BOARD MEETING DATE: October 2, 2015 AGENDA NO. 34

PROPOSAL: Amend Rule 1106 - Marine Coating Operations, as set forth in Proposed Amended Rule 1106 – Marine and Pleasure Craft Coating Operations, and Rescind Rule 1106.1 - Pleasure Craft Coating Operations

SYNOPSIS: The proposed amendment is two-fold, first, Rule 1106.1 is proposed to be rescinded and second, Rule 1106 will subsume the requirements of Rule 1106.1 - Pleasure Craft Coating Operations, revise VOC content limits for pretreatment wash primers, antenna, repair and maintenance thermoplastic, inorganic zinc, and specialty marking coatings in order to align limits with U.S. EPA Control Techniques Guidelines and other California air districts, and add new categories for marine aluminum antifoulant, mist, nonskid and organic zinc coatings and marine deck primer sealant. The proposed amendment also adds provisions for pollution prevention measures, enhanced enforceability, and to promote clarity and consistency.

COMMITTEE: Stationary Source, July 24, 2015, Reviewed

RECOMMENDED ACTIONS:
Adopt the attached resolution:

1. Certifying the Final Supplemental Environmental Assessment for Proposed Amended Rule 1106 - Marine and Pleasure Craft Coating Operations and rescinding of Rule 1106.1 – Pleasure Craft Coating Operations;
2. Adopting Proposed Amended Rule 1106 - Marine and Pleasure Craft Coating Operations; and
3. Rescinding Rule 1106.1 - Pleasure Craft Coating Operations.

Barry R. Wallerstein, D.Env.
Executive Officer

PF:DD:DH

Background

Rule 1106 - Marine Coating Operations and Rule 1106.1 - Pleasure Craft Coating Operations are both source specific rules that were adopted to reduce emissions of volatile organic compounds (VOC) and stratospheric ozone depleting and global warming compounds from marine coatings applied on boats, ships, and vessels, and their appurtenances, and to buoys and oil drilling rigs intended for the marine environment, and for pleasure craft, as defined in Rule 1106.1, including parts and components.

Rule 1106 was adopted on November 4, 1988 and has been subsequently amended seven times. The most recent amendment was on January 13, 1995 which incorporated corrective action items in efforts to resolve deficiencies as determined by U.S. EPA. The corrective action items in that amendment included language and an equation for control device equivalency, an applicability statement, test methods that were required to be specified, language regarding multiple test methods with the addition of the most recent test method, an updated definition for aerosol coatings and exempt compounds, and a permanent exemption for aerosol containers.

Rule 1106.1 was adopted on May 1, 1992 and has been subsequently amended three times. The most recent amendment was on February 12, 1999 which removed Pleasure Craft Coating Operations from existing Rule 1106 - Marine Coating Operations. Many of the existing coating categories in Rule 1106 at that time were not representative of the pleasure craft coating industry. Consequently, the SCAQMD adopted Rule 1106.1 with the intent of identifying the special categories of coatings applied on pleasure craft.

Proposal

The proposal is two-fold: First, Rule 1106.1 is proposed to be rescinded and second, Rule 1106 is proposed to be amended to subsume the requirements of Rule 1106.1 - Pleasure Craft Coating Operations, revise VOC content limits for pretreatment wash primers, antenna, repair and maintenance thermoplastic, inorganic zinc, and specialty marking coatings in order to align limits with U.S. EPA Control Techniques Guidelines and other California air districts, and add new categories for marine aluminum antifoulant, mist, nonskid and organic zinc coatings and marine deck primer sealant. The proposed amendment also adds provisions for pollution prevention measures, enhanced enforceability, and to promote clarity and consistency.

Key Issues

Touch-up Coatings

Staff visited several facilities conducting marine and pleasure craft coating operations and found many operators believed the touch-up exemption meant any touch-up operation. The definition for a touch-up coating does not allow for maintenance and repair “touch-up” coatings because it is only intended for minor imperfections or minor

mechanical damage incurred after the main coating operation. The touch-up exemption in the current rule (Rule 1106) provides an exemption from the VOC content limits for touch-up coatings and defines them as any coating used to cover minor imperfections prior to shipment appearing after the main coating operation. Many operators indicated to staff that they did not consider the definition for touch-up coating, just the exemption. Staff has remedied this scenario by adding additional language to paragraph (j)(2) which will direct the reader to read the definition for a touch-up coating. The definition has also been revised to allow touch-up coatings prior to use, instead of prior to shipment, to be consistent with other air district authorities.

Survey and Reporting

Staff is conducting a survey with marine and pleasure craft coating manufacturers to determine the VOC inventory based on throughput. The survey will provide data to show the VOC content of the many marine and pleasure craft coatings used in the SCAQMD jurisdiction, as well as the volume of coatings used. This data will be used to establish an accurate VOC inventory for the marine and pleasure craft industry operating in the SCAQMD jurisdiction. Staff continues to collect data from marine coating and pleasure craft coating manufacturers and suppliers and when completed, an accurate VOC inventory will determine the overall impact the industry has on emission contribution. In addition, staff will be able to use the inventory to identify compliant and non-compliant products usage and take action to eliminate the use of non-compliant marine and pleasure craft coatings.

Staff will also require two reports from marine and pleasure craft coating manufacturers and one report from their distributors and these reports will be submitted to SCAQMD on an annual basis starting with 2015 and continuing up to 2018. The first of the reports will be the Annual Quantity Emissions Report (AQER) which will be due, annually, on April 1 beginning with the year 2015. This report will require both manufacturers and their distributors to document any marine and pleasure craft coating supplied into the SCAQMD, the volume that was supplied and the VOC content for each and every marine and pleasure craft coating. The second report will be the manufacturer's distributors list. This report will be due, annually, on April 1 beginning with the year 2015 and continuing up to 2018 and will document all the manufacturer's distributors that supply marine and pleasure craft coatings into the district.

Industry Issues and Staff Responses

ISSUES:	STAFF RESPONSES:
Recordkeeping requirements would add an undue burden to the UV/EB industry and would eliminate the current exemptions for UV/EB in Rule 109.	Proposed Amended Rule 1106 will not place undue burden on the UV/EB industry or eliminate current exemptions in Rule 109. Under proposed Rule 1106, records will be maintained pursuant to Rule 109, including the exemptions contained therein.
The UV/EB industry requests inclusion of a definition for energy curable materials and ASTM D7767 to the proposed rulemaking.	Staff added a definition for energy curable coatings to Proposed Amended Rule 1106 that will include a reference to ASTM D7767-11.
Additional flexibility should be offered to UV/EB processes as related to the requirements for transfer efficiency.	Aside from a VOC emissions reduction benefit, transfer efficiency requirements reduce PM2.5 and PM10 (overspray) which can travel by wind beyond property boundaries and become a nuisance to other entities in the area. In addition, transfer efficiency requirements also reduce spray particulate matter (PM2.5 and PM10) fallout from spray coating operations, which is important as many of the facilities spray coatings next to bodies of water and the fallout material can be washed into the water during cleanup.
There are a few coatings specified on submarine component drawings that are used on valves and these coatings will no longer be complaint due to the reduced VOC content limits in Proposed Amended Rule 1106. These coatings have to meet certain military specifications per U.S. Navy requirements.	Staff proposes to craft an exemption for these coatings of no more than 12 gallons per calendar year, of all products combined. This exemption will require that the products used shall be in compliance with the U.S. EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) for Shipbuilding and Ship Repair (Surface Coating) as provided in Part 63 of the Federal Register.
The revised definition for pleasure craft in the Proposed Amended Rule 1106 would move Disneyland's park attraction vessels out of the pleasure craft category for those that exceed 20 meters in length (Mark Twain, Columbia).	Staff has included additional language in the definition for pleasure craft to include amusement park attraction vessels regardless of their length.

ISSUES:	STAFF RESPONSES:
Reporting requirements for UV/EB manufacturers	Reporting by the manufacturers is not a disincentive to the end user, and has proved successful in other rules. In developing the inventory for low and near zero VOC marine and pleasure craft coatings, reporting of these products would be advantageous to the UV/EB coatings industry. It would show that these coatings are available and in use therefore, staff would have a basis to lower the allowable VOC limits in future rule amendments.

Public Process

Over the past four months, staff has worked with the American Coatings Association, as well as other interested parties on the proposed amendment. A working group meeting was held with industry representatives and interested stakeholders on June 17, 2015 and a public workshop was held with industry representatives and interested stakeholders on August 12, 2015. Staff has incorporated feedback received into the proposed amendment.

California Environmental Quality Act

In accordance with the California Environmental Quality Act (CEQA), the SCAQMD is the Lead Agency and prepared a Draft Environmental Assessment (EA) to analyze environmental impacts from the proposed project pursuant to its certified regulatory program (SCAQMD Rule 110). The Draft EA included a project description and analysis of potential adverse environmental impacts that could be generated from the proposed project. The Draft EA was released for a 30-day public review and comment period beginning August 19, 2015, and ending 5 p.m. on September 18, 2015. The environmental analysis in the Draft EA concluded that PAR 1106 would not generate any significant adverse impacts.

Since the release of the Draft EA, minor modifications have been made to the document. However, none of the modifications alter any conclusions reached in the Draft EA, nor provide new information of significance relative to the Draft document. As a result, these minor revisions do not require recirculation of the Draft EA pursuant to CEQA Guidelines § 15073.5. Therefore, the Draft EA is now a Final EA and is included as Attachment H in the Board Package.

Socioeconomic Analysis
The proposed amendment codifies existing practices at Marine and Pleasure Craft Coating Operations that are subject to current Rule 1106 and Rule 1106.1. As such, there will be no additional costs or other socioeconomic impacts anticipated. Therefore, no socioeconomic analysis is required under Health and Safety Code § 40728.5.

Implementation and Resource Impact
Existing SCAQMD resources will be sufficient to implement the proposed amendment with minimal impact on the budget.

Attachments
A. Summary of Proposal
B. Rule Development Process
C. Key Contacts List
D. Resolution
E. Proposed Rescinded Rule 1106.1
F. Proposed Amended Rule 1106
G. Final Staff Report
H. Final Supplemental Environmental Assessment

ATTACHMENT A
SUMMARY OF PROPOSAL

Proposed Amended Rule 1106 - Marine and Pleasure Craft Coating Operations

Subsume the requirements of Rule 1106.1 into Rule 1106

- Rescind Rule 1106.1
- Subsume the requirements of Rule 1106.1 into Rule 1106

Align VOC limits of certain coating categories consistent with U.S. EPA Control Techniques Guidelines (CTG) and other local APCDs/AQMDs

- Inorganic Zinc Coating - Align with U.S. CTG
- Pretreatment Wash Primer - Align with other California APCDs/AQMDs
- Antenna Coating - Align with other California APCDs/AQMDs
- Repair and Maintenance Thermoplastic Coating - Align with other California APCDs/AQMDs
- Specialty Marking Coating - Align with other California APCDs/AQMDs

Add new coating categories consistent with U.S. EPA Control Techniques Guidelines (CTG) and other local APCDs/AQMDs

- Marine Aluminum Antifoulant
- Mist Coating
- Nonskid Coating
- Organic Zinc Coating
- Marine Deck Primer Sealant

Other revisions and clarifications

- Inclusion of a most restrictive VOC content limit
- Prohibition of possession, specification and sale of non-compliant coatings
- Establish requirements for transfer efficiency, labeling, recordkeeping and reporting

ATTACHMENT B
RULE DEVELOPMENT PROCESS
Proposed Amended Rule 1106 -
Marine and Pleasure Craft Coating Operations

Beginning of Rule Development Process
October 2014

↓

Working Group Meeting - with Industry
June 17, 2015

↓

Stationary Source Committee Meeting
July 24, 2015

↓

Public Workshop - with Industry
August 12, 2015

↓

Set Hearing
September 4, 2015

↓

Public Hearing
October 2, 2015

Ten (10) months spent in rule development

ATTACHMENT C
KEY CONTACTS LIST
Proposed Amended Rule 1106 -
Marine and Pleasure Craft Coating Operations

Marine Coating Manufacturers

- Akzo Nobel
- Epifanes NA Inc.
- Pacific Southwest Coatings
- Pettit Marine Paints
- PPG Industries
- Rust-Oleum
- The Sherwin Williams Company
- Valspar Paint

Pleasure Craft Category: Boatyards, marinas and shipyards

- Al Larson Boat Shop
- Balboa Boatyard
- Basin Marine
- Cabrillo Boat Shop
- Dana Point Shipyard
- Gambol Industries
- King Harbor Marine Center
- Larson's Shipyard
- Marina Shipyard
- Newport Harbor Shipyard
- Seamark Marine
- South Coast Shipyard
- Sunset Aquatic Shipyard
- The Boatyard
- Windward Yacht & Repair Center

Marine Category: Ships

- Queen Mary
- Pacific Battleship Center, U.S.S. Iowa
- S.S. Lane Victory

Government Agencies

- Department of Pesticide Regulation (DPR)
- Los Angeles Regional Water Quality Control Board
- U.S. Environmental Protection Agency (U.S. EPA)

Other Interested Parties

- American Coatings Association (ACA)
- DDU Enterprises, Inc.
- Disneyland Resort
- E4 Strategic Solutions, Inc.
- EPMAR Corporation
- Heraeus Noble Light America, LLC
- Institute of Research and Technical Assistance (IRTA)
- Llewellen Supply
- Raymond Regulatory Resources, LLC (3R)
- UV Specialties, LLC
- VACCO Industries
- Wave Front Technology
- West Coast Marine

ATTACHMENT D
RESOLUTION NO. 15 -_____

A Resolution of the South Coast Air Quality Management District (SCAQMD) Governing Board amending Rule 1106 – Marine Coating Operations as set forth in Proposed Amended Rule 1106 – Marine and Pleasure Craft Coating Operations, and rescinding Rule 1106.1 – Pleasure Craft Coating Operations.

A Resolution certifying the Final Environmental Assessment for Proposed Amended Rule 1106 - Marine and Pleasure Craft Coating Operations and Rescission of Rule 1106.1 – Pleasure Craft Coating Operations.

