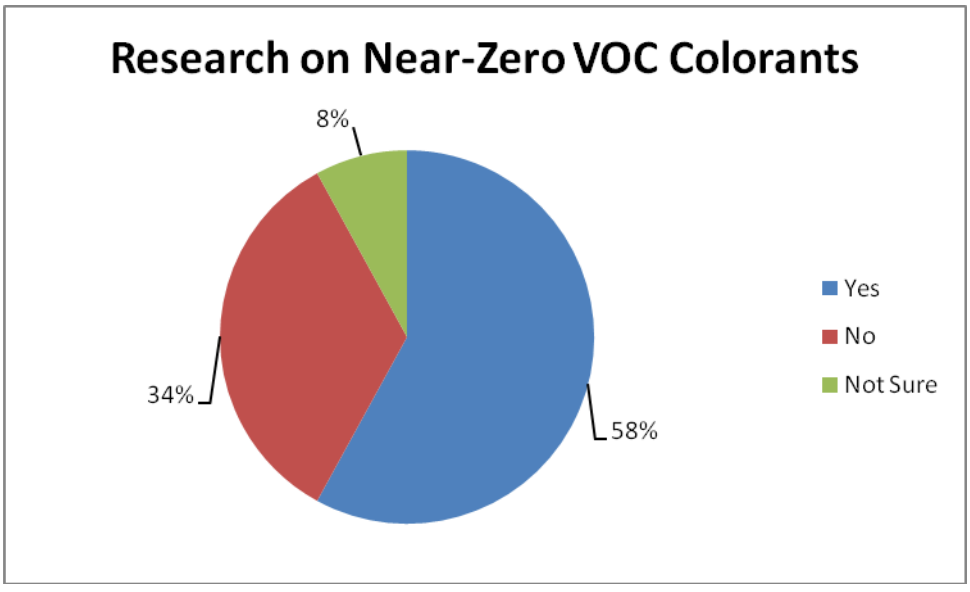


AQMD Colorant Survey

Compiled General & Targeted Surveys



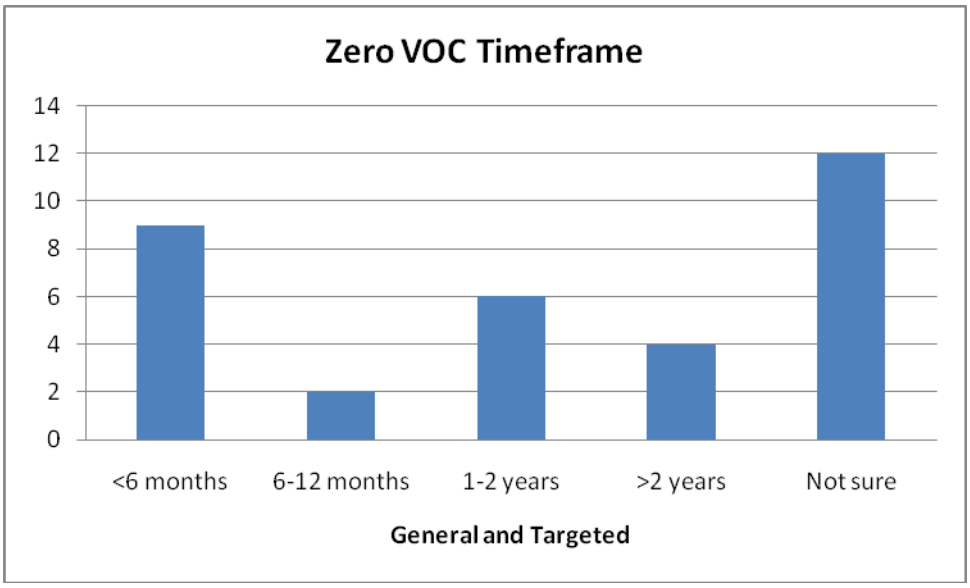
Do you currently use or are you conducting research and development on near zero-VOC colorants?



What was the timeframe or what is the estimated timeframe to complete the development?

AQMD Colorant Survey

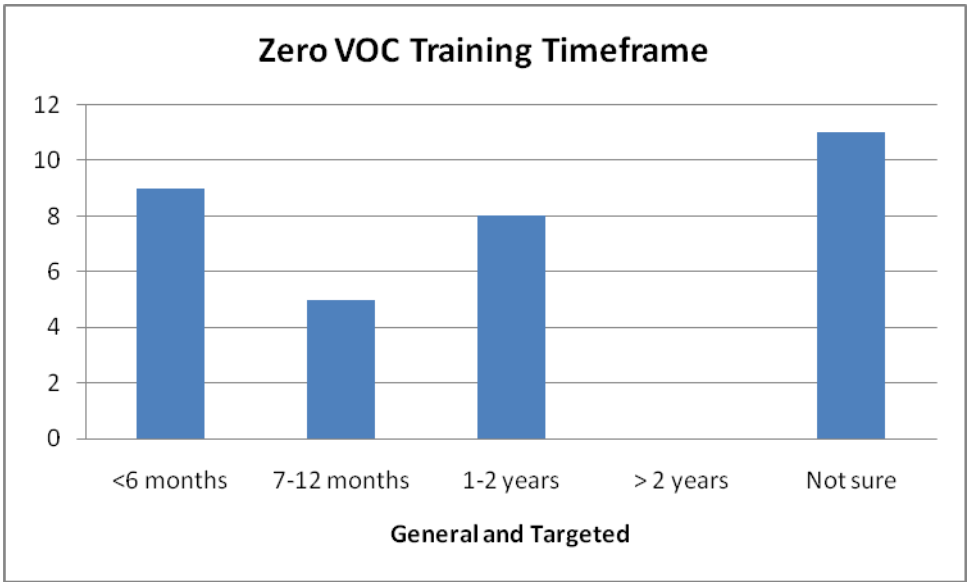
Compiled General & Targeted Surveys



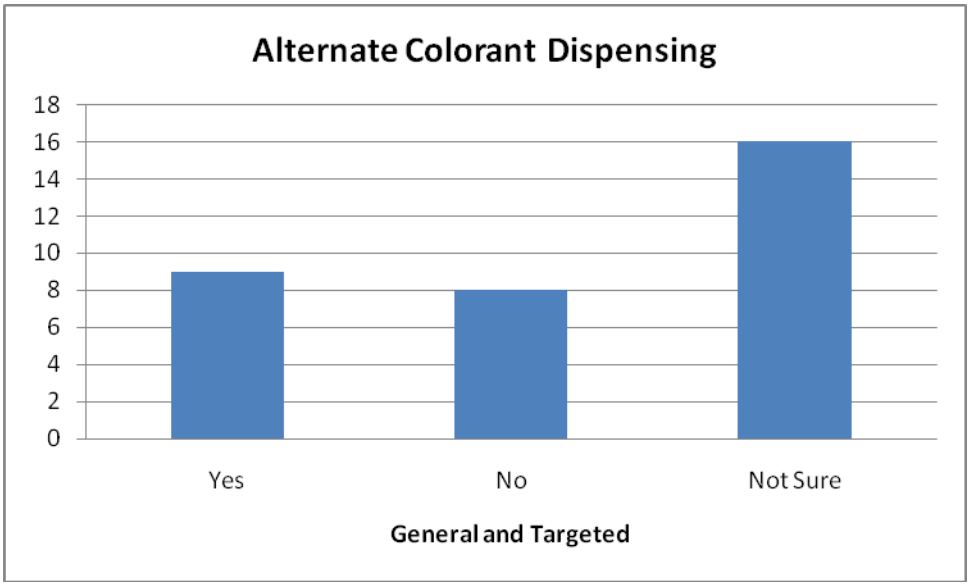
AQMD Colorant Survey

Compiled General & Targeted Surveys

What were the timeframe or what is the estimated timeframe to implement and train paint retail facilities on the use of near zero-VOC (< 5 g/L) colorants once the development was/is complete?



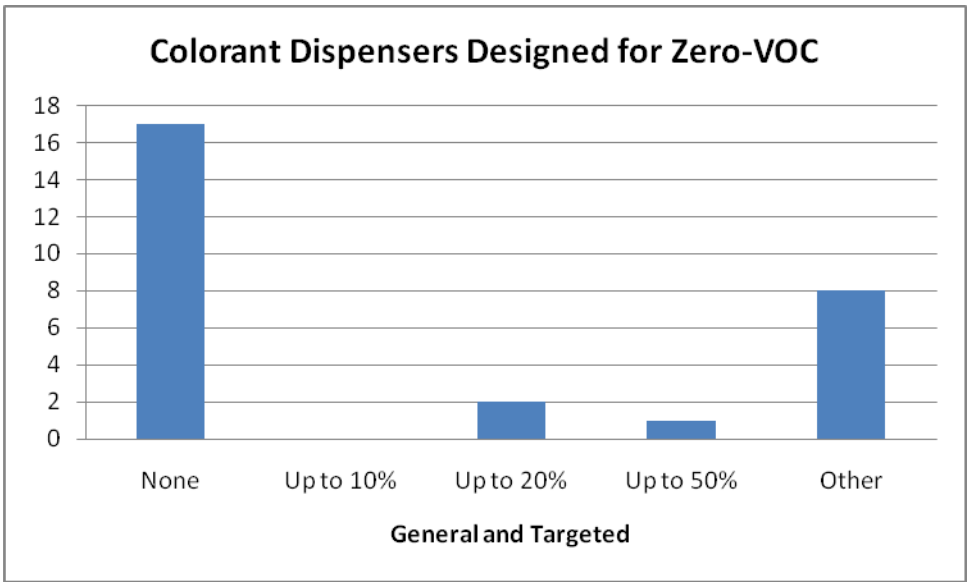
Does that colorant system require a different dispensing unit?



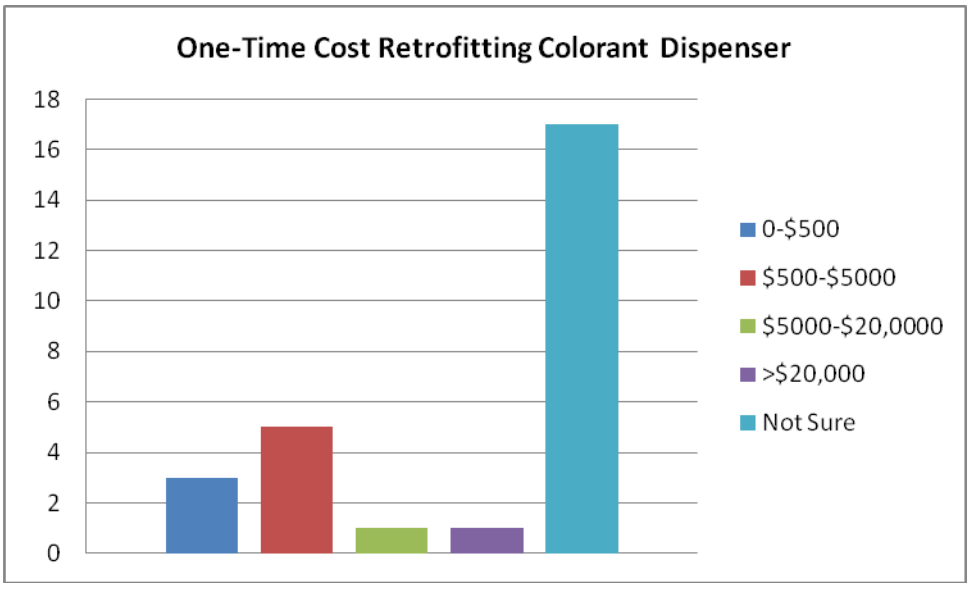
AQMD Colorant Survey

Compiled General & Targeted Surveys

How many of the colorant dispensers you currently have in the AQMD (see question 4) are designed or can be retrofitted for the use of near zero-VOC (< 5 g/L) colorants?



What is the estimated one-time cost of retrofitting a colorant dispenser?



AQMD Colorant Survey

Discussion and Emission Calculation

Discussion

Staff appreciates all of the manufacturer's and retailer's time in filling out the surveys. The results are insightful. The survey definitively shows that manufacturers are working toward the use of near-zero VOC colorants. The largest hurdle appears to be the issue of tip drying in the dispenser which can lead to miss-tints. For several manufacturers these issues have been resolved and they have gone forward to successfully utilize near-zero VOC colorants. The survey results for which coatings require conventional colorants was split down the middle. Further feedback outside of this survey indicates that the higher performance IM coatings require conventional colorants but are not tinted at the point of sale in large quantities. In site visits to local retailers, staff documented the use of a near-zero VOC colorant for waterborne IM coatings being added in a conventional dispenser.

In discussions with manufacturer who have either switched to near-zero VOC colorant, there are several options each of which present different challenges.

Powder tinting	Pigments must be pre-packaged which limits color selection. Dispenser for powder pigments not yet commercially available. No negative impact on film properties.
Universal colorant containing humectants	Humectants help issue with tip drying but can have detrimental effect on the film properties, especially for saturated colors in deep bases. Reported problems include film softness and blocking.
Waterborne colorant with no humectants	Less impact on film properties but tip drying is an issue which requires dispensing equipment with humidification units.

In addition, staff documented near-Zero VOC colorants being used with both a conventional carousel dispenser and with a dispenser missing the sponge used to keep the tip wet. In both instances the retail staff indicated that the dispensers needed 5 - 10 minutes of daily maintenance to keep the nozzles clear. No additional maintenance was mentioned at retail locations containing the dispensing units containing the full humidification units.

Estimated VOC Emissions

Based on the results from the surveys and the California Air Resources Board (CARB) 2005 survey of coatings sold in California in calendar year 2004[1]; assuming 45% of those coatings were sold in the AQMD, the VOC emissions from colorant added at the POS can be estimated. The majority of the respondents to the surveys indicated that more than 50% of the products sold in stores are tinted with colorants, the majority of which are flat or non-flat coatings. The highest sales are for light base (up to 4 ounces) followed by the saturated colors of the clear bases (up to 12 ounces). The VOC emissions estimate below assumes the VOC of Coating content of colorant to be 500 g/L (325 g/L VOC of Material), based on what has been documented in the field. This analysis only included Flat, Non-Flat and IM coatings, and assumes that 80% of the coatings are tinted at the point of sale, even though other coatings are also tinted at the point of sale (Stains, Quick Dry Enamels, Rust Preventative Coatings, Recycled Coatings, etc.).

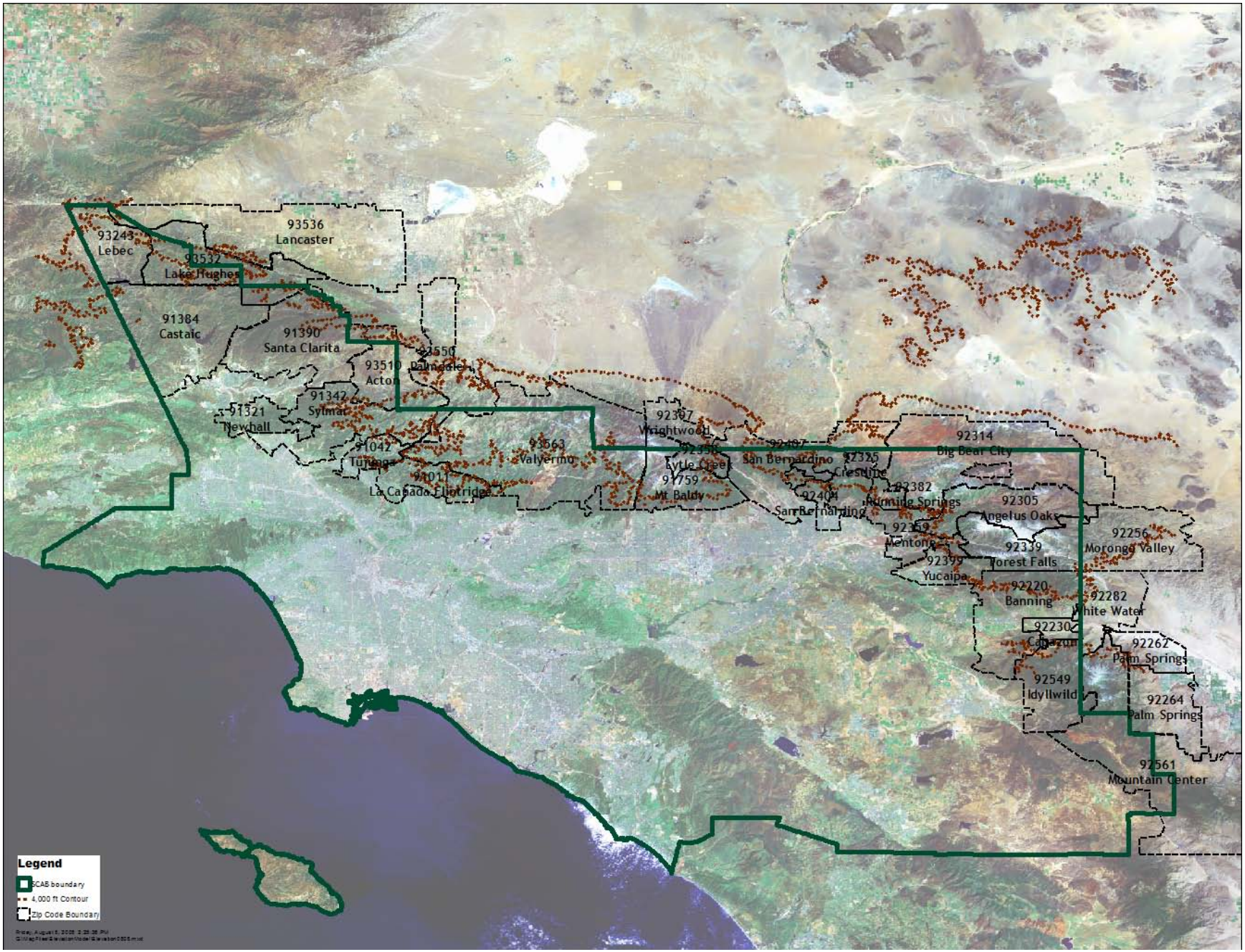
Category	Volume Sold (gallons)	Emissions (tpd)			
	Colorant Added:	3 oz	4 oz	5 oz	6 oz
Flat & Non-Flat	25,608,202	2.23	2.98	3.72	4.47
IM Solvent Based	505,047	0.04	0.06	0.07	0.09
IM Waterborne	249,494	0.02	0.03	0.04	0.04

[1] The 2005 CARB survey is used to indicate the higher volume sales in 2004, with an adjustment for volumes and emissions representing the South Coast only; however, the 2004 sales volume does not necessarily represent the upper bounds of paint sales or economic activity, although it does reflect pre-recession volumes.

A P P E N D I X B

MAP OF CITIES AND COMMUNITIES ABOVE 4,000 FEET

Map of Cities and Communities Above 4,000 Feet



ATTACHMENT G

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Socioeconomic Assessment for Proposed Amended Rule 1113─Architectural Coatings

May 2011

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EXECUTIVE SUMMARY

A socioeconomic analysis was conducted to assess the impacts of Proposed Amended Rule 1113 –Architectural Coatings. A summary of the analysis and findings is presented below.

Elements of Proposed amendments	Proposed Amendments to Rule 1113 (PAR 1113) would lower the VOC limit for several product categories, and the limit VOC content for the currently unregulated colorant category, effective on January 1, 2014. In addition, the proposed amendments would limit coating categories eligible for the Averaging Compliance Option (ACO), effective January 1, 2012, and phase out the ACO by 2015. Other proposed amendments include consideration of new coating categories and their VOC content limits, and clarification of the labeling and small container exemption provisions. The proposed amendments would reduce VOC emissions by 4.4 tons per day by 2015.
Affected Facilities and Industries	PAR 1113 would affect 198 coating manufacturers, of which 48 are local, and 3,436 retail outlets selling paints in the four-county area. The manufacturers and retail outlets belong to the industries of chemical manufacturing (NAICS 325) and retail trade (NAICS 44), respectively. PAR 1113 would also affect the end-users of coatings which include paint and wall covering contractors and the general public. The paint contractors belong to the construction sector (NAICS 238).
Assumptions of Analysis	Two Scenarios were created to assess the cost impacts of PAR 1113. Scenario A uses the price differential between compliant and noncompliant coatings that coating users would have to pay to estimate the direct impact of reformulation on these users. Scenario B places the direct impact of reformulation on coatings manufacturers and uses the price differentials to approximate the cost of reformulation to these manufacturers. In addition, to comply with the proposed colorant VOC limits, the two scenarios assume that retail outlets selling paints would incur additional labor cost to maintain and/or calibrate their dispensing machines more frequently.
Compliance Costs	The majority of the price increases between the compliant and noncompliant coatings are expected to be about $2 to $5 per gallon. The average annual total cost of the proposed amendments is estimated to be $8.66 million of which there would be a savings of $0.05 million resulting from the ACO phase out. Under both Scenario A and B, the local retail paint outlets will incur an average annual cost of $5.43 million. The remaining $3.23 million cost would be incurred by paint contractors and consumers under Scenario A and by manufacturers of coatings under Scenario B.
Jobs and Other Socioeconomic Impacts	The secondary and induced impacts of the proposed amendments are analyzed using the Regional Economic Models, Inc. (REMI) model, which includes published historical and projected economic data in assessing impacts of a policy. Overall, 21 jobs could be forgone annually, on average, between 2012 and 2025 in the local economy under Scenario A, which is 0.0002% of the baseline jobs in the four-county area. Under Scenario B, one job could be forgone annually, on average, between 2012 and 2025 in the local economy,

	which is 0.00001% of the baseline jobs in the four-county area. The estimated job impacts from both scenarios are considered to be within the noise of the model. There would be few impacts on the relative costs of production and the delivery prices in the local economy resulting from the implementation of the proposed amendments.

INTRODUCTION

The proposed amendments to Rule 1113 (Architectural Coatings) would lower the VOC limit for the categories of dry fog, form release, fire proofing, mastic, graphic arts, and metallic pigmented; and limit the VOC content for the currently unregulated colorant category, effective January 1, 2014. In addition, the proposed amendments would limit coating categories eligible for the Averaging Compliance Option (ACO), effective January 1, 2012. PAR 1113 would also phase out the ACO by 2015. Other proposed amendments include consideration of new coating categories and their VOC content limits, and clarification of the labeling and small container exemption provision. The proposed amendments would reduce VOC emissions by 4.4 tons per day by 2015.

LEGISLATIVE MANDATES

The socioeconomic assessments at the South Coast Air Quality Management District (AQMD) have evolved over time to reflect the benefits and costs of regulations. The legal mandates directly related to the assessment of the proposed amendments include the AQMD Governing Board resolutions and various sections of the California Health & Safety Code (H&SC).

AQMD Governing Board Resolutions

On March 17, 1989 the AQMD Governing Board adopted a resolution that calls for preparing an economic analysis of each proposed amendments or amendment for the following elements:

- Affected Industries
- Range of Control Costs
- Cost Effectiveness
- Public Health Benefits

On October 14, 1994, the Board passed a resolution which directed staff to address whether the proposed amendments or amendments brought to the Board for adoption are in the order of cost effectiveness as defined in the AQMP. The intent was to bring forth those rules that are cost-effective first.

Health & Safety Code Requirements

The state legislature adopted legislation that reinforces and expands the Governing Board resolutions for socioeconomic assessments. H&SC Sections 40440.8(a) and (b), which became effective on January 1, 1991, require that a socioeconomic analysis be prepared for any proposed amendments or rule amendment that *"will significantly affect air quality or emissions limitations."* Specifically, the scope of the analysis should include:

- Type of Affected Industries
- Impact on Employment and the Economy of the Basin
- Range of Probable Costs, Including Those to Industries

- Emission Reduction Potential
- Necessity of Adopting, Amending or Repealing the Rule in Order to Attain State and Federal Ambient Air Quality Standards
- Availability and Cost Effectiveness of Alternatives to the Rule

For the emission reduction potential and necessity of adopting the proposed amendments as well as availability and cost effectiveness of alternatives to the proposed amendments, please refer to the Staff Report of Proposed Amended Rule 1113. Additionally, the AQMD is required to actively consider the socioeconomic impacts of regulations and make a good faith effort to minimize adverse socioeconomic impacts. H&SC Section 40728.5, which became effective on January 1, 1992, requires the AQMD to:

- Examine Business and Small Business Impacts; and
- Consider Socioeconomic Impacts in Rule Adoption

H&SC Section 40920.6, which became effective on January 1, 1996, requires that incremental cost effectiveness be performed for a proposed amendment or amendment relating to ozone, carbon monoxide (CO), oxides of sulfur (SO_x), oxides of nitrogen (NO_x), and their precursors. Incremental cost effectiveness is defined as the difference in costs divided by the difference in emission reductions between one level of control and the next more stringent control. Incremental cost effectiveness analysis is presented in the Staff Report prepared for the proposed amendments.

AFFECTED INDUSTRIES

The proposed amendments to Rule 1113 would affect 198 coating manufacturers, of which 48 are local, and 3,436 retail outlets selling paints in the four-county area. The manufacturers and retail outlets belong to the industries of chemical manufacturing (NAICS 325) and retail trade (NAICS 44), respectively. PAR 1113 would also affect the end-users of coatings which include paint and wall covering contractors (paint contractors) and the general public. The paint contractors belong to the construction sector (NAICS 238). According to the County Business Patterns, there are approximately 1,600 paint and wall covering contractors in the district.

Small Businesses

The AQMD defines a "small business" in Rule 102 as one which employs 10 or fewer persons and which earns less than $500,000 in gross annual receipts. In addition to the AQMD's definition of a small business, the federal Small Business Administration (SBA), the federal Clean Air Act Amendments (CAAA) of 1990, and the California Department of Health Services (DHS) also provide definitions of a small business.

The SBA's definition of a small business uses the criteria of gross annual receipts (ranging from $0.75 million to $35.5 million), number of employees (ranging from 50 to 1,500), megawatt hours generated (4 million), or assets ($175 million), depending on industry type (US SBA, 2010). The SBA definitions of small businesses vary by 6-digit North American Industrial

Classification System (NAICS) code. A business in the painting and wall covering contractors sector with less than $14 million in gross annual receipts is considered small by SBA.
The CAAA classifies a facility as a "small business stationary source" if it: (1) employs 100 or fewer employees, (2) does not emit more than 10 tons per year of either VOC or NOx, and (3) is a small business as defined by SBA.

Out of the 48 coating manufacturers in the district, information on sales for 11 facilities and that on employees for 23 facilities were available, based on 2011 Dun and Bradstreet data. Under the AQMD definition of small business, there are two small businesses. Using the SBA definition of small business, there are 22 small businesses. Under the CAAA definition of small business, there are 21 small businesses assuming that all the facilities without the annual emission data emit less than 10 tons of VOC or NOx.

Out of the 3,436 local affected retail outlets selling paints, information on sales for 296 facilities and that on employees for 315 facilities were available from Dun and Bradstreet. Under the AQMD definition of small business, there are 244 small businesses. Under the SBA's and CAAA's definitions of small business, 296 retail outlets are small businesses.

Since there is no listing of individually affected paint contractors, the number of affected small businesses cannot be determined. However, due to the fact that the majority of the businesses in this sector are small shops, most of them could potentially be small businesses.

COMPLIANCE COST

In order to meet the lower proposed VOC limits, it is assumed that affected coating manufacturers would need to reformulate their noncompliant coatings that fall under categories of dry fog, form release, fire proofing, mastic, graphic arts, and metallic pigmented; and colorant by 2014. In addition, affected manufacturers are expected to reformulate specialty primer, primer, sealer, undercoaters (PSU), and waterproofing and concrete/masonry sealers (WPCMS) that would no longer be eligible for the average compliance option (ACO) by 2012. Lastly, all the remaining high VOC categories that are eligible for averaging would have to be reformulated (or no longer be sold) due to the phase out of ACO after 2015.

To comply with the proposed colorant VOC limits, it is assumed that retail outlets selling paints would need to maintain and/or calibrate their dispensing machines more often. This analysis includes the additional labor costs associated with increased maintenance and calibration of colorant dispensers at retail paint outlets.

Two Scenarios were created to assess the cost impacts of PAR 1113. Scenario A uses the price differentials between compliant and noncompliant coatings that coating users would have to pay to estimate the direct impact of reformulation on these users. Scenario B places the direct impact of reformulation on coatings manufacturers and uses the price differentials to approximate the cost of reformulation to these manufacturers. The two Scenarios are used to estimate the potential impacts from two different perspectives.

Scenario A

Table 1 shows the additional cost that coating users would have to pay for the compliant products based on the price differences between compliant and non-compliant products. These users include paint contractors and consumers. The annual cost to the end users was estimated by multiplying the number of gallons used by the incremental cost (or savings) per gallon of compliant coatings. The total annual cost to the coating users is estimated to be $3.23 million. Please see the Staff Report for more detailed assumptions.

Table 1
Incremental Coating Prices by Category

Coating Categories	Implementation Date	Incremental Cost/Gallon	Number of Gallons
Dry Fog	2014	$0.91	79,211
Form Release	2014	$0.00	133,371
Fire Proofing	2014	$2.97	2,586
Graphic Arts	2014	$4.77	2,424
Metallic Pigmented	2014	$13.19	4,601
Mastic	2014	$5.68	172,032
Colorant	2014	$1.80	1,000,320
Specialty Primer	2012	$4.79	248,380
PSU	2012	-$3.07	121,107
WPCMS	2012	$3.28	2,254
ACO Phase-out*	2015	-$0.07	928,134
Total			**2,694,420**

*Represents the weighted average price of those coatings that would no longer be eligible for averaging, thus would have to be reformulated.

According to a 2009 staff survey, the ultra-low VOC colorants could result in more frequently clogging of dispenser tips. As a result, retail outlets may need to maintain and/or calibrate their dispensing machines more often. Although such impacts may have been minimized due to the fact that the revised proposed VOC limits for colorants are somewhat higher now than was originally proposed during the initial stages of rule development process, this analysis assumes that the same costs due to more frequent maintenance and calibration will still be incurred.

It is assumed that all the 3,436 retailers would increase their labor maintenance by 10 minutes a day, with an estimated labor cost of $30 per hour (a total of $1,825 per year). The total annual labor cost for the 3,436 retailers would be $6.27 million.

Some retail outlets may need to replace their dispenser units and perform additional calibration or other maintenance. Based on feedback from coating and dispenser manufacturers, there would be no increase in the replacement cost because market forces have actually lowered the cost of these new dispensers. Furthermore, national paint outlets such as Home Depot and

Lowe's that sell the majority of coatings are in the process or have already switched to new dispensers and as such, no additional replacement cost was assumed for these outlets.

It is assumed that the 221 retail outlets that use automated dispensing machines may need to perform additional calibration or other maintenance on their dispensers at $300 per year or $66,300 annually for the 221 retail outlets. Retail outlets that use manual dispenser machines or new generation dispensers would not need to perform additional calibration or other maintenance. As a result, the total annual labor cost to retailers is estimated to be $6.34 million.

Based on the data received from chemical manufacturing industry representatives, it is assumed that paint contractors account for an estimated 65 percent of total paint sales and consumers account for the remaining 35 percent. As a result, they are estimated to share 65 percent ($2.10 million) and 35 percent ($1.13 million) of the estimated cost ($3.23 million), respectively. The total average annual cost of PAR 1113 is projected to be $8.66 million (Table 2).

Table 2
Average Annual Cost of Proposed Amendments (Scenario A)
(in millions of dollars)

Affected Industries	2012	2014	2015	2025	Average Annual Cost (2012-2025)
Retail Outlets	$0	$6.34	$6.34	$6.34	$5.43
Consumers	$0.29	$1.29	$1.27	$1.27	$1.13
Paint Contractors	$0.54	$2.40	$2.36	$2.36	$2.10
Total	**$0.82**	**$10.03**	**$9.96**	**$9.96**	**$8.66**

Scenario B

Manufacturers of noncompliant coatings will need to reformulate their products to meet the VOC requirements of PAR 1113. However, different manufacturers may utilize different technologies to meet the VOC limits and therefore their reformulation costs may differ. Since manufacturers treat these costs as proprietary, they do not provide cost data to the AQMD. As a result, AQMD utilizes the price differences between compliant and non-compliant products as proxies for the one-time reformulation, testing, and commercialization costs. The $3.23 million ($1.13 plus $2.10 million) cost to paint contractors and consumers under Scenario A will thus be incurred by the coating manufacturers (in and out of the district).[1] The cost to retail outlets for additional calibration and maintenance of dispensers remains the same as Scenario A. The $8.66 million total average annual cost of the proposed amendments is distributed as follows:

[1]The equivalent one-time reformulation, testing, and commercialization cost based on the annual $3.23 million price differentials is $ 35.6 million. This was based on four-percent real interest rate and compliance period from 2012 to 2015.

Table 3
Average Annual Cost of Proposed Amendments (Scenario B)
(in millions of dollars)

Affected Industries	Average Annual Cost (2012-2025)
Chemical Manufacturing	$3.23
Retail Outlets	$5.43
Total	**$8.66**

JOBS AND OTHER SOCIOECONOMIC IMPACTS

The REMI model (version 1.2.7) is used to assess the total socioeconomic impacts of a policy change. The model links the economic activities in the counties of Los Angeles, Orange, Riverside, and San Bernardino. The REMI model for each county is comprised of a five block structure that includes (1) output and demand, (2) labor and capital, (3) population and labor force, (4) wages, prices and costs, and (5) market shares. These five blocks are interrelated. Within each county, producers are made up of 165 private non-farm industries, three government sectors, and a farm sector. Trade flows are captured between sectors as well as across counties and the rest of U.S. Market shares of industries are dependent upon their product prices, access to production inputs, and local infrastructure. The demographic/migration component has 160 ages/gender/race/ethnicity cohorts and captures population changes in births, deaths, and migration.

The assessment here is performed relative to a baseline where there is no adoption of the proposed amendments. Direct effects of the policy change (the proposed amendments) have to be estimated and used as inputs to the REMI model in order for the model to assess secondary and induced impacts for all the actors in the four-county economy on an annual basis and across a user-defined horizon (2012 to 2025). Direct effects of PAR 1113 include additional costs to the affected industries and additional sales of materials by local vendors at the county (or finer) level and by industry.

Two different simulation methods reflecting the two Scenarios mentioned before are used to examine the total impact of the proposed amendments on the entire local economy. Scenario A uses the price differentials between lower and higher VOC coatings as additional costs to consumers and paint contractors and Scenario B uses the differentials to approximate the additional costs of reformulation, testing, and commercialization that manufacturers of coatings would face.

Scenario A

Higher prices of compliant products would translate into additional sales to the retail sector, which would spur additional production at the manufacturing level. Coating manufacturers would make necessary purchase decisions to support additional production. This process continues until the economy reaches an equilibrium. The interactions among industries and between industries and consumers are captured in the REMI model as secondary and induced

impacts. On the other hand, the price differentials between lower and higher VOC coatings would increase the cost of doing business for paint contractors and the expenditure of durable house furnishings for consumers. The additional labor required for maintaining dispenser units at retail stores would result in a reduction in labor productivity because more labor will now be required to produce the same amount of output.

Overall, 21 jobs could be forgone annually, on average, between 2012 and 2025 in the local economy, which is 0.0002% of the baseline jobs in the four county area. Table 4 presents the estimated job impact by industry for the proposed amendments. The retail sector is projected to gain an average of 25 jobs from 2012 to 2025 due to additional sales from compliant coatings. Construction sector would experience five jobs forgone due to additional cost of doing business incurred by painting contractors. The remaining sectors would incur minor jobs forgone due to secondary and induced impacts resulting from interactions between industries and consumers. It should be noted that the estimated 21 jobs forgone annually from Scenario A, on average, from 2012 to 2025 are considered to be within the noise the model.

Table 4
Job Impacts of Proposed Amendments (Scenario A)

Industries	2012	2015	2025	Average Annual (2012-2025)
Construction	-1	-6	-5	-5
Manufacturing	-1	-3	-3	-3
Wholesale Trade	-1	-4	-4	-3
Retail Trade	2	39	21	25
Transportation and Warehousing	0	-1	-2	-1
Information	0	-1	-1	-1
Finance and Insurance	0	-2	-2	-2
Real Estate and Rental and Leasing	-1	-5	-5	-4
Professional and Technical Services	0	-4	-6	-4
Management of Companies and Enterprises	0	-1	-1	-1
Administrative and Waste Services	0	-4	-5	-4
Educational Services	0	-1	-1	-1
Health Care and Social Assistance	-1	-3	-4	-3
Arts, Entertainment, and Recreation	0	-1	-1	0
Accommodation and Food Services	-1	-2	-5	-3
Other Services, except Public Admin.	-1	-4	-4	-3
Government	-1	-5	-8	-6
Total	**-5**	**-7**	**-34**	**-21**

Scenario B

Scenario B uses the price differentials between the compliant and the conventional higher-VOC coatings to approximate the additional costs of reformulation, testing, and commercialization that manufacturers of the lower VOC products may face under the requirements of the proposed amendments. Only coatings produced in the four-county area are modeled.[2] Colorant is not

[2] In order to model manufacturers outside of the four-county area, a REMI model including the rest of U.S. would be needed.

produced in the area and is thus not modeled. It is assumed that 57 percent of the remaining coatings categories are produced in the area based on the information from Rule 314 (Fees for Architectural Coatings).