WHEREAS, the SCAQMD Governing Board has determined with certainty that proposed amended Rule 1106 and the rescission of Rule 1106.1 is a "project" pursuant to the terms of the California Environmental Quality Act (CEQA); and

WHEREAS, the SCAQMD 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 SCAQMD has prepared a Draft Environmental Assessment (EA) pursuant to its certified regulatory program and CEQA guidelines Section 15252 setting forth the potential environmental consequences of proposed amended Rule 1106 and the rescission of Rule 1106.1; and

WHEREAS, the SCAQMD staff has determined in the Draft EA that potential adverse environmental impacts were not significant; and

WHEREAS, the Draft EA was circulated for a 30-day public review and comment period, no comment letters were received, and the Draft EA has been revised such that it is now a final EA; and

WHEREAS, it is necessary that the adequacy of the Final EA including responses to comments must be determined by the South Coast Air Quality Management District Governing Board prior to its certification; and

WHEREAS, the SCAQMD is not required to prepare a State of Findings, a Statement of Overriding Considerations, or a Mitigation Monitoring Plan because the proposed project is not expected to generate significant adverse environmental impacts; and

WHEREAS, the SCAQMD Governing Board has determined that a need exists to rescind Rule 1106.1 and amend Rule 1106 to enhance readability and provide clarity of the rule language; and

WHEREAS, the SCAQMD Governing Board obtains its authority to rescind Rule 1106.1 and amend Rule 1106 from Sections 39002, 40000, 40001, 40440, 40702 and 41508 of the California Health and Safety Code; and

WHEREAS, the SCAQMD Governing Board has determined that Rule 1106.1 as proposed to be rescinded, and Rule 1106 as proposed to be amended, are written or displayed so that its meaning can be easily understood by the persons directly affected by it; and

WHEREAS, the SCAQMD Governing Board has determined that Rule 1106.1 as proposed to be rescinded, and Rule 1106 as proposed to be amended, are in harmony with, and not in conflict with or contradictory to, existing federal or state statutes, court decisions, or regulations; and

WHEREAS, the SCAQMD Governing Board has determined that Rule 1106.1 as proposed to be rescinded, and Rule 1106 as proposed to be amended, do not impose the same requirements as any existing state or federal regulation and the proposed amendments to the rule are necessary and proper to execute the powers and duties granted to, and imposed upon, the SCAQMD; and

WHEREAS, the SCAQMD Governing Board has determined that rescinding 1106.1 and amending Rule 1106 reference the following statutes which the SCAQMD hereby implements, interprets or makes specific; Health and Safety Code Sections 40001 (a) and (b) (air quality standards and air pollution episodes); 40702 (adoption of rules and regulations); and, 40440 (rules and regulations to carry out the air quality management plan and to require best available retrofit control technology); and

WHEREAS, the SCAQMD Governing Board has determined that a Socioeconomic Impact Assessment is not required, pursuant to Health and Safety Code Section 40440.8 or Section 40728.5, because proposed amended Rule 1106 and the rescission of Rule 1106.1 will not have a significant impact on air quality or emissions limitations; and

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

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

WHEREAS, the SCAQMD Governing Board specifies the manager of rescinded Rule 1106.1 and proposed amended Rule 1106 as the custodian of the documents or other materials which constitute the record of proceedings upon which the adoption of this proposed amendments are based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California; and

WHEREAS, the SCAQMD Governing Board finds and determines, taking into consideration the factors in Section (d)(4)(D) of the Governing Board Procedures (to be codified as Section 30.5(4)(D) of the Administrative Code), that the modifications adopted which have been made to Proposed Amended Rule 1106 and to the proposed rescission of Rule 1106.1, 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 Section 40726; and

WHEREAS, the SCAQMD Governing Board has determined that proposed amended Rule 1106 and the rescission of Rule 1106.1 should be adopted for the reasons contained in the Final Staff Report.

NOW, THEREFORE, BE IT RESOLVED, that the SCAQMD Governing Board has received and considered the EA and hereby determines that the EA is adequate and certifies, pursuant to the authority granted by law, the Final EA for proposed amended Rule 1106 and rescission of Rule 1106.1, and

BE IT FURTHER RESOLVED, that the SCAQMD Governing Board does hereby adopt the proposed amended Rule 1106 and rescind Rule 1106.1, pursuant to the authority granted by law as set forth in the attached and incorporated herein by reference.

BE IT FURTHER RESOLVED, that the SCAQMD Governing Board requests that proposed amended Rule 1106 be submitted into the State Implementation Plan.

BE IT FURTHER RESOLVED, that the Executive Officer is hereby directed to forward a copy of this Resolution, the rescinded Rule 1106.1 and proposed amended Rule 1106 to the California Air Resources Board for approval and subsequent submittal to the U.S. Environmental Protection Agency for inclusion into the State Implementation Plan.

DATE: _____ _____

CLERK OF THE BOARDS

ATTACHMENT E

(Adopted May 1, 1992)(Amended March 8, 1996)
(Amended June 13, 1997)(Amended February 12, 1999)
(Proposed Rescinded Rule 1106.1 October 2, 2015)

Proposed Rescinded Rule 1106.1. PLEASURE CRAFT COATING OPERATIONS

Rescinded by the South Coast Air Quality Management District Board on October 2, 2015.

~~(a) Applicability~~

~~This rule is applicable to all coating operations of pleasure craft, as defined in paragraph (b)(10) of this rule, or their parts and components, for the purpose of refinishing, repairing, modification, or manufacturing such craft. This rule shall also apply to establishments engaged in activities described in the United States Office of Management and Budget's 1987 Standard Industrial Classification Manual, under Standard Industrial Classification (SIC) codes 3732 - Boat Building and Repairing and 4493 - Marinas. Pleasure craft coating operations which are subject to the requirements of this rule shall not be subject to the requirements of Rule 1106 - Marine Coating Operations.~~

~~(b) Definitions~~

~~For purposes of this rule, the following definitions shall apply:~~

~~(1) AEROSOL COATING PRODUCT is 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 traffic/marking applications.~~

~~(2) ANTIFOULANT COATING is any coating applied to the underwater portion of a pleasure craft to prevent or reduce the attachment of biological organisms, and registered with the United States Environmental Protection Agency (EPA) as a pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act (7 United States Code Section 136).~~

~~(3) CLEAR WOOD FINISHES are clear and semi-transparent topcoats applied to wood substrates to provide a transparent or translucent film.~~

~~(4) EXEMPT COMPOUNDS (See Rule 102 Definition of Terms).~~

~~(5) EXTREME HIGH GLOSS COATING is any coating which achieves at least 95 percent reflectance on a 60o meter when tested by ASTM Method D 523-89.~~

(6) FINISH PRIMER/SURFACER is a coating applied with a wet film thickness of less then 10 mils prior to the application of a topcoat for purposes of providing corrosion resistance, adhesion of subsequent coatings, a moisture barrier, or promotion of a uniform surface necessary for filling in surface imperfections.

(7) GRAMS OF VOC PER LITER OF COATING, LESS WATER AND LESS EXEMPT COMPOUNDS is the weight of VOC per combined volume of VOC and coating solids and which is 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:

W_s = weight of volatile compounds in grams

W_w = weight of water in grams

W_{es} = weight of exempt compounds in grams

V_m = volume of material in liters

V_w = volume of water in liters

V_{es} = volume of exempt compounds in liters

(8) HIGH BUILD PRIMER/SURFACER is a coating applied with a wet film thickness of 10 mils or more prior to the application of a topcoat for purposes of providing corrosion resistance, adhesion of subsequent coatings, or a moisture barrier, or promoting a uniform surface necessary for filling in surface imperfections.

(9) HIGH GLOSS COATING is any coating which achieves at least 85 percent reflectance on a 60o meter when tested by ASTM D 523-89.

(10) PLEASURE CRAFT are vessels which are manufactured or operated primarily for recreational purposes, or leased, rented, or chartered to a person or business for recreational purposes. The owner or operator of such vessels shall be responsible for certifying that the intended use is for recreational purposes.

(11) PLEASURE CRAFT COATING is any marine coating, except unsaturated polyester resin (fiberglass) coatings, applied by brush, spray, roller, or other means to a pleasure craft.

(12) PRETREATMENT WASH PRIMER is a coating which contains no more than 12 percent solids, by weight, and at least 1/2 percent acids, by weight; is used to provide surface etching; and is applied directly to fiberglass and metal surfaces to provide corrosion resistance and adhesion of subsequent coatings.

(13) SEALER is a low viscosity coating applied to bare wood to seal surface pores to prevent subsequent coatings from being absorbed into the wood.

(14) TEAK PRIMER is a coating applied to teak or previously oiled decks in order to improve the adhesion of a seam sealer to wood.

(15) TOPCOAT is any final coating applied to the interior or exterior of a pleasure craft.

(16) VARNISHES are clear wood topcoats formulated with various resins to dry by chemical reaction on exposure to air.

(17) VOLATILE ORGANIC COMPOUND (VOC) is any volatile compound which contains the element carbon, excluding methane, carbon dioxide, carbon monoxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds.

(c) Requirements

(1) VOC Content

(A) Within the District, a person shall not sell, offer for sale, solicit, apply, or require any other person to use in the District any pleasure craft coating with a VOC content in excess of the following limits, expressed as grams of VOC per liter of coating applied, less water and exempt solvents:

COATING	VOC LIMIT		
	On or After 7/1/94	On or After 2/12/99	On or After 1/1/2001
Topcoats			
Extreme High Gloss	490	650	490
High Gloss	420	420	420
Pretreatment Wash Primers	780	780	780
Finish Primer/Surfacer	420	600	420
High Build Primer Surfacer	340	340	340
Teak Primer	775	775	775

COATING	VOC LIMIT		
	On or After 7/1/94	On or After 2/12/99	On or After 1/1/2001
Antifoulant Coatings			
Aluminum Substrate	560	560	560
Other Substrates	150	400	330
Clear Wood Finishes			
Sealers	550	550	550
Varnishes	490	490	490
Others	420	420	420

In the case of any coating sold, offered for sale, or solicited for use, this prohibition shall only apply where it is designated anywhere on the container by any sticker or label affixed thereto, or where it is indicated in any sales or advertising literature, that the coating may be used as, or is suitable for use as, a pleasure craft coating.

(B) This section shall not apply to pleasure craft coatings sold, offered for sale, or solicited, for shipment or use outside of this District or for shipment to other manufacturers for repackaging.

(2) Solvent cleaning of coating application equipment, parts, products, tools, machinery, equipment, and general work areas, and the storage and disposal of VOC-containing materials used in solvent cleaning operations, shall be carried out in accordance with Rule 1171 (Solvent Cleaning Operations).

(3) A person shall not apply pleasure craft coatings subject to the requirements of this rule with a coating containing carbon tetrachloride or any of the Group II exempt compounds as defined in paragraph (b)(4) except for: methylene chloride; perchloroethylene; cyclic, branched, or linear, completely methylated siloxanes (VMS); or parachlorobenzotrifluoride (PCBTF).

(d) Recordkeeping Requirement

Records shall be maintained in accordance with Rule 109.

(e) Compliance Test Methods

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

(1) VOC Content

(A) The VOC content of coatings shall be determined by:

(i) EPA Reference Method 24, (40 Code of Federal Regulations, Part 60, Appendix A). The exempt solvent content shall be determined by SCAQMD Method 302 and 303 (SCAQMD "Laboratory Method of Analysis for Enforcement Samples" manual); or

(ii) SCAQMD Methods 304 – Determination of Volatile Organic Compounds (VOC) in Various Materials, 303 – Determination of Exempt Compounds, and 302 – Distillation of Solvents from Paints, Coatings and Inks (SCAQMD "Laboratory Method of Analysis for Enforcement Samples" manual).

(B) VOC content determined to exceed the limits established by this rule through the use of any of the above-referenced test methods shall constitute a violation of this rule.

(2) Acid Content in Coatings

The percent acid by weight of pretreatment wash primers shall be determined by ASTM D 1613-85 – Acidity in Volatile Solvents and Chemical Intermediates Used in Paints, Varnishes, Lacquers, and Related Products.

(3) 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; and 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 at such time as manufacturers specify which individual compounds are used in the coating formulations and identify the test methods, which prior to such analysis, have been approved by the USEPA and the SCAQMD, that can be used to quantify the amounts of each exempt compound.

(f) Exemptions

The provisions of this rule shall not apply to aerosol coating products.

ATTACHMENT F

(Adopted November 4, 1988)(Amended May 5, 1989)(Amended June 2, 1989)
(Amended March 2, 1990)(Amended November 2, 1990)(Amended December 7, 1990)
(Amended August 2, 1991)(Amended January 13, 1995)
(Proposed Amended Rule 1106 October 2015)

PROPOSED AMENDED RULE 1106. MARINE AND PLEASURE CRAFT COATING OPERATIONS

(a) Purpose

The purpose of this rule is to reduce emissions of volatile organic compounds (VOC) and stratospheric ozone depleting and global warming compounds from Marine and Pleasure Craft Coating Operations.

(~~a~~b) Applicability

This rule applies to:

(1) MARINE COATING OPERATIONS:

~~This rule applies to~~Which means all coating operations of boats, ships, and vessels, and their appurtenances, including but not limited to structures, such as piers, docks ~~and~~, ~~to~~buoys and oil drilling rigs, intended for exposure to either a marine or fresh water environment.~~Coating operations of vessels which are manufactured or operated primarily for recreational purposes are subject to the requirements of Rule 1106.1 - Pleasure Craft Coating Operations.~~

(2) PLEASURE CRAFT COATING OPERATIONS:

Which means all coating operations for purposes of refinishing, repairing, modifying, or manufacturing of pleasure craft as defined in paragraph (c)(~~29~~30) of this rule, and to their parts and components.

(~~b~~c) Definitions

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

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

(2) AIR DRIED COATING is any coating that is formulated by the manufacturer to be cured at a temperature below 90 °~~o~~C (194 °~~o~~F).

(3) ANTENNA COATING is any coating applied to equipment and associated structural appurtenances which are used to receive or transmit electromagnetic signals.

(4) ~~ANTIFOULING~~ ANTIFOULANT COATING is any coating applied to the underwater portion of ~~a~~ boats, ships, vessels, ~~vessel~~ or pleasure craft to prevent or reduce the attachment of biological organisms~~. An antifouling coating~~ and shall be registered with the ~~Environmental Protection Agency (EPA) as a pesticide~~United States Environmental Protection Agency ("U.S. EPA") as a pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act (7 United States Code Section 136).

(5) BAKED COATING is any coating that is formulated by the manufacturer to be cured at a temperature at or above 90 °~~o~~C (194 °~~o~~F).

(6) CLEAR WOOD COATINGS are clear and semi-transparent topcoats applied to wood substrates to provide a transparent or translucent film.

(7) DISTRIBUTOR means any person to whom a ~~consumer~~ product is sold or supplied for the purposes of resale or distribution in commerce, except that manufacturers, retailers, and consumers are not distributors.

(~~6~~8) ELASTOMERIC ADHESIVE is any adhesive containing natural or synthetic rubber.

(9) ENERGY CURABLE COATINGS are single-component reactive products that cure upon exposure to visible-light, ultra-violet light or to an electron beam. The VOC content of thin film Energy Curable Marine and Pleasure Craft Coatings may be determined by manufacturers using ASTM Test Method 7767-11 "Standard Test Method to Measure Volatiles from Radiation Curable Acrylate Monomers, Oligomers, and Blends and Thin Coatings Made from Them".