There would be increased demand for low-VOC technology in the chemical manufacturing industry and for product testing and commercialization services provided by the professional and technical services industry when local producers of coatings reformulate existing products. It is assumed that 25 percent of the local production cost will be used for reformulation and the rest for testing and commercialization. On the other hand, local producers of coatings (part of chemical manufacturing industry) would incur additional costs of doing business for their reformulation. The ratio of the sales volume of coatings sold by manufacturers in each county is used to distribute the total local production of affected coatings to each county. The additional labor required for maintaining dispenser units at retail stores would result in a reduction in labor productivity because more labor will now be required to produce the same amount of output.

Overall, one job could be forgone annually, on average, between 2012 and 2025 in the local economy, which is 0.00001% of the baseline jobs in the four-county area. Table 5 presents the estimated job impact by industry for the proposed amendments. The retail sector could gain an average of 17 jobs between 2012 and 2025 due to additional sales of the compliant coatings. Projected job gains in the industry of professional and technical services in 2012 are due to the additional expenditures on testing and commercialization services. Other sectors also show slight job gains in 2012 as the local economy benefits from the additional demand for materials and services used in the reformulation process. Over time, the jobs forgone from the additional cost of doing business by the local manufacturers of coatings offsets jobs created from their additional investment in formulation, thus resulting in net jobs forgone in later years. It should be noted that the estimated one job forgone annually from Scenario B, on average, between 2012 to 2025 are considered to be within the noise the model.

Table 5
Job Impacts of Proposed Amendments (Scenario B)

Industries	2012	2015	2025	Average Annual (2012-2025)
Construction	2	-2	-3	-2
Manufacturing	1	-4	-4	-3
Wholesale Trade	1	-3	-3	-2
Retail Trade	3	28	13	17
Transportation and Warehousing	1	-1	-1	-1
Information	1	-1	-1	0
Finance and Insurance	2	-1	-1	-1
Real Estate and Rental and Leasing	2	-1	-2	-1
Professional and Technical Services	30	-5	-4	2
Management of Companies and Enterprises	0	-1	-1	-1
Administrative and Waste Services	4	-3	-3	-2
Educational Services	1	0	-1	0
Health Care and Social Assistance	3	-2	-3	-1
Arts, Entertainment, and Recreation	1	0	-1	0
Accommodation and Food Services	2	-1	-3	-1
Other Services, except Public Admin.	3	-2	-2	-1
Government	4	-3	-5	-3
Total	**59**	**0**	**-22**	**-1**

Competitiveness

The additional cost brought on by the proposed amendments would increase the cost of production of the affected industries relative to their national counterparts. Changes in relative production costs would thus be a good indicator of changes in relative competitiveness. The magnitude of the impact depends on the size and diversification of, and infrastructure in a local economy as well as interactions among industries. A large, diversified, and resourceful economy would absorb the impact with relative ease.

Changes in production costs will affect prices of goods produced locally. The relative delivered price of a good is based on its production cost and the transportation cost of delivering the good to where it is consumed or used. The average price of a good at the place of use reflects prices of the good produced locally and imported elsewhere. Under both Scenarios, there would be few impacts on the relative costs of production and the delivery prices in the local economy resulting from the implementation of the proposed amendments.

RULE ADOPTION RELATIVE TO THE COST-EFFECTIVENESS

On October 14, 1994, the Governing Board adopted a resolution that requires staff to address whether rules being proposed for adoption are considered in the order of cost-effectiveness. The 2007 Air Quality Management Plan (AQMP) ranked, in the order of cost-effectiveness, all of the proposed control measures for which costs were quantified. It is generally recommended that the most cost-effective actions be taken first.

The proposed amended Rule 1113 will partially implement Control Measure MCS-07 (Application of All Feasible Measures). The cost-effectiveness of Control Measure MCS-07 was not assessed due to unavailability of cost data at the time. The overall cost effectiveness of PAR 1113 is estimated to be $6,211 per ton of VOC, which would have been in the top quarter of the cost effectiveness ranking for stationary and area sources measures in the 2007 AQMP.

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ATTACHMENT H

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Environmental Assessment:

Proposed Amended Rule 1113 – Architectural Coatings

May 2011

SCAQMD No. 110408JK
SCH No. 2003011053

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PREFACE

This document constitutes the Final Environmental Assessment (EA) for Proposed Amended Rule (PAR) 1113 – Architectural Coatings. The Draft EA was released for a 30-day public review and comment period from April 12, 2011 to May 22, 2011. Two comment letters were received on the Draft EA.

Subsequent to the circulation of the Draft EA for public review, the VOC content limit for mastic coatings in PAR 1113 was reduced from the existing limit of 300 grams per liter to 100 grams per liter on January 1, 2014. The proposed VOC content limit of 100 grams per liter for mastic coatings is consistent with the mastic coating VOC content limit in the 2007 CARB SCM for architectural coatings. Six air districts (Bay Area AQMD, San Joaquin Valley APCD, Ventura County APCD, Imperial County APCD, Eastern Kern APCD, and Placer County APCD have already adopted the 2007 CARB SCM; therefore, pursuant to Health and Safety Code Section 40440(b)(1), SCAQMD is required to adopt the 2007 CARB SCM VOC content limit for mastic coatings of 100 gram per liter. Reducing the VOC content limit for mastic coatings is consistent with the proposed project objective to further reduce the VOC content limit of existing categories. Reducing the VOC content limit for mastic coatings was analyzed in this Final EA, and was determined not to alter the conclusions presented in the Draft EA.

Currently, the VOC limits for the categories waterproofing concrete/masonry sealers; waterproofing sealers; and primers, sealers undercoaters are all at 100 grams per liter. After the circulation of the Draft EA for public review, SCAQMD staff proposed to change the definition of waterproofing concrete/masonry sealers by changing the conjunction 'and' to 'or' to better reflects current usage of this coating category. Waterproofing concrete/masonry sealers coatings that would not fit the current narrow definition would have been regulated as under the waterproofing sealer category or as a sealer under the primers, sealers undercoaters category, both of which have the same VOC content limits as waterproofing concrete/masonry sealers category. As a result, this proposed change would better describe the waterproofing concrete/masonry sealers coating category, but not affect the VOC content limit the expanded definition would be subject to. Since the VOC content limit would not change, no reformulation is expected, and therefore, environmental impacts are not expected. Thus, the change in conjunctions from 'and' to 'or' would not alter the conclusions presented in the Draft EA.

A sentence that stated that exempt compounds may be used to reformulate affected architectural coatings was removed, since no PAR 1113 compliant coatings with exempt compounds were identified in a review of MSDSs for existing PAR 1113 compliant coatings. The Draft EA assumed that PAR 1113 non-compliant coatings would be reformulated to be similar to existing PAR 1113 compliant coatings. Therefore, PAR 1113 is not expected to increase the use of exempt solvents. Corrections were made to the flammability column in Table 2-11. Since the flammability analysis in the Draft EA is based on the NFPA Flammability Rating not the Consumer Products Safety Commission (CPSC) ratings, the changes will not affect the conclusion of the flammability analysis in the Final EA.

To ease in identification, modifications to the document are included as <u>underlined text</u> and text removed from the document is indicated by ~~strikethrough~~. CEQA Guidelines §15088.5(b) states that recirculation is not required were new information added to the EA mainly clarifies or

amplifies or makes insignificant modifications in an adequate EIR. None of the modifications alter any conclusions reached in the Draft EA (i.e., would not result in a significant impact, not require mitigation to be implemented), nor provide new information of substantial importance relative to the draft document. As a result, these minor revisions do not require recirculation of the document pursuant to CEQA Guidelines §15088.5. This document constitutes the Final EA PAR 1143 – Architectural Coatings.

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INTRODUCTION

The California Legislature created the South Coast Air Quality Management District (SCAQMD) in 1977[1] as the agency responsible for developing and enforcing air pollution control rules and regulations in the South Coast Air Basin (Basin) and portions of the Salton Sea Air Basin and Mojave Desert Air Basin (collectively known as the "district"). By statute, the SCAQMD is required to adopt an air quality management plan (AQMP) demonstrating progress towards attainment of all federal and state ambient air quality standards for the district[2]. Furthermore, the SCAQMD must adopt rules and regulations that carry out the AQMP[3]. The 2007 AQMP concluded that major reductions in emissions of particulate matter (PM), oxides of nitrogen (NOx) and volatile organic compounds (VOC) are necessary to attain the state and national ambient air quality standards for ozone, particulate matter with an aerodynamic diameter of 10 microns or less (PM10) and particulate matter with an aerodynamic diameter of 2.5 microns or less (PM2.5). Ozone, a criteria pollutant, is formed when VOCs react in the presence of light with NOx in the atmosphere and has been shown to adversely affect human health. VOC emissions also contribute to the formation of PM10 and PM2.5. The federal one-hour and eight-hour ozone standards were exceeded in all four counties and in the Salton Sea Air Basin in 2009. The Central San Bernardino Mountain area recorded the greatest number of exceedences of the one-hour state standard (70 days), eight-hour state standard (107 days), and eight-hour federal standard (70 days). East San Gabriel Valley had the most health advisory days (three days at East San Gabriel Valley Station Number 2). Altogether, in 2009, the South Coast Air Basin exceeded the federal eight-hour ozone standard on 113 days, the state one-hour ozone standard on 102 days, and the state eight-hour ozone standard on 133 days.

The 2007 AQMP, specifically Control Measure CM#2007 MCS-07 – Application of All Feasible Measures, explicitly lists coating and solvent rules to achieve additional VOC reductions. The California Clean Air Act (CCAA) requires districts to achieve and maintain state standards by the earliest practicable date and for extreme non-attainment areas, to include all feasible measures Health and Safety (H&S) Code (H&S §§40913, 40914, and 40920.5). The term "feasible" is defined in the 14 California Code of Regulations, section 15364, as a measure "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." PAR1113 will partially implement CM#2007 MCS-07. The VOC emission reduction of 4.4 ~~4.2~~ tons per day expected from PAR 1113 would assist in achieving the 116 tons per day of VOC emission reductions needed for attainment of the National Ambient Air Quality Standard for ozone by 2023.

Rule 1113 - Architectural Coatings, was originally adopted by the SCAQMD on September 2, 1977, to regulate the VOC emissions from the application of architectural coatings and has since undergone numerous amendments. Rule 314 – Fees for Architectural Coatings, was adopted on June 6, 2008, requiring manufacturers to pay fees as well as report sales and emissions of architectural coatings in the district. Based on the 2008 and 2009 sales data collected from Rule 314, documents from CARB, numerous site visits by SCAQMD staff, technical research, and

[1] The Lewis-Presley Air Quality Management Act, 1976 Cal. Stats., ch 324 (codified at Health & Safety Code, §§40400-40540).
[2] Health & Safety Code, §40460 (a).
[3] Health & Safety Code, §40440 (a).

working group meetings, staff is proposing to amend Rule 1113 to accomplish, at a minimum, the following:

- Remove outdated language;
- Clarify existing definitions and requirements;
- New coating categories and associated VOC content limits;
- Reduce the VOC content limits of some architectural coating categories;
- Limit the VOC content of previously unregulated colorants used to tint regulated coatings at the point of sale;
- Limit categories eligible for the Averaging Compliance Option (ACO) and phase the ACO out by the year 2015; and
- Clarify that the Small Container Exemption (SCE) is limited to VOC content limits and add an anti-bundling provision.

Staff has held four working group meetings with stakeholders over the past six months, as well as met with individual architectural coating manufacturers and the American Coatings Association (ACA), previously the National Paints and Coatings Association. In addition a public workshop and a public consultation meeting were held for PAR 1113. Based on the ACA's request, staff conducted extensive surveys on the use of colorant. The current proposal (see Appendix A of the Final Staff Report[4]) incorporates and addresses numerous comments and concerns expressed by the stakeholders.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

Proposed amended Rule (PAR) 1113 is a discretionary action by a public agency, which has potential for resulting in direct or indirect changes to the environment and, therefore, is considered a "project" as defined by the California Environmental Quality Act (CEQA). SCAQMD is the lead agency for the proposed project and has prepared this ~~draft~~ final environmental assessment (EA) with no significant adverse impacts pursuant to its Certified Regulatory Program and SCAQMD Rule 110. California Public Resources Code §21080.5 allows public agencies with regulatory programs to prepare a plan or other written document in lieu of an environmental impact report or negative declaration once the Secretary of the Resources Agency has certified the regulatory program. SCAQMD's regulatory program was certified by the Secretary of the Resources Agency on March 1, 1989, and is codified as SCAQMD Rule 110.

CEQA and Rule 110 require that potential adverse environmental impacts of proposed projects be evaluated and that feasible methods to reduce or avoid significant adverse environmental impacts of these projects be identified. To fulfill the purpose and intent of CEQA, the SCAQMD has prepared this ~~draft~~ final EA to address the potential adverse environmental impacts associated with the proposed project. The ~~draft~~ final EA is a public disclosure document intended to: (a) provide the lead agency, responsible agencies, decision makers and the general public with information on the environmental effects of the proposed project; and, (b) be used as a tool by decision makers to facilitate decision making on the proposed project.

[4] SCAQMD, Final Staff Proposed Amended Rule 113 – Architectural Coatings, May 2011

SCAQMD's review of the proposed project shows that the proposed project would not have a significant adverse effect on the environment. Therefore, pursuant to CEQA Guidelines §15252, no alternatives or mitigation measures are required to be included in this ~~draft~~ final EA. The analysis in Chapter 2 supports the conclusion of no significant adverse environmental impacts.

~~Comments received on the Draft EA during the public comment period and responses to comments will be prepared and included in the Final EA for the proposed project.~~ Two comment letters were received on the Draft EA. The comment letters and response to comments are included as Appendix C in this Final EA.

PROJECT LOCATION

PAR 1113 would affect architectural coating manufacturing, retail, and use throughout the SCAQMD's jurisdiction. The SCAQMD has jurisdiction over an area of 10,473 square miles, consisting of the four-county South Coast Air Basin (Basin) and the Riverside County portions of the Salton Sea Air Basin (SSAB) and the Mojave Desert Air Basin (MDAB) referred to hereafter as the district. The Basin, which is a subarea of the district, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The 6,745 square-mile Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The Riverside County portion of the SSAB and MDAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. The federal non-attainment area (known as the Coachella Valley Planning Area) is a subregion of both Riverside County and the SSAB and is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east (Figure 1-1).

PROJECT OBJECTIVE

The objectives of PAR 1113 are to:

- Establish new coating categories;
- Further reduce the VOC content of existing categories;
- Regulate the VOC content of currently unregulated colorants used to tint coatings at the point of sale;
- Limit the use of the averaging compliance option and phase out the averaging compliance option;
- Clarify the small container exemption;
- Remove outdated rule language, including exemptions that have expired or requirements that have surpassed their effective date.

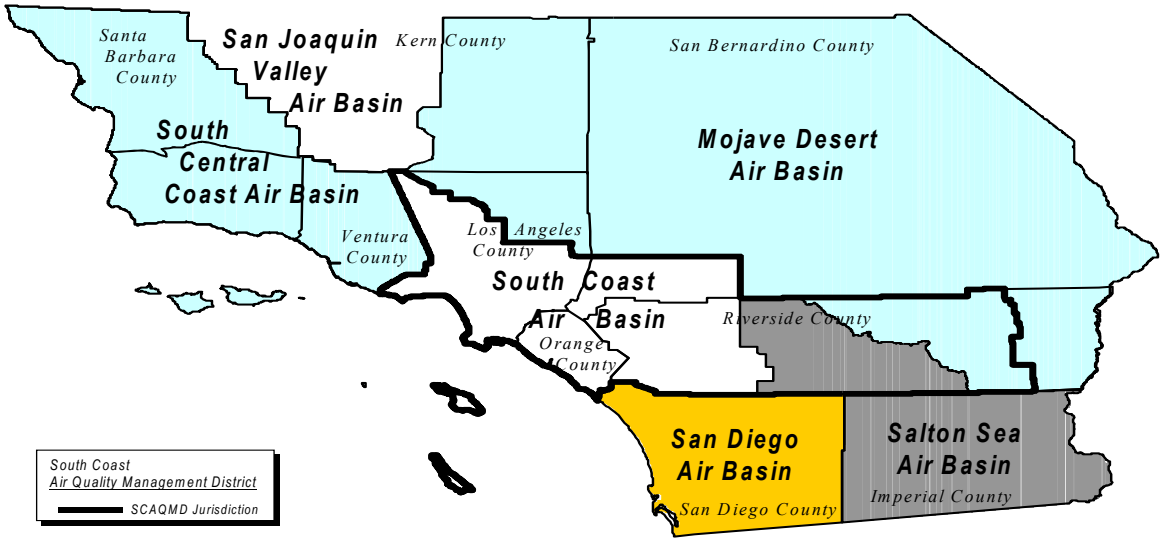

Figure 1-1
Boundaries of the South Coast Air Quality Management District

PROJECT BACKGROUND

Architectural coatings comprise one of the largest non-mobile sources of VOC emissions in the district. Rule 1113 was first adopted in 1977, and has undergone numerous amendments, most recently on July 15, 2007, to address the metallic pigmented coatings category. Rule 1113 is applicable to manufacturers, distributors, and end-users of architectural coatings. These coatings are used to enhance the appearance of and protect stationary structure and their appurtenances, including homes, office buildings, factories, pavements, curbs, roadways, racetracks, bridges, other structures and their appurtenances on a variety of substrates. Architectural coatings are typically applied using brushes, rollers by homeowners, painting contractors, and maintenance personnel.

The 2007 AQMP estimated that the 2010 Annual Average Emissions for architectural coatings would be 23 tons per day, with a Summer Planning Inventory of 27 tons per day. That estimate is based on California Air Resources Board (CARB) 2001 survey of coatings sold in California in calendar year 2000, which assumes that 45 percent of those coatings were sold in the district. The survey was updated in 2005 with 2004 sales data, which do not reflect the recent economic downturn.

According to more recent Rule 314 fee data for products shipped in 2008 and 2009, the emissions in the district that can be attributed to architectural coatings were 15 tons per day and 12 tons per day, respectively. This data does not include VOC emissions from colorants added at the point of sale. Rule 314 data relies upon coatings sales volumes, which may be heavily

affected by the recent decline in economic activity, especially the local real estate market, which is the biggest driver for coating usage. Table 1-1 summarizes sales and emissions collected for Rule 314 for 2008 and 2009, as well as the 2005 CARB survey of coatings sold in the 2004 calendar year.

Table 1-1 demonstrates that while the recession has impacted the volume of coatings sold, there has been a sharper decrease in emissions relative to sales volumes. In addition to VOC emission reductions associated with lower VOC content limits under Rule 1113, this can partially be attributed to the Rule 314 fee structure which charges a higher fee for higher-VOC coatings. It may also be the result of increased consumer demand for low-VOC products. By lowering the VOC content of coatings, manufacturers can reduce the amount of fees paid under Rule 314. It is also the result of increased consumer demand for low VOC products, primarily waterborne products because of they are easier to clean (water is used for cleaning) than solventborne products, which require solvent for cleaning. The 2005 CARB survey, using 2004 sales data with an adjustment for volumes and emissions representing the South Coast only, indicates the higher volume sales in 2004 and reflects pre-recession volumes.

Table 1- 1
Total Sales and VOC Emissions by Type

Total Annual Sales Volume, gallons per year					
Year	**Total**	**Solvent Based**	**Waterborne**	**Solvent Based**	**Waterborne**
2004[a]	44,304,827	7,607,795	36,697,032	17.2%	82.8%
2008[b]	39,006,780	2,815,527	36,191,253	7.2%	92.8%
2009[b]	34,117,105	2,025,777	32,091,328	5.9%	94.1%
Total Emissions, tons per day					
Year	**Total**	**Solvent Based**	**Waterborne**	**Solvent Based**	**Waterborne**
2004[a]	49.4	28.9	20.5	58.5%	41.5%
2008[b]	15.05	6.51	8.54	43.3%	56.7%
2009[b]	11.64	4.77	6.87	41.0%	59.0%

a) SCAQMD Rule 314 coatings shipped data.
b) CARB 2005 survey based on year 2004 sales data.

PROJECT DESCRIPTION

The following summarizes the proposed amendments to Rule 1113. A copy of PAR 1113 is included in Appendix A.

Applicability (Subdivisions (a))

Applicability would be extended to any person who "markets" any architectural coating. The "for use" phrase would be removed. "Fields or lawn" have been added, as well as, any person who "stores at a worksite."

Definitions (Subdivision (b))

Definitions for architectural coatings; fire proofing coatings; floor coatings; metallic pigmented coating; product line; quick-dry enamels; quick-dry primers, sealers and undercoaters; sanding sealers; swimming pool coatings; varnishes; ~~and~~ volatile organic compound; and waterproofing concrete/masonry sealers have been modified. The fireproofing exterior coatings definition would be renamed fireproofing coatings and the word "outdoor" would be removed from the definition.

The subcategories would be added to the faux finishing coatings paragraph (glazes, decorative coatings, trowel applied coatings and clear topcoats) and the japans category would become a subcategory under faux finishing coatings.

Definitions for clear brush lacquers, fire retardant coatings, and nonflat high gloss coatings have been removed.

Definitions for concrete surface retarders, driveway sealers, form release compounds, gonioapparent, manufacturer, market, non-sacrificial anti-graffiti coatings, pearlescent, pigmented, reactive penetrating sealers, restoration architect, retail outlet, sacrificial anti-graffiti coatings, stationary structures, stone consolidants, and worksite would be added.

Requirements (Subdivision (c))

- PAR 1113 would include a requirement, except where provided elsewhere in PAR 1113, that would prohibit a person from the supplying; selling; offering for sale; marketing; manufacturing; blending; repackaging; applying; storing at a worksite; or soliciting the application of any architectural coating within the district:
  - That is listed in the Table of Standards 1 (Table 1-2 of this EA and contains VOCs (excluding any colorant added to tint bases) in excess of the corresponding VOC content limit specified in the table, after the effective date specified;
  - That is not listed the Table of Standards 1 and contains VOC (excluding any colorant added to tint bases) in excess of 250 grams of VOC per liter of coating (2.08 pounds per gallon), less water, less exempt compounds, until January 1, 2014, at which time the limit drops to 50 grams of VOC per liter of coating (0.42 pounds per gallon), less water, less exempt compounds.
- Prohibit any person from adding colorant at the point of sale, within the district, that is listed in Table of Standards 2 (Table 1-3 of this EA) if the colorant contains VOC in excess of the corresponding VOC content limit specified in Table of Standards 2, after the effective date specified;

In the above requirements, the terms "apply, store at worksite or solicit the application of" were added to replace "for use within the District" from the existing Rule 1113. This wording refers to both the existing Rule 1113 (c)(1) and (c)(2) requirements relating to the Table of Standards and architectural coatings that exceed 250 grams of VOC per liter of coating. Table of Standards 2 for colorants would be new and is not in the existing Rule 1113.

- The existing Table of Standards in Rule 1113 would be renamed Table of Standards 1 (Table 1-2 in this EA). Ceiling and current limits would be updated. Ceiling VOC content limits for coatings that are not allowed to be included in the PAR 1113 averaging compliance option would be removed from the Table of Standards 1. Ceiling VOC content limits for coatings that would remain in the averaging compliance option would be lowered to or remain the same as the VOC content limit that was effective January 1, 2003. Concrete surface retarder, driveway sealer, form release compound, non-sacrificial anti-graffiti coatings, reactive penetrating sealers, sacrificial anti-graffiti coatings, and stone consolidants categories would be added. Clear brush lacquer; fire retardant coatings and related sub-categories; nonflat high gloss; pigmented lacquer; quick dry enamels; quick dry primers, sealers and undercoaters, below ground wood preservatives and other wood preservatives categories would be removed. Fire-proofing exterior coatings would become fire-proofing coatings. Faux finishing coatings would become its own category with sub-categories of clear topcoats, decorative coatings, glazes, japans, and trowel applied coatings. The new categories and effective dates from Table of Standards 1 are presented in Table 1-2.

Sell Through Provision

- Outdated wording related to shellacs would be removed. The outdated small container sell through provision report would be removed.

Averaging Compliance Option

- Outdated wording related to January 1, 2001 and July 1, 2006 averaging requirements would be removed.
- A sunset date of January 1, 2015 would be added to the averaging compliance option.
- Until December 31, 2011, PAR 1113 would allow the following coatings to be averaged: bituminous roof primers; floor coatings; industrial maintenance coatings; interior stains; metallic pigmented coatings; primers, sealers, and undercoaters; roof coatings; rust preventative coatings; sanding sealers; specialty primers; stains; waterproofing concrete/masonry sealers; waterproofing sealers; varnishes; zinc-rich industrial maintenance primers; flats and nonflats (excluding recycled coatings).
- Effective January 1, 2012, only the following coatings may be averaged: floor coatings; industrial maintenance coatings; interior stains; metallic pigmented coatings; rust preventative coatings; sanding sealers; stains; varnishes; as well as flats and nonflats (excluding recycled coatings).

Table 1-2
Summary of Affected Categories and Effective Dates for Table of Standards 1 in PAR 1113
(grams of VOC per liter of colorant less water and less exempt compounds)

Coating Category	Ceiling VOC Content Limit[1]	Current VOC Content Limit	Effective Date 07/01/11	Effective Date 01/01/14
Concrete Surface Retarder[2]		250		50
Driveway Sealer[2]		100	50	
Dry-Fog Coatings		150		50
Faux Finishing Coatings				
Clear topcoat[2]		350	200	100
Decorative Coatings[2]		350		
Glazes[2]		350		
Japan		350		
Trowel Applied Coatings[2]		350	150	50
Fire-Proofing Coatings		350		150
Form Release Compound[2]		250		100
Graphic Arts (Sign) Coatings		500		150
Industrial Maintenance Coatings				
Non-Sacrificial Anti-Graffiti Coatings[2]		100		
Mastic Coatings	300	300		100
Metallic Pigmented Coatings	500	500		150
Reactive Penetrating Sealer[2,3]		350		
Stone Consolidant[2,3]		450		
Sacrificial Anti-Graffiti Coatings		100	50	

1. The specified ceiling limits are applicable to products sold under the Averaging Compliance Option.
2. These categories/subcategories are new in PAR 1113
3. Reactive penetrating sealers and stone consolidants are considered waterproofing concrete/masonry sealers under the existing Rule 1113. This category has a VOC content limit of 100 grams per liter in the existing Rule 1113.

Table 1-3
Table of Standards 2 from PAR 1113
VOC Limits for Colorants
(grams of VOC per liter of colorant less water and less exempt compounds)

Colorant	VOC Content Limit Effective January 1, 2014
Architectural Coatings, excluding Industrial Maintenance	50
Solvent Based Industrial Maintenance	600
Waterborne Industrial Maintenance	50

- The provision for the application or solicitation of the application within the District of any industrial maintenance coatings, except non-sacrificial anti-graffiti coatings, for residential

use or for use in areas such as office space and meeting rooms of industrial, commercial or institutional facilities not exposed to such extreme environmental conditions described in the definition of industrial maintenance coatings would be moved from the subsection (c)(2) to (c)(7). The text "or of any rust preventative coatings for industrial use, unless such a rust preventative coating complies with the Industrial Maintenance Coating VOC limit specified in the Table of Standards" would be removed. This provision is no longer necessary as Industrial Maintenance and rust prevention coatings now have the same VOC content limit.

General Prohibition

- A general prohibition, effective January 1, 2012, would be included that states that no person shall supply, sell, market, offer for sale, manufacture, blend, or repackage any architectural coating in the District subject to the provisions of this rule with any materials that contain in excess of 0.1 percent by weight any Group II exempt compounds listed in Rule 102. Cyclic, branched, or linear, completely volatile methylated siloxanes (VMS) would not be subject to this prohibition. A sell-through provision for products manufactured prior to the effective date until January 1, 2013, would be included.

Administrative Requirements (Subdivision (d))

- Effective January 1, 2014, the VOC content would be required to be displayed on the coating container such that the required language is noticeable and in clear and legible English; separated from other text; and conspicuous, as compared with other words, statements, designs, or devices in the label.
- Quick dry primer, sealer, undercoaters; and quick dry enamels labeling requirements would be removed.
- Past effective compliance dates would be removed.
- The requirement for an annual report on recycled coatings, shellacs and specialty primers would be removed.
- Effective January 1, 2012, the labels of all Clear Topcoat for Faux Finishing coatings would be required to prominently display the statement "This product can only be sold as part of a Faux Finishing coatings system."

Test Methods (Subdivision (e))

- VOC content test methods would be for colorants as well as coatings.
- Requirements for the flame spread index would be removed.
- Gonioapparent characteristics of coatings would be required to be determined by ASTM E 284 (Standard Terminology of Appearance).
- Water repellency for Reactive Penetrating Sealers would be required to be determined by:
  - ASTM C67 (Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile);
  - ASTM C97/97M (Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone);or
  - ASTM C140 (Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units).
- Water Vapor Transmission for Reactive Penetrating Sealers would need to be determined by ASTM E96/96M (Standard Test Methods for Water Vapor Transmission of Materials).

Selection and Use of Stone Consolidants would need to be determined by ASTM E2176 (Standard Guide for Selection and Use of Stone Consolidants).

- Chloride Screening for Reactive Penetrating Sealer shall be determined using the National Cooperative Highway Research Report 244 (1981), "Concrete Sealers for the Protection of Bridge Structures".

Technology Assessment

The technology assessment requirements for flat coatings would be removed, since the effective dates for the requirement have passed.

Exemptions (Subdivision (f))

Small Container Exemption

- The size of the architectural coating containers in small container exemption would be changed from one quart to one liter.
- A sunset date of December 31, 2013 for provisions other than the emission standards has been added to the small container exemption from the provisions of Rule 1113. Until December 31, 2013, the provisions of PAR 1113 would not apply to any architectural coatings in containers having capacities of one liter (1.057 quart) or less, excluding clear wood finishes, varnishes, sanding sealers, lacquers, and pigmented lacquers provided the provisions of the small container exemptions are met.
- Effective January 1, 2014, the specific provisions of the Table of Standards and the VOC content limit of 50 grams per liter, less water, less exempt compounds for architectural coatings that are not listed in Table of Standards 1 (excluding any colorant added to tint bases) would not apply to any architectural coatings in containers having capacities of one liter (1.057 quart) or less, excluding clear wood finishes, varnishes, sanding sealers, lacquers, and pigmented lacquers provided the subsections of the small contain exemptions are met.
- Requirements related to small container exemption reports would be removed. The small container exemption would require instead that the manufacturer reports sales in the Rule 314 Annual Quantity and Emissions Report.
- The date July 1, 2006, has been removed from the provision that clear wood finishes, including varnishes and sanding sealers; and lacquers, including pigmented lacquers in containers having capacities of one quart or less shall no longer be exempt, since this date has passed. The wording "clear wood finishes, including varnishes and sanding sealers; and lacquers, including pigmented lacquers" has been simplified to "clear wood finishes, varnishes, sanding sealers, lacquers and pigmented lacquers." Clear wood finishes, varnishes, sanding sealers, lacquers and pigmented lacquers would remain excluded from the small container exemption.
- The coating containers would be prohibited from being bundled or sold together as a unit that exceeds one liter, excluding containers packed together for shipping to a retail outlet. The label or any other product literature would be prohibited from suggesting combining multiple containers so that the combination exceeds one liter. These anti-bundling provisions would become effective July 1, 2011 with sell-through provision for products manufactured prior to the effective date until January 1, 2012.
- ~~The words "supplied, offered for sale, marketed, manufactured, blended, repackaged or stored" have been added to the exemption to Rule 1113 for architectural coatings sold in this~~

~~District for shipment outside of this District or for shipment to other manufactures for repackaging.~~

Modifications to other Exemptions

- The verbs "supplied, offered for sale, marketed, manufactured, blended, repackaged or stored" were added in addition to the existing verb "sold" in the exemption for coatings shipped outside of the district.
- An allowance of "sale in such areas" would be added to the exemption from the rule for the "use" of stains and lacquers in all areas within the District at an elevation of 4,000 feet or greater above sea level.

Exemptions Removed by PAR 1113

- The exemption to prevent blushing of lacquer finishes would be removed.
- Outdated exemptions for lacquers and flat coatings would be removed.
- Outdated exemptions for nonflats, primers, sealers, undercoaters, quick dry enamels, waterproofing concrete/masonry sealers and rust preventative coatings would be removed.
- The outdated exemption for roof coatings with a VOC content of 100 grams per liter or less that are certified under the U.S. EPA Energy Star Program would be removed.

Appendix A

Averaging Compliance Option (ACO) Provision (Subdivision (A))
The ACO would be phased out by January 1, 2015. Appendix A would only be applicable until the ACO~~L~~ is phased out.

"Maximum VOC content in effect, immediately prior to July 1, 2001" would be replaced by "ceiling limit in the Table of Standards." "Manufacturers that submitted the required 2005 annual report for clear wood finish containers of one quart or less, may include in an ACO Program varnishes and sanding sealers so long as these coatings sold in such containers do not exceed the applicable National Standard of 450 grams of VOC per liter of coating less water and less exempt compounds, in lieu of the otherwise applicable VOC limit of 350 grams per liter" would be removed.

ACO Program (Subdivision (B))
No changes are proposed.

General Requirements (Subdivision (C))
Minor changes in grammar would be made (capitalization).

Reporting Requirements (Subdivision (D))
No changes are proposed.

Renewal of an ACO Program (Subdivision (E))
No changes are proposed.

Modification of a ACO Program (Subdivision (F))
No changes are proposed.

Termination of an ACO Program (Subdivision (G))
No changes are proposed.

Change in VOC Limits (Subdivision (H))
No changes are proposed.

Labeling (Subdivision (I))
No changes are proposed.

Labeling (Subdivision (J))
The phrase "each gallon of" would be added before "each coating product line."

Sell-Through Provision (Subdivision (K))
No changes are proposed.

EMISSIONS INVENTORY

SCAQMD staff developed the existing emissions inventory from 2005 CARB survey of coatings sold in 2004, Rule 314 data for products sold in 2009, and the 2009 Final ACO Reports. SCAQMD staff has data on coatings that were sold in the district as a result of Rule 314 reporting, which was started in 2008. SCAQMD staff noted the significant decline in sales that the architectural coatings industry experienced during 2009. Architectural coating sales are beginning to recover, and while they may not soon reach the peak realized during the housing boom, the 2009 sales volumes do not portray an accurate account of the emissions that would result from the application of architectural coatings in the future. For this reason, SCAQMD staff relied on the 2005 CARB architectural coating survey of coatings sold in California in 2004, using the assumption that 45 percent of those coatings were sold in the district. The 2004 architectural coating sales do not represent the height of the housing/coating boom; however, it is the closest sales data available to the height of the housing boom. The 2004 sales are also considered a more accurate estimate of the level where coating sales may eventually reach. While SCAQMD staff is confident that the coating sales volume should rebound to at least 2004 levels, the same assumption does not apply to VOC emissions. VOC emissions are being reduced though air quality regulation and because of consumer demand. For this reason, the data analysis includes an estimate of the VOC emissions reductions based on the 2004 sales volume from the CARB survey and the sales weighted average VOC content based on the latest data available from Rule 314, which is the 2009 sales data, to estimate baseline emissions. This approach is also consistent with the methodology used to estimate architectural coating emissions in the AQMP, since the baseline emissions from architectural coatings in the AQMP was calculated from data in an earlier CARB survey.

Staff estimates that the baseline emissions from the use of conventional colorants are three tons per day. This assumes that 80 percent of the flat and non-flat coatings sold in the district are tinted at the point of sale with an average of four ounces of colorant containing 325 grams of VOC of Material per liter based on industry feedback. The estimate of volume of colorant added

is conservative, because other coating categories are also tinted but to a lesser extent, i.e. primer, specialty primers, and stains. The volume of colorant added and the average VOC content was based on feedback from members of industry. The volume of colorant added varies widely depending on the desired color; light or pastel colors require as little as 0.5 ounce, while deep colors can require up to 12 ounces. SCAQMD staff used the most recent CARB survey data for the volume of flat and non-flat coatings that may be tinted. CARB conducts a survey of architectural coatings sold into California every four or five years. The most recent survey data is from 2005 indicating total coatings sold in California during 2004. The 2004 sales data does not represent the height of the volume of coatings sold, which more than likely occurred in 2006 during the peak real estate activity. As the economy recovers, SCAQMD staff estimates that the emission reductions that can be achieved will be higher than those indicated from the 2008 and 2009 data.