(~~7~~910) EXEMPT COMPOUNDS ~~are any of the following compounds:~~(See Rule 102 - Definition of Terms).

~~(A) Group I (General)~~

~~trifluoromethane (HFC-23)~~

~~pentafluoroethane (HFC-125)~~

~~1,1,2,2-tetrafluoroethane (HFC-134)~~

~~tetrafluoroethane (HFC-134a)~~

~~1,1,1-trifluoroethane (HFC-143a)~~

~~1,1-difluoroethane (HFC-152a)~~

~~chlorodifluoromethane (HCFC-22)~~

~~dichlorotrifluoroethane (HCFC-123)~~

~~2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124)~~

~~dichlorofluoroethane (HCFC-141b)~~

~~chlorodifluoroethane (HCFC-142b)~~

~~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~~

~~(B) Group II~~

~~methylene chloride~~

~~1,1,1-trichloroethane (methyl chloroform)~~

~~trichlorotrifluoroethane (CFC-113)~~

~~dichlorodifluoromethane (CFC-12)~~

~~trichlorofluoromethane (CFC-11)~~

~~dichlorotetrafluoroethane (CFC-114)~~

~~chloropentafluoroethane (CFC-115)~~

~~The use of Group II compounds and/or carbon tetrachloride may be restricted in the future because they are toxic, potentially toxic, upper-atmosphere ozone depleters, or cause other environmental impacts. By January 1, 1996, production of chlorofluorocarbons (CFC), 1,1,1,-trichloroethane (methyl chloroform), and carbon tetrachloride will be phased out in accordance with the Code of Federal Regulation Title 40, Part 82 (December 10, 1993).~~

(~~810~~11) EXTREME HIGH GLOSS COATING is any coating which achieves at least 95 percent reflectance on a 60°~~o~~ meter when tested by ASTM Test Method D-523-14 "Standard Test Method for Specular Gloss".

(~~11~~12) FINISH PRIMER/SURFACER is any coating applied with a wet film thickness of less than 10 mils (one mil = 0.001 of an inch) and is applied prior to the application of a Marine or Pleasure Craft Coating for the purpose of providing corrosion resistance, adhesion for subsequent coatings, a moisture barrier, and promotes a uniform surface necessary for filling in surface imperfections.

(~~912~~13) GRAMS OF VOC PER LITER OF COATING, LESS WATER AND LESS EXEMPT COMPOUNDS, OR REGULATORY VOC, is the weight of VOC per combined volume of VOC and coating solids and can be calculated by the following equation:

Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds = $\frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$

Where: W_s = weight of volatile compounds in grams
W_w = weight of water in grams
W_{es} = weight of exempt compounds in grams
V_m = volume of material in liters
V_w = volume of water in liters
V_{es} = volume of exempt compounds in liters

(~~13~~14) GRAMS OF VOC PER LITER OF MATERIAL, OR ACTUAL VOC, is the weight of VOC per volume of material and shall be calculated by the following equation:

Grams of VOC per Liter of Material = $\frac{W_s - W_w - W_{es}}{V_m}$

Where: W_s = weight of volatile compounds in grams
W_w = weight of water in grams
W_{es} = weight of exempt compounds in grams
V_m = volume of material in liters

(~~1014~~15) HEAT RESISTANT COATING is any coating which during normal use must withstand temperatures of at least 204 °~~o~~C (400 °~~o~~F).

(~~1115~~16) HIGH GLOSS COATING is any coating which achieves at least 85 percent reflectance on a 60°~~o~~ meter when tested by ASTM Method D-523-14 –"Standard Test Method for Specular Gloss".

(~~1216~~17) HIGH TEMPERATURE COATING is any coating that during normal use ~~which~~ must withstand temperatures of at least 426 °~~o~~C (800 °~~o~~F).

(~~17~~18) HIGH BUILD PRIMER/SURFACER is any coating applied with a wet film thickness of 10 mils or more (one mil = 0.001 of an inch) prior to the application of a topcoat for purposes of providing corrosion resistance, adhesion of subsequent coatings, a moisture barrier, or promoting a uniform surface necessary for filling in surface imperfections.

(~~18~~19) HIGH-VOLUME, LOW-PRESSURE (HVLP) means spray application equipment designed to atomize 100 percent by air pressure only and is

operated between 0.1 and 10 pounds per square inch~~,~~ gauge~~,~~ (psig), air atomizing pressure measured dynamically at the center of the air cap and at the air horns.

(~~19~~20) INORGANIC ZINC COATING is a coating that contains 960 grams per liter or more elemental zinc incorporated into an inorganic silicate binder that is applied to steel to provide galvanic corrosion resistance.

(~~13~~20~~21~~) LOW ACTIVATION INTERIOR COATING is any coating used on interior surfaces aboard ~~ships~~ boats, ships, and vessels, to minimize the activation of pigments on painted surfaces within a radiation environment.

(~~21~~22) LOW-SOLIDS COATINGS are coatings containing one pound or less of solids per gallon of material.

(~~14~~22~~23~~) MARINE COATING is any coating, except unsaturated polyester resin (fiberglass) coatings, containing volatile organic materials and applied by any means to ~~ships,~~ boats, ships, and vessels, and their appurtenances, structures such as piers, ~~and~~ docks, ~~intended for exposure to a marine environment, and also to~~ buoys and oil drilling rigs, intended for ~~the~~ exposure to either a marine or fresh water environment.

(~~23~~24) MARINE DECK SEALANT PRIMER is any sealant primer intended by the manufacturer to be applied to wooden marine decks. A sealant primer is any product intended by the manufacturer to be applied to a substrate, prior to the application of a sealant, to enhance the bonding surface.

(~~15~~24~~25~~) METALLIC HEAT RESISTANT COATING is any coating which contains more than 5 grams of metal particles per liter of coating as applied and which must withstand temperatures over 80 °~~o~~C (~~175~~176 °~~o~~F).

(~~25~~26) MIST COATING is any low viscosity, thin film, epoxy coating applied to an inorganic zinc primer that penetrates the porous zinc primer and allows the occluded air to escape through the film prior to curing.

(~~16~~26~~27~~) NAVIGATIONAL AIDS COATING is any coating that is applied to ~~are~~ buoys or other Coast Guard waterway markers that are recoated aboard ship at their usage site and immediately returned to the water.

(~~27~~28) NONSKID COATING means any coating applied to the horizontal surface of a marine vessel for the specific purpose of providing slip resistance for personnel.

(~~28~~29) ORGANIC ZINC COATING is a coating that contains 960 grams per liter or more elemental zinc incorporated into an organic silicate binder that is applied to steel to provide galvanic corrosion resistance.

~~(17) PRETREATMENT WASH PRIMER is any coating which contains at least 1/2 percent acids, by weight, to provide surface etching and is applied directly to metal surfaces to provide corrosion resistance, adhesion, and ease of stripping.~~

(~~29~~30) PLEASURE CRAFT are marine or fresh water vessels that are less than 20 meters in length and are manufactured or operated primarily for recreational purposes, or are leased, rented, or chartered to a person or business for recreational purposes. Vessels operated in amusement~~Amusement~~ theme parks ~~that operate vessels~~ in a fresh water environment solely for the purpose of an amusement park attraction shall be considered pleasure craft vessels regardless of their length. The owner or operator of a pleasure craft vessel shall be responsible for certifying that the intended use is for recreational purposes.

(~~30~~31) PLEASURE CRAFT COATING is any marine coating, except unsaturated polyester resin (fiberglass) coatings, applied by brush, spray, roller, or other means to a pleasure craft. A pleasure craft coating that is sold, offered for sale, or solicited for use within the South Coast Air Quality Management District (SCAQMD) jurisdiction must be designated by the manufacturer as a pleasure craft coating by any sticker or label affixed on the container, or where it is indicated in any sales or advertising literature, that the coating may be used as, or is suitable for use as, a pleasure craft coating.

(~~31~~32) PRETREATMENT WASH PRIMER is a coating which contains a minimum of 1/2 percent acid, by weight, applied directly to bare metal surfaces to provide necessary surface etching.

(~~1832~~33) REPAIR AND MAINTENANCE THERMOPLASTIC COATING is any resin-bearing coating, such as vinyl, chlorinated rubber, or bituminous coatings, in which the resin becomes pliable with the application of heat, and is used to recoat portions of a previously coated substrate which has sustained damage to the coating following normal coating operations.

(~~1933~~34) SEALANT FOR WIRE-SPRAYED ALUMINUM is any coating of up to one mil (one mil = 0.001 of an inch) in thickness of an epoxy

material which is reduced for application with an equal part of an appropriate solvent (naphtha, or ethylene glycol monoethyl ether).

(~~34~~35) SEALER is a coating applied to bare wood to seal surface pores to prevent subsequent coatings from being absorbed into the wood.

(~~2035~~36) SOLVENT CLEANING OPERATION is ~~the removal of loosely held uncured adhesives, uncured inks, uncured coatings, and contaminants from parts, products, tools, machinery, equipment, and general work areas. Contaminants include, but are not limited to, dirt, soil, and grease. In a cleaning process which consists of a series of cleaning methods, each distinct method shall constitute a separate solvent cleaning operation~~as defined in Rule 1171 - Solvent Cleaning Operations.

(~~2136~~37) SPECIAL MARKING COATING is any coating used for items such as flight decks, ~~ships'~~ vessel identification numbers~~,~~ and other demarcations for safety~~/~~ or identification~~applications~~.

(~~2237~~38) TACK COAT is an epoxy coating of up to two mils ~~(0.002 inch)~~ (one mil = 0.001 of an inch) thick applied to an existing epoxy coating. The existing epoxy coating must have aged beyond the time limit specified by the manufacturer for application of the next coat.

(~~38~~39) TEAK PRIMER is a coating applied to teak wood or previously oiled teak wood decks in order to improve the adhesion of a seam sealer.

(~~39~~40) TOPCOAT is any final coating applied to the interior or exterior of a marine or pleasure craft.

(~~2340~~41) TOUCH-UP COATING is any coating operation incidental to the main coating process but necessary ~~used~~ to cover minor imperfections ~~prior to shipment appearing after the main coating operation~~or minor mechanical damage incurred prior to ~~intended~~ use.

(~~41~~42) TRANSFER EFFICIENCY means the amount of coating solids adhering to the object being coated divided by the total amount of coating solids sprayed; expressed as a percentage.

(~~2442~~43) UNDERSEA WEAPONS SYSTEM COATING is any coating applied to any or all components of a weapons system intended for exposure to a marine environment and~~that is~~ intended to be launched or fired ~~underwater~~undersea.

(~~43~~44) VARNISHES are clear or pigmented wood topcoats formulated with various resins to dry by chemical reaction.

(~~25~~44~~45~~) VOLATILE ORGANIC COMPOUND (VOC) is ~~any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds~~as defined in Rule 102 - Definition of Terms.

(~~26~~45~~46~~) WIRE-SPRAYED ALUMINUM is any molten multi-aluminum coating applied to a steel substrate using oxygen fueled combustion spray ~~methods~~equipment.

(~~c~~d) Requirements

(1) VOC Content of Marine Coatings

Except as otherwise provided in this rule, a person shall not apply a marine coating within the SCAQMD jurisdiction with a VOC content in excess of the following limits shown in the Table of Standards I, expressed as grams of VOC per liter of coating, as applied, less water and less exempt solvents:

	~~Baked~~	~~Air Dried~~
~~General Coating~~	~~275 g/L~~	~~340 g/L~~
~~Specialty Coating~~		
~~Heat Resistant~~	~~360~~	~~420~~
~~Metallic Heat Resistant~~		~~530~~
~~High Temperature~~		~~500~~
~~Pre-Treatment Wash Primer~~	~~780~~	~~780~~
~~Underwater Weapons Systems~~	~~275~~	~~340~~
~~Elastomeric Adhesives with 15%, by Weight, Natural or Synthetic Rubber~~		~~730~~
~~Solvent-Based Inorganic Zinc~~		~~650~~
~~Navigational Aids~~		~~340~~
~~Sealant for Wire-Sprayed Aluminum~~		~~610~~
~~Special Marking~~		~~490~~
~~Tack Coat~~		~~610~~
~~Low Activation Interior Coating~~		~~420~~
~~Repair and Maintenance Thermoplastic~~		~~550~~

~~Extreme High-Gloss Coating 420 490~~

~~Antenna Coating 530~~

~~Antifoulant 400~~

~~High Gloss 275 340~~

TABLE OF STANDARDS I

MARINE COATING CATEGORY	VOC LIMITS Less water and exempt compounds Grams per Liter (g/L)	
	BAKED	AIR DRIED
	CURRENT LIMIT	CURRENT LIMIT
Antenna Coating		340
Antifoulant Coatings:		
Aluminum Substrates		560
Other Substrates		400
Elastomeric Adhesives (with 15%, by Weight, Natural or Synthetic Rubber)		730
Inorganic Zinc Coating		340
Low Activation Interior Coating		420
Mist Coating		610
Navigational Aids Coating		340
Nonskid Coating		340
Organic Zinc Coating		340
Pre-Treatment Wash Primer	420	420
Repair and Maintenance Thermoplastic Coating		340
Sealant for Wire-Sprayed Aluminum		610
Special Marking Coating		420
Specialty Coatings:		
Heat Resistant Coating	360	420
Metallic Heat Resistant Coating		530
High Temperature Coating		500
Tack Coating		610
Topcoats:		
Extreme High-Gloss Coating	420	490
High Gloss Coating	275	340
Underwater Weapons Systems Coating	275	340
Any Other Coating Type	275	340

(2) VOC Content of Pleasure Craft Coatings

Except as otherwise provided in this rule, a person shall not apply a pleasure craft coating within the SCAQMD jurisdiction with a VOC content in excess of the following limits shown in the Table of Standards

II, expressed as grams of VOC per liter of coating, as applied, less water and less exempt solvents:

TABLE OF STANDARDS II

VOC LIMITS Less water and exempt compounds Grams per Liter (g/L)	
PLEASURE CRAFT COATING CATEGORY	CURRENT LIMIT
Antifoulant Coatings:	
Aluminum Substrate	560
Other Substrate	330
Clear Wood Coatings:	
Sealers	550
Varnishes	490
Primer Coatings:	
Finish Primer/Surfacer	420
High Build Primer/Surfacer	340
Marine Deck Sealant Primer	760
Pretreatment Wash Primer	780
Teak Primer	775
Topcoats:	
Extreme High Gloss Coating	490
High Gloss Coating	420
Any Other Coating Type	420

(3) VOC Content of Low-Solids Coatings

Except as otherwise provided in this rule, a person shall not apply a marine coating or a pleasure craft coating within the SCAQMD jurisdiction with a VOC content in excess of the following limit shown in the Table of Standards III, expressed as grams of VOC per material of coating, as applied:

TABLE OF STANDARDS III

VOC LIMIT – MARINE & PLEASURE CRAFT COATINGS Grams per liter of material VOC	
COATING CATEGORY	CURRENT LIMIT
Low-Solids Coating	120

(4) Most Restrictive VOC Limit

If any representation or information on the container of any coating subject to this rule, or any label or sticker affixed to the container, or in any sales, advertising, or technical literature that indicates that the coating meets the definition of or is recommended for use for more than one of the marine coating categories listed in ~~sub~~paragraph (d)(1) or the pleasure craft coating categories listed in ~~sub~~paragraph (d)(2), or the low-solids coating category listed in ~~sub~~paragraph (d)(3), then the lowest VOC content limit shall apply.