A summary of the baseline VOC emissions that may be affected by PAR 1113 are presented in Table 1-4. Detailed calculations are presented in Appendix B.

COMPLIANCE

Compliance with PAR 1113 is expected to be met by reformulation of existing coatings and colorants. Existing coatings and colorants that exceed the proposed VOC content limits in PAR 1113 are expected to either reduce the VOC content in the solventborne coatings or remove solvent and use waterborne technology in their coatings/colorants.

Table 1-4
Proposed Project Baseline Emissions

Description	VOC Emissions Potentially Affected by PAR 1113, ton per day
Coatings Affected by VOC Content Change	0.60 ~~0.29~~
Colorants Affected by VOC Content Change	2.98
Coatings Affected by Changes to Averaging Compliance Option	1.2
Total	4.47

CHAPTER 2 - ENVIRONMENTAL CHECKLIST

Introduction

General Information

Environmental Factors Potentially Affected

Determination

Environmental Checklist and Discussion

INTRODUCTION

The environmental checklist provides a standard evaluation tool to identify a project's potential adverse environmental impacts. This checklist identifies and evaluates potential adverse environmental impacts that may be created by the proposed project.

GENERAL INFORMATION

Project Title:	~~Draft~~ Final Environmental Assessment (EA) for Proposed Amended Rule (PAR) 1113 –Architectural Coatings
Lead Agency Name:	South Coast Air Quality Management District
Lead Agency Address:	21865 Copley Drive Diamond Bar, CA 91765
CEQA Contact Person:	Mr. James Koizumi (909) 396-3234
PAR 1113 Contact Person	Ms. Heather Farr (909) 396-3672
Project Sponsor's Name:	South Coast Air Quality Management District
Project Sponsor's Address:	21865 Copley Drive Diamond Bar, CA 91765
General Plan Designation:	Not applicable
Zoning:	Not applicable
Description of Project:	The 2007 Air Quality Management Plan, specifically Control Measure CM#2007 MCS-07 – Application of All Feasible Measures, explicitly lists coating and solvent rules to achieve additional VOC reductions. PAR1113 would partially implement CM#2007 MCS-07. PAR 1113 would reduce volatile organic compound (VOC) emissions by proposing new categories with VOC content limits, reducing the VOC content limits of architectural coatings categories where feasible, and limiting the VOC content of colorants used to tint coatings at point of sale. The averaging compliance option would be limited and eventually phased out by the year 2015. The small container exemption would be clarified to be limited to VOC content limits and an anti-bundling requirement would be added.
Surrounding Land Uses and Setting:	Not applicable
Other Public Agencies Whose Approval is Required:	Not applicable

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The following environmental impact areas have been assessed to determine their potential to be affected by the proposed project. As indicated by the checklist on the following pages, environmental topics marked with an "✓" may be adversely affected by the proposed project. An explanation relative to the determination of impacts can be found following the checklist for each area.

☐	Aesthetics	☐	Geology and Soils	☐	Population and Housing
☐	Agriculture and Forestry Resources	☑	Hazards and Hazardous Materials	☐	Public Services
☑	Air Quality and Greenhouse Gas Emissions	☑	Hydrology and Water Quality	☐	Recreation
☐	Biological Resources	☐	Land Use and Planning	☑	Solid/Hazardous Waste
☐	Cultural Resources	☐	Mineral Resources	☐	Transportation/Traffic
☑	Energy	☐	Noise	☑	Mandatory Findings

DETERMINATION

On the basis of this initial evaluation:

☑ I find the proposed project, in accordance with those findings made pursuant to CEQA Guideline §15252, COULD NOT have a significant effect on the environment, and that an ENVIRONMENTAL ASSESSMENT with no significant impacts has been prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will NOT be significant effects in this case because revisions in the project have been made by or agreed to by the project proponent. An ENVIRONMENTAL ASSESSMENT with no significant impacts will be prepared.

☐ I find that the proposed project MAY have a significant effect(s) on the environment, and an ENVIRONMENTAL ASSESSMENT will be prepared.

☐ I find that the proposed project MAY have a "potentially significant impact" on the environment, but at least one effect 1)has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL ASSESSMENT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL ASSESSMENT pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL ASSESSMENT, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Date: April 7, 2011 Signature: Steve Smith

Steve Smith, Ph.D.
Program Supervisor

ENVIRONMENTAL CHECKLIST AND DISCUSSION

PAR 1113 would lower the VOC content limit of coatings, prohibit the use of Group II exempt solvents, limit categories within the averaging compliance provision, and eventually eliminate the averaging compliance provision.

Coating operations can be categorized into three procedures: manufacturing, distribution and sales, and use of coating. Manufacturing comprises raw material storage (silos, storage tanks, drums, etc.), process operatings (storage tanks, mixers, mills, high-speed dispersion tanks, canners etc.) and product storage (drums, cans, etc.). Distribution and sales comprises transporting coatings to warehouses, retail and commercial facilities for sale or resale. Coatings are used (applied) by spraying, rolling or brushing of the coatings on to architectural structures.

Reformulation of Affected Architectural Coatings

The primary result of PAR 1113 would be the reformulation of architectural colorants and coatings to comply with new or lower VOC content limits by new or changes to coating categories, new or changes to VOC content limits for colorants and coatings or by the elimination of the averaging compliance option.

For the analysis in Chapter 2 of this EA, coatings that are compliant with PAR 1113 VOC coating limits are referred to as PAR 1113 compliant coatings. Coatings that are compliant with the existing Rule 1113, but have VOC contents that exceed the VOC content limits of PAR 1113 are referred to as PAR 1113 non-compliant coatings. It is assumed that PAR 1113 non-compliant coatings would be reformulated to be similar to existing PAR 1113 compliant coatings. Therefore, impacts from reformulation were evaluated by comparing PAR 1113 compliant coatings to PAR 1113 non-compliant coatings.

Replacement of Colorant Dispensers

The use of low-VOC colorants may require the replacement or modification of colorant dispensers at retail stores. Some retailers have installed or are planning to install new colorant dispenser, but not necessarily specifically related to the use of low-VOC colorants. A new trend in the retail coating industry is to tint small coating samples. To tint small coating samples, the colorant dispenser has to be capable of delivering small amounts of colorant (e.g., fraction of an ounce). According to dispenser manufacturers, all of the new generation of dispensers can dispense low-VOC colorants. Therefore, operators, who replace existing machines with the new generation of dispensers to tint coating samples, would also be able to dispense low-VOC colorants.

The new colorant dispensers also include humidifiers or sponges to keep dispensing tips moist. The reduction of solvent in colorants can lead to increased dispenser tip drying/clogging. Conventional colorant dispensers using low-VOC colorants are cleared using a metal wire once a day to once a shift depending on how often the dispensers are used. The use of humidifiers or sponges eliminates the need to clear the dispenser tips with metal wires.

SCAQMD staff estimates that there are 188 large retailers that would be required to use low-VOC colorants by PAR 1113. Large retailers include Home Depot, Lowe's, K-Mart, Orchard Supply Hardware, Sears and Wal-Mart. Large retail facilities are in the process, or have already converted ~~their~~ to new colorant dispensers, which are designed to include low-VOC colorant use. The replacement of colorant dispensers by large retail facilities was made to tint small coating

samples not in preparation for PAR 1113, so construction impacts are not included in this analysis. Large facility operators would only need to use low-VOC colorants to comply with PAR 1113 (i.e., would not require any new construction).

Medium-sized retail facilities and manufacturers with retail outlets may choose to replace or modify their colorant dispensers in part to reduce maintenance associated with low-VOC colorants. Medium-sized retailers and manufacturers with retail outlets include Ace Hardware, Denault, Dunn Edwards, Frazee, Ganahl, Sherwin Williams, Tibbets Newport and Vista Paints. SCAQMD staff estimates that there are 221 medium-sized retail facilities and manufacturers with outlets stores in the district. Medium retailers and manufacturers with retail outlets may purchase new equipment, if they do not already have dispensers capable of handling low-VOC colorants. If their business relies on paint sales, it would be worth the capital investment to purchase dispensing equipment that is designed to handle low-VOC colorants and tint paint samples.

SCAQMD staff estimates that there 3,027 ~~3,436~~ small retail facilities that would need to comply with low-VOC content limits for colorants. Small retail facilities are not likely to modify their dispensers to comply with PAR 1113. The existing dispensers at small retailers are capable of dispensing the proposed 50 gram per liter colorants. Small retailers typically do not sell a considerable amount of paint, and so are not likely to invest in new automated units. Instead, small facility operators would clear colorant dispensers manually with a metal wire. SCAQMD staff has visited small retail outlets using conventional colorant dispensers with low-VOC content colorants successfully.

		Potentially Significant Impact	**Less Than Significant With Mitigation**	**Less Than Significant Impact**	**No Impact**
I.	**AESTHETICS.** Would the project:				
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☑
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☑
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☑
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☑

Significance Criteria

The proposed project impacts on aesthetics will be considered significant if:

- The project will block views from a scenic highway or corridor.
- The project will adversely affect the visual continuity of the surrounding area.
- The impacts on light and glare will be considered significant if the project adds lighting which would add glare to residential areas or sensitive receptors.

Discussion

I.a), b), c) & d) Because architectural coatings are not typically applied in controlled settings, e.g., spray booths. PAR 1113 is not expected to require construction activities to install control equipment. In addition, compliance with PAR 1113 is expected to be met by reformulation of architectural coatings and colorants. Colorant dispensers at exiting medium-sized retail facilities may need to be replaced. These dispensers are drop-in place units that would not need heavy-duty diesel construction equipment (hand tools are expected to be used) and would be placed within existing retail structures at the same location as the unit being replaced. Thus, implementation of PAR 1113 would not result in any new construction of buildings or other structures that would obstruct scenic resources or degrade the existing visual character of a site, including but not limited to, trees, rock outcroppings, or historic buildings. Similarly, additional light or glare would not be created which would adversely affect day or nighttime views in the area since no light generating equipment would be required to comply with PAR 1113. Further, the manufacturing of compliant architectural coatings would not appreciably change the visual profile of the building(s) where compliant architectural coatings are manufactured, because any changes to the manufacturing process would occur inside the facility's buildings and, therefore, would not affect the exterior of the structure in any way. PAR 1113 compliant architectural coatings are expected to be used in a similar fashion to existing coatings, e.g., brushed, rolled or sprayed on to structures or their appurtenances. Therefore, no changes in aesthetics are expected from the use of PAR 1113 compliant architectural coatings.

Based upon these considerations, significant adverse aesthetics impacts are not anticipated and will not be further analyzed in this ~~Draft~~ Final EA. Since no significant adverse aesthetics impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
II.	**AGRICULTURE AND FOREST RESOURCES.** Would the project:				
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland mapping and Monitoring Program of the California Resources Agency, to non- agricultural use?	☐	☐	☐	☑
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☑
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined by Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code §51104 (g))?	☐	☐	☐	☑
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☑

Significance Criteria

Project-related impacts on agriculture and forest resources will be considered significant if any of the following conditions are met:

- The proposed project conflicts with existing zoning or agricultural use or Williamson Act contracts.
- The proposed project will convert prime farmland, unique farmland or farmland of statewide importance as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.
- The proposed project conflicts with existing zoning for, or causes rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined in Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code § 51104 (g)).
- The proposed project would involve changes in the existing environment, which due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use.

Discussion

II.a), b), c) & d) The proposed project would not result in any new construction of buildings or other structures that would convert farmland to non-agricultural use or conflict with zoning for

agricultural use or a Williamson Act contract. The manufacture of compliant architectural coatings and colorants would not require converting farmland to non-agricultural uses because the manufacture of compliant architectural coatings is expected to occur completely within the confines of existing affected industrial facilities. The use of architectural coatings that would be required to comply with the proposed VOC content limits is expected to be similar to the use of existing architectural coatings, which typically do not affect farm or agricultural practices, as such coatings are typically used in urban, commercial or industrial areas. For the same reasons, PAR 1113 would not result in the loss of forest land or conversion of forest land to non-forest use.

Based upon these considerations, significant adverse agricultural resource impacts are not anticipated and will not be further analyzed in this ~~Draft~~ Final EA. Since no significant agriculture resources impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	**Less Than Significant With Mitigation**	**Less Than Significant Impact**	**No Impact**
III. AIR QUALITY AND GREENHOUSE GAS EMISSIONS. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☑	☐
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	☐	☐	☑	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☐	☑	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☑	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☑	☐
f) Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?	☐	☐	☑	☐

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
g) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☑	☐
h) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☑	☐

Air Quality Significance Criteria
To determine whether or not air quality impacts from adopting and implementing PAR 1113 are significant, impacts will be evaluated and compared to the criteria in Table 2-1. The project will be considered to have significant adverse air quality impacts if any one of the thresholds in Table 2-1 are equaled or exceeded.

III.a) The 2007 Air Quality Management Plan, specifically Control Measure CM#2007 MCS-07 – Application of All Feasible Measures, explicitly lists coating and solvent rules to achieve additional VOC reductions. PAR1113 would partially implement CM#2007 MCS-07. Therefore, the proposed project is not expected to conflict with or obstruct implementation of the applicable air quality control plan because the 2007 AQMP demonstrates that the effects of all existing rules, in combination with implementing all AQMP control measures (including "black box" measures not specifically described in the 2007 AQMP) would bring the district into attainment with all applicable national and state ambient air quality standards. Therefore, PAR 1113 is not expected to significantly conflict or obstruct implementation of the applicable air quality plan, but would contribute to attaining and maintaining the ozone and PM standards.

III.b) & f) For a discussion of these items, refer to the following analysis:

Construction Impacts
Construction impacts were analyzed for affected coating manufacturing, affected distribution and sales of coatings, and the use (application) of affected coatings:

Manufacturing of Affected Coatings
The manufacturing of coatings and colorants compliant with PAR 1113 is expected to use similar equipment and processes that are used to manufacture existing coatings and colorants for the following reasons. No substantial change to raw material storage (silos, storage tanks, drums, etc.), process operations (storage tanks, mixers, mills, high-speed dispersion tanks, canners etc.) or product storage (drums, cans, etc.) is expected. Manufacturers may need to reformulate coatings and colorants to comply with PAR 1113, but the manufacturing process is not expected to require any new construction to comply with PAR 1113.

Table 2-1
SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds [a]		
Pollutant	**Construction** [b]	**Operation** [c]
NOx	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
PM2.5	55 lbs/day	55 lbs/day
SOx	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TACs), Odor and GHG Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 metric tons per year	
Ambient Air Quality for Criteria Pollutants [d]		
NO2 1-hour average annual average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.25 ppm (state – peak hour); 0.10 ppm (federal – 98th percentile) 0.053 ppm (federal)	
PM10 24-hour average annual geometric average annual arithmetic mean	10.4 μg/m^3 (construction)[e] & 2.5 μg/m^3 (operation) 1.0 μg/m^3 20 μg/m^3	
PM2.5 24-hour average	10.4 μg/m^3 (construction)[e] & 2.5 μg/m^3 (operation)	
Sulfate 24-hour average	25 μg/m^3	
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) 9.0 ppm (state/federal)	

[a] Source: SCAQMD CEQA Handbook (SCAQMD, 1993)
[b] Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).
[c] For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.
[d] Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.
[e] Ambient air quality threshold based on SCAQMD Rule 403.

KEY: lbs/day = pounds per day ppm = parts per million μg/m^3 = microgram per cubic meter ≥ greater than or equal to

Distribution and Sales of Affected Coatings

The distribution of PAR 1113 compliant coatings and colorants is expected to be similar to the existing distribution of coatings and colorants. Distribution of compliant coatings and colorants is not expected to require any new construction.

The alteration or replacement of point of sale colorant dispensers is not expected to require heavy-duty diesel-fueled construction equipment. Modification or replacement of colorant dispersers is expected to occur through the use of drop-in replacement units or parts. Based on conversations with coating retailers, the removal and installation of colorant systems would be expected to be completed using hand tools (hand jacks, drills, etc.).

As a worst-case assumption secondary criteria pollutant emissions may be generated by a single round-trip to deliver and install new colorant dispensers or to modify existing units, and a second single round-trip to dispose of any solid waste from the replacement or modification of existing colorant dispensers. Emissions from two round-trips from delivery and disposal were estimated using the SCAQMD EMFAC2007 profile for delivery trucks for the 2010 fleet year. It was assumed that a one-way trip would be 40 miles; therefore, based on four one-way trips, 160 miles would be traveled for a single retail store. It was estimated that two retail stores may be affected per day, if replacement or alteration would is necessary at all at the 221 medium-sized retail stores between adoption of PAR 1113 and January 1, 2014, a period of approximately 2.5 years. Secondary criteria emissions from delivery of colorant systems and removal of old systems are presented in Table 2-2 and detailed in Appendix B. As seen in Table 2-2 secondary criteria emissions from construction would be less than significant; therefore, air quality construction impacts are expected to be less than significant.

Based on Table 2-2 up to 15 units could be replaced without exceeding SCAQMD's criteria significance thresholds (NOx emissions would be the limiting criteria pollutant). However, this is an unlikely scenario because of the distance between stores, the limited number of colorant dispenser manufacturers, the limited number of dispenser installers and the fact that some medium-sized facilities already have low-VOC colorant dispensers installed.

Table 2-2
Secondary Criteria Emissions from PAR 1113

Description	CO, lb/day	NOx, lb/day	ROG, lb/day	SOx, lb/day	PM10, lb/day	PM2.5, lb/day
Single Round Trip	3.0	3.3	0.4	0.004	0.1	0.1
Two Round Trips	5.9	6.6	0.8	0.009	0.2	0.2
SCAQMD Construction Significance Thresholds	550	100	75	150	150	55
Significant?	No	No	No	No	No	No

Use (Application) of Affected Coatings

Compliant coatings are expected to be used (applied) in a similar fashion to existing coatings. Coatings would be expected to be sprayed, rolled or brushed on to architectural structures. Therefore, the use of PAR 1113 compliant coatings is not expected to require physical changes

or modifications that would involve construction activities or additional emissions from coating equipment or additional vehicle trips.

As a result according to the above analysis of potential construction impacts, there would be no significant adverse construction air quality impacts resulting from the proposed project for criteria pollutants.

Operational Impacts

PAR 1113 is only expected to have a direct and beneficial effect on VOC emissions. No other criteria pollutants are expected to be directly affected by PAR 1113, because of the narrow regulatory focus of Rule 1113.

Changes to Coating Categories That Do Not Affect VOC Content Limits or VOC Emissions

Merging coating categories into other categories with no change in VOC content limit generates no air quality impacts. Creating new coating categories with the same VOC content limit as the categories they are currently identified with under the existing Rule 1113 is also not expected to generate any air quality impacts. Coating categories that have been merged and separated to form new categories are presented in Table 2-3. Under these scenarios, there would not be any changes in manufacturing or applying the affected coatings because there are no changes to the VOC content limit.

Changes to VOC Content Limits That Are Not Expected to Affect VOC Emissions

Driveway Sealer Coatings

Driveway sealer coatings are currently included in the waterproofing sealer primary category with a VOC content limit of 100 grams per liter. PAR 1113 would establish a new category for driveway sealers with a VOC content limit of 50 grams per liter effective July 1, 2011. The CARB 2004 Architectural Coatings survey data indicated that all driveway sealers have a VOC content at or below 50 grams per liter. Since all driveway sealer coatings currently comply with PAR 1113, no changes in manufacturing or application of these products is anticipated. Therefore, no adverse air quality impacts are expected.

Japans and Faux Finishing Products

SCAQMD staff is proposing to expand and enhance the definition of the faux finishing/japan category. In recent years, there has been a sharp increase in decorative coatings being marketed to the homeowner such as, metallic coatings, suede coatings, plasters, etc. The current definition in Rule 1113 reflects the products used for studio coating with japans and glazes. Based on feedback during the initial working group meeting, SCAQMD staff developed a specific sub-group to discuss the faux finishing/japan categorization. With the assistance from manufacturers involved with the sub-group, SCAQMD staff has developed the following five distinct subcategories of faux finish coatings:

- Japans - traditionally used by professional artist for developing studio sets
- Glazes – used for some commercial and residential decorative finishes
- Decorative Coatings – used by consumers and sold at typical retail outlets
- Trowel Applied Coatings – used by consumers and sold at typical retail outlets but with significantly lower-VOC levels than typical decorative coatings
- Clear topcoat – used to protect the Faux Finishing Coatings

Table 2-3
Changes to Coating Categories That Do Not Affect VOC Content Limits or VOC Emissions

Existing Rule 1113 Coating Category	PAR 1113 Coating Category	VOC Emissions Change
Primary "Clear Brushing Lacquer" category	Existing category eliminated and merged into the existing "Lacquer" sub-category under the primary "Clear Wood Finishing" category	Same VOC content limit (250 grams per liter), so no change in VOC emissions
Primary "High Gloss Non-flats" category	Existing category eliminated and merged into the existing primary "Non-flats" category	Same VOC content limit (50 grams per liter), so no change in VOC emissions
Primary "Industrial Maintenance" category	New sub-category for "Non-sacrificial Anti-graffiti Coatings" under existing primary "Industrial Maintenance" category	Same VOC content limit (100 grams per liter), so no change in VOC emissions
Primary "Japans and Faux Finishing Coatings"	Place "Japans" as a sub-category under the primary "Faux Finishing Coatings"	Same VOC content limit (350 grams per liter), so no change in VOC emissions
Primary "Japans and Faux Finishing Coatings"	Establish new sub-categories "Glazes," and "Decorative Coatings" under the primary "Faux Finishing Coatings"	Same VOC content limit (350 grams per liter), so no change in VOC emissions
Primary "Quick-dry Enamel" category	Existing category eliminated and merged into the existing primary "Non-flats" category	Same VOC content limit (100 grams per liter), so no change in VOC emissions
Primary "Quick-dry Primer, Sealer and Undercoater" category	Existing category eliminated and merged into the existing primary "Primer, Sealer and Undercoater" category	Same VOC content limit, so no change in VOC emissions

SCAQMD staff coordinated with the working group to develop VOC content limits for the subcategories, which are mainly representative of the broad range of products currently marketed and sold as faux finishing coatings. These coatings are sold in relatively small volume and SCAQMD staff is not projecting any emission reductions from the proposed VOC content limits, since the sales weighted average VOC content is well below the current limit of 350 grams per liter for most of the subcategories and products that meet the proposed final VOC content limit are already in the marketplace. PAR 1113 VOC content limits for the faux finishes can be found in Table 1-2.

Two of the faux finishing subcategories in PAR1113, trowel applied coatings and clear topcoats, have unique properties and characteristics that require separate categories and VOC limits. Currently, the confusion over the faux finishing coatings resulted in miscategorization by the manufacturers as mastic coatings, metallic pigmented coatings or default coatings or products sold under the small container exemption. Based on evaluating the data collected under Rule 314, SCAQMD staff is unable to discern the total emissions for these products, but based on a detailed review of product names as well as discussions with the manufacturers, the total emissions from the faux finishing subcategories is fairly low. Overall, the intent of rule changes to the faux finishing coatings is to provide rule clarification and not achieve VOC emission reductions.

Based on the current categorization by the manufacturers of these products, SCAQMD staff is proposing to allow a VOC limit of 200 grams per liter for the clear topcoats and a final VOC content limit of 100 grams per liter, based on manufacturers' feedback reflecting available technology. While some products may meet the final limit today, other manufacturers are in the process of reformulating their clear topcoats to achieve the 100 grams per liter limit effective January 1, 2014. These VOC content limits were set based on ~~some manufacturers'~~ a portion of the industry sub-working group member's recommendations, with support that the reformulated products would not impact performance.

An interim VOC content limit is also being proposed for the trowel applied coatings, since some manufacturers indicated there are a few coatings that currently have a VOC content near 150 grams per liter. The VOC content limit would be reduced down to 50 grams per liter effective January 1, 2014 allowing ample time for reformulation of the few products that currently exceed the 50 grams per liter VOC limit. The feedback received from the working group stated that higher VOC content of the select trowel applied coatings is needed for additional open time (i.e., to slow drying time of the coating during application), which manufactures feel they can overcome by 2014 for the few products that do not meet the 50 grams per liter VOC content limit.

Default Coating Category

The existing VOC content limit for the architectural coatings that are not included in Rule 1113 Table of Standards is 250 grams per liter. This VOC content limit, often referred to as the "default coating" limit, and has been in place since Rule 1113 was adopted on September 2, 1977. Historically, the "default coating" VOC content limit was one of the lowest VOC content limits in the Table of Standards. Currently, the "default coating" VOC content limit of 250 grams per liter is one of the highest VOC content limits. Other coatings regulations, including the CARB Suggested Control Measure implementing by several air districts and EPA regulations, default to the lower-VOC content limit of the flat or non-flat category, which is VOC limit of 50 gram per liter in Rule 1113. Therefore, SCAQMD staff is proposing to reduce the Rule 1113 "default coating" VOC content limit from 250 grams per liter to 50 grams per liter.

Based on past staff rule interpretations, the coatings that currently are recognized as "default coatings" are concrete surface retarders compounds; form release compounds; dry erase, magnetic board and chalk board coatings; and sacrificial anti-graffiti coatings. SCAQMD staff is proposing to create new categories in the Table of Standards for three default coatings (concrete surface retarders, form release compounds, and sacrificial anti-graffiti coatings).

The Rule 314 data for default coatings includes coatings that were miscategorized as default coatings (e.g. one part of a two part coating, field marking coating, color tints for concrete, etc.). SCAQMD staff is working with the manufacturers who miscategorized their coatings in Rule 314 reporting to address this issue.

Dry erase, magnetic board and chalkboard coatings are the only coatings that SCAQMD staff has identified that should be classified under the default category. Dry erase, magnetic board and chalkboard coatings are typically sold in small containers, and therefore, exempt from the VOC content limits of PAR 1113 by the small container exemption.

Therefore, SCAQMD staff is not expecting any VOC emissions reductions from the default coating VOC content limit reduction. The change is being proposed for additional clarification and alignment with other similar regulations.

Concrete Surface Retarders
PAR 1113 would establish a new primary category for concrete surface retarders with a VOC content limit of 50 grams per liter. As already noted, concrete surface retarders are currently categorized under the default coating category, which has a VOC content limit of 250 in the existing Rule 1113. All concrete surface retarders reported in the 2009 Rule 314 data currently have a VOC content of zero. Since all concrete surface retarder coatings currently comply with PAR 1113, no changes in manufacturing or applying these of products are anticipated. Therefore, this change is expected to have no air quality impacts.

Sacrificial Anti-graffiti Coatings
PAR 1113 would create a new category for sacrificial anti-graffiti coatings with a VOC content limit of 50 grams per liter. Sacrificial anti-graffiti coatings are currently classified under the default category, which has a VOC content limit of 250 grams per liter. Sacrificial anti-graffiti coatings are paraffinic or waxed-based with a low VOC content limit. SCAQMD staff has not identified any sacrificial anti-graffiti coatings with a VOC content greater than 50 grams per liter. Therefore, this change is not expected to create any adverse air quality impacts.

Changes to coating categories that affect VOC content limits, but not VOC emissions are summarized in Table 2-4.

Architectural Coatings Affected by PAR 1113 Where the VOC Content Limit Has Been Increased

Reactive Penetrating Sealers
The ARB SCM for Architectural Coatings includes a separate category under the waterproofing concrete/masonry sealer for reactive penetrating sealers at 350 grams per liter. The ARB SCM states that reactive penetrating sealers are clear or pigmented products formulated for application to above-grade concrete and masonry substrates to provide protection from water and waterborne contaminants, such as, alkalis, acids, and salts. Reactive penetrating sealers 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 substrates with a hydrophobic coating, but do not form a surface film.

Table 2-4
Changes to Coating Categories That Affect VOC Content Limits, But Not VOC Emissions

Existing Rule 1113 Coating Category	PAR 1113 Coating Category	Existing Rule 1113 VOC Content Limit, grams per liter	PAR 1113 VOC Content Limit, grams per liter	VOC Emissions Change
Primary "Japans and Faux Finishing Coatings"	Establish new sub-category "Trowel Applied Coatings" under the primary "Faux Finishing Coatings"	350	150 effective ~~July 1, 2011~~ January 1, 2012, 50 effective Jan 1, 2014	Majority of towel applied coatings are already available at 50 g/L VOC, few products formulated at 150 g/L VOC are expected to be reformulated by 2014. Small volume category, so no change in VOC emissions is expected.
Primary "Japans and Faux Finishing Coatings"	Establish new sub-category "Clear Topcoat" under the primary "Faux Finishing Coatings"	350	200 effective ~~July 1, 2011~~ January 1, 2012, 100 effective Jan 1, 2014	Majority of clear topcoatings are already available between 150 g/L and 200 g/L VOC. Small volume category, so no change in VOC emissions is expected.
Primary "Waterproofing Sealer" category	Create new primary category for "Driveway Sealer"	100	50 effective ~~July 1, 2011,~~ January 1, 2012	All driveway sealers in CARB 2004 Architectural Coatings Survey have a VOC content at or below 50 grams per liter, so no change in VOC emissions are expected.

Table 2-4 (Continued)
Changes to Coating Categories That Affect VOC Content Limits But Not VOC Emissions

Existing Rule 1113 Coating Category	PAR 1113 Coating Category	Existing Rule 1113 VOC Content Limit, grams per liter	PAR 1113 VOC Content Limit, grams per liter	VOC Emissions Change
Coatings that are not identified in Rule 1113 Table of Standards - VOC limits	Establish new primary category for "Concrete Surface Retarder"	250	50	All concrete surface retarders in Rule 319 data have a VOC content limit of zero, so no change in VOC emissions are expected.
Coatings that are not identified in Rule 1113 Table of Standards - VOC limits	Establish new primary category for "Sacrificial Anti-graffiti Coatings"	250	50 effective ~~July 1, 2011,~~ January 1, 2012	VOC content limit is set a level that sacrificial anti-graffiti coatings are currently formulated, so no change in VOC emissions are expected.
Coatings that are not identified in Rule 1113 Table of Standards - VOC limits	No change in category	250	50	No coatings were identified that are not currently sold under the small container exemption, so no change in VOC emission is expected.

Reactive penetrating sealers generally are composed of silane; siloxane; silane/siloxane blend; inorganic silicate; silane/silicate blend; or siliconate. As formulated, these products often contain low levels of VOCs or zero VOCs. However, after application the ARB SCM states, silanes and some siloxanes undergo a chemical reaction that releases VOCs (e.g., ethanol or methanol).

Alkylalkoxysilane + water → alkyl silanol + ethanol
Alkyl silanol + silanol (in concrete) → silicone crosslinking network + water

The VOCs that are released during the chemical reaction are known as cure volatiles and they should be included when determining the VOC content of a product. However, ARB staff found that there was some inconsistency in the industry regarding this matter relative to reporting VOC content levels. Some manufacturers are correctly including cure volatiles in their reported VOC contents while others are not. As a result, some products that are being marketed as low-VOC products may actually have much higher VOC contents when the cure VOCs are determined correctly.

Caltrans, OHP and one reactive penetrating sealers manufacturer have requested that SCAQMD staff add a new category for reactive penetrating sealers in PAR 1113 with a VOC content limit of 350 grams per liter. A reactive penetrating sealer is defined by PAR 1113 as a product that is only used for reinforced concrete bridge structures for transportation projects within five miles of the coastline or above 4,000 feet in elevation or for restoration and/or preservation projects on registered historical buildings that are under the purview of a restoration architect. The coatings would be required to penetrate into concrete and masonry substrates and chemically react to form covalent bonds with naturally occurring minerals in the substrate. The coatings would be required to line the pores of the concrete and masonry substrates with a hydrophobic coating, but not form a surface film. Performance characteristics specifically identified in the definition of a reactive penetrating sealer would need to be demonstrated using ASTM test methods detailed in PAR 1113.

The waterproofing concrete/masonry sealers VOC content limit is 100 grams per liter in the existing Rule 1113, which currently includes reactive penetrating sealers. VOC emission foregone were estimated by difference between the proposed VOC content limit of 350 grams per liter and the estimated VOC of the material, which is estimated to be 40 grams per liter. Usage records from Caltrans since 1989 have shown consistent use of these products; therefore, no increase in usage is expected from PAR 1113. Based on these records and Rule 314 data, SCAQMD staff estimates 290 gallons of reactive penetrating sealer usage per year. SCAQMD staff intends to monitor usage through the Rule 314 Annual Quantity and Emissions Reports to ensure that the sales does not exceed the estimated usage, and may consider sales caps for this category if actual sales are above the estimated usage. The VOC emissions foregone would be 0.001 tons per year and are presented in Table 2-5. Detailed calculations are presented in Appendix B.

Table 2-5
Existing Rule 1113 and PAR 1113 VOC Content Limits and VOC Emissions or VOC Emissions Reductions

Coating Category	Existing Rule 1113 VOC Content Limit	PAR 1113 VOC Content Limit at Adoption	PAR 1113 VOC Content Limit 7/11/2011	PAR 1113 VOC Content Limit 1/1/2014	VOC Emission Reductions, ton per day
Dry Fog Coatings	150			50	0.16
Fire Proofing Coatings	350			150	0.02
Form Release Compounds	250			100	0.01
Graphic Arts Coatings	500			150	0.003
Mastic Coatings	300			100	0.2
Metallic Pigmented Coatings	500			150	0.01
Reactive Penetrative Sealers	100	350			-0.001
Stone Consolidants	100	450			-0.001
Total					0.4 ~~0.2~~

Stone Consolidants
The ARB SCM for Architectural Coatings includes a separate category under the waterproofing concrete/masonry sealer for stone consolidants at 450 grams per liter to support historical preservation efforts by allowing limited use of these products under the direction of a stone conservation specialist, such as an architect, conservator, or engineer. Stone consolidants penetrate into stone substrates to help restore the integrity of crumbling or decayed materials. These products are often considered to be concrete treatments, rather than coatings, and are not for general purpose use. The Technical Support Document for Proposed Amendments to the Suggested Control Measure for Architectural Coating states that "solventborne products are generally preferred, because it is believed that the solvent can penetrate deeper into the substrate and distribute the consolidate down to the undeteriorated stone." The OHP and a stone consolidant manufacturer have requested that PAR 1113 also include a category for stone consolidants, previously under the waterproofing concrete/masonry sealers, with a VOC content limit of 450 grams per liter. Stone consolidants would be defined in PAR 1113 to be for restoration and/or preservation projects on registered historical buildings that are under the purview of a restoration architect. Stone consolidants would be required to be specified and used in accordance with ASTM E2167.

The waterproofing concrete/masonry sealers VOC content limit is 100 grams per liter in the existing Rule 1113, which currently includes stone consolidants. A stone consolidants category with a VOC content limit of 450 grams per liter would be added by PAR 1113. VOC emission foregone were estimated by calculating the difference between the proposed VOC content limit of 450 grams per liter and the estimated VOC content of the material, which is estimated to be 40

grams per liter. Ten years of national sales records from the stone consolidant manufacturer have shown consistent use of these products; therefore, no increase in usage is expected from PAR 1113. Based on these records, SCAQMD staff estimates approximately 142 gallons of stone consolidant used per year. SCAQMD staff intends to monitor usage through the Rule 314 Annual Quantity and Emissions Reports to ensure that the sales does not exceed the estimated usage, and may consider sales caps for this category if actual sales are above the estimated usage. VOC emissions foregone would be 0.001 tons per year and are presented in Table 2-5. Detailed calculations are presented in Appendix B.

Architectural Coatings Affected by PAR 1113 Where the VOC Content Limit Has Been Reduced

PAR 1113 would reduce the VOC content limits for the following existing coating categories: dry fog coatings, form release, fire proofing coatings, graphic arts coatings, mastic coatings, and metallic pigment coatings. Table 2-5 presents the existing and proposed VOC content limits and the VOC emission reductions expected from these affected coatings. Detailed calculations are provided in Appendix B.

New VOC Content Requirements for Colorants

PAR 1113 would establish VOC content limits for colorants effective January 1, 2014. The VOC content limit for colorants used to tint architectural coatings, excluding industrial maintenance coatings would be 50 grams per liter. The VOC content limit for colorants used to tint waterborne industrial maintenance would also be 50 grams per liter. The VOC content limit for colorants used to tint solventborne industrial maintenance coatings would be 600 grams per liter.