~~anywhere on the container of any coating listed in either Table of Standards or label theretoor literatureany representation is made that the coating may be used as, or is suitable for use as, a for which a lower standard is specified in the table or in paragraph(d)(1) or (d)(2), standard~~

(~~2~~5) Approved Emission Control System

~~(A) Approved Emission Control System~~

~~Owners and/or operators may comply with the provisions of paragraph (c)(1) by using an emission control system, which has been approved in writing by the Executive Officer, for reducing VOC emissions. The control system must achieve a minimum capture efficiency using USEPA, ARB, and District methods specified in subparagraph (c)(4)(A) and a destruction efficiency of at least 85 percent by weight, and,~~

~~(B) The approved system shall reduce the VOC emissions, when using non-compliant coatings, to an equivalent or greater level that would be achieved by the provisions in paragraph (c)(1)~~A person may comply with the provisions of paragraphs (d)(1), (d)(2) or (d)(3), by using an approved emission control system, consisting of a collection and control device, provided such emission control system is approved pursuant to Rule 203 - Permit to Operate, in writing, by the Executive Officer for reducing emissions of VOC. The Executive Officer shall approve such emission control system only if the VOC emissions resulting from the use of non-compliant coatings will be reduced to a level equivalent to or lower than the limits specified in paragraphs (d)(1), (d)(2) or (d)(3), as applicable. The required efficiency of an emission control system at which an equivalent or greater level of VOC reduction will be achieved shall be calculated by the following equation:

$$C.E. = \left[1 - \left\{ \frac{(VOC_{LWc})}{(VOC_{LWn,Max})} \times \frac{1 - (VOC_{LWn,Max}/D_{n,Max})}{1 - (VOC_{LWc}/D_c)} \right\} \right] \times 100\%$$

Where: C. E. = Control Efficiency, expressed as a percentage

VOC_{LWc} = VOC Limit of Rule 1106, less water and less exempt compounds, pursuant to subdivision (~~e~~d).

$VOC_{LWn,Max}$ = Maximum VOC content of non-compliant coating used in conjunction with a control device, less water and less exempt compounds.

$D_{n,Max}$ = Density of solvent, reducer, or thinner contained in the non-compliant coating, containing the maximum VOC content of the multi-component coating.

D_c = Density of corresponding solvent, reducer, or thinner used in the compliant coating system = 880 g/L.

(~~3~~6) Alternative Emission Control Plan

~~Owners and/or operators may achieve compliance with the requirements~~A person may comply with the provisions of paragraphs (d)(1), (d)(2) and (d)(3)~~paragraph (c)(1)~~ by means of an Alternative Emission Control Plan, pursuant to Rule 108 - Alternative Emissions Control Plans.

(7) Exempt Compounds

A person shall not manufacture, sell, offer for sale, distribute for use in the SCAQMD jurisdiction, or apply any marine or pleasure craft coating which contains any Group II Exempt Compounds listed in Rule 102 - Definition of Terms, in quantities greater than 0.1 percent by weight. Cyclic, branched, or linear, completely methylated siloxanes (VMS) are not subject to this provision.

(8) Carcinogenic Materials

A person shall not manufacture, sell, offer for sale, distribute for use in the SCAQMD jurisdiction, or apply any marine or pleasure craft coating which contains cadmium, nickel, lead or hexavalent chromium that was introduced as a pigment or as an agent to impart any property or

characteristic to the marine or pleasure craft coatings during manufacturing, distribution, or use of the applicable marine or pleasure craft coatings.

(9) Transfer Efficiency

(A) Effective April 1st, 2016 a person shall not apply any marine coating or pleasure craft coating unless one of the following methods of coating transfer is used:

(i) electrostatic application, or

(ii) high-volume, low-pressure (HVLP) spray, or

(iii) brush, dip, or roller, or

(iv) Spray gun application, provided the owner or operator demonstrates that the spray gun meets the HVLP definition in paragraph (c)(~~18~~19) in design and use. A satisfactory demonstration must be based on the manufacturer's published technical material on the design of the spray gun and by a demonstration of the operation of the spray gun using an air pressure tip gauge from the manufacturer of the spray gun.

(v) Any such other marine coating or pleasure craft coating application methods as demonstrated, in accordance with the provisions of paragraph (h)(~~4~~6), to be capable of achieving equivalent or better transfer efficiency than the marine coating or pleasure craft coating application method listed in clause (d)(9)(A)(ii), provided written approval is obtained from the Executive Officer prior to use.

(B) A person shall not apply any marine coating or pleasure craft coating by any of the methods listed in subparagraph (d)(9)(A) unless such coating is applied with properly operating equipment, operated according to procedures recommended by the manufacturer and in compliance with applicable permit conditions, if any.

(~~4~~10) Solvent Cleaning ~~Operations;~~ Storage and Disposal of VOC-containing Materials

~~All solvent~~Solvent cleaning ~~operations~~ of application equipment, parts, products, tools, machinery, equipment, general work areas, and the storage

and disposal of VOC-containing materials used in solvent cleaning operations shall be carried out pursuant to SCAQMD Rule 1171 - Solvent Cleaning Operations.

~~(5) RecordkeepNotwithstanding the provisions of subdivision (g), records shall be maintained pursuant to Rule 109.~~

~~(d) Prohibition of Specification~~

~~(1) A person shall not solicit or require any other person to use, in the district, any coating or combination of coatings to be applied to any marine vessel or marine component subject to the provisions of this rule that does not meet the limits requirements of this rule or of an Alternative Emission Control Plan approved pursuant to the provisions of paragraph (c)(3) of this rule.~~

~~(2) The requirements of paragraph (d)(1) shall apply to all written or oral agreements executed or entered into after November 4, 1988.~~

(e) Prohibition of Possession, Specification and Sale

(1) For the purpose of this rule, no person shall ~~supply, sell, offer for sale, market, manufacture, blend, repackage, apply,~~ store at a worksite, ~~or solicit the application of~~ any marine coating or pleasure craft coating subject to this rule within the SCAQMD jurisdiction that is not in compliance with the requirements shown in the Tables of Standards of paragraphs (d)(1), (d)(2), and (d)(3) unless one or more of the following conditions apply:

(A) The marine or pleasure craft coating is for use at a facility that utilizes an approved emission control device pursuant to ~~sub~~paragraph (d)(5) and the coating meets the limits specified in permit conditions.

(B) The marine or pleasure craft coating is for use at a facility that operates in compliance with an approved Alternative Emissions Control Plan pursuant to subparagraph (d)(6), and the marine or pleasure craft coating is specified in the plan.

~~(C) The requirements of paragraphs (d)(7) and (d)(8).~~

(2) For the purpose of this rule, no person shall solicit from, specify, or require any other person to use in the SCAQMD jurisdiction any marine or pleasure craft coating which, does not meet the:

(A) Applicable VOC limits required by paragraph (d)(1), (d)(2) or (d)(3) for the specific application unless:

(i) The marine or pleasure craft coating is located at a facility that utilizes an approved emission control device pursuant to paragraph (d)(5), and the marine or pleasure craft coating meets the limits specified in permit conditions; or,

(ii) The marine or pleasure craft coating is located at a facility that operates in compliance with an approved Alternative Emissions Control Plan pursuant to paragraph (d)(6), and the marine or pleasure craft coating is specified in the plan.

(B) The requirements of paragraphs (d)(7) and (d)(8).

(3) For the purpose of this rule, no person shall supply, sell, offer for sale, market, blend, package, repackage or distribute any marine or pleasure craft coating for use within the SCAQMD jurisdiction subject to the provisions in this rule which, does not meet the:

(A) Applicable VOC limits required by paragraphs (d)(1), (d)(2) and (d)(3) for the specific application, unless:

(i) The marine or pleasure craft coating is for use at a facility that utilizes an approved emission control device pursuant to paragraph (d)(5), and the coating meets the limits specified in permit conditions; or,

(ii) The marine or pleasure craft coating is for use at a facility that operates in accordance with an approved Alternative Emissions Control Plan pursuant to paragraph (d)(6), and the marine or pleasure craft coating is specified in the plan; and,

(iii) The person that supplies, sells, offers for sale, markets, blends, packages, repackages or distributes the marine or pleasure craft coating keeps the following records for at least five years and makes them available to the Executive Officer upon request:

(I) Marine or pleasure craft coating name and manufacturer;

(II) VOC content of the marine or pleasure craft coating;

(III) Documentation such as manufacturer specification sheets, material safety data sheets, technical data sheets, or any other air quality data sheets that demonstrate that the material is intended for use as a marine or pleasure craft coating;

(B) The requirements of paragraphs (d)(7) and (d)(8).

(4) For the purpose of this rule, no person shall solicit from, specify, require, offer for sale, sell, or distribute to any other person for use in the SCAQMD jurisdiction any marine or pleasure craft coating application equipment which does not meet the requirements of subparagraph (d)(9)(A).

(5) For the purpose of this rule, no person shall offer for sale, sell, supply, market, offer for sale or distribute an HVLP spray gun for use within the SCAQMD unless ~~the~~ said person ~~offering for sale, selling, marketing or distributing the HVLP spray gun for use within the SCAQMD~~ provides accurate information to the spray gun recipient. Such accurate information shall include ~~on~~ the maximum inlet air pressure to the spray gun which would result in a maximum air pressure of 10 pounds per square inch gauge (psig) air pressure, measured dynamically at the center of the air cap and at the air horns, based on the manufacturer's published technical material on the design of the spray application equipment, and by a demonstration of the operation of the spray application equipment using an air pressure tip gauge from the manufacturer of the gun. The information shall either be permanently marked on the gun, or provided on the company's letterhead or in the form of technical literature which clearly identifies the spray gun manufacturer, the seller, or the distributor.

(6) Paragraphs (d)(1), (d)(2) and (d)(3) shall not apply to marine coatings or pleasure craft coatings that are sold, offered for sale, or solicited, for shipment or use outside of the SCAQMD jurisdiction, or for shipment to other manufacturers for repackaging provided such coatings are sold, offered for sale, or solicited, for shipment or use outside the SCAQMD jurisdiction.

(f) Recordkeeping Requirements

(1) Recordkeeping for VOC Emissions

Records of marine coating usage and pleasure craft coating usage, as applicable, shall be maintained pursuant to SCAQMD Rule 109 - Recordkeeping for Volatile Organic Compound Emissions, and shall be made available to the Executive Officer upon request. The records shall also include the following information:

(A) Material name and manufacturer;

(B) Application method;

(C) Marine coating and pleasure craft coating categories, as applicable, and mix ratio specific to the coating;

(D) Regulatory VOC, for the marine coating and pleasure craft coating, as applicable;

(E) Documentation such as manufacturer specification sheets, material safety data sheets, technical data sheets, or any other air quality data sheets that indicate the material is intended for use as a marine coating, pleasure craft coating or solvent, as applicable;

(F) Current manufacturer specification sheets, material safety data sheets, or technical data sheets, which list the actual VOC and regulatory VOC, for each marine and pleasure craft coating, as applicable; and,

(2) Recordkeeping Requirements for Emission Control System

Any person using an emission control system shall maintain daily records of key system operating parameters which will demonstrate continuous operation and compliance of the emission control system during periods of VOC emission producing activities. "Key system operating parameters" are those parameters necessary to ensure or document compliance with subparagraph (h)(~~5~~7)(A), including, but not limited to, temperatures, pressure drops, and air flow rates. These records shall be made available to the Executive Officer upon request.

(g) Administrative Requirements for Marine Coating Manufacturers

(1) Compliance Statement Requirement

Effective April 1st, 2016 for each individual marine coating and pleasure craft coating, marine coating and pleasure craft coating component, and ready to spray mixtures (based on the manufacturers stated mix ratio) sold, offered for sale, for shipment or use within the SCAQMD jurisdiction, the

manufacturer shall include the following information on a product data sheet, or an equivalent medium:

(A) The actual VOC and regulatory VOC for marine coating and pleasure craft coating, as applicable; and,

(B) The weight percentage of volatiles, water, and exempt compounds; and,

(C) The density of the material (in grams per liter).

(2) Labeling Requirements

(A) The manufacturer of marine coatings and pleasure craft coatings or marine coating and pleasure craft coating components shall include on all containers the regulatory VOC content, as supplied (in grams of VOC per liter of coating less water and exempt compounds).

(3) Reporting Requirements

(A) Annual Quantity Emissions Reports (AQER)

Effective April 1st, 2016 and thereafter, for each calendar year (January 1 through December 31) beginning with 2015 and continuing with each subsequent calendar year until 2018, a marine coating or pleasure craft coating manufacturer or distributor shall submit to the SCAQMD by April 1st of the following calendar year, an annual quantity and emissions report for products subject to the rule that were sold or distributed for sale within the SCAQMD jurisdiction. The report format shall be approved by the Executive Officer, and shall include the annual sales or distribution volume and the regulatory VOC content of marine coatings and pleasure craft coatings sold or distributed within the SCAQMD jurisdiction.

(B) List of Distributors

Effective April 1st, 2016 and thereafter, for each calendar year (January 1 through December 31) beginning with 2015 and continuing with each subsequent calendar year until 2018, each manufacturer or distributor of a marine coating or pleasure craft coating that were sold or distributed for sale within the SCAQMD jurisdiction, shall submit to the SCAQMD by April 1st a list of all U.S. distributors to whom they supply products that are subject to

this rule, including but not limited to, private label marine coating or pleasure craft coatings, and toll manufactured marine coatings or pleasure craft coatings. The report format shall be approved by the Executive Officer and shall include the distributor's name, address, contact person and telephone number.

(~~e~~h) Test Methods

(1) Determination of VOC Content:

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

(A) ~~United States Environmental Protection Agency (~~U.S. EPA~~)~~ Reference Test Method 24 (Determination of Volatile Matter Content, Water Content, Volume Solids and Weight Solids of Surface Coatings, Code of Federal Regulations, Title 40, Part 60, Appendix A~~,~~). The exempt compounds' content shall be determined by South Coast Air Quality Management District (SCAQMD) Laboratory Test Method 303 (Determination of Exempt Compounds) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual; or,

(B) SCAQMD Method 304 [Determination of Volatile Organic Compounds (VOCs) in Various Materials] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual~~.~~; or,

(C) SCAQMD Method 313 [Determination of Volatile Organic Compounds VOC by Gas Chromatography-Mass Spectrometry] in the SCAQMD's "Laboratory Methods of Analysis for Enforcement Samples" manual.