As stated in construction analysis of this section, small retail facilities would continue using existing dispensers for low-VOC colorants because coatings are assumed to be a small part of their business, so it is likely that they would not want to spend money to replace colorant dispensers. Large-sized facilities are in the process or have already replaced their colorant dispensers with the new generation of colorant dispensers to tint small coating samples. Medium-sized retailers and manufacturers with retail outlets are likely to use the new generation of dispensers. VOC emissions are directly tied to the VOC content of the colorant (i.e., VOCs are emitted from the colorant) not from colorant dispensers. The reduction in VOC content in colorants would result in a reduction of 2.8 tons VOC emissions per day after the proposed VOC content limits for colorants become effective on January 1, 2014. Detailed calculations are presented in Appendix B.

VOC Emissions Reductions from Phasing Out the Averaging Compliance Option

Fire retardant coatings; high gloss non-flats; quick-dry enamels; quick-dry primers, sealers and undercoaters would be removed from the averaging compliance option because these coatings would be recategorized into categories that would be allowed to use the averaging compliance option under PAR 1113. Roof coatings; water proofing sealers; bituminous roof primers; zinc rich industrial maintenance primers; and waterproofing concrete/masonry sealers would be removed from the averaging compliance option effective January 1, 2012, because some of these coating categories are not currently averaged in large volumes.

SCAQMD staff is also proposing to remove primer, sealer and undercoaters; and specialty primers from averaging compliance option provisions. SCAQMD staff has been approached by

many manufacturers who have had technological breakthroughs resulting in low- and near zero-VOC specialty primers (average $23 per gallon). Those manufacturers are unable to compete with lower-priced specialty primers (average $15 per gallon) with a higher-VOC content that are sold through the averaging compliance option; therefore, staff is proposing to eliminate this category from the averaging compliance option to stimulate greater market penetration of the new generation of low-VOC specialty primers. SCAQMD staff is proposing to remove the primer, sealer and undercoaters to address potential rule circumvention that may occur if manufacturers re-categorize the specialty primers as primer, sealer and undercoaters. The removal of specialty primer and primer, sealer, undercoating categories from the ACO would result in 0.3 tons per day.

There are alternative products for most, if not all of the high-VOC coatings that are currently being averaged, that are below, and in some cases well below the current VOC limit. Manufacturers have invested substantial funds for reformulation and commercial introduction of these low-VOC product lines and expect them to remain in the marketplace due to the market demand for low-VOC coatings.

The numbers of manufacturers who utilize the averaging compliance option has decreased from 10 manufacturers in 2007, to six manufacturers electing to utilize the averaging compliance option for the 2011 compliance period. High-VOC coatings that were able to participate in the averaging compliance option, but would be eliminated effective January 1, 2012, would have to comply with the applicable VOC content limits in PAR 1113(c)(1) and (2). SCAQMD staff expects that these high-VOC coatings would be reformulated to meet the applicable VOC content limits in PAR 1113(c)(1) and (2), or packaged in small containers to comply with the small container exemption.

The remaining PAR 1113 VOC emissions inventory and VOC emission reductions from limiting coating categories under the averaging compliance option effective January 1, 2012 are presented in Appendix B as Table B-4. The emissions inventory was developed from averaging compliance option reports for 2009 submitted by manufacturers to SCAQMD. The elimination of the ACO would result in 0.3 ~~1.2~~ tons of VOC emission reductions per day effective January 1, 2015. The removal of specialty primer and primer, sealer, undercoating categories from the ACO and the elimination of the ACO would result in 1.2 tons of VOC emission reductions. Floor coatings, industrial maintenance coatings; interior stains, metallic pigmented coatings, rust preventative coatings, sanding sealers, stains, varnishes and flats and nonflats are the coating categories that would be affected by the elimination of the averaging compliance option effective January 1, 2015. Once the averaging compliance option is eliminated, all high-VOC coatings would need to be reformulated to meet the applicable VOC content limits in PAR 1113(c)(1) and (2), or packaged in small containers to comply with the small container exemption.

Changes to the Small Container Exemption (SCE)

Based on Rule 314 data approximately 523,749 gallons of coatings that exceed the VOC coating limit for the associated coating category were sold in small containers in 2008 and 370,012 gallons in 2009. The existing rule includes a small container exemption for containers less than one quart. The SCE ~~container~~ requirement would be changed from quart size to liter size containers to be consistent with ARB and EPA regulations. This change is not expected to result in any quantifiable change since one liter is 1.057 quarts.

The exemption would be expanded to prohibit bundling of coatings. Effective January 1, 2014 the small container exemption would exempt small container coatings from the VOC content limits only. The clarification to the exemption and the prohibition would assist in enforcement and is not expected to result in any changes to VOC emissions.

Secondary Criteria Pollutant Emissions from Operation

Manufacturing and Operating Practices
Manufacturing and operating practices for PAR 1113 compliant coatings would be similar to existing manufacturing and operating practices (i.e., no equipment or operational changes are expected to occur). Coatings and colorants are expected to be manufactured at the same facilities with the same types of equipment as existing coatings and colorants. Transportation of coating components and coatings is also expected to be similar or less. Low-VOC coatings or colorants typically use less solvent, which would require less raw material trips. Products are still expected to be sent to the same retailer, repackaging facilities and end users.

Reactivity
Some coating manufacturers assert that a reactivity-based approach should be used to regulate VOC. In 2006, ARB, districts and the U.S. EPA met to discuss a potential reactivity-based approach. Districts expressed concerns that implementation of a reactivity-based rule would require additional resources for enforcement. Detailed chemical formulation data would be needed to identify all of the volatile ingredients contained in the product. District staff would need to identify the appropriate maximum incremental reactivity (MIR) value for each of these ingredients before the overall reactivity could be calculated for the product. A system for updating MIR values to accommodate changes that result from research studies would be needed. Verifying compliance with a mass-based limit requires fewer resources, because it only involves a relatively simple measurement of total VOCs.

In 2007, the National Paint and Coatings Association (NPCA) suggested an Innovative Product Exemption (IPE) for reactivity be considered. For each product submitted for an exemption, district personnel would need to determine the reactivity of the noncompliant product, identify a representative compliant product, and compare the reactivity of the two products. District personnel would also need to develop enforceable conditions for each exemption (e.g., laboratory test methods, reporting requirements, etc.). The U.S. EPA expressed concerns about how a reactivity-based IPE provision would be enforced, and about potential complications that could result from case-by-case, reactivity-based limits that might be adopted by one air district and not a neighboring district. ARB staff concluded that many districts have insufficient resources to implement and enforce reactivity-based limits or the IPE provision, and that the U.S. EPA had concerns regarding the implementation and enforcement of the IPE provision. Based upon the lack of district resources, U.S. EPA's response, and the lack of industry consensus, ARB staff decided to propose mass-based rather than reactivity based VOC limits in their Suggested Control Measure (SCM). ARB staff concluded the proposed mass-based VOC content limits provided significant emission reductions and was easier for the districts to implement and enforce. In addition, the districts have existing variance rules that can provide flexibility for coating manufacturers.

Based on these discussions, SCAQMD staff does not believe that a reactivity-based approach would be appropriate for PAR 1113. However, SCAQMD staff will continue to work with CARB, U.S.EPA staff and industry on a potential reactivity-based approach.

Coating Properties

Coating properties of PAR 1113 non-compliant and PAR 1113 compliant coatings were compared in the Draft Staff Report for PAR 1113 (April 2010). Based on the analysis in the ~~Draft~~ Final Staff Report, coating properties between PAR 1113 non-compliant and PAR 1113 compliant coatings were similar. Therefore, no new adverse air quality impacts are expected from differences between PAR 1113 non-compliant and PAR 1113 compliant coatings.

Retail and Use Practices

Retail operations may require the use of new colorant dispensers. The operation of these new colorant dispensers may have secondary air quality impacts. The colorant dispensers are expected to have electrical use similar to existing units; therefore, no new adverse air quality impacts from increased electrical use are expected. The dispensers may require increased flushing or cleaning, but the increase in liquid waste is expected to be on the order of ounces, so no increase in air quality impacts from liquid waste for treatment is expected. Earlier issues regarding tip drying, mistinting, wasted paint and film property are not expected to be an issue since the VOC content limit in PAR 1113 was increased from 10 grams per liter to 50 grams per liter.

PAR 1113 compliant coatings are expected to be applied in a similar fashion to existing coatings (brushed, sprayed and rolled), so no new emissions from the application of coatings is expected.

Since under PAR 1113 manufacturing, retail and operating practices would be similar to existing manufacturing, retail and operating practices no increases in secondary criteria pollutants are expected.

Summary of Operational VOC Emissions and Emission Reductions

The total operational effects on VOC emissions as a result of adopting and implementing PAR 1113 are presented in Table 2-6.

Although PAR 1113 would result in VOC emission reductions foregone from two coating categories, overall PAR 1113 is expected to result in net VOC emissions reductions once fully implemented. As a result PAR 1113 is expected to result in an operational air quality benefit. Therefore, PAR 1113 is not expected to create significant adverse operational air quality impacts.

III.c) The preceding analysis concluded that there would be no construction emissions impacts and operational criteria emission would not exceed the applicable SCAQMD construction or operational significant thresholds. It is expected that PAR 1113 would result in a reduction of VOC emissions and potential reduction in toxic emissions (see III.d)). Since PAR 1113 is not expected to be significant for any air quality adverse impact it is not expected to be cumulatively considerable and, therefore, is not expected to create significant adverse cumulative air quality impacts.

Table 2-6
Total VOC Emissions Reductions from PAR 1113

	VOC Emission Reductions (tons per day)			
Description	**2012**	**2014**	**2015**	**Totals**
Reduce VOC Content Limits		0.4 ~~0.2~~		0.4 ~~0.2~~
Limit VOC Content Limits of Colorants		2.8		2.8
VOC Emissions Foregone from Stone Consolidants	-0.001			-0.001
VOC Emissions Foregone from Reactive Penetrating Sealers	-0.001			-0.001
Remove Categories from ACO	0.9			0.9
Phase Out of ACO			0.3	0.3
Total VOC Emission Reductions	0.9	3.2 ~~3.0~~	0.3	4.4 ~~4.2~~

III.d) Prohibition of Class II Exempt Compounds

PAR 1113 includes a general prohibition against the use of Group II exempt compounds listed in Rule 102 – Definition of Terms, in excess of 0.1 percent, other than cyclic, branched, or linear, completely methylated siloxanes (VMS). Pursuant to Rule 102, Group II exempt compounds may be restricted in the future because they are toxic, potentially toxic upper atmospheric ozone depleters or have other environmental impacts. This provision would become effective January 1, 2012, with a sell through for products manufactured before the effective date until January 1, 2013. The proposed prohibition is expected to reduce health risks from exposure to potential toxic solvents; however, no quantification of the amount of Group II exempt compounds in currently available coatings was available. Although this provision in PAR 1113 would likely produce human health benefits, because current volumes of Group II exempt compounds in affected coatings are unknown, no credit would be taken from the prohibition.

Reformulation of Coatings

To comply with PAR 1113, some coatings manufacturers may need to reformulate existing coatings. Although not likely, it is possible that reformulated materials could be formulated with toxic products. The following analysis demonstrates that PAR 1113 would not expose sensitive receptors to substantial exposures to air toxics.

Coatings affected by PAR 1113 may need to be reformulated to meet proposed VOC content limits or in response to changes to and elimination of the averaging compliance option provision. Coating components may have differing toxicity characteristics. To evaluate the potential adverse toxics impacts from PAR 1113, SCAQMD staff used Rule 314 data for products sold in 2008 and 2009. Based on discussions with coating manufacturers, the types of solids in affected coatings are not expected to change as a result of implementing PAR 1113, only solvent formulation. As a result, only solvents in replacement coatings were evaluated for human health effects, which were then compared to the human health effects of solvents in coating formulations that exceed the VOC content limits proposed by PAR 1113.

SCAQMD staff reviewed coatings in the Rule 314 data for products sold in 2008 and 2009. Affected architectural coatings (clear topcoat faux coatings, dry fog coatings; fire proofing coatings; graphic arts coatings; metallic pigment coatings, trowel applied faux finishing coatings)

that have VOC contents greater than those proposed for PAR 1113 and had a sales volume greater than one percent of the total sales of that category were used to represent the coatings that would need to be reformulated.

Assuming that coatings reformulated to comply with PAR 1113 would be similar to existing coatings that already comply with PAR 1113, architectural coatings in the Rule 314 data that had VOC contents that are equal or less than those proposed for PAR 1113 were used as surrogates to evaluate health impacts from reformulated coatings. Information from new architectural coatings that had VOC contents that are equal or less than those proposed for PAR 1113, but were not included in Rule 314 data were also added.

Air toxic solvents were identified by reviewing MSDSs for PAR 1113 non-compliant and PAR 1113 compliant coating lists. The types and amounts of air toxics in the coatings remained the same or were reduced or were eliminated in the PAR 1113 compliant coatings when compared to the PAR 1113 non-compliant coatings (see Table 2-7) with the ~~exemption~~ exception of faux finishing coatings and mastic coatings. A detailed summary is included in Appendix B. Table 2-8 presents all toxic air contaminants identified in MSDS for coatings evaluated in this analysis and their health effects.

Air Toxics from Faux Finishing Coatings

One PAR 1113 compliant interior trowel coatings contains ethylene glycol at five percent by weight. No other toxic air contaminates were identified in any other trowel coatings. Ethylene glycol is a chronic non-carcinogenic toxic air contaminant. Trowel coatings are typically applied once for the life of a structure. Therefore, while PAR 1113 compliant coatings may contain ethylene glycol in low concentrations, since trowel coatings are not expected to be reapplied to a structure, the chronic non-carcinogenic health risk from a single application of a trowel coating with ethylene glycol in low concentrations (five percent) is not expected to be significant.

One PAR 1113 compliant clear topcoat faux finish coating product line contains a maximum of 0.48 percent of triethylamine by weight. Triethylamine is an acute and chronic non-carcinogenic toxic air contaminant, no carcinogenic health values have been established by OEHHA (i.e., cancer potency or unit risk factors). The acute recommended exposure limit (REL) of triethylamine is 2,800 micrograms per cubic meter. The chronic REL triethylamine is 200 micrograms per cubic meter. Total sales of the product line are available from Rule 314 data, but where the product is used and how much at a single location is not known. Since, usage is low and specific information was not available, chronic non-carcinogenic health risk was estimated based on total usage of the clear topcoat faux finish coatings from Rule 314 data (i.e., all clear topcoat faux finish coatings) and the maximum triethylamine by weight in the affected clear topcoat faux finish coating product line. This is very conservative because the total usage in 2009 did not likely occur at the same location and not all clear topcoat faux finish coating products contain triethylamine. The chronic hazard index based on this approach is 0.3 which is below the significance threshold of 1.0. Acute non-carcinogenic health risk was estimated assumed that five gallons per hour may be used on any structure and the maximum triethylamine by weight in the affected clear topcoat faux finish coating product line. The acute hazard index based on this approach is 0.02 which is below the significance threshold of 1.0. Since the non-carcinogenic health risk was below the significant thresholds in Table 2-1, non-carcinogenic health risk is expected to be less than significant.

Table 2-7
Maximum Concentrations of Toxic Air Contaminant in PAR 1113 Non-Compliant and PAR 1113 Compliant Coatings[1]

Coating Category	Di(2-ethylhexyl) phthalate (DEHP)	Ethyl-benzene	Ethylene glycol	Ethylene glycol butyl ether	Iso-propanol	Methylene diphenyl isocyanate	Methyl ethyl ketone	Styrene	Tri-ethylamine	Toluene	Xylene
PAR 1113 Non-Compliant Coatings (maximum weight percent)											
Dry Fog Coatings		1		4	4			20			1
Fire Proofing Exterior Coatings		5					15			15	20
Graphic Arts Coatings				5							
Metallic Pigmented Coatings		2.4					2.7			10	9.9
Faux Finish Clear Coat				0.18							
Form Release											
Trowel Applied Faux Finish											
Mastic Coatings		10	3					40			40
PAR 1113 Compliant Coatings (maximum weight percent)											
Dry Fog Coatings								20			
Fire Proofing Exterior Coatings										10	
Graphic Arts Coatings											
Metallic Pigmented Coatings										7	
Faux Finish Clear Coat									0.46[2]		
Form Release											
Trowel Applied Faux Finish			5.3[2]								
Mastic Coatings	0.1		3			5					

1. Maximum weight percents from review of MSDSs.
2. PAR 1113 compliant coatings weight percent is greater than PAR 1113 non-compliant coatings weight percent (i.e., the PAR 1113 compliant coatings have higher toxic concentration than PAR 1113 non-compliant coatings).

Table 2-8
Toxic Air Contaminant Health Effects

Air Toxic Compound	Inhalation Cancer Potency Factor, (mg/kg-d)-1	Chronic Inhalation Reference Exposure Level, µg/m3	Chronic Hazard Index Target(s) in Humans	Chronic Critical Effect(s)	Acute Inhalation Reference Exposure Level, µg/m3	Acute Hazard Index Target(s) in Humans	Acute Critical Effect(s)
Di(2-Ethylhexyl)Phthalate (DEHP)	8.40E-03	-	-	-	-	-	-
Dipropylene glycol monobutyl ether	None	50 (Interim value , March 2010)	Alimentary system (liver) and nasal mucosa	Histopatholoical lesions	None	None	None
Ethylbenzene	0.0087	2,000	Alimentary system (liver); kidney; endocrine system	Liver, kidney, pituitary gland in mice and rats	None	None	None
Ethylene glycol	None	400	Respiratory system; kidney; development	Respiratory irritation in human volunteers	None	None	None
Ethylene glycol butyl ether	None	None	None	None	14,000	Eyes, respiratory system	Irritation
Isopropanol	None	7,000	Kidney; development	Kidney lesions in mice and rats; fetal growth retardation and developmental anomalies in rats	3,200	Eyes; respiratory system	Irritation of the eyes, nose and throat
Methanol	None	4,000	Teratogenicity	Increased incidence of abnormal cervical ribs, cleft palate, and exencephaly in mice	28,000	Nervous system	Subtle impairment in the performance of complicated tasks
Methylene Diphenyl Isocyanate	-	7.00E-01	Respiratory	Hyperplasia of the olfactory epithelium in rats	-	-	-

Table 2-8 (Concluded)
Toxic Air Contaminant Health Effects

Air Toxic Compound	Inhalation Cancer Potency Factor, (mg/kg-d)-1	Chronic Inhalation Reference Exposure Level, µg/m3	Chronic Hazard Index Target(s) in Humans	Chronic Critical Effect(s)	Acute Inhalation Reference Exposure Level, µg/m3	Acute Hazard Index Target(s) in Humans	Acute Critical Effect(s)
Methyl ethyl ketone	None	None	None	None	13,000	Eyes; respiratory system	Eye, nose and throat irritation in human volunteers
Styrene	None	900	Nervous system	Neuropsychological deficits in humans as measured by memory and sensory/motor function tests	21,000	Eyes; respiratory system; reproductive/developmental	Eye and upper respiratory irritation
Toluene	None	300	Nervous system; respiratory system; teratogenicity	Neurotoxic effects (decreased brain [subcortical limbic area] weight, altered dopamine receptor binding).	37,000	Nervous System; eyes; respiratory System; reproductive/developmental	Headache, dizziness, slight eye and nose irritation
Triethylamine	None	200	Eyes	Eye effects in rats and humans	2,800	Nervous system; eyes	Visual disturbances and ocular irritation in healthy human volunteers
Xylene	None	700	Nervous system; respiratory system	Central nervous system effects in humans; irritation of the eyes, nose, and throat	22,000	eyes; respiratory system	Eye irritation in healthy human volunteers

Acute Reference Exposure Levels and Target Organs, http://www.arb.ca.gov/toxics/healthval/chronic.pdf
Chronic Reference Exposure Levels and Target Organs, http://www.arb.ca.gov/toxics/healthval/acute.pdf
Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values, http://www.arb.ca.gov/toxics/healthval/contable.pdf
OEHHA Acute, 8-hour and Chronic Reference Exposure Level (REL) Summary, http://oehha.ca.gov/air/chronic_rels/
Air Toxics Hot Spots Risk Assessment Guidelines Part II: Technical Support Document for Cancer Potency Factors (May 2009) Appendix D - A listing of Toxic Air Contaminants identified by the California Air Resources Board, http://oehha.ca.gov/air/hot_spots/2008/AppendixD2_final.pdf
Dipropylene glycol monobutyl ether - interim chronic REL, http://www.arb.ca.gov/consprod/regact/2010ra/dpnb29911282.pdf

Air Toxics from Mastic Coatings

Based on the MSDS review, conventional solvent toxic air contaminant concentrations contained in PAR 1113 non-compliant mastic coatings are reduced or eliminated in PAR 1113 compliant mastic coatings with the exception di(2-ethylhexyl)phthalate (DEHP), methylene diphenyl isocyanate (MDI) and ethylene glycol.

One PAR 1113 compliant polyurethane mastic coating contains 0.1 weight percent of di(2-ethylhexyl) phthalate (DEHP) and five percent methylene diphenyl isocyanate (MDI). DEHP is a carcinogen. Phthalate concentration is independent of VOC content (i.e., phthalate concentrations are not expected to change in order to lower VOC content).

MDI is a chronic noncarcinogenic compound. Isocyantes are a component of polyurethane coatings and are used in both high- and low -VOC polyurethane coatings. Like phthalates, isocyante concentration is independent of VOC content.

Since the use of DEHP and MDI would not be affected by reformulating to meet the requirements of PAR 1113, and all other toxic air contaminant concentrations in mastic coatings are expected to be reduced or remain the same (see Table 2-7), adverse air toxic impacts from mastic coatings are expected to be less than significant.

Toxic Air Contaminant Reformulated Coatings Conclusion

Many air toxics also have high VOC content values, so by reducing the VOC content limit, the amount of these air toxics must be reduced or replaced to comply with the lower VOC content limit. Based on the preceding evaluation, with the exception of faux finishing coatings no increase in air toxics is expected from coating reformulation that may be required by PAR 1113. Affected toxic air contaminants (i.e., toxic air contaminates that would be affected by changes to VOC content limits) found in PAR 1113 compliant mastic coatings are expected to be reduced by the proposed project. Based on the above analysis health risk from faux finishing coatings are less than significant. Therefore, PAR 1113 is not expected to be significant for adverse air toxic impacts from reformulation of architectural coatings to meet lower VOC content limits.

Stone Consolidants and Reactive Penetrating Sealers

Stone consolidants and reactive penetrating sealers are primarily supplied under the small container exemption. Based on a review of stone consolidants and reactive penetrating sealers MSDSs, these products may be formulated with methanol, which can cause chronic and acute noncarcinogenic health effects. As stated earlier, ethanol and methanol are also formed by a reaction between the siloxanes and water in concrete. Ethanol is not considered to be an air toxic.

VOC emissions foregone were estimated because reductions were taken for VOC emission reductions to the waterproofing concrete/masonry sealer category in June 9, 2006 amendments to PAR 1113 that were submitted to U.S. EPA for incorporation into the SIP. As stated in the VOC emissions discussion above, usage for stone consolidants and reactive penetrating sealer has been consistently low state-wide and nationally for stone consolidants and reactive penetrating sealers for historical restoration and Caltran use because they are used in very specialized niche applications. Based on these records and Rule 314 data, SCAQMD staff estimates usages would remain consistent with existing usages, which are approximately 142 gallons of stone consolidant used per year and 290 gallons of reactive penetrating sealer used per year.

Therefore, no increase in the use of these products is expected. However, SCAQMD staff intends to monitor usage through the Rule 314 Annual Quantity and Emissions Reports to ensure that the sales does not exceed the estimated usage, and may consider sales caps for this category if actual sales are above the estimated usage. Since no increase in use is expected, new adverse air toxic (methanol) impacts are not expected from PAR 1113.

Colorants

To evaluated compliant colorant formulations SCAQMD staff evaluated MSDSs of colorants that currently comply with the proposed colorant VOC content limit. In addition, colorant manufacturers were contacted to obtain additional information on colorant compositions or any other relevant information. Colorant manufacturers have stated that there would be no change to the solid materials used between existing colorants and PAR 1113 compliant colorants. Therefore, the focus of the air toxics analysis is on the solvents expected to be used in complaint formulations. SCAQMD staff contacted colorant manufacturers to obtain additional information on their products. Glycols, ethylbenzene and isopropyl alcohol were listed on MSDSs for colorants that are compliant with the existing Rule 1113, but would not be compliant with PAR 1113. Some of these glycols, such as ethylene glycol are considered air toxic pollutants. MSDSs for low-VOC colorants (PAR 1113 compliant colorants) were reviewed and no toxic air pollutants were identified. Therefore, PAR 1113 is expected to reduce toxic air pollutants.

In the spring of 2010, the South Coast Air Quality Management District conducted a survey of Architectural Coatings Manufacturers[5] to determine the type of colorants that are currently being used to tint coatings at the point of sale for architectural and industrial maintenance applications. The survey identified nine colorant manufacturers (Evonik Degussa Corporation, Consolidated Color Corporation, Plasticolors, BASF Corporation, Sierra Corporation, Clariant Corporation, Engelhart Corporation, Color Corporation of America and Elementis Specialties). Engelhard Corporation was purchased by BASF Corporation, so now there are only eight colorant manufacturers that have been identified to SCAQMD staff.

Seven of the eight the colorant manufacturers also belong to toxic substance reduction programs such as, Germany's Blue Angel Program, American Chemistry Council (ACC) Responsible Care initiative), Green Seal, International Organization for Standardization (ISO) 14001 or have corporate policies and goals related to ongoing research and development to minimize or eliminate toxic materials from their paints. ACC member companies have made CEO-level commitments to measuring and publicly reporting performance, implementing the Responsible Care Security Code, applying the Responsible Care management system and obtaining independent certification that a management system has been established and operating according to professional standards. The BASF Corporation, Clariant Corporation and Evonik Degussa Corporation are ACC member companies.

The Clariant Corporation, a European colorant manufacturer, has formulated their Colanyl 500 pigments to fulfill the requirements of the Blue Angel Low-Emission Wall Paint Standard RAL-UZ 102. Blue Angel is a German certification for environmentally friendly products and services. It provides a standard for companies to promote the environmental positive aspects of their products on a voluntary basis. The Blue Angel Low-Emission Wall Paint Standard RAL-UZ 102 requires low solvent and formaldehyde content, and plasticizer content below 0.1 percent.

[5] http://www.aqmd.gov/prdas/Coatings/CurrentActivities/AQMDColorantSurvey2010.pdf

Many of the Sierra Corporation coatings conform to the Green Seal Standard for Paints and Coatings GS-11. Green Seal is a non-profit organization that uses science-based programs to assist consumers, purchasers and companies to increase sustainability. The Green Seal Standard for Paints and Coatings GS-11 establishes environmental requirements for paints and coatings. The standard includes product performance requirements and environmental and health requirements such as reduced use of hazardous substances and requires low volatile organic compound (VOC) content. GS-11 compliant product are prohibited from containing: 1,2-dichlorobenzene, alkylphenol ethoxylates (APEs), formaldehyde-donors, heavy metals, including lead, mercury, cadmium, hexavalent chromium and antimony in the elemental form or compounds, phthalates, triphenyl tins (TPT) and tributyl tins (TBT).

Plasticolors is ISO 14001:2004 certified. ISO 14000 standards addresses various aspects of environmental management. The two standards, ISO 14001:2004 and ISO 14004:2004 deal with environmental management systems (EMS). ISO 14001:2004 provides the requirements for an EMS and ISO 14004:2004 gives general EMS guidelines. ISO 14001:2004 EMSs are management tools enabling organizations to: identify and control the environmental impact of its activities, products or services, to continually improve its environmental performance, and to implement a systematic approach to setting environmental objectives and targets, to achieving these and to demonstrating that they have been achieved.

Benjamin Moore's zero-VOC colorant system meets their corporate Green Promise designation. To adhere to the Green Promise designation the colorants must meet or exceed standards established by Green Seal, Greenguard, MPI and the California CHPS programs. These programs limit VOC emissions and restrict certain chemicals (like formaldehyde, crystalline silica, and other carcinogens). These programs also establish baselines for dry-film performance characteristics, such as hiding ability, scrubbability and adhesion.

Elementis Specialties has an environmental policy that states, "Elementis Specialties, Inc. operates our facilities to minimize impact on the environment. We view compliance with all applicable legal requirements and other codes of practice as our minimum standard. We work proactively to reduce emissions, minimize waste from our processes, conserve valuable natural resources and ensure responsible product stewardship up and down the supply chain.

In addition, five of the eight colorant manufacturers produce APE free low-VOC colorants. APEs are synthetic surfactants that are used in conventional colorants pigment. Surfactants are compounds that lower the surface tension of a liquid. Surfactants assist with wetting, film leveling, and pigment and dye stabilization. CARB has published a draft interim acute reference exposure level of 0.73 mg/m3 (0.03 ppm) for APEs,[6] which indicates that APEs have the potential to cause adverse non-carcinogenic health impacts from short-term exposures. In response to concerns about adverse biological impacts from APEs by CARB, EPA and European environmental regulatory agencies, there is a trend among colorant manufacturers to eliminate APEs in only low-VOC colorants. There is no direct relationship between APE content and VOC content in colorants (APE concentrations are too low to typically affect VOC content). Complying with PAR 1113 is not expected to increase the use of APEs in any PAR 1113 compliant formulation or interfere with coating manufacturing treads to produce APE-free low-

[6] http://www.arb.ca.gov/consprod/regact/2010ra/ape9016459.pdf

VOC colorants. Because of the trend to eliminate APEs from low-VOC colorants, the use of low-VOC colorants would result in an indirect health benefit. Since APEs are not prohibited by PAR 1113, but were eliminated by colorant manufacturers instead of by public agency rules or regulations, no credit would be taken for the elimination of APEs in colorants.

Based on the above analysis, no adverse health impacts are expected from primary and secondary emissions of air toxic pollutants from the colorant requirements of PAR 1113.

Secondary Air Toxic Emissions

Secondary air toxic emissions may be generated by a single round trip to deliver and install new colorant dispensers or to modify existing units and another single round trip to dispose of any solid waste from the replacement or modification of existing colorant dispensers at retail facilities. As a worst-case assumption, the two round trips from delivery and disposal are expected to be completed using diesel-fueled vehicles. CARB has classified the particulates in diesel exhaust as a carcinogen. Health risks from carcinogenic pollutants are estimated over a 70-year lifetime for residential and sensitive receptors and over a 40-year period for off-site worker receptors. Since deliveries and disposal are expected to be completed over a short period of time (within a couple of days) and health risk values are estimated over long periods of time, increased health risk from diesel exhaust particulate matter is expected to be less than significant for secondary air toxic emissions. In addition, retail facilities are not typically located in close proximity to other affected retail facilities and installation of colorant dispensers would occur over a three-year period. Therefore, there would not be any overlapping or additive exposures from deliveries to different facilities.

Based on the above discussion, PAR 1113 is not expected to generate significant air toxic impacts.

III.e) Odor problems depend on individual circumstances, materials involved, and individual odor sensitivities. For example, individuals can differ quite markedly from the population average in their sensitivity to odor due to any variety of innate, chronic or acute physiological conditions. This includes olfactory adaptation or smell fatigue (i.e., continuing exposure to an odor usually results in a gradual diminution or even disappearance of the smell sensation).

As already noted, the proposed project does not require the use of heavy-duty diesel construction equipment, and only two delivery/haul trucks trips are expected to replace colorant dispensers at medium-sized retailers. As a result no odor impacts associated with diesel exhaust from either on-road or off-road mobile sources are expected to occur.

The odors from coatings are typically related to the types and amounts of solvents used in the coatings. Based on a review of MSDSs for both toxics (see the toxics analysis in this section) and hazardous solvents (see Section VIII - Hazards and Hazardous Material), it appears that coatings that comply with the PAR 1113 would use the same solvents used in existing coatings, but in lower quantities to comply with the proposed VOC content limits with the exception of faux finish coatings. PAR 1113 compliant faux finish coatings may increase triethylamine, ethylene glycol and propylene glycol. Triethylamine is a trace component (maximum 0.48 percent) in faux finish clear topcoat, which is unlikely to generate strong odors at such a low concentration. Ethylene glycol and propylene glycol are used in concentrations at less than five percent in dry trowel applied faux coatings, which are mixed with water. The use of ethylene

glycol and propylene glycol diluted in waterborne trowel applied faux coatings is not expected to generate strong odors.

In summary, the overall reduction in solvent use, with the exception of faux finish coatings is expected to reduce odors from coatings. In the case of PAR 1113 compliant faux coatings where triethylamine, ethylene glycol and propylene glycol may increase, the concentrations of these solvents are low and, therefore, not expected to generate additional adverse significant odor impacts. Therefore, PAR 1113 is not expected to create new objectionable odors that would affect as significant number of people.

III.g) & h) Global warming is the observed increase in average temperature of the earth's surface and atmosphere. The primary cause of global warming is an increase of greenhouse gas (GHG) emissions in the atmosphere. The six major types of GHG emissions identified in the Kyoto Protocol are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), sulfur hexafluoride (SF6), haloalkanes (HFCs), and perfluorocarbons (PFCs). The GHG emissions absorb longwave radiant energy emitted by the earth, which warms the atmosphere. The GHGs also emit longwave radiation both upward to space and back down toward the surface of the earth. The downward part of this longwave radiation emitted by the atmosphere is known as the "greenhouse effect."

The current scientific consensus is that the majority of the observed warming over the last 50 years can be attributable to increased concentration of GHG emissions in the atmosphere due to human activities. Events and activities, such as the industrial revolution and the increased consumption of fossil fuels (e.g., combustion of gasoline, diesel, coal, et cetera), have heavily contributed to the increase in atmospheric levels of GHG emissions. As reported by the California Energy Commission (CEC), California contributes 1.4 percent of the global and 6.2 percent of the national GHG emissions (CEC, 2004). Further, approximately 80 percent of GHG emissions in California are from fossil fuel combustion (e.g., gasoline, diesel, coal, et cetera).

PAR 1113 is not expected to alter manufacturing processes (other than reformulating coatings) and coating use. No GHG compounds were identified in MSDSs of existing coatings that comply with PAR 1113, and since reformulated coatings are expected to be similar to existing coatings that are already compliant with PAR 1113, reformulated coatings are not expected to generate GHG emissions. Retail operations with new colorants and colorant equipment are expected to be similar to existing systems with respect to GHG generation. Therefore, no additional GHG emissions are expected from operational activities related to PAR 1113.

PAR 1113 would generate new trips to replace colorant systems and dispose of the old systems. These emissions are summarized in Table 2-9 and detailed in Appendix B.

Table 2-9
GHG Emissions from PAR 1113

Description	Activity, vehicle miles traveled	CO2, metric ton	CH4, metric ton	N2O, metric ton	CO2eq, metric ton
Project Emissions	35,360	87.6	0.00403	0.00034	87.7
Amortized Emissions	1,179	2.92	0.0001345	0.0000113	2.9

PAR 1113 is expected to result in an incremental increase of 2.9 metric tons of CO2eq emissions per year generated during construction from delivery/haul truck trips to remove and replace colorant dispensers. To determine significance, total GHG emissions from all construction activities were quantified. Construction activities consists primarily of on-road heavy-duty diesel truck trips to transport new colorant dispensers to affected retail facilities and haul away old dispensers. The total project GHG emissions are shown in the first row of Table 2-9. GHG emissions then are amortized over a 30-year period as prescribed in the Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans[7] adopted by the SCAQMD Governing Board in December 2008. PAR 1113 is not expected to generate any additional GHGs from operations, since PAR 1113 compliant operations are expected to be similar to existing operations. Amortized construction GHG emissions are shown in the second row of Table 2-9. Although methane (CH4) and nitrous oxide (N2) have global warming potentials of 21 and 310, respectively, they are a small amount of the total GHG emissions. An incremental increase of 2.9 tons from construction per year of CO2eq emissions is less than the significance threshold of 10,000 metric tons of CO2eq per year. In general, the Program EIR for the 2007 AQMP concluded that implementing the control measures in the 2007 AQMP, would provide a comprehensive ongoing regulatory program that would reduce overall GHGs emissions in the district. Therefore, PAR 1113 is not expected to create significant for adverse GHG emission impacts or conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

Conclusion

Based on the preceding evaluate of air quality impacts from PAR 1113, SCAQMD staff has concluded that PAR 1113 does not have the potential to generate significant adverse air quality impacts and will not be further analyzed in this Final EA. Since no significant adverse air quality and greenhouse gases impacts were identified, no mitigation measures are necessary or required.

[7] Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans, http://www.aqmd.gov/hb/2008/December/081231a.htm.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
IV.	**BIOLOGICAL RESOURCES.** Would the project:				
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☑
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☑
c)	Have a substantial adverse effect on federally protected wetlands as defined by §404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☑
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☑
e)	Conflicting with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☑

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☑

Significance Criteria

Impacts on biological resources will be considered significant if any of the following criteria apply:

- The project results in a loss of plant communities or animal habitat considered to be rare, threatened or endangered by federal, state or local agencies.
- The project interferes substantially with the movement of any resident or migratory wildlife species.
- The project adversely affects aquatic communities through construction or operation of the project.