(~~BD~~2) VOC content determined to exceed the limits established by this rule through the use of any of the above-referenced test methods shall constitute a violation of this rule.

(~~CE~~3) Exempt Perfluorocarbon Compounds

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; and

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

~~will~~ shall be analyzed as exempt compounds for compliance with subdivision (~~c~~d), only ~~when~~ at such time as manufacturers specify which individual compounds are used in the ~~coating~~ formulation of the coatings subject to this rule. In addition, prior to any such analysis, the manufacturers shall also identify the test methods approved by the U.S. EPA, California Air Resources Board (CARB), and the SCAQMD ~~approved test methods prior to any such analysis shall~~ that will be used to quantify the amount of each exempt compound.

(~~2~~4) Determination of ~~Metal Content~~Iridescent Particles in Metallic/Iridescent Coatings

The metal and silicon content in metallic/iridescent coatings subject to the provisions of this rule shall be determined by the SCAQMD Method 311 (Determination~~Analysis~~ of Percent Metal in Metallic Coatings by Spectrographic Method) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(~~3~~5) Determination of Acid Content in Marine and Pleasure Craft Coatings

The acid content of any coating subject to the provisions of this rule shall be determined by ASTM D-1613-~~85~~ 06 (2012) (Standard Test Method for Acidity in Volatile Solvents and Chemical Intermediates Used in Paint~~.~~, Varnish, Lacquer, and Related Products)~~ contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual~~.

(~~4~~6) Transfer Efficiency

The transfer efficiency of alternative marine coating and pleasure craft coating application methods, as defined by clause (d)(9)(A)(v), shall be determined in accordance with the SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989," and SCAQMD "Guidelines for Demonstrating Equivalency With SCAQMD Approved Transfer Efficiency Spray Gun September 26, 2002".

(~~4~~5~~7~~) Determination of Efficiency of Emission Control System

(A) The efficiency of the collection device of the emission control system as specified in paragraph ~~(c)(2)~~(d)(5) shall be determined by the ~~USEPA~~ methods specified ~~cited in 55 Federal Register 26865 (June 29, 1990), or any other method approved by the USEPA, the California Air Resources Board, and the SCAQMD~~below~~.~~:

(i) U.S. EPA method cited in 55 Federal Register (FR) 26865, June 29, 1990; or

(ii) SCAQMD's "Protocol for Determination of Volatile Organic Compounds (VOC) Capture Efficiency"; or

(iii) Any other method approved by the U.S. EPA, CARB, and the SCAQMD Executive Officer.

(B) The efficiency of the control device of the emission control system as specified in paragraph (~~c~~d)(~~2~~5) and the VOC content in the control device exhaust gases, measured and calculated as carbon, shall be determined by U.S. EPA Test Methods 25, 25A, or SCAQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) as applicable. U.S. EPA Test Method 18, or CARB Method 422 shall be used to determine emissions of exempt compounds.

(~~5~~6~~8~~) 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.

(~~6~~7~~9~~) All test methods referenced in this section shall be the most recently approved version.

(~~h~~i) Rule 442 Applicability

Any ~~*marine coating operation*~~Marine Coating Operation or Pleasure Craft Coating Operation or any facility which is exempt pursuant to subdivision (j) from all or a portion of the VOC limits of subdivision (d) ~~this rule~~ shall comply with the provisions of Rule 442 - Usage of Solvents.

(~~i~~j) Exemptions

The provisions of this rule shall not apply to:

(1) ~~marine~~Marine coatings applied to interior surfaces of potable water containers.

(2) ~~touch~~Touch-up coatings, as defined by paragraph (c)(~~40~~41) of this rule.

~~(3) marine coatings purchased before January 1, l992, in containers of one quart or less and applied to pleasure craft.~~

~~(4) antifoulant coatings applied to aluminum hulls.~~

(~~5~~3) Any aerosol coating product~~s~~.

(4) The provisions of paragraph (d)(9) shall not apply to Marine or Pleasure Craft coatings with a viscosity of 650 centipoise or greater, as applied.

(5) The provisions of paragraphs (d)(1), (d)(2), and (d)(3) shall not apply to marine coatings that are used for vessels that are intended to submerge to at least 500 feet below the surface of the water provided that the total combined usage of such coatings does not exceed 12 gallons per calendar year and such coatings are in compliance with the VOC limits in the U.S. EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) for Shipbuilding and Ship Repair (Surface Coatings).

ATTACHMENT G

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

FINAL STAFF REPORT
Proposed Amended Rule 1106 - Marine and Pleasure Craft Coating Operations; and
Proposed Rescinding of Rule 1106.1 - Pleasure Craft Coating Operations

October 2015

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EXECUTIVE SUMMARY

Rule 1106 - Marine Coating Operations and Rule 1106.1 - Pleasure Craft Coating Operations are source specific rules that were adopted to reduce emissions of volatile organic compounds (VOC) and stratospheric ozone depleting and global warming compounds from marine coatings applied on boats, ships, and vessels, and their appurtenances, and to buoys and oil drilling rigs intended for the marine environment, and for pleasure craft, as defined in Rule 1106.1, including the parts and components.

The proposal is two-fold; the proposed amendment to Rule 1106 - Marine Coating Operations and the proposed rescinding of Rule 1106.1 - Pleasure Craft Coating Operations. Proposed Amended Rule (PAR) 1106 - Marine and Pleasure Craft Coating Operations is a source specific rule that will continue to regulate the marine coating industry but will now also apply to the pleasure craft marine coatings by incorporating the requirements of Rule 1106.1 - Pleasure Craft Coating Operations. The air quality objective of these proposed actions is to combine the requirements for marine and pleasure craft coating operations into one rule, align Volatile Organic Compounds (VOC) content limits with United States Environmental Protection Agency (U.S. EPA) Control Techniques Guidelines and other California air districts, and promote consistency with other SCAQMD Regulation XI VOC rules. PAR 1106 - Marine and Pleasure Craft Coating Operations and the Proposed Rescinding of Rule 1106.1 - Pleasure Craft Coating Operations would combine the requirements for marine and pleasure craft coating operations into one rule, reduce the VOC content limits for certain categories of coatings, add VOC content limits for new categories of coatings, and require the use of the most restrictive VOC content limit. The proposed amendment would also prohibit the possession and sale of non-compliant coatings and establish requirements for transfer efficiency, labeling, recordkeeping and reporting.

The proposal seeks to include revised VOC content limits for pretreatment wash primers, antenna, repair and maintenance thermoplastic, inorganic zinc, and specialty marking coatings, in order to align limits with U.S. EPA Control Techniques Guidelines and other California Air Pollution Control Districts and Air Quality Management District's (APCDs/AQMDs), adds new categories for marine aluminum antifoulant, mist, nonskid and organic zinc coatings and marine deck primer sealant and require the use of the most restrictive VOC content limit. The proposed amendment would also prohibit possession and sale of non-compliant coatings and establish requirements for transfer efficiency, labeling, recordkeeping and reporting. In addition, staff is also proposing new definitions to be added to Rule 1106 which are specific to Pleasure Craft Coating Operations definitions from Rule 1106.1. This staff proposal is administrative in nature and staff analysis concludes that the VOC content adjustment to the coating categories noted above will not adversely affect coating manufacturers by way of reformulation, or affect current work practices currently used in the industry.

The proposed administrative amendment is not expected to yield any additional VOC reductions or increases since this industry already has compliant products available that can meet the VOC limits in this proposal.

RULE 1106 – MARINE AND PLEASURE CRAFT COATING OPERATIONS

CHAPTER 1: BACKGROUND ON PROPOSED AMENDED RULE 1106

- Introduction
- Regulatory History
- Affected Facilities
- Process Description

INTRODUCTION

Rule 1106 - Marine Coating Operations and Rule 1106.1 - Pleasure Craft Coating Operations are both source specific rules that were adopted to reduce emissions of volatile organic compounds (VOC) and stratospheric ozone depleting and global warming compounds from marine coatings applied on boats, ships, and vessels, and their appurtenances, and to buoys and oil drilling rigs intended for the marine environment, and for pleasure craft, as defined in Rule 1106.1, including parts and components. The proposed amendment is two-fold. First, Rule 1106.1 is proposed to be rescinded and second, Rule 1106 will subsume the requirements of Rule 1106.1 - Pleasure Craft Coating Operations, while revising VOC content limits for pretreatment wash primers, antenna, repair and maintenance thermoplastic, inorganic zinc, and specialty marking coatings, in order to align limits with U.S. EPA Control Techniques Guidelines and other APCDs/AQMDs. The proposed amendment also adds new categories for marine aluminum antifoulant, mist, nonskid and organic zinc coatings and marine deck primer sealant, and requires the use of the most restrictive VOC content limit. The proposed amendment would also prohibit possession and sale of non-compliant coatings and establish requirements for transfer efficiency, labeling, recordkeeping and reporting.

REGULATORY HISTORY

Rule 1106 was adopted on November 4, 1988 and has been subsequently amended seven times. The most recent amendment was on January 13, 1995 which incorporated corrective action items in efforts to resolve deficiencies as determined by U.S. EPA. The corrective action items in that amendment included language and an equation for control device equivalency, an applicability statement, test methods that were required to be specified, language regarding multiple test methods with the addition of the most recent test method, an updated definition for aerosol coatings and exempt compounds, and a permanent exemption for aerosol containers.

Rule 1106.1 was adopted on May 1, 1992 and has been subsequently amended three times. The most recent amendment was on February 12, 1999 which removed Pleasure Craft Coating Operations from existing Rule 1106 - Marine Coating Operations. Many of the existing coating categories in Rule 1106 at that time were not representative of the pleasure craft coating industry. Consequently, the SCAQMD adopted Rule 1106.1 with the intent of identifying the special categories of coatings applied on pleasure craft.

AFFECTED INDUSTRIES

Rule 1106 is applicable to all coating operations of boats, ships, and their appurtenances, and to buoys and oil drilling rigs intended for the marine environment. Coating operations of vessels which are manufactured or operated primarily for recreational purposes are subject to the requirements of Rule 1106.1.

Rule 1106.1 is applicable to all coating operations of pleasure craft, as defined in paragraph (b)(10) in that rule, or their parts and components, for the purpose of refinishing, repairing, modification, or manufacturing such craft. This rule also applies to establishments engaged in activities

described in the United States Office of Management and Budget's 1987 Standard Industrial Classification Manual, under Standard Industrial Classification (SIC) codes 3732 - Boat Building and Repairing and 4493 - Marinas. Pleasure Craft Coating Operations which are subject to the requirements of Rule 1106.1 are not subject to the requirements of current Rule 1106.

Shipyards, Boatyards and Marinas:

Staff visited numerous shipyards, boatyards and marinas to gather information on what type of work the facilities were doing and what type of coatings they were using. Table 1-1 below shows the shipyards, boatyards and marinas that were visited by SCAQMD staff and Table 1-2 shows the large scale ships that were visited. The majority of the operators in the marine coating and pleasure craft coating industry are non-permitted facilities and are not typically inspected by SCAQMD inspectors. Staff visited several facilities and found many cases of non-compliance with both Rules 1106 and 1106.1 VOC limit standards. Staff also found that the most common maintenance operation at the shipyards, boatyards and marinas is the application of antifoulant coatings (these type coatings are explained in the following section - Process Description). Many shipyards, boatyards and marinas were using antifoulant coatings in excess of the VOC limit standards and were not aware they were exceeding the limit due to their unfamiliarity with the rule requirements. Staff also found that several suppliers to the shipyards, boatyards and marinas and consumers were selling non-compliant coating products.

TABLE 1-1: SHIPYARDS, BOATYARDS AND MARINAS VISITED BY SCAQMD STAFF

SHIPYARD	CITY	COUNTY
Al Larson Boat Shop	Terminal Island	Los Angeles
Cabrillo Boat Shop	Long Beach	Los Angeles
Colonial Yacht Anchorage **(O/B)**	Wilmington	Los Angeles
Gambol Industries	Long Beach	Los Angeles
King Harbor Marine Center	Redondo Beach	Los Angeles
Marina Shipyard	Long Beach	Los Angeles
Seamark Marine	Marina del Rey	Los Angeles
The Boatyard	Marina del Rey	Los Angeles
Wilmington Marine Service Boatyard **(O/B)**	Wilmington	Los Angeles
Windward Yacht & Repair Center	Marina del Rey	Los Angeles
Balboa Boat Yard of California	Newport Beach	Orange
Basin Marine	Newport Beach	Orange
Newport Harbor Shipyard	Newport Beach	Orange
Dana Point Shipyard	Dana Point	Orange
Larson's Shipyard	Newport Beach	Orange
South Coast Shipyard	Newport Beach	Orange
Sunset Aquatic Shipyard	Huntington Beach	Orange

(O/B) Out of Business

TABLE 1-2: LARGE SCALE SHIPS VISITED BY SCAQMD STAFF

SHIP	CITY	COUNTY
Queen Mary	Long Beach	Los Angeles
U.S.S. Iowa	San Pedro	Los Angeles
S.S. Lane Victory	San Pedro	Los Angeles

Staff found that the shipyards, boatyards and marinas perform both mechanical repair and coating services. The mechanical repair services typically include engine work, drive unit work and any other non-coating type work. Coating operations include both top side and bottom side coating operations. Topside coatings are used from the waterline of the vessel up and bottom side coatings are typically for use underwater. Staff found that a small number of shipyards, boatyards and marinas offered topside coating services. The shipyards, boatyards and marinas that do not offer topside coating services default to contractors who perform topside coating operations at the site. The majority of the shipyards, boatyards and marinas offered bottom side coating services which is the application or reapplication of antifoulant coatings. Staff confirmed that antifoulant coatings are used for vessels that remain in the water after use and are subject to marine animal and vegetation fouling and the owner of a vessel needs an antifoulant coating on the bottom of the vessel to prevent marine and vegetative growth. The average recoat operation for antifoulant coatings is typically every two years, and it takes two coats of antifoulant, rolled on, with a third coat applied at the waterline level. Staff found that the application of antifoulant coatings is the main operation for many of the shipyards, boatyards and marinas.

Staff visited the three ships shown in Table 1-2 and learned that none of the ships use an antifoulant coating. The Queen Mary is a stationary museum and there are no plans to move the ship in the future. This ship is scheduled for new paint in the future, possibly within two years. The U.S.S. Iowa is also a museum but can move under its own power. The ship was recently repainted in northern California before it arrived in the Long Beach Harbor. The S.S. Lane Victory is an active ship and goes to sea for tours on occasion. It is scheduled to be repainted either in San Diego or San Francisco next year. All of these ships may need to use coatings for touch-up purposes from time to time, and these operations are conducted using paint brush or roller only; none of them use spray operations.