Discussion

IV.a), b), c), & d) Manufacturing of architectural coatings that comply with PAR 1113 is expected to occur within existing structures at industrial facilities that already manufacture architectural coatings. The use and application of compliant architectural coatings is expected to be similar to the use and application of existing architectural coatings that are applied to new or existing structure and their appurtenances because their formulation, in many cases, are similar to the formulation in existing coatings except compliant coatings are expected to be formulated with less solvent.

Conventional colorants include solvents such as glycols, ethylbenzene and isopropyl alcohol, which indirectly reduce biological growth in the colorants. These solvents have been removed from existing PAR 1113 compliant colorants and, therefore, are expected to be removed in conventional colorants reformulated to comply with PAR 1113. To prevent biological growth in low-VOC colorants, biocides have been added to or increased in these colorants. Therefore, PAR 1113 may require a slight increase in the amount of biocides in colorants for some formulations, but colorants are a small component of coatings (approximately four ounces per gallon) and biocides are a small portion of colorants. Colorant manufacturers were also contacted and stated that they had not identified any biological impacts from low-VOC colorants. MSDSs of PAR 1113 non-compliant and PAR 1113 compliant coatings were reviewed by SCAQMD staff. No MSDSs, either for PAR 1113 non-compliant coatings or PAR 1113 compliant coatings identified biological impacts from biocides in colorants.

APEs are synthetic surfactants that are used in conventional colorants pigment. Surfactants are compounds that lower the surface tension of a liquid. Surfactants assist with wetting, film leveling, and pigment and dye stabilization. EPA has prepared a Nonylphenol (NP) and Nonylphenol Ethoxylates (NPEs) Action Plan. NPs and NPEs are considered APEs. The EPA has stated in their Action Plan, "available acute and chronic toxicity data of NP to aquatic

organisms indicates NP is highly toxic to fish, aquatic invertebrates, and aquatic plants. The 28-day no observed effect concentration (NOEC) of CASRN 84852-15-3 for fish ranges from 0.05 to 0.07 mg/L and the 28-day lowest observed effect concentration (LOEC) ranges from 0.12 to 0.19 mg/L. A 33-day NOEC for fish is 0.007 mg/L and the 33-day LOEC is 0.014 mg/L. The 21-day NOEC for aquatic invertebrates ranges from 0.10 to 0.24 mg/L."[8] In response to concerns about adverse biological impacts from APEs by EPA and European environmental regulatory agencies, there is a trend among colorant manufacturers to eliminate APEs in only low-VOC colorants. There is no direct relationship between APE content and VOC content in colorants (APE concentrations are too low to typically affect VOC content). Complying with PAR 1113 is not expected to increase the use of APEs in any PAR 1113 compliant formulations or interfere with coating manufacturing trends to produce APE-free low VOC products.

Further, PAR 1113 is only expected to require minor construction activities to install colorant equipment in existing retail facilities because compliance with PAR 1113 is expected to be met by reformulation of architectural coatings and colorants. For the same reason, PAR 1113 would not require the construction of any new buildings or other structures. Colorant systems at medium-sized retail facilities may need to be replaced. But these units are drop-in place units that would not need heavy-duty diesel construction equipment for installation and would be replaced within existing retail structures. As a result, implementing PAR 1113 is not expected to adversely affect in any way habitats that support riparian habitat, are federally protected wetlands, or are migratory corridors. Similarly, since implementing PAR 1113 would not require construction of any structures, special status plants, animals, or natural communities are not expected to be adversely affected.

IV.e) & f) It is not envisioned that PAR 1113 would conflict with local policies or ordinances protecting biological resources or local, regional, or state conservation plans because the proposed project does not require construction of any structures or new development in protected areas. Additionally, PAR 1113 would not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any other relevant habitat conservation plan for the same reason.

The SCAQMD, as the Lead Agency for the proposed project, has found that, when considering the record as a whole, there is no evidence that PAR 1113 would have potential for any new adverse effects on wildlife resources or the habitat upon which wildlife depends. Accordingly, based upon the preceding information, the SCAQMD has, on the basis of substantial evidence, rebutted the presumption of adverse effect contained in §753.5 (d), Title 14 of the California Code of Regulations.

Based upon these considerations, significant adverse biological resources impacts are not anticipated and will not be further analyzed in this ~~Draft~~ Final EA. Since no significant adverse biological resources impacts were identified, no mitigation measures are necessary or required.

[8] http://www.epa.gov/oppt/existingchemicals/pubs/actionplans/RIN2070-ZA09_NP-NPEs%20Action%20Plan_Final_2010-08-09.pdf

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
V.	**CULTURAL RESOURCES.** Would the project:				
a)	Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☑
b)	Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	☐	☐	☐	☑
c)	Directly or indirectly destroy a unique paleontological resource, site, or feature?	☐	☐	☐	☑
d)	Disturb any human remains, including those interred outside formal cemeteries?	☐	☐	☐	☑

Significance Criteria

Impacts to cultural resources will be considered significant if:

- The project results in the disturbance of a significant prehistoric or historic archaeological site or a property of historic or cultural significance to a community or ethnic or social group.
- Unique paleontological resources are present that could be disturbed by construction of the proposed project.
- The project would disturb human remains.

Discussion

V.a), b), c), & d) PAR 1113 does not require construction of new facilities, increasing the floor space of existing facilities, or any other construction activities that would require disturbing soil that may contain cultural resources. The only activities expected to occur as a result of PAR 1113 is the removal of old and replacement with new colorant dispensing units at existing retail facilities. The colorant dispensers are drop in replacements, so removal and installation would occur primarily using hand tools.

Since no heavy-duty construction-related activities requiring soil disturbance would be associated with the implementation of PAR 1113, no impacts to historical or cultural resources are anticipated to occur. Further, PAR 1113 is not expected to require physical changes to the environment, which may disturb paleontological or archaeological resources or disturb human remains interred outside of formal cemeteries.

The ARB SCM for Architectural Coatings includes a separate category under the waterproofing concrete/masonry sealer for stone consolidants at 450 grams per liter to support historical preservation efforts by allowing limited use of these products under the direction of a stone conservation specialist, such as an architect, conservator, or engineer. Stone consolidants penetrate into stone substrates to help restore the integrity of crumbling or decayed materials. These products are often considered to be concrete treatments, rather than coatings, and are not

for general purpose use. The Technical Support Document for Proposed Amendments to the Suggested Control Measure for Architectural Coating states that "solventborne products are generally preferred, because it is believed that the solvent can penetrate deeper into the substrate and distribute the consolidate down to the undeteriorated stone."

The ARB SCM also includes a separate category for reactive penetrating sealers with a VOC content limit of 350 grams per liter. Reactive penetrating sealers penetrate and chemically react with concrete and masonry substrates to provide a breathable protective seal that is resistant to water, chemicals, and deicing salts. Reactive penetrating sealers are used to protect bridges and historic structures.

OHP and one stone consolidant manufacturer have requested that PAR 1113 also include new categories for stone consolidants and reactive penetrating sealers with VOC content limits of 450 and 350 grams per liter, respectively.

The VOC content limit for the waterproofing concrete/masonry sealers category is 100 grams per liter in existing Rule 1113. Stone consolidants are currently classified as a waterproofing concrete/masonry sealer under the existing Rule 1113. A stone consolidants category with a VOC content limit of 450 grams per liter would be added by PAR 1113. A reactive penetrating sealer category would be added with a VOC content limit of 350 grams per liter. Both products are currently used under the small container exemption. However, because PAR 1113 would increase the VOC content limit of stone consolidants and reactive penetrating sealers, these products would be available to conservators in more convenient sizes. Ten years of national sales records from the stone consolidant manufacturer and usage records from Caltrans since 1989 have shown consistent use of these products; therefore, no increase in usage is expected from PAR 1113. SCAQMD staff intends to monitor usage through the Rule 314 Annual Quantity and Emissions Reports to ensure that the sales does not exceed the estimated usage, and may consider sales caps for this category if actual sales are above the estimated usage.

Based upon these considerations, significant adverse cultural resources impacts are not expected from implementing PAR 1113 and will not be further assessed in this ~~Draft~~ Final EA. Since no significant cultural resources impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
VI. ENERGY. Would the project:				
a) Conflict with adopted energy conservation plans?	☐	☐	☑	☐
b) Result in the need for new or substantially altered power or natural gas utility systems?	☐	☐	☑	☐

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
c)	Create any significant effects on local or regional energy supplies and on requirements for additional energy?	☐	☐	☑	☐
d)	Create any significant effects on peak and base period demands for electricity and other forms of energy?	☐	☐	☑	☐
e)	Comply with existing energy standards?	☐	☐	☑	☐

Significance Criteria

Impacts to energy and mineral resources will be considered significant if any of the following criteria are met:

- The project conflicts with adopted energy conservation plans or standards.
- The project results in substantial depletion of existing energy resource supplies.
- An increase in demand for utilities impacts the current capacities of the electric and natural gas utilities.
- The project uses non-renewable resources in a wasteful and/or inefficient manner.

Discussion

VI.a) & e) As noted in other discussions large architectural coating retailers have generally already replaced colorant equipment for reasons unrelated to PAR 1113. Small coating retailers are not expected to replace equipment because coating sales are a small part of their overall operations. It is expected that approximately 221 medium-sized coating retailers would replace colorant equipment with similar or identical colorant equipment. Replacement colorant dispensers are expected to use the same or similar amounts of electricity. For this reason, there is no reason to believe that operators would purchase equipment that would substantially increase electricity use, resulting in conflicts with adopted energy conservation plans or violate existing energy standards. Additionally, those who manufacture or use compliant architectural coatings are expected to comply with any relevant existing energy conservation plans and standards because compliant coatings are manufactured and applied using the same equipment as is currently used.

VI.b), c), & d) The manufacturing and use of compliant architectural coatings is expected to create little or no additional demand for energy at affected facilities because activities and practices that involve the manufacturing or application are not expected to change as a result of implementing PAR 1113. Based on the analysis in the Section III Air Quality and Greenhouse Gases of this EA, manufacturers are expected to use the same materials to manufacture compliant coatings compared to existing coatings except that less organic solvents would be used and more of the water-based solvents already in the coating would be used. Compliant architectural coatings are expected to be applied in a similar manner to existing coatings (i.e., sprayed, rolled or brushed on to structures and appurtenances). As such, PAR 1113 would

require little or no additional energy use to manufacture or apply compliant coatings that would increase the demand for energy or require new or modified energy utilities.

PAR 1113 may require the replacement or modification of colorant systems at up to 221 medium-sized retail facilities. Because the new or modified colorant systems are typically identical, or nearly identical, replacements are expected to use similar amounts of electricity. It is expected that old equipment would be removed and new equipment would be installed using hand tools. No heavy-duty diesel construction equipment would be needed for removal or installation of new colorant equipment.

The replacement or modification of colorant systems is expected to require one vehicle round trip to install or modify and one vehicle round-trip to dispose of the old unit or old parts. Two round trips with a one way distance would result in 16 gallons of diesel fuel use per store. Assuming two stores are modified per day, approximately 32 gallons of diesel fuel would be used per day. The total amount of diesel expected to be used to remove and replace colorant dispenser is 3,536 gallons.

The California Energy Commission projected that the year 2010 demand for diesel fuel would be 3,332,865,762 gallons.[9] Since 3,536 gallons of diesel fuel for the project is less than one percent (0.0001 percent) of the diesel demand in 2010, the proposed project is not considered to have a significant adverse operational impact for diesel fuel use.

In light of the above information and because the primary effect of PAR 1113 would be architectural coatings with slightly different formulations, PAR 1113 would not create any significant adverse effects on peak and base period demands for electricity, natural gas, or other forms of energy, or adversely affect energy producers or energy distribution infrastructure.

Based on the preceding discussion, PAR 1113 would not create any significant effects on peak and base period demands for electricity or other forms of energy and it is expected that any affected facilities would continue to comply with existing energy standards. Therefore, PAR 1113 is not expected to generate significant adverse energy resources impacts and will not be discussed further in this ~~Draft~~ Final EA. Since no significant energy impacts were identified, no mitigation measures are necessary or required.

[9] California Energy Commission, Transportation Energy Forecast and Analysis for the 2009 Integrated Energy Policy Report, Final Staff Report, Pub # CEC-600-2010-002-SF, http://www.energy.ca.gov/2010publications/ CEC-600-2010-002/CEC-600-2010-002-SF.PDF , May 2010.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☑
• Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	☐	☑
• Strong seismic ground shaking?	☐	☐	☐	☑
• Seismic–related ground failure, including liquefaction?	☐	☐	☐	☑
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☑
c) Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☑
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☑
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☑

Significance Criteria

Impacts on the geological environment will be considered significant if any of the following criteria apply:

- Topographic alterations would result in significant changes, disruptions, displacement, excavation, compaction or over covering of large amounts of soil.

- Unique geological resources (paleontological resources or unique outcrops) are present that could be disturbed by the construction of the proposed project.
- Exposure of people or structures to major geologic hazards such as earthquake surface rupture, ground shaking, liquefaction or landslides.
- Secondary seismic effects could occur which could damage facility structures, e.g., liquefaction.
- Other geological hazards exist which could adversely affect the facility, e.g., landslides, mudslides.

Discussion

VII.a) There are no provisions in PAR 1113 that would require the construction of new or modified structures or the construction or installation of air pollution control equipment that would call for the disruption or overcovering of soil, changes in topography or surface relief features, the erosion of beach sand, or a change in existing siltation rates. Colorant systems at existing medium sized retail facilities may need to be replaced. But these systems are drop-in place units that would not need heavy-duty diesel-fueled construction equipment and would be placed within existing retail structures with existing foundations; therefore, replacement of colorant systems is not expected to affect geology or soils. The manufacture of compliant architectural coatings is expected to occur at existing industrial facilities that already manufacture existing architectural coatings and no changes to equipment or operations are expected to be necessary to manufacture compliant coatings. It is expected that coating contractors or consumers who use compliant architectural coatings, would use these products in a similar manner to existing architectural coatings, so effects, if any, on geology or soils would not change compared to the existing setting.

Since PAR 1113 would not require the construction of new structures or modify any existing structures (other than replacing existing colorant dispensers within existing medium-sized resale facilities), PAR 1113 would not expose persons or property to new geological hazards such as earthquakes, landslides, mudslides, ground failure, or other natural hazards.

VII.b) PAR 1113 is not expected to require construction activities to install build new structures or control equipment because compliance with PAR 1113 is expected to be met by reformulation of architectural coatings. Colorant systems at existing medium sized retail facilities may need to be replaced. But these units are drop-in-place units that would not need heavy-duty, diesel-fueled construction equipment and would be placed within existing retail structures. Since PAR 1113 would not involve heavy construction activities to build new structures or install control equipment, no soil disruption from excavation, grading, or filling activities; changes in topography or surface relief features; erosion of beach sand; or changes in existing siltation rates are anticipated from the implementation of the proposed project.

VII.c) Since no heavy construction activities to construct new structures would be required, no excavation, grading, or filling activities would be required to comply with the proposed project. Since no new structures would be built that could be affected by subsidence, subsidence is not anticipated to be a problem. Further, the proposed project would not require the drilling or removal of underground products (e.g., water, crude oil, etc.) that could produce subsidence effects. Since no groundwork or earth moving activities would be required as part of implementing PAR 1113, no new landslides effects or other changes to unique geologic features would occur.

VII.d) & e) Since PAR 1113 is not expected to require the installation of control equipment or the construction of any structures that would involve earth-moving activities, no persons or property would be exposed to new impacts from expansive soils or soils. Further, because PAR 1113 does not required construction of any structures that require wastewater disposal, the installation of septic tanks or other alternative waste water disposal systems is not anticipated as a result of adopting PAR 1113.

Based upon these considerations, significant geology and soils impacts are not expected from the implementation of PAR 1113 and will not be further analyzed in this ~~Draft~~ Final EA. Since no significant geology and soils impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
VIII.	**HAZARDS AND HAZARDOUS MATERIALS.** Would the project:				
a)	Create a significant hazard to the public or the environment through the routine transport, use, and disposal of hazardous materials?	☐	☐	☑	☐
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset conditions involving the release of hazardous materials into the environment?	☐	☐	☑	☐
c)	Emit hazardous emissions, or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☑	☐
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would create a significant hazard to the public or the environment?	☐	☐	☑	☐

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☑	☐
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☑	☐
g)	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☑	☐
h)	Significantly increased fire hazard in areas with flammable materials?	☐	☐	☑	☐

Significance Criteria

Impacts associated with hazards will be considered significant if any of the following occur:

- Non-compliance with any applicable design code or regulation.
- Non-conformance to National Fire Protection Association standards.
- Non-conformance to regulations or generally accepted industry practices related to operating policy and procedures concerning the design, construction, security, leak detection, spill containment or fire protection.
- Exposure to hazardous chemicals in concentrations equal to or greater than the Emergency Response Planning Guideline (ERPG) 2 levels.

Discussion

VIII.a), b), c), & h) PAR 1113 does not include provisions that would directly or indirectly dictate the use of any specific coating formulations with the exception of prohibiting Group II exempt solvents, which are, or are potentially toxic compounds. Prohibiting the use of Group II exempt compounds is a beneficial effect because it would reduce the potential for exposures to toxic or potentially toxic compounds by the general public. Persons who currently use architectural coatings would continue to have the flexibility of choosing the product formulation best suited for their needs. It is likely that persons who utilize these materials would choose architectural coatings that do not pose a substantial safety hazard. In addition, in response to increased customer awareness of toxic or hazardous materials and customer demand, colorant

and architectural coating manufacturers have on their own attempted to reduce the amount of hazardous materials included in coatings.

TOXICS AND FLAMMABILITY

Section III.d) evaluates toxics from affected architectural coatings. Based on a comparison of toxics identified in MSDSs from PAR 1113 non-compliant coatings and PAR 1113 compliant coatings, toxic concentrations in affected architectural coatings remain either the same or are reduced with the exemption of faux finish coatings. Therefore, only toxic hazards from faux finish coatings are evaluated the analysis below.

~~Because PAR 1113 would likely require reformulation of some coating products to comply with lower VOC content limits or in response to changes to the averaging compliance option provision, use of some solvents in coatings, including Group I exempt compounds, may result in products with a higher flammability ratings.~~ Coating components may have differing flammability characteristics. Therefore, impacts associated with fire hazards would be considered significant if the project creates a significant fire hazard to the public through the use of more flammable materials by consumers.

SCAQMD staff prepared an analysis of flammability of affected PAR 1113 compliant coatings that is similar to the analysis of toxic air contaminants in PAR 1113 compliant coatings described in Section III.d) of this EA. Based on discussions with coating manufacturers, the solids in coatings are not expected to change as a result of implementing PAR 1113; therefore, only hazards from solvents in coating formulations were evaluated.

SCAQMD staff reviewed MSDSs for coatings in the Rule 314 database for products shipped in 2008 and 2009. Affected architectural coatings (dry fog coatings; faux finish clear topcoats, fire proofing coatings; graphic arts coatings; <u>mastic coatings,</u> metallic pigment coatings; and trowel applied faux finish coatings) that have VOC contents greater than the VOC content limits proposed for PAR 1113 and had a sales volume greater than one percent of the total sales of that category were used to represent the coatings that would need to be reformulated.

Assuming that coatings reformulated to comply with PAR 1113 would be similar to existing coatings that already comply with PAR 1113, architectural coatings in the Rule 314 data that had VOC contents that are equal or less than those proposed for PAR 1113 were used as surrogates to evaluate health impacts from reformulated coatings. Information from new architectural coatings that had VOC contents that are equal or less than those proposed for PAR 1113, but were not included in Rule 314 data were also added.

A number of physical or chemical properties may cause a substance to be a fire hazard. With respect to determining whether any conventional or replacement solvent is a fire hazard, MSDS lists the National Fire Protection Association 704 flammability hazard ratings (i.e. NFPA 704). NFPA 704 is a "standard (that) provides a readily recognized, easily understood system for identifying flammability hazards and their severity using spatial, visual, and numerical methods to describe in simple terms the relative flammability hazards of a material[10].

[10] National Fire Protection Association, FAQ for Standard 704. http://www.nfpa.org/faq.asp?categoryID=928&cookie%5Ftest=1#23057

Although substances can have the same NFPA 704 Flammability Ratings Code, other factors can make each substance's fire hazard very different from each other. For this reason, additional chemical characteristics, such as auto-ignition temperature, boiling point, evaporation rate, flash point, lower explosive limit (LEL), upper explosive limit (UEL), and vapor pressure, are also considered when determining whether a substance is fire hazard. The following is a brief description of each these chemical characteristics.

Auto-ignition Temperature: The auto-ignition temperature of a substance is the lowest temperature at which it will spontaneously ignite in a normal atmosphere without an external source of ignition, such as a flame or spark.

Boiling Point: The boiling point of a substance is the temperature at which the vapor pressure of the liquid equals the environmental pressure surrounding the liquid. Boiling is a process in which molecules anywhere in the liquid escape, resulting in the formation of vapor bubbles within the liquid.

Evaporation Rate: Evaporation rate is the rate at which a material will vaporize (evaporate, change from liquid to a vapor) compared to the rate of vaporization of a specific known material. This quantity is a represented as a unitless ratio. For example, a substance with a high evaporation rate will readily form a vapor which can be inhaled or explode, and thus have a higher hazard risk. Evaporation rates generally have an inverse relationship to boiling points, (i.e., the higher the boiling point, the lower the rate of evaporation).

Flash Point: Flash point is the lowest temperature at which a volatile liquid can vaporize to form an ignitable mixture in air. Measuring a liquid's flash point requires an ignition source. At the flash point, the vapor may cease to burn when the source of ignition is removed. There are different methods that can be used to determine the flashpoint of a solvent but the most frequently used method is the Tagliabue Closed Cup standard (ASTM D56), also known as the TCC. The flashpoint is determined by a TCC laboratory device which is used to determine the flash point of mobile petroleum liquids with flash point temperatures below 175 degrees Fahrenheit (79.4 degrees Centigrade).

Flash point is a particularly important measure of the fire hazard of a substance. For example, the Consumer Products Safety Commission (CPSC) promulgated Labeling and Banning Requirements for Chemicals and Other Hazardous Substances in 15 U.S.C.§1261 and 16 CFR Part 1500. Per the CPSC, the flammability of a product is defined in 16 CFR Part 1500.3 (c)(6) and is based on flash point. For example, a liquid needs to be labeled as: 1) "Extremely Flammable" if the flash point is below 20 degrees Fahrenheit; 2) "Flammable" if the flash point is above 20 degrees Fahrenheit but less than 100 degrees Fahrenheit; or, 3) "Combustible" if the flash point is above 100 degrees Fahrenheit up to and including 150 degrees Fahrenheit.

Lower Explosive Limit (LEL): The lower explosive limit of a gas or a vapor is the limiting concentration (in air) that is needed for the gas to ignite and explode or the lowest concentration (percentage) of a gas or a vapor in air capable of producing a flash of fire in presence of an ignition source (e.g., arc, flame, or heat). If the concentration of a substance in air is below the LEL, there is not enough fuel to continue an explosion. In other words, concentrations lower than the LEL are "too lean" to burn. For example, methane gas has a LEL of 4.4 percent (at 138 degrees Centigrade) by volume, meaning 4.4 percent of the total volume of the air consists of

methane. At 20 degrees Centigrade, the LEL for methane is 5.1 percent by volume. If the atmosphere has less that 5.1 percent methane, an explosion cannot occur even if a source of ignition is present. When the concentration of methane reaches 5.1 percent, an explosion can occur if there is an ignition source.

Upper Explosive Limit (UEL): The upper explosive limit of a gas or a vapor is the highest concentration (percentage) of a gas or a vapor in air capable of producing a flash of fire in presence of an ignition source (e.g., arc, flame, or heat). Concentrations of a substance in air above the UEL are "too rich" to burn.

Vapor Pressure: Vapor pressure is an indicator of a chemical's tendency to evaporate into gaseous form.

The types and amounts of flammable solvents in the coatings remained the same or were reduced or were eliminated in the PAR 1113 compliant coatings when compared to the PAR 1113 non-compliant coatings (see Table 2-10) with the exemption of faux finishing coatings. A detailed summary is included in Appendix B. Table 2-11 presents all flammable solvents identified in MSDS for coatings evaluated in this analysis and their flammable characteristics.

Therefore, since based on the review of MSDSs flammable solvents might increase only in PAR 1113 compliant faux finish coatings, only faux finish coatings were evaluated in the hazard analysis. Hazard impacts were evaluated from manufacturing, distribution and sales and use (application) of faux finish coatings.

Manufacturing

MSDSs for PAR 1113 non-compliant and complaint coatings were evaluated to identify toxic and hazardous constituents. With the exception of faux finish coatings the analysis of MSDSs showed a reduction in toxic and flammable materials in PAR 1113 compliant coatings compared to PAR 1113 non-compliant coatings.

Manufacturing operations comprise receiving and storing raw material, crushing and mixing operations, and storage of architectural coatings. Emissions from manufacturing architectural coatings are expected to be smaller than emission from accidental releases because manufacturing operations are typically done in enclosed containers and systems. In addition, manufacturing operations are permitted, and therefore, required to apply best available control technology, while architectural coatings are typically used outdoors. The following is an analysis of hazards from accidental release of raw material from the manufacturing process from faux finish coatings and mastic coatings, which are ~~is~~ the worst-case scenarios for manufacturing.

Table 2-10
Maximum Concentrations of Flammable Solvent in PAR 1113 Non-Compliant and PAR 1113 Compliant Coatings[1]

Coating Solvent	PAR 1113 Non-Compliant (weight percent)								PAR 1113 Compliant (weight percent)							
	Dry Fog Coatings	Faux Finish Clear Coat	Fire Proofing Exterior Coatings	Form Release	Graphic Arts Coatings	Mastic Coatings	Metallic Pigmented Coatings	Trowel Applied Faux Finish	Dry Fog Coatings	Faux Finish Clear Coat	Fire Proofing Exterior Coatings	Form Release	Graphic Arts Coatings	Mastic Coatings	Metallic Pigmented Coatings	Trowel Applied Faux Finish
1,3,5-Trimethylbenzene							26.1									
1,2,4 Trimethylbenzene						5										
2,2,4-trimethyl-1, 3-pentanediol monoisobutyrate						5								5		
Asphalt						70								60		
Benzyl alcohol														5		
Butyl benzyl phthalate														40		
Di(2-Ethylhexyl)Phthalate														0.1		
Dimethyl phthalate						0.5										
Diesel				100												
Diethylene glycol monobutyl ether							10.2									
Dipropylene glycol ether					15											
Dipropylene glycol monobutyl ether								5								
Ethanol	2															
Ethylbenzene	1		5			10	2.4									
Ethylene glycol						3	2.7							3		5.3[2]
Ethylene glycol butyl ether	4	0.29			5											
Ethylene monopropyl Ether					5											
Hydrotreated light naphthenic distillate														60		
Isopropanol	4															

Table 2-10 (concluded)
Maximum Concentrations of Flammable Solvent in PAR 1113 Non-Compliant and PAR 1113 Compliant Coatings[1]

Coating Solvent	PAR 1113 Non-Compliant (weight percent))								PAR 1113 Compliant (weight percent)							
	Dry Fog Coatings	Faux Finish Clear Coat	Fire Proofing Exterior Coatings	Form Release	Graphic Arts Coatings	Mastic Coatings	Metallic Pigmented Coatings	Trowel Applied Faux Finish	Dry Fog Coatings	Faux Finish Clear Coat	Fire Proofing Exterior Coatings	Form Release	Graphic Arts Coatings	Mastic Coatings	Metallic Pigmented Coatings	Trowel Applied Faux Finish
Methanol					1											
Methylene diphenyl isocyanate						0.02								5		
Methyl ethyl ketone			15			40										
Methyl isoamyl ketone			5													
Mineral spirits				30	50											
n-Methylpyrrolidone					10											
Polypropylene glycol alkyl phenyl ether														5		
Propylene glycol		5			5	40	2.6	70	5				5	5	2	4[2]
Propylene glycol monomethyl ether							70									
Styrene	20								20							
Toluene			15				10				10				7	
Triethanolamine												5				
Triethylamine										0.5						
Tris-2,4,6-(dimethylaminomethyl) phenol						40					10					
V. M. & P. Naphtha	24					0.02										
Xylene	1		20			40	9.9									

1. Maximum weight percents from review of MSDSs.
2. PAR 1113 compliant coatings weight percent is greater than PAR 1113 non-compliant coatings weight percent (i.e., the PAR 1113 compliant coatings have higher toxic concentration than PAR 1113 non-compliant coatings).

Table 2-11
Flammable Characteristics of Coating Solvents

Chemical Compound	Auto-ignition Temperature (°F)	Boiling Point (@760 mmHg, °F)	Evaporation Rate @25 °C (Butyl Acetate = 1)	Flash Point (°F)	LEL/UEL [a] (% by Vol.)	Vapor Pressure (mmHg @ 20 °C)	NFPA Flammability Rating [b]	Flammability [c]
1,2,4 Trimethylbenzene	932	337	0.01	112	0.9/6.4	1	2	~~Flammable~~ Combustible
1,2-Diaminocyclohexane	N/A	200	N/A	167	N/A	0.4	2	~~Flammable~~ Combustible
1,3,5 Trimethylbenzene	550	329	0.01	122	2.6/12.5	2	2	~~Flammable~~ Combustible
2,2,4-trimethyl-1, 3- pentanediol monoisobutyrate	740.0	471.0	0.01	247.98	0.62/4.24	<0.01	1	Combustible
Asphalt	> 905	649	NA	> 424	0.9/7	Negligible	1	Combustible
Benzyl alcohol	817	401	1.8	199	1.3/13	0.15	2	~~Flammable~~ Combustible
Butyl benzyl phthalate	451	698	NA	390	1.2/	8.6e-06	1	Combustible
Denatured Alcohol (Ethanol)	435	78	2.3	56	3.3/19	44	3	Flammable
Di(2-ethylhexyl)phthalate (DEHP)	419	446	NA	419	0.3/	<0.01	1	Combustible
Diesel	500	320-700	<1	125	0.3/10	0.40	2	~~Flammable~~ Combustible
Diethylene glycol	444	471 - 473	N/A	255	1.6/10.8	1	1	~~Flammable~~ Combustible
Diethylene glycol butyl ether	442	448	0.01	172	1.2/8.5	0.01	2	~~Flammable~~ Combustible
Dipropylene glycol methyl ether	278.6	408	N/A	180	1.1/3	0.5	3	~~Flammable~~ Combustible
Ethylbenzene	809.6	276.8	0.84	70	0.8/7	6.75	3	Flammable
Ethylene glycol	748	388	0.01	232	3.2/ 15.3	0.06	1	~~Flammable~~ Combustible
Ethylene glycol monobutyl ether	460	340	0.07	144	1.1/12.7	0.8	2	Combustible Liquid
Ethylene monopropyl ether	455	301	N/A	120.0	1.3/ 5.8	0.038	2	~~Flammable~~ Combustible
Glycerine	698	554	N/A	390	0.9/N/A	0.0025	1	~~Flammable~~ Combustible
Hydrotreated light naphthenic distillate	>650	>350	0.001	>293	NA	0.04	1	Combustible
Isopropyl Alcohol	399	180	2.3	53	2/12.7	33	3	Flammable
Methanol	867	147	5.9	54	6/36	97	3	Flammable
Methyl ethyl ketone	474	80	4.0	16	1.8/11.5	8.7	3	Extremely Flammable
Methyl isoamyl ketone	860	291	0.46	97	1/8.2	5	3	Flammable
Mineral Spirits (Stoddard)	232	154-188	0.1	109-113	1.0 / 7	1.1	2	Combustible
Polyethylene glycol	N/A	482	N/A	182 - 287	N/A	0.01	1	~~Flammable~~ Combustible
Polypropylene glycol alkyl phenyl ether	NA	> 300	NA	> 200	NA	0.01	1	Combustible
Propylene glycol	700	370	0.01	210	2.6/ 12.5	0.129	1	~~Flammable~~ Combustible
Propylene glycol monomethyl ether	278.6	248.2	0.62	96.8	3/13.8	12.5	3	Flammable
Styrene	914	293 - 295	0.5	88	0.9/6.8	5	2	Flammable
Toluene	538	111	2.0	41	1.3/7	22	3	Flammable
Triethanolamine	599	635	< 1	354	1.3/8.5	< 0.01	1	~~Flammable~~ Combustible
Triethylamine	480	194	5.6	16	1.2/8.0	57.1	3	Extremely Flammable
Tris-2,4,6-(dimethylaminomethyl)phenol	266 - 275	N/A	N/A	255	N/A	N/A	1	~~Flammable~~ Combustible

Table 2-11 (concluded)
Flammable Characteristics of Coating Solvents

Chemical Compound	Auto-ignition Temperature (^{o}F)	Boiling Point (@760 mmHg, ^{o}F)	Evaporation Rate @25 ^{o}C (Butyl Acetate = 1)	Flash Point (^{o}F)	LEL/UEL [a] (% by Vol.)	Vapor Pressure (mmHg @ 20 ^{o}C)	NFPA Flammability Rating [b]	Flammability [c]
VM&P Naphtha	288	266.9	1.2	53.1	1.2/6	20	3	Flammable
Xylene	499	139	0.8	81	1.0/6.6	6	3	Flammable

[a] Lower Explosive Limit / Upper Explosive Limit

[b] NFPA Flammability Rating: 0 = Not Combustible; 1 = Combustible if heated; 2 = Caution: Combustible liquid flash point of 100^{o} to 200^{o}F; 3 = Warning: Flammable liquid flash point below 100^{o}F; 4 = Danger: Flammable gas or extremely flammable liquid

[c] The Consumer Products Safety Commission (CPSC) has Labeling and Banning Requirements for Chemicals and Other Hazardous Substances which are located in 15 U.S.C.§1261 and 16 CFR Part 1500. Specifically, the flammability of a product is defined in 16 CFR Part 1500.3 (c)(6) and is based on flash point. For example, a flammable liquid needs to be labeled as: 1) "Extremely Flammable" if the flash point is below 20 ^{o}F; 2) "Flammable" if the flash point is above 20 ^{o}F but less than 100^{o}F; or, 3) "Combustible" if the flash point is above 100 ^{o}F up to and including 150 ^{o}F.

Sources: OxyChem Specialty Business Group, EPA (Cameo Chemicals), ARB, Science Lab.com, Dow Chemical, J.T. Baker, ATSDR CDC , Vinyl Acetate Council, Sigma-Aldrich, and Phillips Petroleum, The European Chemical Industry Council, Hill Brothers Chemical Company, BASF, Tulstar Products

Trowel Applied Faux Finishing Coatings

Only one toxic air contaminant (ethylene glycol) was identified in PAR 1113 compliant trowel applied faux finish coatings that was not identified in PAR 1113 non-compliant trowel applied faux finish coatings. Glycol ethers are commonly used to improve flow, leveling characteristics, lengthen drying time and improve bonding with by softening primer undercoats. Ethylene glycol is a chronic non-carcinogenic toxic air contaminant. Ethylene glycol does not have carcinogenic or acute non-carcinogenic health risk values listed by OEHHA. Therefore, ethylene glycol is not considered a carcinogen or acute non-carcinogenic air toxic for this analysis. Any accidental release of ethylene glycol is expected to be a onetime event. Chronic non-carcinogenic heath risk is estimated for long term exposures. Since ethylene glycol does not have any acute health risk values and any accidental releases are expected to be cleaned up within a short period of time (within a day or two), no significant adverse toxic impacts would be expected from an accidental release related to trowel applied faux finish coatings.

Ethylene glycol has a NFPA flammability rating of 1, which is low compared to other glycols used in architectural coating manufacturing (see NFPA flammability ratings for diethylene glycol, diethylene glycol butyl ether, dipropylene glycol methyl ether, dipropylene glycol monobutyl ether, ethylene glycol monobutyl ether, ethylene monopropyl ether, polyethylene glycol, propylene glycol, propylene glycol monomethyl ether in Table 2-11). Because glycol ethers are common and ethylene glycol has a low NFPA flammability compared to other glycol ethers, the use of ethylene glycols in the manufacturing of PAR 1113 compliant trowel applied faux finish coatings is not expected to increase adverse flammable impacts to trowel applied faux finish coatings manufacturing or any related accidental releases.

Propylene glycol was identified in one PAR 1113 compliant trowel applied faux finish coatings, but was not identified in PAR 1113 non-compliant trowel applied faux finish coatings. Propylene glycol does not have health risk values listed by OEHHA. Therefore, propylene glycol is not expected to increase health risk.