Staff believes that Proposed Amended Rule 1106 will provide enhanced clarity and compliance with the VOC limits through reporting similar to SCAQMD Rule 1113 - Architectural Coatings. The proposed amendment will include an Annual Quantity Emission Report (AQER) that will require documentation of the VOC content limits for all marine and pleasure craft coating products that are sold in the SCAQMD's jurisdiction. In addition, staff intends to clarify the use of a higher VOC content limit for antifoulant for aluminum substrate hulls and eliminate any confusion that such product could be used on non-aluminum substrate vessel hulls. Staff believes the amendment could potentially provide emission reductions through enhanced clarity and compliance.

PROCESS DESCRIPTION

Coatings for Ships, Yachts, Boats

Water going vessels, commonly referred to as ships, yachts, and boats have coatings specifically designed for the two main portions of a boat; top side and bottom side. With the boat at rest, anything above the water line is considered top side and anything below the water line is considered bottom side.

Top Side

The top side of the ship, yacht or boat is the visual portion of the boat from the water-line up. These coatings not only have to perform well in protecting the substrate in a marine environment but also have aesthetic purposes. The substrates can include wood of various types, fiberglass and composites, steel, stainless steel, aluminum, brass and bronze. These coatings can be applied by hand application, usually with a paint brush or roller, or by atomized spray equipment. There are several categories which are included in Rules 1106 and 1106.1 such as varnish, antenna coatings, pre-treatment wash primers, etc.

Bottom Side

A boat that is docked or moored in both fresh water and sea water is susceptible to what the marine industry calls fouling. Fouling is typically broken down into hard growth such as barnacles, mussels, shipworms and soft growth such as marine plant growth like algae and grass which would if unabated, would continue to grow and cause excessive drag on the boat during operation and could also cause severe damage to the hull substrate via corrosion to steel and aluminum hulls and shipworms boring into wooden hulls. The fouling also poses a potential threat to the environment through transporting harmful marine organisms to other waterways. The solution to fouling is an antifoulant coating, which is used to inhibit the growth of foulant from adhering to the bottom of the boat. There are two different categories for antifoulant coatings, a hard bottom paint and an ablative bottom paint.

Hard Bottom Paint

Hard Bottom Paint is an epoxy type paint formulated with copper, organotin compounds (an organic compound with one or more tin atoms in its molecules) and other biocides and pesticides to control marine growth from adhering to the hull. The copper is used to deter hard growth such as mussels and barnacles, and biocides and pesticides are used to control soft growth such as algae and other marine organisms like ship worms. Most hard bottom paints control marine growth by biocide and pesticide release which are released slowly from the pores of the paint while in water. Other types of hard bottom paint include Teflon® and silicone which make the coating surface too slick for marine growth to adhere to. This type coating is typically used for boats that spend long periods of time at rest in the water.

Ablative Bottom Paint

Ablative bottom paint is specially formulated to be a somewhat sacrificial coating designed to be slowly worn away during boat operation. For the marine environment, ablation is simply a wear

away type coating where the coating continuously wears off at a slow rate during operation thus exposing a new layer with fresh antifoulant compounds. An analogy of this would be washing your hands with a bar of soap where the soap continues to erode during each washing operation yet remains effective in subsequent washings.

There have been environmental concerns with the use of copper in these bottom paints and the toxic effects it has on marine life. The Port of San Diego continues to investigate how much copper can be reduced from copper-based antifoulant coatings and Washington State passed a law which may phase in a ban on copper antifoulant coatings on recreational vessels beginning in January 2018. On October 2013, California Governor Edmund G. Brown Jr. signed into law Assembly Bill AB425 (Atkins) "Pesticides: copper-based antifouling paint: leach rate determination: mitigation measure recommendations." The assembly bill requires: "No later than February 1, 2014, the Department of Pesticide Regulation (DPR) shall determine a leach rate for copper-based antifouling paint used on recreational vessels and make recommendations for appropriate mitigation measures that may be implemented to address the protection of aquatic environments from the effects of exposure to that paint if it is registered as a pesticide." In order to comply with AB 425, the DPR successfully determined such standards and developed measures to address the amount of copper in California's coastal marinas. The DPR further suggested that the State Water Resources Control Board, paint manufacturers, boat owners, boatyards, boat cleaners, and marina operators all work to establish compliance with the state copper standard of 3.1 parts per billion in the water. The DPR is continuing their work on implementing these measures and reducing copper levels throughout state marine waters.

Transfer Efficiency Requirements

Proposed Amended Rule 1106 incorporates similar transfer efficiency requirements found in Rule 1151 - Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations for application of a marine or pleasure craft coating. The transfer efficiency requirement for spray application is the use of electrostatic, HVLP (High Volume, Low Pressure) spray equipment, and other spray guns that meet the HVLP definition of paragraph (b)(18) in design and use. A demonstration must be based on the manufacturer's published technical material on the design of the spray gun and by demonstration of the operation of the spray gun using an air pressure tip gauge from the manufacturer of the spray gun [See clause (d)(9)(A)(v)].

Brush and roller coatings are applied directly from the paint brush bristles or the roller to the substrate and have a very high coating to substrate transfer efficiency. Dip coatings are simply a container filled with paint where an object is dipped into the coating which also provides a very high coating to substrate transfer efficiency. Brush, roller and dip coating processes are proposed to be included as compliant transfer efficiency processes as specified in clause (d)(9)(A)(iii) of the transfer efficiency requirements in order to be to be consistent with the Coating Application Methods provision in the state Suggested Control Measure.

In addition, Proposed Amended Rule 1106 provides two test methods for spray guns that do not meet the HVLP definition in design but can be used to determine if such spray guns can meet the transfer efficiency requirements under SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989" and SCAQMD "Guidelines for Demonstrating Equivalency With District Approved Transfer Efficiency Spray Gun September 26, 2002" [See paragraph (h)(~~4~~6)]. Any spray gun used in the SCAQMD jurisdiction must meet the criteria for these test methods to qualify as a compliant transfer efficient spray gun for use in the SCAQMD jurisdiction.

HVLP spray equipment utilizes very low air pressure (i.e., less than 10 psi) to atomize the coating material and propel the atomized droplets at a low velocity and high volume to the surface being coated. Though, the majority of pleasure craft coatings are applied by hand, there are operations where spray applications are used for primers and topcoats. There are several subsets of HVLP spray guns that can also meet the transfer efficiency requirements and these subsets are discussed below.

High Volume Low Pressure (HVLP)
HVLP spray guns are created to meet the transfer efficiency requirements of governmental agencies, including the SCAQMD. HVLP spray guns can meet the high transfer efficiency requirement and operate at less than 10 psi at the air cap. HVLP spray guns are used in the South Coast Air Basin to spray coatings for a multitude of categories including automotive coatings, metal coatings, wood coatings, industrial coatings and marine coatings.

Low Volume Low Pressure (LVLP)
LVLP spray guns are a subset of non-conventional spray guns and may be used in the spraying of marine or pleasure craft coatings provided the requirements in Proposed Amended Rule 1106 clause (d)(9)(A)(v) for transfer efficiency are met, including achieving equivalent or better transfer efficiency to HVLP using the test method protocols prescribed in Proposed Amended Rule 1106 to determine transfer efficiency, and written approval is obtained from the Executive Officer prior to use. LVLP offers an alternative to HVLP because they have less air flow requirements and can be used with a smaller compressor. This makes LVLP appealing for mobile painters and applicators that use a small air compressor. Manufacturers of LVLP spray guns state that LVLP can operate at less than 10 psi at the air cap and achieve transfer efficiencies equivalent to HVLP application. The working speed of LVLP is not as fast as HVLP spray guns.

Low Volume Medium Pressure (LVMP)
LVMP spray guns are a subset of the non-conventional spray guns and may also be used in the spraying of marine or pleasure craft coatings provided the requirements in Proposed Amended Rule 1106 clause (d)(9)(A)(v) for transfer efficiency are met, including achieving equivalent or better transfer efficiency to HVLP using the test method protocols prescribed in Proposed Amended Rule 1106 to determine transfer efficiency, and written approval is obtained from the Executive Officer prior to use.

Reduced Pressure (RP)
RP spray guns are a subset of non-conventional spray guns and may be used in the spraying of marine or pleasure craft coatings provided the requirements in Proposed Amended Rule 1106 clause (d)(9)(A)(v) for transfer efficiency are met, including achieving equivalent or better transfer efficiency to HVLP using the test method protocols prescribed in Proposed Amended Rule 1106 to determine transfer efficiency, and written approval is obtained from the Executive Officer prior to use. RP spray guns also use smaller air compressors because they need less air flow requirements than HVLP spray guns which makes RP attractive for mobile painters. RP can be an alternative to HVLP and has a fast working speed similar to HVLP guns.

Pressure Fed (PF)
PF spray guns are unique as compared to the other types of spray guns in that they are equipped with auxiliary containers used for holding larger quantities of coating product. PF spray guns can be used in the spraying of marine or pleasure craft coatings provided all the requirements in Proposed Amended Rule 1106 clause (d)(9)(A)(v) for transfer efficiency are met, including achieving equivalent or better transfer efficiency to HVLP using the test method protocols prescribed in Proposed Amended Rule 1106 to determine transfer efficiency, and written approval is obtained from the Executive Officer prior to use.

New Conventional (NC)
Staff has identified an additional new subset of conventional spray guns being marketed as New Conventional (NC). Manufacturers of such spray guns claim the NC spray guns offer the same wide pattern (spray) as the old conventional spray guns but have better transfer efficiency, and have the ability to spray thick fluids. This technology could be used for spraying marine or pleasure craft coatings but only if the spray gun meets all the requirements in Proposed Amended Rule 1106 clause (d)(9)(A)(v) for transfer efficiency, including achieving equivalent or better transfer efficiency to HVLP using the test method protocols prescribed in Proposed Amended Rule 1106 to determine transfer efficiency, and written approval is obtained from the Executive Officer prior to use.

Transfer Efficiency and Special Plural Type Application Equipment
Coatings with a viscosity greater than 650 centipoise have poor flow characteristics and will be exempted from the transfer efficiency requirements. To spray such thick fluids, special plural type application equipment or very high pressures (greater than 1,000 psi) are necessary. Without the proposed exemption, shops forced to use HVLP equipment would otherwise have to thin the high solids coatings with VOC solvents to allow them to be sprayed, thus eliminating the benefit of the low-VOC high solids coatings.

Emission Inventory and Rulemaking Survey:
Staff is conducting a survey with marine and pleasure craft coating manufacturers to determine the VOC inventory based on throughput. The survey will provide data to show the VOC content of

the many marine and pleasure craft coatings used in the SCAQMD jurisdiction, as well as the volume of coatings used. This data will be used to establish an accurate VOC inventory for the marine and pleasure craft industry operating in the SCAQMD jurisdiction. Staff continues to collect data from marine coating and pleasure craft coating manufacturers and suppliers and when completed, an accurate VOC inventory will determine the overall impact the industry has on emission contribution. In addition, staff will be able to use the inventory to identify compliant and non-compliant products usage and take action to eliminate the use of non-compliant marine and pleasure craft coatings.

Reporting Requirements

Staff will require two reports from marine and pleasure craft coating manufacturers and one report from their distributors and these reports will be submitted to SCAQMD on an annual basis starting with 2015 and continuing up to 2018. The first of the reports will be the Annual Quantity Emissions Report (AQER) which will be due, annually, on April 1 beginning with the year ~~2015~~2016. This report will require both manufacturer's and their distributors to document any marine and pleasure craft coating supplied into the SCAQMD, the volume that was supplied and the VOC content for each and every marine and pleasure craft coating. The second report will be the manufacturer's distributors list. This report will also be due, annually, on April 1 beginning with the year ~~2015~~2016 and continuing up to 2018 and will document all the manufacturer's distributors that supply marine and pleasure craft coatings into the district. The reporting by the manufacturers is not a disincentive to the end user, and has proved successful in other rules. In developing the inventory for low and near zero VOC marine and pleasure craft contains, reporting of these products would be advantageous to the UV/EB coating industry. It would show that these coatings are available and in use therefore, staff would have a basis to lower the allowable VOC limits in future rule amendments.

Super-compliant coatings:

The recordkeeping requirements in Proposed Amended Rule 1106 paragraph (d)(1) state, in part, "Records of marine coating usage and pleasure craft coating usage, as applicable, shall be maintained pursuant to SCAQMD Rule 109- Recordkeeping for Volatile Organic Compound emissions, and shall be made available to the Executive Officer upon request…". Rule 109 provides an exemption from the provisions in the rule pertaining to recordkeeping for super compliant material(s) provided the facility can demonstrate that the total permitted facility VOC emissions do not exceed four tons in any calendar year. Rule 109 defines a super compliant material as any material containing 50 grams or less of VOC per liter of material. The exemption provided in Rule 109 as discussed above is also applicable to Proposed Amended Rule 1106.

Touch-up Coatings

Staff visited several facilities conducting marine and pleasure craft coating operations and found many operators believed the touch-up exemption meant any touch-up operation. The definition for a touch-up coating does not allow for maintenance and repair "touch-up" coatings because ~~it's~~ it is only intended for minor imperfections ~~prior to shipment~~ or minor mechanical damage incurred

after the main coating operation. The touch-up exemption in the current rule (Rule 1106) provides an exemption from the ~~rule requirements including the~~ VOC content limits~~. However, the rule does have a definition~~ for touch-up coatings and defines them as any coating used to cover minor imperfections prior to shipment appearing after the main coating operation. Many operators indicated to staff that they did not consider the definition for touch-up coating, just the exemption. Staff has remedied this scenario by adding additional language to paragraph (j)(2) ~~the touch-up exemption~~ which will ~~tying~~ direct the reader to read ~~it to~~ the definition for a touch-up coating. The definition has also been revised to allow touch-up coatings for minor imperfections or mechanical damages prior to use of the material or equipment to be touched up, instead of prior to shipment, to be consistent with other air district authorities.

Department of Defense Specified Coatings for Submarines

Staff determined Pre-treatment Wash Primers and Special Marking Coatings that are intended to be used on submerged vessel (submarine) components require the use of these coatings per military specifications (Mil-Specs) and currently meet the VOC limits in Rule 1106 - Marine Coating Operations. However, these coatings will not meet the new aligned VOC limits in Proposed Amended Rule 1106, which seeks to align these VOC limits with other APCDs/AQMDs. Staff proposes to craft an exemption for this type of no more than 12 gallons per calendar year, of all products combined, for this type operation and will require that the products used will have to be in compliance with the U.S. EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) for Shipbuilding and Ship Repair (Surface Coating) as provided in Part 63 of the Federal Register.