Propylene glycol has a NFPA flammability rating of 1, which is low compared to other glycols used in architectural coating manufacturing (see NFPA flammability ratings for diethylene glycol, diethylene glycol butyl ether, dipropylene glycol methyl ether, dipropylene glycol monobutyl ether, ethylene glycol, ethylene glycol monobutyl ether, ethylene monopropyl ether, polyethylene glycol, propylene glycol monomethyl ether). Because glycol ethers are common and propylene glycol has a low NFPA flammability compared to other glycol ethers, the use of propylene glycol in the manufacturing of PAR 1113 compliant trowel applied faux finish coatings is not expected to increase adverse flammable impacts to trowel applied faux finish coatings manufacturing or any related accidental releases.

Faux Finish Clear Topcoats

Only one toxic air contaminant (triethylamine) was identified in a PAR 1113 compliant faux finish clear topcoat product line and was not identified in PAR 1113 non-compliant faux finish clear topcoats. Triethylamine is an acute and chronic non-carcinogenic toxic air contaminant. Triethylamine does not have carcinogenic health risk values listed by OEHHA. Therefore, ethylene glycol is not considered a carcinogen for this analysis. Triethylamine is a trace chemical in waterborne polymer (0.6 percent by weight) that is used in the manufacturing of a PAR 1113 compliant faux finish clear topcoat product line, and is considered is an acute and chronic non-carcinogenic toxic air contaminant. Waterborne polymer is expected to be used in

275-gallon totes. Any accidental release of the waterborne polymer is considered a onetime event, so no chronic non-carcinogenic health risk are expected. The health risk from triethylamine emissions from an accidental release would result in an acute hazard index of 0.9. In addition, the acute non-carcinogenic health risk is likely to be less because spills are likely to be neutralized and cleaned up before all of the waterborne polymer has dried (i.e., all the triethylamine has evaporated).

Triethylamine has a NFPA rating of 3. However, at a concentration of 0.6 percent by weight in the waterborne polymer, the flammability of the triethylamine is expected to be less than significant. The final faux finish clear topcoat product, which has a triethylamine concentration of 0.4 percent by weight has a NFPA rating of zero. Therefore, no increase in adverse flammable impacts are expected from using triethylamine in compliant faux finish clear topcoat products or any related accidental release is expected.

Mastic Coatings

Based on the review of MSDSs for mastic coatings reported under Rule 314 the following compounds were identified in PAR 1113 compliant coatings and not in PAR 1113 non-compliant coatings: benzyl alcohol, butyl benzyl phthalate, DEHP, ethylene glycol, hydrotreated light naphthenic distillate, methylene diphenyl isocyanate, polypropylene glycol alkyl phenyl ether, and propylene glycol. All of these compounds have a NFPA rating of one. PAR 1113 non-compliant coatings had compounds with NFPA ratings between one and three (higher number represent higher flammability – see Table 2-10). Therefore, the use of these compounds in the manufacturing of PAR 1113 compliant coatings is not expected to increase mastic flammability.

Distribution and Sales

Architectural coatings are typically packaged and transported in containers that are less than five gallons by volume. Trowel applied faux finishes may be packed in containers that are less than five gallons in volume or packed dry in bags that are less than 80 pounds by weight.

Exposure to toxics and flammable substances in coatings would likely only be related to an accidental release. As stated above, based on a review of MSDSs PAR 1113 compliant affected architectural coatings are expected to have less toxic and flammable compounds than PAR 1113 non-compliant affected architectural coatings with the exception of trowel applied faux finish coatings and faux finish clear topcoats.

Trowel Applied Faux Finishing Coatings

Trowel applied faux finish coatings ~~that~~ are packaged as dry material in 10 to 80 pound bags. Because the ethylene glycol and propylene glycol are less than five percent by weight of the towel applied faux finish coatings and the coatings are packaged dry, no increase in toxicity or flammability is expected from accidental release, which are expected to be easily vacuumed or swept up.

Faux Finish Clear Coats

Triethylamine is a trace component (maximum 0.48 percent) of a PAR 1113 compliant faux finish clear topcoat product line. OEHHA lists both acute and chronic non-carcinogenic health risk values for triethylamine. Since accidental releases are expected to be onetime events, chronic non-carcinogenic health risk is not expected. Typically the largest faux finish clear topcoat container available for retail sale is five gallons. The chronic non-carcinogenic health

risk of emitting all the triethylamine in a five-gallon container of faux finish clear topcoat in one hour is 0.1, which is less than the significance threshold of 1.0. In addition, the chronic non-carcinogenic health risk is likely to be less because spills are likely to be neutralized and cleaned up before all of the faux finish clear topcoat has dried (i.e., all the triethylamine has evaporated).

The MSDS lists the NFPA flammability of PAR 1113 compliant faux finish clear topcoat product line as zero. Therefore, the use of a faux finish clear topcoat with trace triethylamine is not expected to increase adverse flammable impacts from use.

Mastic Coatings

Based on the review of MSDSs for mastic coatings reported under Rule 314 the following compounds were identified in PAR 1113 compliant coatings and not in PAR 1113 non-compliant coatings: benzyl alcohol, butyl benzyl phthalate, DEHP, ethylene glycol, hydrotreated light naphthenic distillate, methylene diphenyl isocyanate, polypropylene glycol alkyl phenyl ether, and propylene glycol. All of these compounds have a NFPA rating of one. PAR 1113 non-compliant coatings had compounds with NFPA ratings between one and three (higher numbers represent higher flammability– see Table 2-10). Therefore, compounds in PAR 1113 compliant coatings are not expected to increase mastic flammability related to sales and distribution.

Coating Use (Application)

As stated above, based on a review of MSDSs PAR 1113 compliant affected architectural coatings are expected to have less toxic and flammable compounds than PAR 1113 non-compliant affected architectural coatings with the exception of trowel applied faux finish coatings and faux finish clear topcoats. Therefore, in general adverse hazard impacts from toxics and flammable compounds are expected to be reduced indirectly by the lower VOC content limits in PAR 1113. Hazard impacts from the use of compliant trowel applied faux finish coatings and faux finish clear topcoats are presented as follows:

Trowel Applied Faux Finish

Health risks from ethylene glycol related to coating use are evaluated in Section III d). Ethylene glycol is not listed as a carcinogen by OEHHA, so there would be no increase in carcinogenic health risk from ethylene glycol in towel applied faux finish coatings. Ethylene glycol is listed by OEHHA has a chronic non-carcinogenic toxic air contaminant. Since towel applied faux finish coatings are expected only to be applied once on a structure, no chronic non-carcinogenic is expected. PAR 1113 compliant towel applied faux finishes may also contain propylene glycol. Propylene glycol does not have any health risk values listed by OEHHA, so no increase in health risk is expected from the propylene glycol. So no health risk from use or accidental release of towel applied faux finish coatings during use (application) is expected.

Ethylene glycol and propylene glycol are included in towel applied faux finish coatings that are packaged as dry material in 10 to 80 pound bags. Because the ethylene glycol and propylene glycol are less than five percent by weight of the towel applied faux finish coatings and the coatings are packaged dry and mixed with water for use, no increase in flammability from use (application) or accidental release during use is expected.

Faux Finish Clear Topcoats

Triethylamine is a trace component (maximum 0.48 percent) of a PAR 1113 compliant faux finish clear topcoat product line. OEHHA lists both acute and chronic non-carcinogenic health

risk values for triethylamine. Both acute and chronic non-carcinogenic health risk from use of a faux finish clear topcoat with triethylamine were determined to be less than significant in Section III.d) of this EA. The MSDS lists the NFPA flammability of PAR 1113 compliant faux finish clear topcoat product line as zero. Therefore, the use of a faux finish clear topcoat with trace triethylamine is not expected to increase adverse flammable impacts from use (application).

Typically the largest faux finish clear topcoat container available for retail sale is five gallons. The acute non-carcinogenic health risk of emitting all the triethylamine in a five-gallon container of faux finish clear topcoat in one hour is 0.12, which is less than the significance threshold of 1.0. In addition, the acute non-carcinogenic health risk is likely to be less because spills are likely to be neutralized and cleaned up before all of the faux finish clear topcoat has dried (i.e., all the triethylamine has evaporated).

Mastic Coatings

Based on the review of MSDSs for mastic coatings reported under Rule 314 the following compounds were identified in PAR 1113 compliant coatings and not in PAR 1113 non-compliant coatings: benzyl alcohol, butyl benzyl phthalate, DEHP, ethylene glycol, hydrotreated light naphthenic distillate, methylene diphenyl isocyanate, polypropylene glycol alkyl phenyl ether, and propylene glycol. All of these compounds have a NFPA rating of one. PAR 1113 non-compliant coatings had compounds with NFPA ratings between one and three (higher numbers represent higher flammability– see Table 2-10). Therefore, the use of PAR 1113 compliant coatings containing these compounds is not expected to increase mastic flammability.

Colorants

Existing colorants typically contain glycols as humectants. MSDSs also list ethylbenzene, isopropyl, mineral spirits and glycerin. Some of these glycols, such as ethylene glycol are considered toxic air contaminants. MSDSs for low-VOC PAR 1113 compliant colorants were reviewed and no toxic or flammable substances were identified. Therefore, no increase in toxicity or flammability is expected from manufacturing, selling or use (application) of PAR 1113 compliant colorants or any accidental release related to manufacturing, selling or use.

Stone Consolidants and Reactive Penetrating Sealers

Stone consolidants are niche products that are used for historic restoration. Reactive penetrating sealers are niche products that are used for historic restoration and to protect bridges by Caltrans. The products are currently used in small containers. PAR 1113 would create new categories for stone consolidants and reactive penetrating sealers with VOC content limits of 450 and 350 grams per liter respectively. Currently, these coatings are considered waterproofing concrete/masonry sealers, which has a VOC content limit of 100 grams per liter in the existing Rule 1113.

Usage has been low and consistent state-wide and nationally for stone consolidants and reactive penetrating sealers for historical restoration. As stated in the VOC emissions discussion in Section III.b) & f), usage for stone consolidants and reactive penetrating sealer has been consistently low state-wide and nationally for stone consolidants and reactive penetrating sealers for historical restoration and Caltrans because they are used in very specialized niche applications. Based on these records and Rule 314 data, SCAQMD staff estimates usages would remain consistent with existing usages, which are approximately 142 gallons of stone consolidant used per year and 290 gallons of reactive penetrating sealer used per year.

Therefore, no increased use of these products is expected. Since there is no increase in manufacturing, sell or use, new adverse toxic or flammable impacts are not expected from the manufacturing, sell or use of PAR 1113 compliant stone consolidants or reactive penetrating sealers or accidental releases related to the manufacturing, sell or use of PAR 1113 compliant stone consolidants or reactive penetrating sealers.

VIII.d) Government Code §65962.5 typically refers to a list of facilities that may be subject to Resource Conservation and Recovery Act (RCRA) permits. Since PAR 1113 relates to coatings, it is not expected to have direct impacts on facilities affected by Government Code §65962.5 Facilities affected by Government Code §65962.5 would still need to comply with any regulations relating to that code section. The use of PAR 1113 compliant coatings is not expected to interfere with existing hazardous waste management programs and based on analyses presented earlier in this section (VIII.a), b), c), & h)) and in Section III. Air Quality and Greenhouse Gases of this document, PAR 1113 may reduce the amount of hazardous materials in architectural coatings. Accordingly, PAR 1113 is not expected to result in a new significant impact to the public or environment from sites on lists compiled pursuant to Government Code §65962.5.

Lastly, affected facilities would be expected to continue to manage any and all hazardous materials and hazardous waste, in accordance with federal, state and local regulations.

VIII.e) Since the use of PAR 1113 compliant coatings is not expected to generate significant adverse new hazardous emissions in general or increase the manufacture or use of hazardous materials, the implementation of PAR 1113 is not expected to increase or create any new safety hazards to people working or residing in the vicinity of public/private airports. As stated above, PAR 1113 compliant coatings tings are expected to be reformulated with less toxic and hazardous material content than PAR 1113 non-compliant coatings.

VIII.f) As already noted PAR 1113 compliant coatings would likely be formulated with less toxic materials than PAR 1113 non-compliant coatings. Further, PAR 1113 compliant coatings are expected to be manufactured, transported, stored and applied in the same quantities as PAR 1113 non-compliant coatings. As a result, PAR 1113 is not expected to conflict with business emergency response plans. With respect to suppliers and sellers of affected architectural coatings, Health and Safety Code §25506 specifically requires all businesses handling hazardous materials to submit a business emergency response plan to assist local administering agencies in the emergency release or threatened release of a hazardous material. Business emergency response plans generally require the following:

1. Identification of individuals who are responsible for various actions, including reporting, assisting emergency response personnel and establishing an emergency response team;
2. Procedures to notify the administering agency, the appropriate local emergency rescue personnel, and the California Office of Emergency Services;
3. Procedures to mitigate a release or threatened release to minimize any potential harm or damage to persons, property or the environment;
4. Procedures to notify the necessary persons who can respond to an emergency within the facility;

5. Details of evacuation plans and procedures;
6. Descriptions of the emergency equipment available in the facility;
7. Identification of local emergency medical assistance; and
8. Training (initial and refresher) programs for employees in:
    a. The safe handling of hazardous materials used by the business;
    b. Methods of working with the local public emergency response agencies;
    c. The use of emergency response resources under control of the handler; and
    d. Other procedures and resources that will increase public safety and prevent or mitigate a release of hazardous materials.

In general, every county or city and all facilities using a minimum amount of hazardous materials are required to formulate detailed contingency plans to eliminate, or at least minimize, the possibility and effect of fires, explosion, or spills. In conjunction with the California Office of Emergency Services, local jurisdictions have enacted ordinances that set standards for area and business emergency response plans. These requirements include immediate notification, mitigation of an actual or threatened release of a hazardous material, and evacuation of the emergency area. Based on the analysis in VIII.a), b), & c) and VIII.h), PAR 1113 coatings are expected to have similar or less hazardous properties than existing architectural coatings. Therefore PAR 1113 is not expected to impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

VIII.g) Since PAR 1113 compliant coatings are not expected to increase fire hazards and may reduce them (see VIII. a), b), c) &h)), risk of loss or injury associated with wildland fires is not expected as a result of implementing PAR 1113. Therefore, PAR 1113 is not expected to be significant for exposing people or structures to risk of loss, injury or death involving wildland fires.

Based upon these considerations, significant hazards and hazardous materials impacts are not expected from the implementation of PAR 1113. Since no significant hazards and hazardous materials impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
IX.	**HYDROLOGY AND WATER QUALITY.** Would the project:				
a)	Violate any water quality standards, waste discharge requirements, exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, or otherwise substantially degrade water quality?	☐	☐	☑	☐
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☑	☐
c)	Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or siltation on- or off-site or flooding on- or off-site?	☐	☐	☐	☑
d)	Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☑
e)	Place housing or other structures within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, which would impede or redirect flood flows?	☐	☐	☐	☑

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
f)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, or inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☑
g)	Require or result in the construction of new water or wastewater treatment facilities or new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☑
h)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☑
i)	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☑	☐

Significance Criteria

Potential impacts on water resources will be considered significant if any of the following criteria apply:

Water Demand:

- The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use more than 262,820 gallons per day of potable water.
- The project increases demand for total water by more than five million gallons per day.

Water Quality:

- The project will cause degradation or depletion of ground water resources substantially affecting current or future uses.
- The project will cause the degradation of surface water substantially affecting current or future uses.
- The project will result in a violation of National Pollutant Discharge Elimination System (NPDES) permit requirements.

- The capacities of existing or proposed wastewater treatment facilities and the sanitary sewer system are not sufficient to meet the needs of the project.
- The project results in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The project results in alterations to the course or flow of floodwaters.

Discussion

IX. a) To evaluate potential water quality impacts from PAR 1113, it is assumed that future compliant coatings would be formulated primarily with waterborne technologies. As a result, more water would be used for clean-up and the resultant wastewater material could be disposed of into the public sewer system. It is anticipated that current coating equipment (i.e., spray guns, rollers, and brushes) clean-up practices of using water would continue into the future. Table 2-12 illustrates the "worst-case" potential increase of waste material likely to be received by publicly owned treatment works (POTWs) in the district as a result of implementing PAR 1113. POTW's average daily flow is based on historical wastewater flow in the district.

The potential increase in the volume of wastewater estimated as a result of implementing PAR 1113 is considered to be within the projected capacity of local POTWs in the district based on historical wastewater data. Hence, wastewater impacts associated with the disposal of waterborne coating clean-up wastewater generated from PAR 1113 compliant coating categories are not considered significant.

State and federal regulations promote the development and use of coatings formulated with non-hazardous solvents. Based on discussions with colorant and coating formulators, the trend in coating technologies is to replace toxic/hazardous solvents with equal or less toxic/hazardous solvents. This trend was verified by review of MSDSs as noted in Sub-sections III.b), VIII.a), b), & c) and VIII.h). Therefore, wastewater which may be generated from reformulated coatings is expected to contain less hazardous materials than the wastewater generated for solventborne coating operations, thereby potentially reducing toxic influent to the POTWs.

Table 2-12
Projected POTW Impact from Implementing PAR 1113

Year	POTW Average Wastewater Flow[a], million gal per day	POTW Treatment Capacity[b] million gal per day	Estimated Affected Coating Usage, gal per year	Projected PAR 1113 Wastewater Flow[c], gallon per year	Projected PAR 1113 Wastewater Flow[c], gallon per day	Total Impacts, Percent of POTW Average Daily Flow
2010	1,413	2,000	3,350,316	3,350,316	9,179	0.0006

a) Total average daily wastewater flows handled by all POTWs greater than 10 million gallons per day in the district from the 2007 AQMP
b) Based on design daily flows by all POTWs greater than 10 million gallons per day in the district from the 2007 AQMP
c) Assumes one gallon of water would be used to clean-up equipment for every gallon of coating applied. This estimate includes the water used in humidifiers and for purging lines in colorant systems.

A comment was made early in the development of PAR 1113, that sub-components of compliant colorants (biocides, humectants, surfactants, plasticizers, etc.) may leach out of painted surfaces. SCAQMD staff has not identified any material that supports this claim. Based on discussions with a coating manufacturer representative, coatings comprise approximately 30 percent of the cost of a project requiring architectural coatings; the remaining 70 percent is attributed to labor cost. The representatives said that failure of the coating film (leaching of sub-components) would be resolved in testing of the coatings, and if such failures occurred in the field it would likely place such companies out of business. They also stated that biocides, surfactants and plasticizers used in PAR 1113 compliant coatings are similar to those used in existing colorants. Different humectants may be used, but waterborne humectants that are less toxic than existing glycol humectants would be used in the new formulations.

In the past the SCAQMD has received comments that with the increased use of waterborne technologies to meet the lower VOC content limits, there would be a greater trend of coating applicators to improperly dispose of the waste generated from these coatings into the ground, storm drains, or sewer systems. However, there are no data to support this contention. In any event, there are several reasons why there should be no significant increase in improper disposal over current practices due to greater use of waterborne coatings.

Results from a survey of contractors determined that a majority either dispose of the waste material properly as required by the coating manufacturer's MSDS or recycle the waste material regardless of type of coating.[11] The survey was prepared to evaluate the reformulation of solventborne coatings with waterborne coatings. Many of the affected coatings are already waterborne and PAR 1113 would only reduce solvents used in waterborne coatings. Based upon these results, there is no reason to expect that paint contractors would change their disposal practices, especially those that dispose of wastes properly, with the implementation of PAR 1113. Similarly, here is also no evidence that illegal disposal practices would increase as a result of implementing PAR 1113.

Since the proposed project is not expected to generate significant adverse water quality impacts industry-wide, no changes to existing wastewater treatment permits at affected coating manufacturing facilities are expected to be necessary. As a result, it is expected that operators of affected facilities would continue to comply with existing wastewater treatment requirements of the applicable Regional Water Quality Control Boards or sanitation districts.

With the increasing trend toward less toxic waterborne coatings, it is likely that water quality impacts from implementing PAR 1113 would be equivalent to or less than water quality impacts from coatings affected by PAR 1113. Therefore, PAR 1113 would not significantly adversely affect water resources by violating water quality standards, exceed wastewater treatment requirement of the applicable Regional Water Quality Control Board, or otherwise substantially degrade water quality.

[11] SCAQMD, Final Subsequent Environmental Assessment, SCAQMD No. 960626DWS, October 1996. Contractor survey prepared by SCAQMD staff for the November 1996 amendments to Rule 1113. In November 2008, a paint manufacture conducted a survey of 180 Southern California residential and professional painters. The conclusion was that a majority professional painters use hazardous waste disposal service to dispose of coatings instead of air drying coatings, and then disposing of as a solid waste.

IX. b) & h) Historically, potential water demand to reformulate conventional coatings into waterborne coatings and to clean up waterborne coatings has not resulted in a significant adverse impact on water demand or depleted groundwater supplies. Using "worst-case" assumptions, increased water demand from implementing PAR 1113 can be calculated for both manufacturers of waterborne coatings and water used by consumers to clean coating equipment. As shown in Table 2-13, water demand associated with the manufacture and clean-up of waterborne formulations is estimated to be 18,358 gallons per day (6.7 million gallons per year). This increased water demand does not exceed the SCAQMD's significant thresholds of 5,000,000 gallons per day of total demand or 262,820 gallon per day of potable water demand and, therefore, is not considered to be a significant water demand impact.

Table 2-13
Projected Water Demand from Implementing PAR 1113

Year	Projected Water Supplied,[a] billion gal per year	Projected Water Demand with 20 Percent Reduction,[b] billion gal per year	Projected Coating Sales,[c] million gal per year	Projected Mfgr Water Demand,[d] million gal per year	Projected Cleanup Water Demand [e], million gal per year	PAR 1113 Total Water Demand, [f] million gal per year	PAR 1113 Total Demand,[f] gal per day	Total Impacts,[g] percent of demand
2010	1,498	1,198	3.35	3.35	3.35	6.70	18,358	0.0004

a) Water demand and supply projections obtained from hydrology setting in 2007 AQMP.
b) On November 10, 2009, the state Legislature passed Senate Bill 7 as part of the Seventh Extraordinary Session, referred to as SBX7-7. This new law is the water conservation component to the historic Delta legislative package, and seeks to achieve a 20 percent statewide reduction in urban per capita water use in California by December 31, 2020. The projected water demand from the 20007 AQMP was reduced by 20 percent pursuant to this legislation.
c) SCAQMD Staff Report for PAR 1113
d) Assumes that one gallon of water would be used to manufacture one gallon of coating applied. This estimate includes the water used in humidifiers for and for purging lines in colorant systems. This volume also assumes as "worst-case" scenario, that all affected coatings used in the SCAQMD's jurisdiction were manufactured here and does not take into consideration the fact that some affected coatings are already waterborne coatings.
e) Assumes that one gallon of water would be used to clean-up equipment for every gallon of coating applied. Also assumes as a "worst-case" scenario, that full conversion of affected coating categories to waterborne formulations occurs in 2012.
f) Total amount of manufactured and clean-up water demand.
g) The percentage of increase in water demand as a result of the incremental increase due to water clean-up of waterborne coating material.

While it is not possible to predict water shortages in the future, existing entitlements and resources in the district provide sufficient water supplies that currently exceed demand. Further, according to the Metropolitan Water District (MWD), the largest supplier of water to California, "Metropolitan has supply capabilities that would be sufficient to meet expected demands from 2015 through 2035 under the single dry-year and multiple dry-year conditions. Metropolitan has comprehensive plans for stages of actions it would undertake to address up to 50 percent reduction in its water supplies and a catastrophic interruption in water supplies through its Water

Surplus and Drought Management and Water Supply Allocation Plans."[12] MWD is expected to continue providing a reliable water supply through developing a portfolio of diversified water sources that includes: cooperative conservation; water recycling; and groundwater storage, recovery, and replenishment programs. Other additional water supplies will be supplied in the future as a result of water transfer from other water agencies, desalination projects and state and federal water initiatives, such as CALFED, California's Colorado River Water Use Plan.

As shown in Table 2-13, it is within the capacity of the local water suppliers to supply the small incremental increase in water demand associated with the implementation of PAR 1113. Sufficient water supplies are available to serve the project from existing entitlements and no new or expanded entitlements are needed to implement the proposed project. Therefore, no significant water demand impacts are expected as the result of implementing PAR 1113.

IX. c) & d) The proposed project would not change current architectural manufacturing or coating application or practices. Consequently, no major construction activities would be necessary to comply with PAR 1113. As a result, the proposed project would not require site preparation, or other heavy-duty construction activities that could alter any existing drainage patterns or increase the rate or amount of surface runoff water that would exceed the capacity of existing or planned stormwater drainage systems.

IX. e) Since PAR 1113 does not require construction of any new structures, it would not result in placing housing or other structures in a 100-year flood hazard areas. Therefore, so any flood hazards would be part of the existing setting or would be present for reasons unrelated to PAR 1113.

IX. f) Since PAR 1113 does not require construction of new facilities, it would not alter existing flood risks or risks from seiches, tsunamis or mudflow conditions.

IX. g) & i) As indicated in the discussion under items IX a) the proposed project is not expected to result in a significant increase in the volume of wastewater generated in the district or violate any water quality standards. As a result, it is not anticipated that PAR 1113 would generate additional volumes of wastewater that could exceed the capacity of existing stormwater drainage systems or require the construction of new wastewater or stormwater drainage facilities. Similarly, as discussed under item IX b) & h), the proposed project is not expected to significantly increase demand for water in the district, no new or expanded water supply entitlements are not anticipated to be necessary as a result of implementing PAR 1113.

Based on the above considerations, significant adverse impacts to hydrology and water quality are not expected to occur from implementing PAR 1113. Since there are no significant adverse impacts, no mitigation measures are required.

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[12] From Metropolitan Water District, The Regional Urban Water Management Plan, November 2010.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
X. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☑
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☑

Significance Criteria

Land use and planning impacts will be considered significant if the project conflicts with the land use and zoning designations established by local jurisdictions.

Discussion

X.a) It is expected that compliance with PAR 1113 would be achieved primarily through reformulating existing coatings with low VOC formulations. Manufacturing and applying compliant coatings does not require building new structures, installing new equipment, constructing or installing any air pollution control equipment or structures. Existing colorant units at 221 medium-sized retail facilities would need to be removed and replaced with new colorant units. New colorant units are drop-in replacements, do not require heavy-duty construction equipment, and would be installed in existing facilities. Therefore, it would not result in physically dividing an established community.

X.b) There are no provisions in PAR 1113 that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments and no land use or planning requirements would be altered by PAR 1113 requirements.

Based upon these considerations, significant land use and planning impacts are not expected from the implementation of PAR 1113. Since no significant land use and planning impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XI. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☑
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☑

Significance Criteria

Project-related impacts on mineral resources will be considered significant if any of the following conditions are met:

- The project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- The proposed project results in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Discussion

XI.a) & b) There are no provisions in PAR 1113 that would result in the loss of availability of a known mineral resource of value to the region and the residents of the state, or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. Some examples of mineral resources are gravel, asphalt, bauxite, and gypsum, which are commonly used for construction activities or industrial processes. Since the proposed project is likely only to require the reformulation of coatings and colorants and replacement or modification of colorant systems in existing retail stores, PAR 1113 would have no effects on the use of important minerals, such as those described above. Therefore, no new demand for mineral resources is expected to occur and significant adverse mineral resources impacts from implementing PAR 1113 are not anticipated.

Based upon these aforementioned considerations, significant mineral resources impacts are not expected from the implementation of PAR 1113. Since no significant mineral resources impacts were identified, no mitigation measures are necessary or required

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XII. NOISE. Would the project result in:				
a) Exposure of persons to or generation of permanent noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☑
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☑
c) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☑
d) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑

Significance Criteria

Noise impact will be considered significant if:

- Construction noise levels exceed the local noise ordinances or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three decibels (dBA) at the site boundary. Construction noise levels will be considered significant if they exceed federal Occupational Safety and Health Administration (OSHA) noise standards for workers.
- The proposed project operational noise levels exceed any of the local noise ordinances at the site boundary or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three dBA at the site boundary.

Discussion

XII.a) Lowering the VOC content limit of coatings, prohibiting the use of Group II exempt solvents, and phase out of the averaging compliance provision is not expected to alter coating manufacturing, distribution or application in a substantial way. The manufacture of PAR 1113 compliant coatings is not expected to cause physical modifications that would require heavy-duty diesel-fueled construction activities at the point of manufacture, distribution or use because it is anticipated that the same equipment used to manufacture and apply currently available coatings could be used to manufacture and apply PAT 1113 compliant coatings.

PAR 1113 may require the alteration or replacement of colorant dispensers. Colorant dispensers are drop-in replacement units that are not expected to require heavy-duty construction equipment

to remove or install. Instead, it is expected that removal of existing and replacement of new dispensers could be accomplished using hand tools, e.g., hand jacks, drills, etc., entirely within the existing retail building. Colorant dispensers for PAR 1113 compliant colorants are not expected to generate noise or vibrations that are greater than existing colorant dispensers. Any alteration of colorant dispensers is also not expected to require construction equipment. These units are expected to be replaced or modified using hand tools. Further, Occupational Safety and Health Administration (OSHA) and California-OSHA have established noise standards to protect worker health at distribution and retail locations.

For these reasons, PAR 1113 is not expected to expose persons to the permanent generation of excessive noise levels above current facility levels. Further, the use of these architectural coatings subject to PAR 1113 at the consumer level would occur using the same types of application equipment (e.g., brushes, rollers or sprayguns). Therefore, as a result of implementing PAR 1113 the existing noise levels are unlikely to increase in the vicinities of the existing facilities or other sites where these products are distributed, sold or used to a level exceeding any applicable significance thresholds.

XII.b) PAR 1113 is not anticipated to expose persons to or generate excessive groundborne vibration or groundborne noise levels since only minor construction activities are expected to occur as a result of implementing PAR 1113 and the proposed amended rule does not involve, in any way, the installation of control equipment that would generate vibrations and noise. The only equipment that may be replaced is colorant dispensers. However, these units would not require heavy-duty diesel-fueled construction equipment for removal and replacement. Existing colorant dispensers do not generate ground vibration and neither do replacement units.

XII.c) No increase in periodic or temporary ambient noise levels in the vicinity of affected facilities above levels existing prior to implementing PAR 1113 is anticipated because the proposed project would not require heavy-duty diesel-fueled construction-related activities nor would it change the existing activities currently performed by persons who utilize architectural coatings. See also the response to items XII.a) and XII.b).

XII.d) Implementation of PAR 1113 would not affect existing practices by persons who utilize PAR 1113 coatings (See discussions in items XII.a) and XII.b)). Even if affected sites where PAR 1113 compliant are used are located near public/private airports, no new noise impacts would be expected since the application of architectural coatings is not typically a noise intensive activity. Thus, PAR 1113 is not expected to expose persons residing or working in the vicinity of public or private airports to excessive noise levels.

Based upon these considerations, significant noise impacts are not expected from the implementation of PAR 1113. Since no significant noise impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XIII. POPULATION AND HOUSING. Would the project:				
a) Induce substantial growth in an area either directly (for example, by proposing new homes and businesses) or indirectly (e.g. through extension of roads or other infrastructure)?	☐	☐	☐	☑
b) Displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

Significance Criteria

Impacts of the proposed project on population and housing will be considered significant if the following criteria are exceeded:

- The demand for temporary or permanent housing exceeds the existing supply.
- The proposed project produces additional population, housing or employment inconsistent with adopted plans either in terms of overall amount or location.

Discussion

XIII.a) The proposed project is not anticipated to generate any significant effects, either direct or indirect, on the district's population or population distribution as no additional workers are anticipated to be required to comply with PAR 1113. Replacement of existing colorant dispensers at retail facilities may require two to three workers, which can be accommodated by the existing labor pool in southern California. No additional workers would be required to manufacture or apply PAR 1113 compliant coatings as the same equipment that is currently used would continue to be used. Human population within the jurisdiction of the SCAQMD is anticipated to grow regardless of implementing PAR 1113. As such, PAR 1113 would not result in changes in population densities or induce significant growth in population.

XIII.b) The proposed project would likely only require reformulation of coatings and colorants and replacement or modification of colorant systems in retail stores. As such, PAR 1113 is not expected to substantially alter existing operations where architectural coatings may be manufactured or used (see discussion in item XIII.a)). Consequently, PAR 1113 is not expected to result in the creation of any industry that would affect population growth, directly or indirectly induce the construction of single- or multiple-family units, or require the displacement of persons or housing elsewhere in the district.

Based upon these considerations, significant population and housing impacts are not expected from the implementation of PAR 1113. Since no significant population and housing impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XIV. PUBLIC SERVICES. Would the proposal result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:				
a) Fire protection?	☐	☐	☐	☑
b) Police protection?	☐	☐	☐	☑
c) Schools?	☐	☐	☐	☑
d) Parks?	☐	☐	☐	☑
e) Other public facilities?	☐	☐	☐	☑

Significance Criteria

Impacts on public services will be considered significant if the project results in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response time or other performance objectives.

Discussion

XIV.a) Potential adverse impacts to fire departments could occur in two ways: 1) if there is an increase in accidental release of hazardous materials used in compliant architectural coatings, fire departments would have to respond more frequently to accidental release incidences; and, 2) if there is an increase in the amount of hazardous materials or flammable materials stored at affected facilities, fire departments may have to conduct additional safety inspections. Based on the analysis in Section VIII. Hazards and Hazardous Materials, PAR 1113 is not expected to generate significant adverse hazards and hazardous material impacts because PAR 1113 compliant coatings tend to be formulated using aqueous-based chemistries. Consequently they tend to be less hazardous and less flammable than conventional solvent based coatings. It should be again acknowledged, however, that PAR 1113 does not require the use of any particular product. In addition, PAR 1113 compliant traditional solvents, aqueous, and bio-based technologies are commercially available for coating reformulation. Consumers who utilize compliant architectural coatings would determine which compliant architectural coatings to use based on a number of factors including, but not limited to, safety considerations.

Based on the human health and flammability analysis (see discussions in Sections III.d) and VIII.a), b), c) & h), respectively), PAR 1113 compliant coatings would be composed of the same types of toxic or flammable materials but in the same or lower concentrations with the exemption of faux finish coatings; therefore, with the exception of faux finish coatings would result in similar or less impacts. As analyzed in Sections III.d) and VIII.a), b), c) & h), respectively, the increase in ethylene glycol, propylene glycol, and triethylamine from faux finish coatings would not create significant adverse air toxics or hazard/flammability impacts. Since it is expected that implementing PAR 1113 would not increase the use of hazardous or flammable materials there would be no need for new or additional fire fighting resources.

XIV.b) Local police departments are also first responders to emergency situations such as fires, for example, to cordon off the area and provide crowd control. As noted in Section VIII.a), b), c) & h), PAR 1113 is not expected to significantly increase adverse hazards or hazardous material impacts. Similarly, implementing PAR 1113 is not expected to increase fire hazards compared to the existing setting. As a result, no significant adverse impacts to local police departments are expected because no increases in hazardous material or fire emergencies are anticipated.

XIV.c) & d) The local labor pool (e.g., workforce) of employees, contractors or consumers who work at coating manufacturing facilities, work at retail locations that sell affected coatings, or use architectural coatings in their day-to-day activities is expected to remain the same since PAR 1113 would not trigger substantial changes to current manufacture or usage practices. Therefore, with no increase in local population anticipated (see discussion "XIII. Population and Housing"), construction of new or additional demands on existing schools and parks are not anticipated. Therefore, no significant adverse impacts are expected to local schools or parks, be further analyzed in this ~~Draft~~ Final EA.

XIV.e) PAR 1113 would not result in the need for new or physically altered facilities, in order to maintain acceptable service ratios. As noted in other sections, PAR 1113 is not expected to require the use of equipment or processes that handle or use hazardous or flammable material that would require public agency oversight or affect in any way public agency service ratios, response times or other performance objectives. Further, there would be no increase in population and, therefore, no need for physically altered government facilities.

Reactive Penetrating Sealers Effect on Caltrans

The ARB SCM for Architectural Coatings includes a separate category under the waterproofing concrete/masonry sealer for reactive penetrating sealers at 350 grams per liter. Reactive penetrating sealers penetrate and chemically react with concrete and masonry substrates to provide a protective hydrophobic seal that repels liquid water and is resistant to chemicals and deicing salts (chloride ions). The sealers are considered to be concrete treatments, rather than coatings, and some are formulated to be resistant to oils and grease. The sealers repel the intrusion of liquid water, but allow water vapor to escape from the substrate without damaging the protective seal. Caltrans has stated interest in using reactive penetrating sealers for bridge deck protection in marine areas of the district subject to direct splash exposure and salt fog and mists. Caltrans desires reactive penetrating sealers that meet the NCHRP 224 standards for protection of concrete from chloride ion intrusion. Products that conform to the NCHRP standard would prevent chloride from penetrating concrete and corroding imbedded steel in cable tensioned slab concrete used in bridges. Caltrans and a reactive penetrating sealers manufacture have requested that SCAQMD staff add a new category for reactive penetrating sealers in PAR

1113 with a VOC content limit of 350 grams per liter. The inclusion of the reactive penetrating sealers category would address Caltrans concerns about protection of concrete from chloride ion intrusion and would likely result in less recoating of affected substrates, thereby, promoting performance objectives.

Based upon these considerations, significant adverse public services impacts are not expected from the implementation of PAR 1113. Since no significant public services impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XV. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☑
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment or recreational services?	☐	☐	☐	☑

Significance Criteria

Impacts to recreation will be considered significant if:

- The project results in an increased demand for neighborhood or regional parks or other recreational facilities.
- The project adversely affects existing recreational opportunities.

Discussion

XV.a) & b) As discussed under "Land Use and Planning" above, there are no provisions in PAR 1113 that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments. No land use or planning requirements would be altered by the adoption of PAR 1113, which only affect the manufacture, sale and use of architectural coatings. Further, PAR 1113 would not affect in any way affect district population growth or distribution (see Section XIII), in ways that could increase the demand for or use of existing neighborhood and regional parks or other recreational facilities or require the construction of new or expansion of existing recreational facilities that might have an adverse physical effect on the environment because it would not directly or indirectly increase or redistribute population.

Based upon these considerations, significant recreation impacts are not expected from the implementation of PAR 1113. Since no significant recreation impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVI. SOLID/HAZARDOUS WASTE. Would the project:				
a) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☑	☐
b) Comply with federal, state, and local statutes and regulations related to solid and hazardous waste?	☐	☐	☑	☐

Significance Criteria

The proposed project impacts on solid/hazardous waste will be considered significant if the following occurs:

- The generation and disposal of hazardous and non-hazardous waste exceeds the capacity of designated landfills.

Discussion

XVI.a) & b) Any liquid wastes generated by PAR 1113 are discussed in the "Hydrology and Water Quality" discussion as it is prohibited to dispose of liquid wastes in landfills. PAR 1113 is not expected to increase the amount of solid waste used in manufacturing of PAR 1113 compliant coatings, since coating manufacturing and operation are not expected to change because the same equipment is expected to be used in compliant architectural coatings with the only change being reducing the amount of solvents in existing coatings. PAR 1113 is also not expected to result in an increase the amount of solids used in architectural coatings.

PAR 1113 would increase in the amount of solid waste at existing retail facilities, since colorant dispensers may need to be modified or replaced in medium-sized retail stores. Removal and replacement of colorant units would not be a significant impact as explained below. Operators of large retail stores are in the process or have already replace their colorant dispensers with colorant dispensers that can use low-VOC colorants for reasons other than complying with PAR 1113. Since replacement of color dispensers at large retail operators was done primarily for the ability to tint small coating samples (see discussion in Section III. Air Quality and Greenhouse Gases) and not in anticipation of PAR 1113; solid waste impacts form removal colorant dispensers at large facilities are not included in this analysis. Small retail stores are not expected to replace their colorant dispensers because it is not expected to be cost effective since coatings are typically a small part of their operations. There are 221 medium sized retail stores in the district that may require replacement of colorant dispensers. It was assumed that two medium facilities would replace colorant dispensers on a peak day. Assuming that two dispensers are

replaced at each facility and an average colorant system weight of 0.4 ton, the disposal of colorant systems that are not compatible with PAR 1113 compliant colorants would generate 1.6 tons of waste per day.

The debris from PAR 1113 would be disposed of at a Class II (industrial) or Class III (municipal) landfill. According to the Program EIR for the 2007 AQMP, there are 48 Class II/Class III landfills within the SCAQMD's jurisdiction with an estimated total capacity of approximately 111,198 tons per day. Therefore, as shown in Table 2-14, the amount of waste associated with disposal of old colorant systems as a result of implementing PAR 1113 would be about 0.001 percent of the total disposal capacity and, therefore, is considered to be within the disposal capacity of local landfills.

Table 2-14
Amount of Solid Waste Landfilled
During Construction-Related Activities

Description	Demolition Material (tons/day)
Total Disposal from Colorant Dispenser Replacement	1.6
Threshold (Capacity of Landfills)	111,198
% of Capacity	0.001 %
Significant (Yes/No)	No

The assumption that replaced colorant systems would all be disposed of as solid waste is a very conservative assumption. Replaced colorant dispersers may be sold or transferred to retail facilities located outside of the district. Alternatively, the metal in replaced colorant dispensers has economic value and it is likely that metal parts from the dispensers would be sold as scrap metal and recycled. Increases in solid waste disposal related to complying with PAR 1113 would be small and temporary (a one-time disposal). Therefore, the solid waste impacts from removing existing colorant dispensers associated with the implementation of PAR 1113 would not be significant.

It is important to note that PAR 1113 does not change the current requirements specific to cleanup solvent storage and disposal. Since PAR 1113 compliant solvents are expected to be formulated with solvents that are equally or less hazardous than currently used solvents (see "Hazards and Hazardous Materials" section), implementing PAR 1113 is not expected to generate significant new adverse hazardous waste impacts. Therefore, no significant adverse solid and hazardous waste impacts associated with PAR 1113 were identified.

Based upon these considerations, PAR 1113 is not expected to increase the volume of solid or hazardous wastes that cannot be handled by existing municipal or hazardous waste disposal facilities, or require additional waste disposal capacity. Further, implementing PAR 1113 is not expected to interfere with any affected distributors' or retailers' ability to comply with applicable local, state, or federal waste disposal regulations. Therefore, significant adverse solid or hazardous waste impacts are not expected from the implementation of PAR 1113. Since no solid/hazardous waste impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVII. TRANSPORTATION/TRAFFIC. Would the project:					
a)	Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☑
b)	Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☑
c)	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☑
d)	Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	☐	☐	☐	☑
e)	Result in inadequate emergency access?	☐	☐	☐	☑
f)	Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☑

Significance Criteria

Impacts on transportation/traffic will be considered significant if any of the following criteria apply:

- Peak period levels on major arterials are disrupted to a point where level of service (LOS) is reduced to D, E or F for more than one month.
- An intersection's volume to capacity ratio increase by 0.02 (two percent) or more when the LOS is already D, E or F.
- A major roadway is closed to all through traffic, and no alternate route is available.
- The project conflicts with applicable policies, plans or programs establishing measures of effectiveness, thereby decreasing the performance or safety of any mode of transportation.
- There is an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.
- The demand for parking facilities is substantially increased.
- Water borne, rail car or air traffic is substantially altered.
- Traffic hazards to motor vehicles, bicyclists or pedestrians are substantially increased.
- The need for more than 350 employees
- An increase in heavy-duty transport truck traffic to and/or from the facility by more than 350 truck round trips per day
- Increase customer traffic by more than 700 visits per day.

Discussion

XVII.a) & b) The manufacture or use of PAR 1113 compliant architectural coatings is not expected to adversely affect transportation or traffic. In general, the volumes of PAR 1113 compliant architectural coatings are not expected to increase when compared to the volumes of materials currently used. Thus, the current level of transportation demands related to transporting new formulations of materials is not expected to increase. PAR 1113 is not expected to affect existing uses and applications of architectural coatings that would change or cause additional worker trips to distribution or retail facilities or increase transportation demands or services. Therefore, since no substantial increase in operational-related trips are anticipated, implementing PAR 1113 is not expected to significantly adversely affect circulation patterns on local roadways or the level of service at intersections near affected facilities or other sites that use these products.

PAR 1113 may require two additional round trips to deliver and dispose of colorant systems at each of the estimated 221 medium-sized retail stores. A one-time increase of two additional round trips per medium-sized facility is not expected to significantly adversely affect circulation patterns on local roadways or the level of service at intersections near affected facilities because the number of vehicle trips is so low and affected facilities are dispersed throughout the 10,473 square mile district.

XVII.c) The height and appearance of the existing structures where compliant architectural coatings would be manufactured or used is not expected be affected by complying with PAR 1113. Therefore, implementation of PAR 1113 is not expected to require construction of structures that have the potential to adversely affect air traffic patterns. Further, PAR 1113 would not affect in any way air traffic in the region because, architectural coatings are typically shipped via ground transportation and not by air.

XVII.d) Manufacturing and use of compliant architectural coatings is not expected to require construction of structures or roadways. Further, implementing PAR 1113 would not involve modifications to existing roadways. Consequently, implementing the proposed project would not create roadway hazards or incompatible roadway uses.

XVII.e) Use of compliant architectural coatings is not expected to affect or require changes to emergency access at or in the vicinity of the affected facilities or other sites where compliant architectural coatings are used since PAR 1113 would not require construction or physical modifications to any structure associated with manufacturing or selling PAR 1113 compliant coatings. The manufacture and use of compliant coatings are not expected to affect businesses' emergency response plans (see discussion in Section VIII.f). Therefore, PAR 1113 is not expected to adversely affect emergency access.

XVII.f) No modifications at facilities or other sites where compliant architectural coatings are manufactured, sold or used are expected that would conflict with alternative transportation, such as bus turnouts, bicycle racks, et cetera. Consequently, implementing PAR 1113 would not create any conflicts with these modes of transportation.

Based upon these considerations, PAR 1113 is not expected to generate significant adverse transportation/traffic impacts. Since no significant transportation/traffic impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☑	☐

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
b)	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)	☑	☐	☐	☐
c)	Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☑	☐	☐	☐

XVIII.a) As discussed in the "Biological Resources" section of this EA, PAR 1113 is not expected to significantly adversely affect plant or animal species or the habitat on which they rely because the proposed project would likely only require the reformulation of coatings and colorants and the replacement or modification of colorant systems at existing retail stores. Additionally, since implementing PAR 1113 would not require construction of any structures, special status plants, animals, natural communities, and important examples of the major periods of California history or prehistory are not expected to be adversely affected.

SCAQMD staff received a single comment that PAR 1113 may increase the use of biocides in colorants, but colorants are a small component of coatings and biocides would be a small component of colorants. Colorant manufacturers were contacted and MSDSs of existing and PAR 1113 compliant coatings were reviewed by SCAQMD staff. No biological impacts from colorants were identified in the MSDSs. Colorant manufactures contacted stated that they had not identified any biological impacts from low-VOC colorants. Colorant manufacturer contacts stated that their low-VOC colorants are APE free. As indicated in the Biological Resources discussion in IV.a), b), c) & d), complying with PAR 1113 is not expected to interfere with manufacturing trends to produce APE free low VOC coatings.

PAR 1113 would add two subcategories under the waterproofing concrete/masonry sealer, which would have a VOC content limit of 100 grams in the existing Rule 1113. The two subcategories are stone consolidants and reactive penetrating sealers with VOC content limits of 450 and 350 grams per liter, respectively, and are typically used in small quantities under the small container exemption. The higher VOC content limits were requested by OHP and one stone consolidant and reactive penetrating sealer manufacturer, because it is believed that solventborne products can penetrate deeper into substrates and distribute the consolidate/sealer down to the undeteriorated stone. Because PAR 1113 would increase the VOC content limit of stone

consolidants and reactive penetrating sealers, these products would continue to be used at the current VOC content limits, so there would be no change in use compared to the existing setting.

XVIII.b) Based on the foregoing analyses, PAR 1113 is not expected to generate any project-specific significant adverse environmental impacts for the following reasons. The environmental topics checked 'No Impact' (e.g., aesthetics, agriculture and forestry resources, biological resources, cultural resources, geology and soils, , land use and planning, mineral resources, noise, population and housing, public services, recreation and transportation and traffic) would not be expected to make any contribution to potential cumulative impacts whatsoever. For the environmental topics checked 'Less than Significant Impact' (e.g., air quality, energy, hazards and hazardous materials, and hydrology and water quality and solid/hazardous waste), the analysis indicated that project impacts would not exceed any project-specific significance thresholds. Based on these conclusions, incremental effects of the proposed project would be minor and, therefore, are not considered to be cumulatively considerable. Therefore, since impacts from the proposed project are not considered to be cumulatively considerable, the proposed project has no potential for generating significant adverse cumulative impacts.

XVIII.c) Based on the preceding analyses, PAR 1113 is not expected to cause adverse effects on human beings. Less than significant air quality and greenhouse gases, hazards and hazardous materials, water quality and solid/hazardous waste impacts from implementing PAR 1113 were identified. PAR 1113 would result in a reduction of 4.4 ~~4.2~~ tons of VOC emissions per day. Based on a review of MSDSs of affected existing and PAR 1113 compliant coatings and colorants, PAR 1113 may reduce or replace air toxics and flammability as manufacturers comply with the lower VOC content limit (default coatings, dry fog coatings, fire proofing coatings, graphic arts coatings, mastic coatings, and metallic pigment coatings) with the exception of faux finish coatings (trowel applied and clear topcoats). PAR 1113 compliant coatings may increase the use of ethylene glycol, propylene glycol, and triethylamine in faux finishing coatings. As analyzed in Sections III.d) and VIII.a), b), c) & h), respectively, the increase in ethylene glycol, propylene glycol, and triethylamine would not create significant adverse air toxics or hazard/flammability impacts.

PAR 1113 would create two new subcategories under the waterproofing concrete/masonry sealers category (VOC content limit of 100 grams per liter): stone consolidants and reactive penetrating sealers with VOC content limits of 450 and 350 grams per liter respectively. These products are currently used in small containers at the higher VOC content under the small container exemption. Usage for stone consolidants and reactive penetrating sealer has been consistently low state-wide and nationally for stone consolidants and reactive penetrating sealers for historical restoration because they are used in very specialized niche applications. Based on these records and Rule 314 data, SCAQMD staff estimates usages would remain consistent with existing usages, which are approximately 142 gallons of stone consolidant used per year and 290 gallons of reactive penetrating sealer used per year. Therefore, no increase in the use of these products is expected. Since there is no increase in use, new adverse toxic or hazard/flammable impacts are not expected from PAR 1113.

As discussed in items I through XVIII above, the proposed project is not expected to have the potential to cause significant adverse environmental effects to any environmental topic.

APPENDIX A

PROPOSED AMENDED RULE 1113

In order to save space and avoid repetition, please refer to the latest version of the PAR 1113 located elsewhere in the final rule package. The PAR 1113 version dated April 7, 2011 of the proposed rule was circulated with the Draft EA released on April 12, 2011 for a 30-day public review and comment period ending May 11, 2011.

Original hard copies of the Draft EA, which include version PAR 1113 (dated April 7, 2011) of the proposed amended rule circulated with the Draft EA, can be obtained through the SCAQMD Public Information Center at the Diamond Bar headquarters or by calling (909) 396-2039.

APPENDIX B

ASSUMPTIONS AND CALCULATIONS

Table B-1
VOC Emissions after PAR 1113 VOC Content Limits ~~for Coatings~~ Become Effective

Coating Category	Estimated SCAQMD Sales Volume,[2] gal/year	Percent of Rule 314 2009 Sales Above Proposed Limit[3]	Estimated CARB Sales Volume Above Proposed Limit, [4] gal/year	Rule 314 2009 Sales Weighted Average VOC Content of Coating above Proposed Limit,[3,5] grams per liter	Rule 314 2009 Sales Weighted Average VOC Content of Material above Proposed Limit,[3,6] grams per liter	Proposed limit, VOC Content of Coating,[4] grams per liter	VOC Content of Material Based on Proposed Limit,[5] grams per liter	Baseline Emissions Inventory[7]		VOC Emissions Reductions[8]		VOC Emissions Inventory after PAR 1113[9]	
								pound per day	ton per day	pounds per day	tons per day	pounds per day	tons per day
Form Release	145,625	92%	133,371	147~~-146~~	147~~-146~~	100	40	447	0.22	325	0.16	122	0.06
Dry Fog coatings	169,968	47%	79,211	89~~-62~~	~~40-26~~	50	20	72	0.04	36	0.02	36	0.02
Fire Proofing ~~Exterior~~ Coatings	5,630	46%	2,586	311~~-157~~	311~~-154~~	150	60	18	0.01	15	0.01	4	0.002
Graphic Arts Coatings[1]	7,459	32%	2,424	247~~-157~~	155~~-85~~	150	60	9	0.004	5	0.00	3	0.002
Mastic Coatings	304,678	56%	172,032	208	156	100	40	614	0.307	456	0.2	157	0.079
Metallic Pigmented Coatings	20,250	23%	4,601	341	304	150	60	32	0.02	68	0.03	6	0.003
							Totals:	1,192 ~~578~~	0.60 ~~0.29~~	863~~-407~~	0.43 ~~0.20~~	329~~-171~~	0.16 ~~0.09~~

1. 2009 Rule 314 sales volume - CARB data is protected (less than three companies reported)
2. Based on 2005 CARB survey of coatings sold in California in 2004 - Assumes 45 percent of sales were in district.2009 Rule 314
3. 2009 Rule 314 sales data
4. Estimated CARB Sales Volume above Proposed Limit, gal/year = Estimated SCAQMD Sales Volume, gal/year x Percent of Rule 314 2009 Sales above Proposed Limit
5. VOC content limits in PAR 1113 are listed as VOC of coating. VOC content of coating is defined as (weight of volatile compounds – weight of water – weight of exempt compounds)/(volume of material – volume of water – volume of exempt compounds)
6. Emissions inventories are developed using VOC of material. VOC content of material is defined as (weight of volatile compounds – weight of water – weight of exempt compounds)/(volume of material)
7. Based on CARB 2004 sales, Rule 314 sales weighted average VOC 2009 data. Baseline Emissions Inventory, lb/day = Estimated CARB Sales Volume Above Proposed Limit, gal/year x Rule 314 2009 SWA VOC Material Above Proposed Limit, gram/liter x pound/453.59 gram x 3.79 liter/gallon x year/365 day
8. Estimated Emissions Reductions, lb/day = Baseline Emissions Inventory, lb/day - VOC Emissions Inventory after PAR 1113, lb/day
9. VOC Emissions Inventory after PAR 1113, lb/day = Estimated CARB Sales Volume Above Proposed Limit, gal/year x Proposed limit, VOC Content of Material, grams per liter x pound/453.59 gram x 3.79 liter/gallon x year/365 day

Table B-2
Colorant VOC Emissions Inventory and VOC Emission Reductions after PAR 1113 VOC Content Limits ~~for Colorants~~ Become Effective

Faux Finishing Coating Category	Rule 314 2009 Estimate Usage,[1] gallon per year	Rule 314 2009 Sales Weighted Average VOC of Coatings Over Proposed Limit,[1,2] gram per liter	Rule 314 2009 Sales Weighted Average VOC of Material Over Proposed Limit,[1,2] gram per liter	Proposed VOC of Coatings Limit, gram per liter	VOC Content of Material Based on Proposed Limit, grams per liter	Baseline VOC Emissions Inventory[3]		Estimated Emissions Reductions[4]		VOC Emissions Inventory after PAR 1113[5]	
						pounds per day	ton per day	pound per day	ton per day	pound per day	ton per day
Clear Topcoat	1,285	202	69	100	40	2.0	0.0010	0.87	0.0004	1.2	0.0006
Trowel Applied	5,781	95	50	50	20	6.6	0.0033	4.0	0.0020	2.6	0.0013

1. Based on 2009 Rule 314 data
2. VOC content limits in PAR 1113 are listed as VOC of coating. VOC content of coating is defined as (weight of volatile compounds – weight of water – weight of exempt compounds)/(volume of material – volume of water – volume of exempt compounds)
3. Emissions inventories are developed using VOC of material. VOC content of material is defined as (weight of volatile compounds – weight of water – weight of exempt compounds)/(volume of material)
4. Baseline Emissions Inventory, lb/day = Estimated CARB Sales Volume Above Proposed Limit, gal/year x Rule 314 2009 SWA VOC Material Above Proposed Limit, gram/liter x pound/453.59 gram x 3.79 liter/gallon x year/365 day
5. Estimated Emissions Reductions, lb/day = Baseline Emissions Inventory, lb/day - VOC Emissions Inventory After PAR 1113, lb/day
6. VOC Emissions Inventory after PAR 1113, lb/day = Estimated CARB Sales Volume Above Proposed Limit, gal/year x Proposed limit, VOC Content of Material, grams per liter x pound/453.59 gram x 3.79 liter/gallon x year/365 day

Table B-3
Colorant VOC Emissions Inventory and VOC Emission Reductions after PAR 1113 VOC Content Limits for Colorants Become Effective

Category	80 Percent Total Sales, CARB 2004 Survey[1]	Current Inventory[2]		VOC Emissions Reductions[3]		VOC Emissions Inventory After PAR 1113[4]	
		Pounds per day	Tons per day	Pounds per day	Tons per day	Pounds per day	Tons per day
Flat & Non-Flat	25,608,202	5,959	2.98	5,580	2.79	366	0.18

1. 2005 CARB survey of coatings sold in California in 2004 - Assumes 45 percent of sales were in the district.
2. Assume four ounces of colorant (based on industry feedback), at VOC of material 325 grams per liter, added to 80 percent of flat and non-flat coatings.
3. Assumes four ounces of colorant, being reduced from a VOC of material of 325 to 20 grams per liter, added to 80 percent of flat and non-flat coatings.
4. Assumes four ounces of colorant, at VOC of material 20 grams per liter, added to 80 percent of flat and non-flat coatings.

Table B-4
VOC Emissions Inventory and VOC Emission Reductions from Reduction of Coating Categories Then Elimination of Averaging Compliance Option in PAR 1113

Year	Total Gallons Sold Above the VOC Content Limit under an ACO	Current Inventory[1]		Emissions Reductions from reduction of coating categories[2]			VOC Emissions Reductions from Elimination of ACO[3]			VOC Emissions Inventory After PAR 1113[4]	
		Pounds per day	Tons per day	Gallons	Pounds per day	Tons per day	Gallons	Pounds per day	Tons per day	Pounds per day	Tons per day
2009	1,299,875	2,399	1.20	371,741	1,786	0.89	928,134	613	0.31	0	0

1. Coatings sold above the VOC limit under an ACO plan, assume coatings reformulated to meet current VOC limit.
2. Eliminated primer, sealers and undercoaters; specialty primer, and waterproofing concrete/masonry sealers reductions assumed coatings reformulated to meet current VOC limit.
3. Eliminates remaining emissions in current inventory.
4. After phase out, all coatings formulated to meet VOC limit.

Table B-5
VOC Emissions and VOC Emission Reductions from Stone Consolidants

Projected Sales in SCAQMD,[1] gallon/year	Proposed VOC of Coating limit,[2] g/L	Estimated VOC of Material,[3] g/L	Current VOC of Content Limit, [2,4] g/L	Rule 314 2009 Sales Weighted Average VOC Content of Material,[1,3] g/L	Existing VOC Emissions,[5] lb/day	Existing VOC Emissions, ton/day	Estimated Foregone Emissions,[6] lb/day	Estimated Foregone Emissions, ton/day	VOC Emissions after PAR 1113,[7] lb/day	Existing VOC Emissions after PAR 1113, ton/day
142	450	450	100	40	0.27 ~~2.4~~	0.001 ~~0.0012~~	1.3 ~~24.9~~	0.001 ~~0.012~~	1.5 ~~2.4~~	0.001 ~~0.014~~

1. Projected sales in SCAQMD based on 2009 Rule 314 data and national sales from a stone consolidant manufacturer.
2. VOC content limits in PAR 1113 are listed as VOC of coating. VOC content of coating is defined as (weight of volatile compounds – weight of water – weight of exempt compounds)/(volume of material – volume of water – volume of exempt compounds)
3. Emissions inventories are developed using VOC of material. VOC content of material is defined as (weight of volatile compounds – weight of water – weight of exempt compounds)/(volume of material)
4. Existing Rule 1113 VOC content limit of waterproof concrete/masonry sealers.
5. Existing emissions estimated = Projected Sales in SCAQMD x Estimated VOC of material, g/L x (3.79 L/gal)/(453.59 g/lb)
6. Difference between VOC emissions after PAR 1113 and existing VOC emissions.
7. VOC emissions after PAR 1113 = Projected Sales in SCAQMD x Rule 314 2009 Sales Weighted Average VOC Content of Material, g/L x (3.79 L/gal)/(453.59 g/lb)

Table B-6
VOC Emissions and VOC Emission Reductions from Reactive Penetrating Sealers

Projected Sales in SCAQMD,[1] gallon/year	Proposed VOC of Coating limit,[2] g/L	Estimated VOC of Material,[3] g/L	Current VOC of Coating Limit, [4] g/L	Rule 314 2009 Sales Weighted Average VOC Content of Material,[1,3] g/L	Existing VOC Emissions,[5] lb/day	Existing VOC Emissions, ton/day	Estimated Foregone Emissions,[6] lb/day	Estimated Foregone Emissions, ton/day	VOC Emissions after PAR 1113,[5] lb/day	Existing VOC Emissions after PAR 1113, ton/day
290	350	350	100	40	2.3	0.0012	2.1	0.001	0.3	0.0001

1. Projected sales in SCAQMD based on 2009 Rule 314 data and Caltrans data.
2. VOC content limits in PAR 1113 are listed as VOC of coating. VOC content of coating is defined as (weight of volatile compounds – weight of water – weight of exempt compounds)/(volume of material – volume of water – volume of exempt compounds)
3. Emissions inventories are developed using VOC of material. VOC content of material is defined as (weight of volatile compounds – weight of water – weight of exempt compounds)/(volume of material)
4.
5. Existing Rule 1113 VOC content limit of waterproof concrete/masonry sealers.
6. Existing emissions estimated = Projected Sales in SCAQMD x Estimated VOC of material, g/L x (3.79 L/gal)/(453.59 g/lb)
7. Difference between VOC emissions after PAR 1113 and existing VOC emissions.
8. VOC emissions after PAR 1113 = Projected Sales in SCAQMD x Rule 314 2009 Sales Weighted Average VOC Content of Material, g/L x (3.79 L/gal)/(453.59 g/lb)

Table B-7
EMFAC2007 Emission Factors for Delivery Vehicles

CO, lb/mile	NOx, lb/mile	ROG, lb/mile	SOx, lb/mile	PM10, lb/mile	PM2.5, lb/mile	CO2, lb/mile	CH4, lb/mile	N2O, lb/mile
0.0184	0.0206	0.0026	0.00003	0.0008	0.0006	2.73	0.0001	0.000011

All EF from EMFAC2007 as reported for delivery vehicles on SCAQMD website (http://www.aqmd.gov/ceqa/handbook/onroad/onroadEF07_26.xls) for 2010, N2O from ARB's Regulation for the Mandatory Reporting of Greenhouse Gases,

Table B-8
Criteria Pollutant Emissions from Delivery Vehicles

Description	Number of Vehicle Trips[1]	Total Daily VMT,[2] mile/day	CO, lb/day	NOx, lb/day	ROG, lb/day	SOx, lb/day	PM10, lb/day	PM2.5, lb/day
Single Store	4	160	3.0	3.3	0.4	0.004	0.1	0.1
Daily[3]	8	320	5.9	6.6	0.8	0.009	0.2	0.2
Significance Thresholds			550.0	100.0	75.0	150.000	150.0	55.0
Significant?			No	No	No	No	No	No

1. Assumed one two-way vehicle trip to replace or modify colorant systems and one two-way vehicle trip to remove old units or parts.
2. Assumed a 40-mile per day one-way per vehicle trip.
3. Assumed colorants replaced at two retail facilities per day.

Table B-9
GHG Emissions from Delivery Vehicles

Activity, vehicle miles traveled per project	CO2, lb/project	CH4, lb/project	N2O, lb/project	CO2eq, lb/project	CO2, ton/year	CH4, ton/year	N2O, ton/year	CO2eq, ton/year
35,360	193,223	8.9	0.7	236,554	87.6	0.00403	0.00034	87.7

Based on discussions with coating retailers only medium-sized facilities would need to replace or modify colorant systems. SCAQMD staff identified 221 medium-sized retail facilities.

Table B-10
Fuel Use from Delivery Vehicles

Description	Number of Vehicle Trips[1]	Total Daily Vehicle Miles Traveled,[2] mile/day	Fuel Consumption, miles per gallon	Fuel Use, gallon/day
Single Store	4	160	10	16
Daily[3]	8	320	10	32

1. Assumed one two-way vehicle trip to replace or modify colorant systems and one two-way vehicle trip to remove old units or parts.
2. Assumed a 40-mile per day one-way per vehicle trip.
3. Assumed colorants replaced at two retail facilities per day.

Table B-11
Comparison of Air Toxics in PAR 1113 Non-Compliant and PAR 1113 Compliant Coatings[1]

Dry Fog Coatings

Coating Category	Statistical Property, weight percent	Chemical Abstract Service (CAS) No.[4]				
		100-41-4	1330-20-7	100-42-5	67-63-0	111-76-2
		Ethylbenzene, weight percent	Xylene, weight percent	Styrene, weight percent	Isopropanol, weight percent	Ethylene glycol butyl ether, weight percent
PAR 1113 Non-Compliant Dry Fog Coatings[2]	Max	1	1	20	4	4
	Min	1	1	20	2	1.9
	Avg	1	1	20	3	2.9
PAR 1113 Compliant Dry Fog Coatings[3]	Max	0	0	20	0	0
	Min	0	0	20	0	0
	Avg	0	0	20	0	0

1. SCAQMD staff developed the existing emissions inventory from the Rule 314 data for products sold for 2008 and 2009.
2. PAR 1113 non-compliant coatings were represented by coatings with one or more percent of total sales volume.
3. PAR 1113 compliant coatings in the Rule 314 data that had VOC contents that are equal or less than those proposed for PAR 1113 were used as surrogates to evaluate health impacts from reformulated coatings. Information from new architectural coatings that had VOC contents that are equal or less than those proposed for PAR 1113, but were not included in Rule 314 were also added.
4. Air toxic weight percents were obtained from a review of MSDSs for the coatings.

Table B-11 (Continued)
Comparison of Air Toxics in PAR 1113 Non-Compliant and PAR 1113 Compliant Coatings[1]

Fire Proofing Exterior Coatings

Coating Category	Statistical Property, weight percent	CAS No.[4]			
		100-41-4	1330-20-7	108-88-3	78-93-3
		Ethylbenzene weight percent	Xylene weight percent	Toluene weight percent	Methyl ethyl ketone weight percent
PAR 1113 Non-Compliant Fire Proofing Exterior Coatings[2]	Max	5	20	15	15
	Min	5	20	15	15
	Avg	5	20	15	15
PAR 1113 Compliant Fire Proofing Exterior Coatings[3]	Max	0	0	10	0
	Min	0	0	10	0
	Avg	0	0	10	0

1. SCAQMD staff developed the existing emissions inventory from the Rule 314 data for products shipped for 2008 and 2009.
2. PAR 1113 non-compliant coatings were represented by coatings with one or more percent of total sales volume.
3. PAR 1113 compliant coatings in the Rule 314 data that had VOC contents that are equal or less than those proposed for PAR 1113 were used as surrogates to evaluate health impacts from reformulated coatings. Information from new architectural coatings that had VOC contents that are equal or less than those proposed for PAR 1113, but were not included in Rule 314 were also added.
4. Air toxic weight percents were obtained from a review of MSDSs for the coatings.

Table B-11 (Continued)
Comparison of Air Toxics in PAR 1113 Non-Compliant and PAR 1113 Compliant Coatings[1]

Graphic Arts Coatings

Coating Category	Statistical Property, weight percent	CAS No. 111-76-2 Ethylene glycol butyl ether, weight percent
PAR 1113 Non-compliant Graphic Arts Coatings[2]	Max	5
	Min	5
	Avg	5
PAR 1113 Compliant Graphic Arts Coatings[3]	Max	0
	Min	0
	Avg	0

1. SCAQMD staff developed the existing emissions inventory from the Rule 314 data for products shipped for 2008 and 2009.
2. PAR 1113 non-compliant coatings were represented by coatings with one or more percent of total sales volume.
3. PAR 1113 compliant coatings in the Rule 314 data that had VOC contents that are equal or less than those proposed for PAR 1113 were used as surrogates to evaluate health impacts from reformulated coatings. Information from new architectural coatings that had VOC contents that are equal or less than those proposed for PAR 1113, but were not included in Rule 314 were also added.
4. Air toxic weight percents were obtained from a review of MSDSs for the coatings.

Table B-11 (Continued)
Comparison of Air Toxics in PAR 1113 Non-Compliant and PAR 1113 Compliant Coatings[1]

Coating Category	Statistical Property, weight percent	CAS No.						
		100-41-4	1330-20-7	100-42-5	107-21-1	107-98-2	101-68-8	117-81-7
		Ethylbenzene, weight percent	Xylene, weight percent	Styrene, weight percent	Ethylene glycol, weight percent	Propylene Glycol Monomethyl Ether, weight percent	Methylene diphenyl isocyanate, weight percent	Di (2-ethylhexyl) phthalate (DEHP) , weight percent
PAR 1113 Non-compliant Mastic Coating	Max	10	40	40	3	0	0	0
	Min	10	5	40	2	0	0	0
	Avg	10	22.5	40	2.7	0	0	0
PAR 1113 Compliant MasticCoating	Max	0	0	0	3	0	5	0.1
	Min	0	0	0	2	0	5	0.1
	Avg	0	0	0	2.6	0	5	0.1

1. SCAQMD staff developed the existing emissions inventory from the Rule 314 data for products shipped for 2009.
2. PAR 1113 non-compliant coatings were represented by coatings with one or more percent of total sales volume.
3. PAR 1113 compliant coatings in the Rule 314 data that had VOC contents that are equal or less than those proposed for PAR 1113 were used as surrogates to evaluate health impacts from reformulated coatings. Information from new architectural coatings that had VOC contents that are equal or less than those proposed for PAR 1113, but were not included in Rule 314 were also added.
4. Air toxic weight percents were obtained from a review of MSDSs for the coatings.

Table B-11 (Continued)
Comparison of Air Toxics in PAR 1113 Non-Compliant and PAR 1113 Compliant Coatings[1]

Metallic Pigmented Coatings

Coating Category	Statistical Property, weight percent	CAS No.[4]			
		100-41-4	1330-20-7	108-88-3	78-93-3
		Ethylbenzene, weight percent	Xylene, weight percent	Toluene, weight percent	Methyl ethyl ketone, weight percent
PAR 1113 Non-compliant Metallic Pigmented Coatings[2]	Max	2.4	9.9	10	2.7
	Min	0.1	0.6	3	2.7
	Avg	1	4	7	2.7
PAR 1113 Compliant Metallic Pigmented Coatings[3]	Max	0	0	7	0
	Min	0	0	7	0
	Avg	0	0	7	0

1. SCAQMD staff developed the existing emissions inventory from the Rule 314 data for products shipped for 2008 and 2009.
2. PAR 1113 non-compliant coatings were represented by coatings with one or more percent of total sales volume.
3. PAR 1113 compliant coatings in the Rule 314 data that had VOC contents that are equal or less than those proposed for PAR 1113 were used as surrogates to evaluate health impacts from reformulated coatings. Information from new architectural coatings that had VOC contents that are equal or less than those proposed for PAR 1113, but were not included in Rule 314 were also added.
4. Air toxic weight percents were obtained from a review of MSDSs for the coatings.

Table B-11 (Concluded)
Comparison of Air Toxics in PAR 1113 Non-Compliant and PAR 1113 Compliant Coatings[1]

Faux Finish Clear Coat

Coating Category	Statistical Property, weight percent	CAS No.[4]	
		111-76-2	121-44-8
		Ethylene glycol butyl ether	Triethylamine
PAR 1113 Non-compliant Clear Coat[2]	Max	0.29	0
	Min	0.26	0
	Avg	0.18	0
PAR 1113 Compliant Clear Coat[3]	Max	0	0.46
	Min	0	0.46
	Avg	0	0.46

1. SCAQMD staff developed the existing emissions inventory from the Rule 314 data for products sold for 2008 and 2009.
2. PAR 1113 non-compliant coatings were represented by coatings with one or more percent of total sales volume.
3. PAR 1113 compliant coatings in the Rule 314 data that had VOC contents that are equal or less than those proposed for PAR 1113 were used as surrogates to evaluate health impacts from reformulated coatings. Information from new architectural coatings that had VOC contents that are equal or less than those proposed for PAR 1113, but were not included in Rule 314 were also added.
4. Air toxic weight percents were obtained from a review of MSDSs for the coatings.