Conclusion:

The majority of the operators in the marine and pleasure craft coating industry are non-permitted facilities, and are not typically inspected by SCAQMD inspectors. Staff visited several facilities and found many instances of non-compliance with both Rules 1106 and 1106.1 VOC limit standards. Staff also found that the most common maintenance operation at the boatyards is the application of antifoulant coatings. Many shipyards were using antifoulant coatings in excess of the VOC limit standards and were not aware. Staff also found that several suppliers to the shipyards and consumers were selling non-compliant coating products. Staff believes the proposed amendment will provide enhanced compliance with the VOC limits by requiring an Annual Quantity Emission Report (AQER), further ensuring a mechanism to review the VOC content of marine and pleasure craft coatings sold in the SCAQMD's jurisdiction. In addition, staff intends to clarify a higher VOC content limit for antifoulant for aluminum substrate hulls and eliminate any confusion that such product could be used on non-aluminum substrate vessel hulls. Staff believes the amendment could potentially provide an emission reduction through enhanced clarity and compliance.

RULE 1106 – MARINE AND PLEASURE CRAFT COATING OPERATIONS

CHAPTER 2: SUMMARY OF PROPOSED AMENDED RULE 1106

- OVERVIEW: RESCIND RULE 1106.1 AND SUBSUME THE REQUIREMENTS OF RULE 1106.1 INTO PROPOSED AMENDED RULE 1106
- PROPOSED RESCINDING OF RULE 1106.1
- PROPOSED NEW DEFINITIONS TO BE ADDED TO RULE 1106
- PROPOSED REVISIONS TO EXISTING RULE LANGUAGE

OVERVIEW: RESCIND RULE 1106.1 AND SUBSUME THE REQUIREMENTS OF RULE 1106.1 INTO PROPOSED AMENDED RULE 1106

Staff believes that Rule 1106 - Marine Coating Operations and Rule 1106.1 - Pleasure Craft Coating Operations can be combined into one rule rather than two separate rules. This would be consistent with other APCD and AQMD agencies in California who regulate both marine and pleasure craft operations under one rule. Staff further believes that combining these two rules will provide the regulated community a better understanding of which category, marine or pleasure craft, their operation will fall under, and which VOC content would be appropriate for their particular coating operation. Staff is proposing to rescind Rule 1106.1 - Pleasure Craft Coating Operations and subsume the requirements of Rule 1106.1 into Proposed Amended Rule 1106 - Marine Coating and Pleasure Craft Coating Operations.

PROPOSED RESCINDING OF RULE 1106.1

On May 1, 1992, Rule 1106.1 was adopted as a companion rule to Rule 1106. Rule 1106.1 is applicable to all coating operations of pleasure craft, as defined in paragraph (b)(10) of the rule, or their parts and components, for the purpose of refinishing, repairing, modification, or manufacturing such craft. Staff proposes to rescind Rule 1106.1 and subsume its contents into Proposed Amended Rule 1106. Staff believes that Rule 1106 and Rule 1106.1 should be consolidated into one rule to avoid confusion for end-users of marine products who may not know which rule applies to their application. The other air districts in California, except for one, already have one rule for marine and pleasure craft coating operations. The VOC limits for Proposed Amended Rule 1106 are not impacted, other than to conform to the United States Environmental Protection Agency (U.S. EPA) Control Techniques Guidelines for Ship Building and Ship Repair Operations (Surface Coating) and other California air district rules already in place.

PROPOSED AMENDMENT TO RULE 1106

Rule 1106.1 is proposed to be rescinded and Proposed Amended Rule 1106 will subsume the requirements of Rule 1106.1 - Pleasure Craft Coating Operations, while also revising VOC content limits for pretreatment wash primers, antenna, repair and maintenance thermoplastic, inorganic zinc, and specialty marking coatings in order to align limits with U.S. EPA Control Techniques Guidelines and other California APCD's/AQMD's, and adding new categories for marine aluminum antifoulant, mist, nonskid and organic zinc coatings and marine deck primer sealant. The proposed amendment also prohibits possession and sale of non-compliant coatings and establishes requirements for transfer efficiency, labeling, recordkeeping and reporting.

PROPOSED REVISIONS TO EXISTING RULE LANGUAGE

Additionally, staff proposes to add a provision stating the purpose of Proposed Amended Rule 1106 to provide additional clarity on the purpose of the rule and to be consistent with other Regulation XI coatings rules, make minor revisions to the applicability subdivision, make

revisions and add new definitions to the definitions subdivision, add two tables of standards that will contain VOC limits, and include clarifications and editorial corrections to the entire rule as necessary.

Subdivision (a) Purpose

Staff proposes to include a "Purpose" subdivision in Proposed Amended Rule 1106 to provide clarity on the purpose of the rule and to make this rule consistent with other VOC Regulation XI rules that already include a purpose subdivision as follows:

"The purpose of this rule is to reduce emissions of volatile organic compounds (VOC) and stratospheric ozone depleting and global warming compounds from Marine and Pleasure Craft Coating Operations."

Subdivision (b) Applicability

Staff proposes to subsume Rule 1106.1 into Rule 1106. The applicability subdivision will not only include the existing Marine Coating Operations applicability, with revisions, but will also include the Pleasure Craft Coating Operations applicability language. Staff proposes to write the applicability subdivision in two sections, Marine Coating Operations and Pleasure Craft Coating Operations to facilitate quick and easy identification of the two operations.

"This rule applies to:"

"(1) MARINE COATING OPERATIONS:

~~This rule applies to~~ Which means all coating operations of boats, ships, and vessels, and their appurtenances, including but not limited to structures such as piers, docks ~~and~~, ~~to~~buoys and oil drilling rigs, intended for exposure to either a marine or fresh water environment.~~Coating operations of vessels which are manufactured or operated primarily for recreational purposes are subject to the requirements of Rule 1106.1 – Pleasure Craft Coating Operations.~~"

"(2) PLEASURE CRAFT COATING OPERATIONS:

Which means all coating operations for purposes of refinishing, repairing, modifying, or manufacturing of pleasure craft, as defined in paragraph (c)(~~29~~30) of this rule, and their parts and components."

Subdivision (c) Definitions

Proposed New Definitions to Be Added to Proposed Amended Rule 1106

The following new definitions are proposed to address pleasure craft coating operations, transfer efficiency provisions, and make reference to Rule 1171 consistent with other SCAQMD rules. Staff added Mist Coatings, Nonskid Coatings and Solvent-Based Organic Zinc Coatings categories to be consistent with the U.S. EPA Control Techniques Guidelines (CTG) for Shipbuilding and Ship Repair Operations (Surface Coating). Staff also added a definition for Solvent-Based Inorganic Zinc Coatings since it was missing from the current version of Rule 1106 - Marine Coatings Operations even though it is a listed coating under Paragraph (c)(1)

"VOC Content of Marine Coatings", and to be consistent with the U.S. EPA CTG. Staff also proposes to add the definition Marine Deck Sealant Primer to be consistent with other local AQMD/APCD definitions. Finally, staff proposes to add a new definition to the rule to define "Energy Curable Coatings" to provide clarity to energy curable marine and pleasure craft coating materials.

"(6) CLEAR WOOD COATINGS are clear and semi-transparent topcoats applied to wood substrates to provide a transparent or translucent film."

"(7) DISTRIBUTOR means any person to whom a ~~consumer~~ product is sold or supplied for the purposes of resale or distribution in commerce, except that manufacturers, retailers, and consumers are not distributors."

"(9) ENERGY CURABLE COATINGS are single-component reactive products that cure upon exposure to visible-light, ultra-violet light or to an electron beam. The VOC content of thin film Energy Curable Marine and Pleasure Craft Coatings may be determined by manufacturers using ASTM Test Method 7767-11 "Standard Test Method to Measure Volatiles from Radiation Curable Acrylate Monomers, Oligomers, and Blends and Thin Coatings Made from Them."

"(~~11~~12) FINISH PRIMER/SURFACER is any coating applied with a wet film thickness of less than 10 mils (one mil = 0.001 of an inch) and is applied prior to the application of a Marine or Pleasure Craft Coating for the purpose of providing corrosion resistance, adhesion for subsequent coatings, a moisture barrier, and promotes a uniform surface necessary for filling in surface imperfections."

"(~~13~~14) GRAMS OF VOC PER LITER OF MATERIAL, OR ACTUAL VOC, is the weight of VOC per volume of material and shall be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where: W_s = weight of volatile compounds in grams
W_w = weight of water in grams
W_{es} = weight of exempt compounds in grams
V_m = volume of material in liters"

"(~~17~~18) HIGH BUILD PRIMER/SURFACER is any coating applied with a wet film thickness of 10 mils or more (one mil = 0.001 of an inch) prior to the application of a topcoat for purposes of providing corrosion resistance, adhesion of subsequent coatings, a

moisture barrier, or promoting a uniform surface necessary for filling in surface imperfections."

"(~~18~~19) HIGH-VOLUME, LOW-PRESSURE (HVLP) means spray application equipment designed to atomize 100 percent by air pressure only and is operated between 0.1 and 10 pounds per square inch~~,~~ gauge~~,~~ (psig), air atomizing pressure measured dynamically at the center of the air cap and at the air horns."

"(~~19~~20) INORGANIC ZINC COATING is a coating that contains 960 grams per liter or more elemental zinc incorporated into an inorganic silicate binder that is applied to steel to provide galvanic corrosion resistance."

"(~~21~~22) LOW-SOLIDS COATINGS are coatings containing one pound or less of solids per gallon of material."

"(~~23~~24) MARINE DECK SEALANT PRIMER is any sealant primer intended by the manufacturer to be applied to wooden marine decks. A sealant primer is any product intended by the manufacturer to be applied to a substrate, prior to the application of a sealant, to enhance the bonding surface."

"(~~25~~26) MIST COATING is any low viscosity, thin film, epoxy coating applied to an inorganic zinc primer that penetrates the porous zinc primer and allows the occluded air to escape through the film prior to curing."

"(~~27~~28) NONSKID COATING means any coating applied to the horizontal surface of a marine vessel for the specific purpose of providing slip resistance for personnel."

"(~~28~~29) ORGANIC ZINC COATING is a coating that contains 960 grams per liter or more elemental zinc incorporated into an organic silicate binder that is applied to steel to provide galvanic corrosion resistance."

"(~~29~~30) PLEASURE CRAFT are marine or fresh water vessels that are less than 20 meters in length and are manufactured or operated primarily for recreational purposes, or are leased, rented, or chartered to a person or business for recreational purposes. Vessels operated in amusement~~Amusement~~ theme parks ~~that operate vessels~~ in a fresh water environment solely for the purpose of an amusement park attraction shall be considered pleasure craft vessels regardless of their length. The owner or operator of a pleasure craft vessel shall be responsible for certifying that the intended use is for recreational purposes."

"(~~30~~31) PLEASURE CRAFT COATING is any marine coating, except unsaturated polyester resin (fiberglass) coatings, applied by brush, spray, roller, or other means to a pleasure craft. A pleasure craft coating that is sold, offered for sale, or solicited for use within the South Coast Air Quality Management District (SCAQMD) jurisdiction must be designated by the manufacturer as a pleasure craft coating by any sticker or label affixed on the container, or where it is indicated in any sales or advertising literature, that the coating may be used as, or is suitable for use as, a pleasure craft coating."

"(~~31~~32) PRETREATMENT WASH PRIMER is a coating which contains a minimum of 1/2 percent acid, by weight; applied directly to bare metal surfaces to provide necessary surface etching."

"(~~34~~35) SEALER is a coating applied to bare wood to seal surface pores to prevent subsequent coatings from being absorbed into the wood."

"(~~38~~39) TEAK PRIMER is a coating applied to teak wood or previously oiled teak wood decks in order to improve the adhesion of a seam sealer."

"(~~39~~40) TOPCOAT is any final coating applied to the interior or exterior of a marine or pleasure craft."

"(~~41~~42) TRANSFER EFFICIENCY means the amount of coating solids adhering to the object being coated divided by the total amount of coating solids sprayed; expressed as a percentage."

"(~~43~~44) VARNISHES are clear or pigmented wood topcoats formulated with various resins to dry by chemical reaction."

Staff proposes to make the following revisions to the existing definitions in Rule 1106 to clarify the intent of the definition and make the definitions consistent with other Regulation XI coating rules and the U.S. CTG.

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

"(2) AIR DRIED COATING is any coating that is formulated by the manufacturer to be cured at a temperature below 90 °~~o~~C (194 °~~o~~F)."

"(4) ~~ANTIFOULING~~ ANTIFOULANT COATING is any coating applied to the underwater portion of ~~a~~ boats, ships, and vessels, ~~vessel~~ or pleasure craft to prevent or reduce the attachment of biological organisms~~. An Antifoulant coating~~ and shall be registered with the ~~Environmental Protection Agency as a pesticide~~United States Environmental Protection Agency ("U.S. EPA") as a pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act (7 United States Code Section 136). "

"(5) BAKED COATING is any coating that is formulated by the manufacturer to be cured at a temperature at or above 90 °~~o~~C (194 °~~o~~F)."

"(~~6~~8) ELASTOMERIC ADHESIVE is any adhesive containing natural or synthetic rubber."

"(~~79~~10) EXEMPT COMPOUNDS ~~are any of the following compounds:~~ (See Rule 102 - Definition of Terms).

~~(A) Group I (General)~~

~~trifluoromethane (HFC-23)~~

~~pentafluoroethane (HFC-125)~~

~~1,1,2,2-tetrafluoroethane (HFC-134)~~

~~tetrafluoroethane (HFC-134a)~~

~~1,1,1-trifluoroethane (HFC-143a)~~

~~1,1-difluoroethane (HFC-152a)~~

~~chlorodifluoromethane (HCFC-22)~~

~~dichlorotrifluoroethane (HCFC-123)~~

~~2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124)~~

~~dichlorofluoroethane (HCFC-141b)~~

~~chlorodifluoroethane (HCFC-142b)~~

~~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~~

~~(B) Group II~~

~~Methylene chloride~~

~~1,1,1-trichloroethane (methyl chloroform)~~

~~trichlorotrifluoroethane (CFC-113)~~

~~dichlorodifluoromethane (CFC-12)~~

~~trichlorofluoromethane (CFC-11)~~
~~dichlorotetrafluoroethane (CFC-114)~~
~~chloropentafluoroethane (CFC-115)~~
~~The use of Group II compounds and/or carbon tetrachloride may be restricted in the future because they are toxic, potentially toxic, upper-atmosphere ozone depleters, or cause other environmental impacts. By January 1, 1996, production of chlorofluorocarbons (CFC), 1,1,1, trichloroethane (methyl chloroform), and carbon tetrachloride will be phased out in accordance with the Code of Federal Regulation Title 40, Part 82 (December 10, 1993).~~"

"(~~8~~10~~10~~11) EXTREME HIGH GLOSS COATING is any coating which achieves at least 95 percent reflectance on a 60°~~o~~ meter when tested by ASTM Method D-523-14 - "Standard Test Method for Specular Gloss"."