Trowel Applied Faux Finish Coating

Coating Category	Statistical Property, weight percent	CAS No. 107-21-1[4]
		Ethylene glycol, weight percent
PAR 1113 Non-compliant Trowel[2]	Max	0
	Min	0
	Avg	0
PAR 1113 Compliant Trowel[3]	Max	5.3
	Min	5.3
	Avg	5.3

1. SCAQMD staff developed the existing emissions inventory from the Rule 314 data for products sold for 2008 and 2009.
2. PAR 1113 non-compliant coatings were represented by coatings with one or more percent of total sales volume.
3. PAR 1113 compliant coatings in the Rule 314 data that had VOC contents that are equal or less than those proposed for PAR 1113 were used as surrogates to evaluate health impacts from reformulated coatings. Information from new architectural coatings that had VOC contents that are equal or less than those proposed for PAR 1113, but were not included in Rule 314 were also added.
4. Air toxic weight percents were obtained from a review of MSDSs for the coatings.

Table B-12
Chronic Non-Carcinogenic Health Risk Analysis of Toxic Air Contaminants in Faux Finish Topcoats

2009 Rule 314 Usage,[1] gal/year	Density[2] lb/gal	Triethylamine,[2] weight fraction	Triethylamine Emissions,[3] lb/year	Triethylamine Emissions,[4] ton/year
1,285	8.67	0.005	55.7	0.028

1. 2009 annual use of faux finish topcoats from Rule 314 database.
2. Density from MSDS. Only one manufacturer was found that use triethylamine in one faux finish topcoats product line. Maximum triethylamine weight fraction from faux finish topcoat manufacturer.
3. Emissions, lb/year = usage, gal/year x density, lb/gal x weight fraction
4. Emissions, ton/year = Emissions, lb/year x ton/2,000 lb

Triethylamine Emissions, ton/year	Chronic REL[1] µg/m^3	X/Q,[2] [µg/m^3]/ [ton/year]	MET[2]	MP[2]	Chronic Hazard Index[3]
0.028	200	41.45	60.49	1	0.3

1. Chronic relative exposure limit (REL) from Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values http://www.arb.ca.gov/toxics/healthval/contable.pdf.
2. X/Q, [µg/m3]/ [ton/year], meteorological correction factor (MET) and multi-pathway (MP) factor from Risk Assessment Procedures for Rules 1401 and 212, Version 7.0, Attachment L, http://www.aqmd.gov/prdas/images/pdficons.gif. The worst-case X/Q and MET values for volume sources were chosen.
3. Chronic non-carcinogenic hazard index = (emissions, ton/year x X/Q, [µg/m3]/ [tons/yr] x MET x MP)/(chronic REL, µg/m3)

Table B-13
Acute Non-Carcinogenic Health Risk Analysis of Toxic Air Contaminants from Five Gallons of Faux Finish Topcoats

Usage,[1] gal/hour	Density,[2] lb/gal	Triethylamine,[2] weight fraction	Triethylamine Emissions,[3] lb/hour
5	8.67	0.005	0.22

1. Usage based on assumption that one five gallon container of faux finish topcoat would be used in an hour or a five gallon container could be accidentally spilt.
2. Density from MSDS. Only one manufacturer was found that use triethylamine in one faux finish topcoats product line. Maximum triethylamine weight fraction from faux finish topcoat manufacturer.
3. Emissions, lb/hour = usage, gal/hour x density, lb/gal x weight fraction

Table B-13 (Concluded)
Acute Non-Carcinogenic Health Risk Analysis of Toxic Air Contaminants from Five Gallons of Faux Finish Topcoats

Emissions, lb/hour	Acute REL,[1] µg/m^3	X/Qhr,[2] [µg/m^3]/ [lb/hour]	Acute Hazard Index[3]
0.22	2,800	1,532	0.1

1. Acute relative exposure limit (REL) from Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values http://www.arb.ca.gov/toxics/healthval/contable.pdf.
2. X/Q, [µg/m3]/ [lb/hr] from Risk Assessment Procedures for Rules 1401 and 212, Version 7.0, Attachment L, http://www.aqmd.gov/prdas/images/pdficons.gif. The worst-case X/Q values for volume sources were chosen.
3. Acute non-carcinogenic hazard index = (emissions, ton/year x X/Q, [µg/m3]/ [tons/yr])/(acute REL, µg/m3)

Table B-14
Acute Non-Carcinogenic Health Risk Analysis of Toxic Air Contaminants from Accidental Release of 275 Gallons of Waterborne Polymer Used for the Manufacture of Faux Finish Topcoats

Tote Size[1] gal	Density,[2] lb/gal	Clean-up Duration,[1] hr/day	Triethylamine,[2] weight fraction	Triethylamine Emissions,[3] lb/hr
275	8.67	8	0.006	1.7

1. Usage based on assumption that one 275 gallon tote could be accidentally spilt. Assumed that clean-up could be done in a single day.
2. Density from MSDS. Only one manufacturer was found that use triethylamine in one faux finish topcoats product line. Maximum triethylamine weight fraction from waterborne polymer used in faux finish topcoat manufacturing.
3. Emissions, lb/hour = (tote size, gal x density, lb/gal x weight fraction x Percent Emitted by Accidental Release)/(8 hour clean-up)

Triethylamine Emissions, lb/hour	Acute REL,[1] µg/m^3	X/Qhr,[2] [µg/m^3]/ [lbs/hour]	Acute Hazard Index[3]
1.7	2,800	1,532	0.9

1. Acute relative exposure limit (REL) from Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values http://www.arb.ca.gov/toxics/healthval/contable.pdf.
2. X/Q, [µg/m3]/ [lb/hr] from Risk Assessment Procedures for Rules 1401 and 212, Version 7.0, Attachment L, http://www.aqmd.gov/prdas/images/pdficons.gif. The worst-case X/Q values for volume sources were chosen.
3. Acute non-carcinogenic hazard index = (emissions, ton/year x X/Q, [µg/m3]/ [ton/yr])/(acute REL, µg/m3)

Table B-15
Comparison of Hazardous Materials in PAR 1113 Non-Compliant and PAR 1113 Compliant Coatings[1]

Dry Fog Coatings

Coating Category	Statistical Property, weight percent	CAS No.[4]							
		100-41-4	1330-20-7	100-42-5	67-63-0	111-76-2	64742-89-8	57-55-6	64-17-5
		Ethyl-benzene, weight percent	Xylene, weight percent	Styrene, weight percent	Isopropanol, weight percent	Ethylene glycol butyl ether, weight percent	V. M. & P. Naphtha, weight percent	Propylene glycol, weight percent	Ethanol, weight percent
PAR 1113 Non-compliant Dry Fog Coatings[2]	Max	1	1	20	4	4.0	24	0	2
	Min	1	1	20	2	1.9	0.7	0	2
	Avg	1	1	20	3	2.9	9.6	0	2
PAR 1113 Compliant Dry Fog Coatings[3]	Max	0	0	20	0	0	0	5	0
	Min	0	0	20	0	0	0	5	0
	Avg	0	0	20	0	0	0	5	0

1. SCAQMD staff developed the existing emissions inventory from the Rule 314 data for products shipped for 2008 and 2009.
2. PAR 1113 non-compliant coatings were represented by coatings with one or more percent of total sales volume.
3. PAR 1113 compliant coatings in the Rule 314 data that had VOC contents that are equal or less than those proposed for PAR 1113 were used as surrogates to evaluate health impacts from reformulated coatings. Information from new architectural coatings that had VOC contents that are equal or less than those proposed for PAR 1113, but were not included in Rule 314 were also added.
4. Hazardous material weight percents were obtained from a review of MSDSs for the coatings.

Table B-15 (Continued)
Comparison of Hazardous Materials in PAR 1113 Non-Compliant and PAR 1113 Compliant Coatings[1]

Fire Proofing Exterior Coatings

Coating Category	Statistical Property, weight percent	CAS No.[4]					
		100-41-4	1330-20-7	108-88-3	78-93-3	110-12-3	90-72-2
		Ethyl-benzene	Xylene	Toluene	Methyl ethyl ketone	Methyl isoamyl ketone	Tris-2,4,6-(dimethyl-aminomethyl) phenol
PAR 1113 Non-compliant Fire Proofing Exterior Coatings[2]	Max	5	20	15	15	5	0
	Min	5	20	15	15	5	0
	Avg	5	20	15	15	5	0
PAR 1113 Compliant Fire Proofing Exterior Coatings[3]	Max	0	0	10	0	0	10
	Min	0	0	10	0	0	10
	Avg	0	0	10	0	0	10

1. SCAQMD staff developed the existing emissions inventory from the Rule 314 data for products shipped for 2008 and 2009.
2. PAR 1113 non-compliant coatings were represented by coatings with one or more percent of total sales volume.
3. PAR 1113 compliant coatings in the Rule 314 data that had VOC contents that are equal or less than those proposed for PAR 1113 were used as surrogates to evaluate health impacts from reformulated coatings. Information from new architectural coatings that had VOC contents that are equal or less than those proposed for PAR 1113, but were not included in Rule 314 were also added.
4. Hazardous material weight percents were obtained from a review of MSDSs for the coatings.

Table B-15 (Continued)
Comparison of Hazardous Materials in PAR 1113 Non-Compliant and PAR 1113 Compliant Coatings[1]

Graphic Arts Coatings

Coating Category	Statistical Property, weight percent	CAS No.[4]						
		111-76-2	67-56-1	64742-88-7	57-55-6	34590-94-8	2807-30-9	872-50-4
		Ethylene glycol butyl ether	Methanol	Mineral spirits	Propylene glycol	Dipropylene glycol ether	Ethylene Monopropyl Ether	n-Methyl-pyrrolidone
PAR 1113 Non-compliant Graphic Arts Coatings[2]	Max	5	1	50	5	15	5	10
	Min	5	1	20	0	0	5	10
	Avg	5	1	35	4	3	5	10
PAR 1113 ~~B~~Compliant Graphic Arts Coatings[3]	Max	0	0	0	5	0	0	0
	Min	0	0	0	3	0	0	0
	Avg	0	0	0	4.4	0	0	0

1. SCAQMD staff developed the existing emissions inventory from the Rule 314 data for products shipped for 2008 and 2009.
2. PAR 1113 non-compliant coatings were represented by coatings with one or more percent of total sales volume.
3. PAR 1113 compliant coatings in the Rule 314 data that had VOC contents that are equal or less than those proposed for PAR 1113 were used as surrogates to evaluate health impacts from reformulated coatings. Information from new architectural coatings that had VOC contents that are equal or less than those proposed for PAR 1113, but were not included in Rule 314 were also added.
4. Hazardous material weight percents were obtained from a review of MSDSs for the coatings.

Table B-15 (Continued)
Comparison of Hazardous Materials in PAR 1113 Non-Compliant and PAR 1113 Compliant Coatings[1]

Hazardous Compound	CAS No.	PAR 1113 Non-compliant Mastic Coating			PAR 1113 Compliant Mastic Coating		
		Statistical Property, weight percent			Statistical Property, weight percent		
		Max	Min	Avg	Max	Min	Avg
Ethylbenzene	100-41-4	10	10	10	0	0	0
Xylene	1330-20-7	40	5	22.5	0	0	0
Styrene	100-42-5	0	0	0	40	40	40
Ethylene glycol	107-21-1	3	2	2.7	3	1	2.2
Polyvinyl chloride	9002-86-2	40	40	40	0	0	0
Methylene Diphenyl Isocyanate	101-68-8	0	0	0	5	5	0
Di(2-Ethylhexyl)Phthalate (DEHP)	117-81-7	0	0	0	0.1	0.1	0.1
Mineral Spirits	64742-88-7	40	1	17.5	0	0	0
1,2,4 Trimethylbenzene	95-63-6	5	5	5	0	0	0
Propylene Glycol	57-55-6	0	0	0	5	5	5
Benzyl alcohol	100-51-6	0	0	0	5	5	5
Asphalt	8052-42-4	70	60	66.7	60	60	60
Texanol	25265-77-4	5	1	3	5	3	4.3
Butyl benzyl phthalate	85-68-7	0	0	0	40	7	18
Polypropylene glycol alkyl phenyl ether	9064-13-5	0	0	0	5	5	5
Hydrotreated light naphthenic distillate	64742-53-6	0	0	0	60	60	60

1. SCAQMD staff developed the existing emissions inventory from the Rule 314 data for products shipped for 2009.
2. PAR 1113 non-compliant coatings were represented by coatings with one or more percent of total sales volume.
3. PAR 1113 compliant coatings in the Rule 314 data that had VOC contents that are equal or less than those proposed for PAR 1113 were used as surrogates to evaluate health impacts from reformulated coatings. Information from new architectural coatings that had VOC contents that are equal or less than those proposed for PAR 1113, but were not included in Rule 314 were also added.
4. Hazardous material weight percents were obtained from a review of MSDSs for the coatings.

Table B-15 (Continued)
Comparison of Hazardous Materials in PAR 1113 Non-Compliant and PAR 1113 Compliant Coatings[1]

Coating Category	Statistical Property, weight percent	CAS No.[4]							
		100-41-4	1330-20-7	108-88-3	107-21-1	107-98-2	112-34-5	57-55-6	108-67-8
		Ethylbenzene	Xylene	Toluene	Ethylene glycol	Propylene glycol monomethyl ether	Diethylene glycol monobutyl ether	Propylene glycol	1,3,5-Trimethylbenzene
PAR 1113 Non-compliant Metallic Pigmented Coatings[2]	Max	2.4	9.9	10	2.7	70	10.2	2.6	26.1
	Min	0.1	0.6	3	2.7	1.2	0.6	2.6	26.1
	Avg	1	4	7	2.7	38.0	4.0	2.6	26.1
PAR 1113 Compliant Metallic Pigmented Coatings[3]	Max	0	0	7	0	0	0	2	0
	Min	0	0	7	0	0	0	2	0
	Avg	0	0	7	0	0	0	2	0

1. SCAQMD staff developed the existing emissions inventory from the Rule 314 data for products shipped for 2008 and 2009.
2. PAR 1113 non-compliant coatings were represented by coatings with one or more percent of total sales volume.
3. PAR 1113 compliant coatings in the Rule 314 data that had VOC contents that are equal or less than those proposed for PAR 1113 were used as surrogates to evaluate health impacts from reformulated coatings. Information from new architectural coatings that had VOC contents that are equal or less than those proposed for PAR 1113, but were not included in Rule 314 were also added.
4. Hazardous material weight percents were obtained from a review of MSDSs for the coatings.

Table B-15 (Continued)
Comparison of Hazardous Materials in PAR 1113 Non-Compliant and PAR 1113 Compliant Coatings[1]

Clear Coat

Coating Category	Statistical Property, weight percent	CAS No.[4]		
		111-76-2	121-44-8	57-55-6
		Ethylene glycol butyl ether	Triethylamine	Propylene glycol
PAR 1113 Non-Compliant Clear Coat[2]	Max	0.29	0	5
	Min	0.26	0	5
	Avg	0.18	0	5
PAR 1113 Compliant Clear Coat[3]	Max	0	0.5	0
	Min	0	0.5	0
	Avg	0	0.5	0

1. SCAQMD staff developed the existing emissions inventory from the Rule 314 data for products shipped for 2008 and 2009.
2. PAR 1113 non-compliant coatings were represented by coatings with one or more percent of total sales volume.
3. PAR 1113 compliant coatings in the Rule 314 data that had VOC contents that are equal or less than those proposed for PAR 1113 were used as surrogates to evaluate health impacts from reformulated coatings. Information from new architectural coatings that had VOC contents that are equal or less than those proposed for PAR 1113, but were not included in Rule 314 were also added.
4. Hazardous material weight percents were obtained from a review of MSDSs for the coatings.

Table B-15 (Concluded)
Comparison of Hazardous Materials in PAR 1113 Non-Compliant and PAR 1113 Compliant Coatings[1]

Trowel Applied Faux Coating

Coating Category	Statistical Property, weight percent	CAS No.[4]		
		107-21-1	57-55-6	29911-28-2
		Ethylene glycol	Propylene glycol	Dipropylene glycol monobutyl ether
PAR 1113 Non-compliant Trowel Applied Faux Coating[2]	Max	0	70	5
	Min	0	5	5
	Avg	0	37.5	5
PAR 1113 Compliant Trowel Applied Faux Coating[3]	Max	5.3	4	0
	Min	5.3	4	0
	Avg	5.3	4	0

1. SCAQMD staff developed the existing emissions inventory from the Rule 314 data for products shipped for 2008 and 2009.
2. PAR 1113 non-compliant coatings were represented by coatings with one or more percent of total sales volume.
3. PAR 1113 compliant coatings in the Rule 314 data that had VOC contents that are equal or less than those proposed for PAR 1113 were used as surrogates to evaluate health impacts from reformulated coatings. Information from new architectural coatings that had VOC contents that are equal or less than those proposed for PAR 1113, but were not included in Rule 314 were also added.
4. Hazardous material weight percents were obtained from a review of MSDSs for the coatings.

APPENDIX C

COMMENT LETTERS AND RESPONSE TO COMMENTS

lyondellbasell

Mr. James Koizumi
Office of Planning, Rule Development, and Area Sources
South Coast Air Quality Management District (SCAQMD)
21865 Copley Drive
Diamond Bar, CA 91765

April 19, 2011

RE: PAR 1113 Draft Environmental Assessment.

Dear Mr. Koizumi:

As the developer of TBAC (tert-butyl acetate), Lyondell Chemical submits the following comments on the proposed amendments to rule 1113 and draft environmental assessment.

We are disappointed that the SCAQMD continues to ignore our requests to exempt TBAC in more architectural coatings categories and the extreme flammability risk that this delay poses for consumers and contractors. The US EPA exempted TBAC from the VOC definition in 2004, in recognition of its negligible photochemical reactivity (MIR = 0.17g ozone/g). TBAC is now VOC exempt in 49 states and 21 California counties and can be used in 14 other counties that do not regulate VOCs. In 2009, Environment Canada exempted TBAC in architectural coatings and automotive refinishing operations. In 2006, the SCAQMD staff also exempted TBAC in industrial maintenance coatings and zinc-rich primers in rule 1113. The exemption of TBAC was limited to these two categories because of speculative concerns that TBAC may pose a chronic risk to humans due to its metabolism to tert-butanol (TBA) and occupational exposure to TBAC-containing solvents.

Because of these concerns, SCAQMD conducted a CEQA analysis on the use of TBAC in IM coatings using worst case hypothetical heath risk factors and worst case exposure scenarios. Despite these extremely conservative assumptions, the theoretical chronic risk fell below the level of concern for TBAC-based IM coating use. SCAQMD staff did not conduct a CEQA analysis for other coating categories, including consumer coatings despite the absence of chronic exposures to solvent-based coatings by consumers. The FEA for rule 1113 stated that ***"staff is opposed to allowing TBAc use in residential applications until final conclusions regarding the toxicity of TBAc have been concluded"*** but provided no justification for this opposition. 1-1

There is still no evidence that either TBAC or TBA poses a chronic risk to humans. On the other hand, additional high quality toxicity studies been conducted since 2006 on TBAC and its metabolite TBA to address OEHHA's speculative toxicity concerns. These studies confirm that neither compound is genotoxic[1] or poses an acute or chronic risk to humans. In 2010, the

[1] McGregor, D.B., et.al. (2005). The mutagenicity testing of tertiary-butyl alcohol, tertiary-butyl acetate, and methyl tertiary-butyl ether in Salmonella typhimurium. *Mutat. Res.* 565:181–189

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Pathology Working Group reviewed the male rat kidney data from the 1995 NTP chronic study that showed a dose dependent increase in benign tumors following TBA ingestion.[2] The PWG concluded unanimously that ***"under the conditions of this study, TBA-related renal changes in rats posed no risk for humans, and it would be inappropriate to extrapolate TBA-associated renal proliferative changes in rats to humans."*** The PWG is the fifth panel of toxicologists to independently come to this conclusion since 2003.[3,4,5,6]

Other studies have shown that TBAC is not a reproductive or developmental toxicant and that the mouse thyroid tumors observed in the 1995 TBA chronic study were caused by a mode of action to which humans are not susceptible.[7] It is now clear that OEHHA's concerns were unfounded and that TBAC does not pose a health risk when used in any architectural coatings. This is particularly true for coatings applied outdoors by professional contractors and for DIY products that are used infrequently. Therefore, it is not protective of human health or the environment to continue to deny the VOC exemption for TBAC. In fact, it promotes the use of acetone, which is extremely flammable, and PCBTF whose chronic toxicity has not been evaluated. The exemption of TBAC in architectural coatings would *reduce* product hazards, not increase them.

1-1

The flash point of acetone is -4°F which is well below that of other solvents currently used in architectural coatings, or that of TBAC (40°F). It is also well below the Consumer Products Safety Commission (CPSC) cutoff of 20°F for "Extremely Flammable" solvents. Of all the solvents listed in table 2-11 of the DEA, only one, MEK (FP 16°F) is classifiable as "extremely flammable" by the CPSC. Table 2-11 is fraught with errors, with a majority of compounds incorrectly classified as to flammability. Fifteen non-combustible or combustible materials are listed as "flammable" as is MEK. The properties of exempt solvents acetone, methyl acetate, TBAC, and PCBTF are not listed. Theses errors and omissions should be corrected in the final version of the Environmental Assessment.

1-2

The DEA acknowledges on page 2-45 that PAR-1113 that **"*because PAR 1113 would likely require reformulation of some coating products to comply with lower VOC content limits or in response to changes to the averaging compliance option provision, use of some solvents in coatings, including Group I exempt compounds, may result in products with a higher flammability ratings.*"** As long as TBAC is not recognized as an exempt compound in architectural coating categories, formulators will turn to acetone to the lower VOC content limits in solvent-borne coatings for contractors and consumers. The 2005 CARB survey proves that

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[2] Hard, G., Cohen, S., Regan, K., Pletcher, J., Bruner, R. (2010). Pathology Working Group Review of Selected Histopathologic Changes in the Kidneys of Rats Assigned to Toxicology and Carcinogenicity Studies of t-Butyl Alcohol in F344/N Rats NTP Study No. 05142-03.

[3] NSF International (2003) tert-Butyl Alcohol Oral Risk Assessment Document

[4] NSF International (2008) tert-Butyl Acetate Oral Risk Assessment Document.

[5] Shipp, AM., McDonald, T., Vanlandingham, C., 2005. Hazard Narrative for Tertiary-Butyl Alcohol (TBA) CAS Number 75–65–0, API Publication 4743.

[6] Independent Peer assessment for TBAC (2009): http://www.tera.org/Peer/TBAC/index.html

[7] Blanck O., Fowles J., Schorsch F., Pallen C., Espinasse-Lorneau H., Schulte-Koerne E., Totis M., and Banton M. (2010). Tertiary butyl alcohol in drinking water induces phase I and II liver enzymes with consequent effects on thyroid hormone homeostasis in the B6C3F1 female mouse. *J. Appl. Toxicol.* 30:125-132

acetone is the predominant exempt compound used by formulators in California and that its use continues to grow.

The DEA also recognizes that a solvent's ***"flash point is a particularly important measure of the fire hazard of a substance. For example, the Consumer Products Safety Commission (CPSC) promulgated Labeling and Banning Requirements for Chemicals and Other Hazardous Substances in 15 U.S.C.§1261 and 16 CFR Part 1500. Per the CPSC, the flammability of a product is defined in 16 CFR Part 1500.3 (c)(6) and is based on flash point. For example, a liquid needs to be labeled as: 1) "Extremely Flammable" if the flash point is below 20 degrees Fahrenheit; 2) "Flammable" if the flash point is above 20 degrees Fahrenheit but less than 100 degrees Fahrenheit; or, 3) "Combustible" if the flash point is above 100 degrees Fahrenheit up to and including 150 degrees Fahrenheit."*** In addition, blending acetone with flammable or combustible solvents renders the coating extremely flammable and greatly extends the flammability range. Therefore, it is apparent that without a VOC exemption for TBAC, PAR 1113 creates a significant fire hazard to the public through the use of more flammable materials by consumers, contractors, distributors, and formulators.

1-2

Solvent-based architectural coatings fall into the following categories 1) niche DYI products that are used only occasionally by consumers, and 2) commercial products used by professional contractors. Consumers do not use solvent-based paints occupationally so chronic exposure does not occur. This is acknowledged by the SCAQMD in previous rule 1113 documents:[8]

"Since the application of architectural coatings does not occur continuously over a long period of time, carcinogenic risk and long-term (chronic) non-carcinogenic effects will not be analyzed since they are both based on long-term exposure."

Furthermore, indoor air quality testing[9] using ASTM D5116 Small Chamber Test and Modified California Specification 01350 Test Methods shows that TBAC-based consumer trim paint and floor varnish cannot pose a long-term exposure risk to consumers because 99.9% of the TBAC evaporates in the first 24 hours and residual air concentrations are below the analytical detection limit of 0.3 parts per billion (1.3µg/m3) after 14 days. This level is 30 times below the TBAC odor threshold and 1,000 times below the chronic RfC (safe level). Without chronic overexposure there is no chronic risk, even if a chronic hazard from TBAC actually existed. Therefore, OEHHA's speculative concern about TBAC's chronic toxicity is not only unfounded, but also irrelevant to consumer use of TBAC-containing architectural paints and coatings.

1-3

As for contractor use of architectural coatings, they fall into the following categories 1) exterior application, and 2) interior application. Exterior application provides sufficient ventilation to

[8] http://www.aqmd.gov/ceqa/documents/2006/aqmd/is_nop/IS_1113.doc

[9] Research Triangle Park Laboratories report 08-106, June 23 2008. RTP labs is compliant with ISO 17025 Standard for laboratories, is a State of Pennsylvania Registered Laboratory and Federal Drug Enforcement Agency & North Carolina Controlled Substances Registered Analytical Laboratory and conducts indoor air quality testing for LEEDS and Green Seal (GS-11) product certifications. http://www.rtp-labs.com/

prevent acute and chronic overexposure to solvents. Interior application of solvent-based coatings can lead to overexposure but is usually avoided through the use of respiratory protection and/or forced ventilation of the space. This is commonly done in operations like tub & tile and kitchen cabinet refinishing. Leading suppliers of tub, tile, and cabinet refinishing paints such as NAPCO ltd. provide professional training of the safe application of these coatings and supply a full line of personal protective equipment, supplied air, and fume exhaust equipment and accessories.[10] Their products also bear labels that warn users of the potential hazards of solvent vapors and suggest NIOSH-approved respiratory protection when using their products. Finally, the OSHA PEL for TBAC is 200ppm which is equal or higher than many of the solvents safely used today.

In summary, it is not health protective to further delay the exemption of TBAC due to unfounded chronic toxicity concerns, especially in consumer products that are used infrequently or in commercial products applied by contractors trained in the safe handling of solvent-based coatings. The use of TBAC instead of more reactive, flammable, and hazardous solvents will allow suppliers to formulate lower VOC products for both consumers and contractors without affecting cost, performance, or compromising worker or consumer safety. It will also reduce 314 fees for a number of producers during this recession and lower the cost of low-VOC coating products for contractors and consumers.

1-3

Therefore, we again request that TBAC be exempted for all coating categories in rule 1113 and, if not, at least in exterior coatings applied by contractors. These include concrete curing compounds, concrete surface retarders, driveway sealers, form release coatings, fire proofing exterior, roof coatings and primers, swimming pool coatings, traffic coatings, and waterproofing concrete/masonry coatings.

Thank you for the opportunity to comment. If you have any questions or need any further information, please free to contact me.

Sincerely,

Daniel B. Pourreau, Ph.D.
Technical Advisor

David J. Roznowski, APR
Manager, State Government Affairs

[10] https://www.napcoltd.com/training.asp

Page 4 of 4

Comment Letter 1
Lyondellbasell
April 19, 2011

Response to Comment 1-1
SCAQMD staff relies on the Office of Environmental Health Hazard Assessment (OEHHA) for toxic air pollutant health risk values and health risk assessment guidance. OEHHA staff have raised concern about the potential carcinogenicity of tBAc. Until such time as OEHHA makes further determination regarding the toxicity of tBAc, SCAQMD will exercise caution with regard to considering it an exempt compound.

Based on a review of MSDSs for PAR 1113 compliant coatings, existing PAR 1113 compliant coatings contain conventional solvents but in concentrations less than PAR 1113 non-compliant solvents (i.e., do not contain exempt solvents). A statement in the Draft EA to the contrary was incorrect and has been deleted. It was assumed that PAR 1113 non-compliant coatings would be reformulated to be similar to existing PAR 1113 compliant coatings. Therefore, PAR 1113 is not expected to increase the use of exempt solvents, including acetone, methyl acetate, tBAc and parachlorobenzotrifluoride (PCBTF).

Since, PAR 1113 does not include any provisions that would define tBAc as an exempt solvent in coatings other than industrial maintenance coatings, it is not expected there would be increase in the use of tBAc; therefore, no analysis of tBAc is needed.

Response to Comment 1-2
The Draft EA does indeed include the statement, "Because PAR 1113 would likely require reformulation of some coating products to comply with lower VOC content limits or in response to changes to the averaging compliance option provision, use of some solvents in coatings, including Group I exempt compounds, may result in products with a higher flammability ratings." However, this statement is inconsistent with data compiled and will be removed in the Final EA.

First, many of the proposed changes in PAR 1113 simply move the coatings into a different coating category without changes to the VOC content limit. For coating categories where VOC content limits are proposed to be lowered (dry fog coatings, form release, fire proofing coatings, graphic arts coatings, mastic coatings, and metallic pigment coatings), i.e., where reformulation is expected to be necessary to comply with PAR 1113 limits, staff reviewed MSDSs of the many PAR 1113 compliant products available in the market and used in the distirct (PAR 314 database). In the review of MSDSs for PAR 1113 compliant coatings, no PAR 1113 compliant coatings were identified that used any exempt solvents, including acetone, methyl acetate, tBAc and PCBTF. Since no PAR 1113 compliant architectural coatings that contained exempt compounds were identified in the MSDS review, and no coatings containing exempt compounds were identified by the commenter; exempt compounds are not expected to be used to comply with PAR 1113 and are not included in Table 2-11.

The commenter states that some of the entries in the flammability column in Table 2-11 are not correct (i.e., combustible coatings were labeled as flammable and methyl ethyl ketone and triethanolamine were identified as flammable instead of extremely flammable). Table 2-11 has been corrected in the Final EA. MEK and triethylamine were listed as flammable and now are

listed as extremely flammable. 1,2,4 trimethylbenzene, 1,2-diaminocyclohexane, 1,3,5 trimethylbenzene, benzyl alcohol, diesel, diethylene glycol, diethylene glycol butyl ether, dipropylene glycol methyl ether, ethylene glycol, ethylene monopropyl ether, glycerine, polyethylene glycol, propylene glycol, triethanolamine, and tris-2,4,6-(dimethylaminomethyl) phenol were listed as flammable and are now listed as combustible. However, since the flammability analysis in the Draft EA is based on the NFPA Flammability Rating, not the Consumer Products Safety Commission (CPSC) ratings, the change to the CPSC column do not affect the conclusion of the flammability analysis in the Draft EA.

Response to Comment 1-3

The commenter asks that tBAc be exempted for all coating categories in Rule 1113, and, if not, at least in exterior coatings applied by contractors. Exterior coatings identified by the commenter are concrete curing, concrete surface retarders, driveway sealers, form release coatings, fire proofing exterior, roof coatings and primers, swimming pool coatings, traffic coatings, and waterproofing concrete/masonry coatings. As stated in Response to Comment 1-1, until such time as OEHHA makes a determination regarding the potential toxicity of tBAc, SCAQMD will exercise caution with regard to considering it an exempt compound.

No VOC content limit are being changed for concrete curing, roof coatings and primers, swimming pool coatings, traffic coatings and waterproofing concrete/masonry coatings, so no reformulation of these coatings is expected to be caused by PAR 1113.

VOC content limits of concrete surface retarders and driveway sealers would be reduced by PAR 1113. However, as stated in the Draft EA, the VOC contents of these coatings are already at or below the PAR 1113 VOC content limits. Therefore, no reformulation is expected for concrete surface retarders and driveway sealers because of PAR 1113.

VOC content limits of form release coatings, and fire proofing exterior would be reduced by PAR 1113. The Draft EA assumed that PAR 1113 non-compliant coatings would be reformulated to be similar to existing PAR 1113 compliant coatings to comply with PAR 1113. As stated in the Draft EA, MSDSs were reviewed for these coatings (also see Response to Comment 1-2) and no exempt solvent, such as acetone, methyl acetate, tBAc and parachlorobenzotrifluoride (PCBTF), were identified in PAR 1113 compliant coatings. Therefore, PAR 1113 is not expected to increase the use of exempt solvents. The general trend based on the MSDS review is that conventional coatings are expected to be used in reformulated PAR 1113 compliant coatings (i.e, not using exempt solvents), but used in less concentrations than before reformulation (see Table 2-10 of the Final EA). Since the concentrations of these conventional solvents would be reduced by PAR 1113, the flammability of PAR 1113 compliant coatings is expected to be reduced. However, the Draft EA identified exceptions to this general trend. Increased concentrations of ethylene glycol, propylene glycol and triethylamine were identified in PAR 1113 compliant faux finishing coatings. However, as stated in the Draft EA, ethylene glycol and propylene glycol have low NFPA flammability ratings (both have a NFPA flammability rating of 1) compared to other glycols, which are used in both PAR 1113 compliant coatings and PAR 1113 non-compliant coatings. Therefore, no increase flammability hazards are expected from possible increases in ethylene glycol and propylene glycol use. Triethylamine is used in low concentrations (0.6 percent by weight) in aqueous coatings. At this concentration, health risk and flammability was determined to be less than significant in the Draft EA.

From: Dave Darling [mailto:ddarling@paint.org]
Sent: Wednesday, May 11, 2011 11:44 AM
To: James Koizumi
Subject: 1113DEA.doc

May 11, 2011

Mr. James Koizumi
Office of Planning, Rule Development, and Area Sources
SCAQMD
21865 Copley Drive
Diamond Bar, CA 91765-4178

RE: Proposed Amended Rule 1113 – Architectural Coatings; Notice of Completion of a Draft Environmental Assessment: ACA Comments

Dear Mr. Koizumi:

The American Coatings Association (ACA) [1] has several comments on Section VIII Hazardous and Hazardous Materials of the Draft Environmental Assessment:

It is interesting that exempt solvents (including Acetone, Methyl Acetate etc.) are not listed in Table 2-10 or Table 2-11, it appears based on Table 2-10 that little if any exempt solvents will be used in compliant coatings formulations, which does not seem realistic.

In addition, there seems to be typos in Table 2-11. The Consumer Products Safety Commission (CPSC) has a flashpoint cutoff of 20˚F for "Extremely Flammable" solvents. Of all the solvents listed in table 2-11 of the DEA, two (MEK and Triethylamine) would be classifiable as "extremely flammable" by the CPSC. Also fifteen non-combustible or combustible materials are listed as "flammable". Further as mentioned above, the properties of exempt solvents (acetone, methyl acetate, TBAC, and PCBTF) are not listed on the table or described in the DEA.

2-1

Sincerely,

/s/
David Darling
Senior Director, Environmental Affairs
American Coatings Association

** *Sent via email* **

[1] **The American Coatings Association (ACA) is a voluntary, nonprofit trade association working to advance the needs of the paint and coatings industry and the professionals who work in it. The organization represents paint and coatings manufacturers, raw materials suppliers, distributors, and technical professionals. ACA serves as an advocate and ally for members on legislative, regulatory and judicial issues, and provides forums for the advancement and promotion of the industry through educational and professional development services.**

Comment Letter 2
American Coatings Association
May 11, 2011

Response to Comment 2-1
Based on a review of MSDSs of coatings reported in Rule 314, none of the existing affected PAR 1113 compliant coatings contain exempt compounds (acetone, methyl acetate, tBAc and PCBTF). PAR 1113 compliant coatings contain conventional solvent at lower concentrations (see Tables 2-7, 2-10, B-11and B-15 of the Final EA). It was assumed that PAR 1113 non-compliant coatings would be reformulated to be similar to existing PAR 1113 compliant coatings. Based on the above, it is not expected that exempt compounds would be used to reformulate PAR 1113 non-compliant coatings.

The consumer product safety commission column in Table 2-11 was not correct and has been corrected in the Final EA. MEK and triethylamine were listed as flammable and now are listed as extremely flammable. 1,2,4 trimethylbenzene, 1,2-diaminocyclohexane, 1,3,5 trimethylbenzene, benzyl alcohol, diesel, diethylene glycol, diethylene glycol butyl ether, dipropylene glycol methyl ether, ethylene glycol, ethylene monopropyl ether, glycerine, polyethylene glycol, propylene glycol, triethanolamine, and tris-2,4,6-(dimethylaminomethyl) phenol were listed as flammable and are now listed as combustible. However, since the flammability analysis in the Draft EA is based on the NFPA Flammability Rating not the Consumer Products Safety Commission (CPSC) ratings, the changes do not affect the conclusion of the flammability analysis in the Draft EA.

Exempt solvents were not included in Table 2-11, because they were not found in existing affected PAR 1113 compliant coatings and, therefore, are not expected to be found in reformulated PAR 1113 non-compliant coatings.