"(~~9~~12~~12~~13) GRAMS OF VOC PER LITER OF COATING, LESS WATER AND LESS EXEMPT COMPOUNDS, OR REGULATORY VOC, is the weight of VOC per combined volume of VOC and coating solids and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where: W_s = weight of volatile compounds in grams
W_w = weight of water in grams
W_{es} = weight of exempt compounds in grams
V_m = volume of material in liters
V_w = volume of water in liters
V_{es} = volume of exempt compounds in liters"

"(~~10~~14~~14~~15) HEAT RESISTANT COATING is any coating which during normal use must withstand temperatures of at least 204 °~~o~~C (400 °~~o~~F)."

"(~~11~~15~~15~~16) HIGH GLOSS COATING is any coating which achieves at least 85 percent reflectance on a 60°~~o~~ meter when tested by ASTM Method D-523-14 ~~–~~"Standard Test Method for Specular Gloss".

"(~~12~~16~~16~~17) HIGH TEMPERATURE COATING is any coating that during normal use ~~which~~ must withstand temperatures of at least 426 °~~o~~C (800 °~~o~~F)."

"(~~13~~20~~2~~1) LOW ACTIVATION INTERIOR COATING is any coating used on interior surfaces aboard ~~ships,~~ boats, ships, and vessels, to minimize the activation of pigments on painted surfaces within a radiation environment."

"(~~14~~22~~2~~3) MARINE COATING is any coating, except unsaturated polyester resin (fiberglass) coatings, containing volatile organic materials and applied by any means to ~~ships,~~ boats, ships, and vessels, and their appurtenances, structures such as piers~~,~~ ~~and~~ docks~~,~~ ~~intended for exposure to a marine environment, and also to~~ buoys and oil drilling rigs~~,~~ intended for ~~the exposure to either a~~ marine or fresh water environment."

"(~~15~~24~~2~~5) METALLIC HEAT RESISTANT COATING is any coating which contains more than 5 grams of metal particles per liter of coating as applied and which must withstand temperatures over 80 °~~o~~C (~~175~~176 °~~o~~F)."

"(~~16~~26~~2~~7) NAVIGATIONAL AIDS COATING is any coating that is applied to ~~are~~ buoys or other Coast Guard waterway markers that are recoated aboard ship at their usage site and immediately returned to the water."

"(~~18~~32~~3~~3) REPAIR AND MAINTENANCE THERMOPLASTIC COATING is any resin-bearing coating, such as vinyl, chlorinated rubber, or bituminous coatings, in which the resin becomes pliable with the application of heat, and is used to recoat portions of a previously coated substrate which has sustained damage to the coating following normal coating operations."

"(~~19~~33~~3~~4) SEALANT FOR WIRE-SPRAYED ALUMINUM is any coating of up to one mil ~~(0.001 inch)~~ (one mil = 0.001 of an inch) in thickness of an epoxy material which is reduced for application with an equal part of an appropriate solvent (naphtha, or ethylene glycol monoethyl ether)."

"(~~20~~35~~3~~6) SOLVENT CLEANING OPERATION is ~~the removal of loosely held uncured adhesives, uncured inks, uncured coatings, and contaminants from parts, products, tools, machinery, equipment, and general work areas. Contaminants include, but are not limited to, dirt, soil, and grease. In a cleaning process which consists of a series of cleaning methods, each distinct method shall constitute a separate solvent cleaning operation~~as defined in Rule 1171 - Solvent Cleaning Operations."

"(~~21~~36~~3~~7) SPECIAL MARKING COATING is any coating used for items such as flight decks, ~~ships'~~ vessel identification numbers and other demarcations for safety~~/~~ or identification~~applications~~."

"(~~22~~37~~38~~38) TACK COAT is an epoxy coating of up to two mils ~~(0.002 inch)~~ (one mil = 0.001 of an inch) thick applied to an existing epoxy coating. The existing epoxy coating must have aged beyond the time limit specified by the manufacturer for application of the next coat."

"(~~23~~40~~41~~41) TOUCH-UP COATING is any coating operation incidental to the main coating process but necessary ~~used~~ to cover minor imperfections ~~prior to shipment appearing after the main coating operation~~or minor mechanical damage incurred prior to ~~intended~~ use."

"(~~24~~42~~43~~43) UNDERSEA WEAPONS SYSTEM COATING is any coating applied to any or all components of a weapons system intended for exposure to a marine environment and~~that is~~ intended to be launched or fired ~~underwater~~undersea."

"(~~25~~44~~45~~45) VOLATILE ORGANIC COMPOUND (VOC) is ~~any volatile compound which contains the element carbon, excluding methane, carbon dioxide, carbon monoxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds~~ as defined in Rule 102 - Definition of Terms."

"(~~26~~45~~46~~46) WIRE-SPRAYED ALUMINUM is any molten multi-aluminum coating applied to a steel substrate using oxygen fueled combustion spray ~~methods~~equipment."

Subdivision (d) Requirements

Paragraph (d)(1)

Staff proposes to amend Paragraph (d)(1) to enhance the clarity of the Paragraph and to introduce Table of Standards I for Marine Coating Operations. The edits are as follows:

"Except as otherwise provided in this rule, a person shall not apply a marine coating within the SCAQMD jurisdiction with a VOC content in excess of the following limits shown in the Table of Standards I, expressed as grams of VOC per liter of coating, as applied, less water and less exempt solvents:"

VOC Limit Compliance Table

The current version of Rule 1106 - Marine Coating Operations, contains a list of coating categories and their corresponding VOC content limits. This list is spread over two pages and because there are no line separations between the coating categories, determining the VOC limits for each of the coating categories may be difficult as one traces their finger from the coating category on the left side of the page to the VOC limits on the right side of the page. Staff proposes to create an easier to read Table of Standards I that will contain this list of coating categories and their corresponding VOC content limits in a much easier to read tabular format. Table of Standards I will contain just the coating categories and VOC limits for Marine Coating

Operations (Pleasure Craft Coating VOC limits will be in a subsequent table, Table of Standards II).

There are currently five coating categories in Table of Standards I that have VOC content limits in excess of other California APCDs/AQMDs and one coating category that is not in alignment with the U.S. EPA CTG. Staff proposes to update these five coating categories and make their VOC content limits consistent with the other local APCDs/AQMDs and the U.S. EPA CTG as shown in Table 2-3:

TABLE 2-3: FIVE COATING CATEGORIES IN RULE 1106 THAT NEED TO BE ADJUSTED FOR CONSISTENCY WITH THE U.S. EPA AND LOCAL APCDS/AQMDS

	SCAQMD RULE 1106		U.S. EPA CTG	BAAQMD	SDAPCD	VCAPCD
COATING CATEGORY	Current Limit (g/L)	Proposed Limit (g/L)	Current Limit (g/L)	Current Limit (g/L)	Current Limit (g/L)	Current Limit (g/L)
Antenna Coating	530	340	530	--	340	340
Pre-Treatment Wash Primer	780	420	780	420	420	780
Repair & Maintenance Thermoplastic Coating	550	340	550	340	550	340
Inorganic Zinc Coating	650	340	340	340	340	340
Special Marking Coating	490	420	490	490	420	420

The current version of Rule 1106 has an exemption for antifoulant coatings that are applied on aluminum substrates. The current version of Rule 1106.1 does not have an exemption for antifoulant coatings that are applied to aluminum substrates but instead has a 560 g/L VOC content limit. The Ventura County APCD has a 560 g/L VOC content limit for antifoulant coatings and no exemptions for aluminum substrates. Staff research found several antifoulant coatings that can be used on aluminum substrates that can be used on commercial vessels and the U.S. Coast Guard fleet and still meet the 560 g/L VOC content limit. Therefore, staff is proposing to eliminate the aluminum substrate exemption and incorporate a 560 g/L VOC content limit for antifoulant coatings that are applied to aluminum substrates in Table of Standards I.

Staff proposes to add three additional coating categories to Table of Standards I that are included in the U.S. EPA CTG (Table 2-4):

TABLE 2-4: THREE COATING CATEGORIES TO BE ADDED TO PROPOSED AMENDED RULE 1106 FOR CONSISTENCY WITH THE U.S. EPA AND LOCAL APCDS/AQMDS

	SCAQMD RULE 1106		U.S. EPA CTG	BAAQMD	SDAPCD	VCAPCD
COATING CATEGORY	Current Limit (g/L)	Proposed Limit (g/L)	Current Limit (g/L)	Current Limit (g/L)	Current Limit (g/L)	Current Limit (g/L)
Mist Coating	--	610	610	--	610	--
Nonskid Coating	--	340	340	--	--	--
Organic Zinc Coating	--	340	360	--	340	--

Table 2-5 shows the Table of Standards I for Proposed Amended Rule 1106 with the revised VOC limits for the five categories discussed above and the three additional coating categories added. The "General Coating" category in the current Rule 1106 is proposed to be renamed as "Any Other Coating Type" to be consistent with other Regulation XI rules and will include coating categories that are not listed in Table of Standards I such as bilge coatings and propeller coatings.

TABLE 2-5: PROPOSED TABLE OF STANDARDS FOR MARINE COATINGS:

TABLE OF STANDARDS I

MARINE COATING CATEGORIES	VOC LIMITS Less water and exempt compounds Grams per Liter (g/L)	
	BAKED CURRENT LIMIT	AIR DRIED CURRENT LIMIT
Antenna Coating		340
Antifoulant Coatings:		
Aluminum Substrate		560
Other Substrate		400
Elastomeric Adhesives (with 15%, by Weight, Natural or Synthetic Rubber)		730
Inorganic Zinc Coating		340
Low Activation Interior Coating		420
Mist Coating		610
Navigational Aids Coating		340
Nonskid Coating		340
Organic Zinc Coating		340
Pre-Treatment Wash Primer	420	420
Repair and Maintenance Thermoplastic Coating		340
Sealant for Wire-Sprayed Aluminum		610

Special Marking Coating		420
Specialty Coatings:		420
Heat Resistant Coating	360	420
Metallic Heat Resistant Coating		530
High Temperature Coating		500
Tack Coating		610
Topcoats:		
Extreme High Gloss Coatings	420	490
High Gloss Coatings	275	340
Underwater Weapons Systems Coating	275	340
Any Other Coating Type	275	340

Paragraph (d)(2)

Staff proposes to add a new paragraph to Proposed Amended Rule 1106 to include the pleasure craft coating categories and VOC limits. The current version of Rule 1106.1 - Pleasure Craft Coating Operations, contains a list of coating categories and their corresponding VOC content limits. Similar to the VOC categories and VOC limits in the current version of Rule 1106, in this list it may be difficult to locate the proper VOC content limit for a coating category because there are no line separations between the coating categories and determining the VOC limits for each of the coating categories may be difficult as one traces their finger from the coating category on the left side of the page to the VOC limits on the right side of the page. Staff proposes to subsume Rule 1106.1 into PAR1106 and proposes to create an easier to read Table of Standards II that will contain this list of coating categories and the corresponding VOC content limits in a much easier to read tabular format. Table of Standards II will contain just the coating categories and VOC limits for Pleasure Craft Coating Operations. Table of Standards II contains all the original coating categories and VOC content limits that are currently shown in Rule 1106.1 but the list will be arranged in alphabetical order. There is only one addition to Table of Standards II and that is the inclusion of the Marine Deck Sealant Primer along with the corresponding 760 g/L VOC content limit. This coating category has been added to be consistent with another local APCD that also has a pleasure craft coating rule. Finally, the "Others" category in the current Rule 1106.1 is proposed to be renamed as "Any Other Coating Type" to be consistent with other Regulation XI rules and will include coating categories that are not listed in Table of Standards I such as bilge coatings and propeller coatings.

"(2) VOC Content of Pleasure Craft Coatings

Except as otherwise provided in this rule, a person shall not apply a pleasure craft coating within the SCAQMD jurisdiction with a VOC content in excess of the following limits shown in the Table of Standards II, expressed as grams of VOC per liter of coating, as applied, less water and less exempt solvents:"

TABLE 2-6 - PROPOSED TABLE OF STANDARDS FOR PLEASURE CRAFT COATINGS:

TABLE OF STANDARDS II

VOC LIMITS Less water and exempt compounds Grams per Liter (g/L)	
PLEASURE CRAFT COATING CATEGORIES	Current Limit
Antifoulant Coatings:	
Aluminum Substrate	560
Other Substrates	330
Clear Wood Finishes:	
Sealers	550
Varnishes	490
Primer Coatings:	
Finish Primer/Surfacer	420
High Build Primer Surfacer	340
Marine Deck Sealant Primer	760
Pretreatment Wash Primer	780
Teak Primer	775
Topcoats:	
Extreme High Gloss Coating	490
High Gloss Coating	420
Any Other Coating Type	420

Staff will also add a low-solids coating category for both marine and pleasure craft coatings. Low-solids marine and pleasure craft coatings will be limited to 120 grams per liter of VOC and will be classified as a low-solids coating if they have at least one pound of solids per gallon. Staff will add the following table to the proposed amended rule:

"(3) VOC Content of Low-Solids Coatings

Except as otherwise provided in this rule, a person shall not apply a marine coating or a pleasure craft coating within the SCAQMD jurisdiction with a VOC content in excess of the following limit shown in the Table of Standards III, expressed as grams of VOC per material of coating, as applied:"

TABLE 2-7: PROPOSED TABLE FOR LOW-SOLIDS COATINGS:

TABLE OF STANDARDS III

VOC LIMIT – MARINE & PLEASURE CRAFT COATINGS Grams per liter of material VOC	
COATING CATEGORY	CURRENT LIMIT
Low-Solids Coating	120

Paragraph (d)(4) - Most Restrictive VOC Limit

Staff proposes to include a provision in Proposed Amended Rule 1106 to address the most restrictive VOC limit. This provision is included in the other Regulation XI VOC rules and is now being proposed to be included in Proposed Amended Rule 1106 for consistency. In addition, there was some residual rulemaking language from the working group meeting that should have been removed (it's shown below in strike-out).

"(4) Most Restrictive VOC Limit

If any representation or information on the container of any coating subject to this rule, or any label or sticker affixed to the container, or in any sales, advertising, or technical literature that indicates that the coating meets the definition of or is recommended for use for more than one of the marine coating categories listed in ~~sub~~paragraph (d)(1) or the pleasure craft coating categories listed in ~~sub~~paragraph (d)(2), or the low-solids coating category listed in ~~sub~~paragraph (d)(3), then the lowest VOC content limit shall apply." ~~anywhere on the container of any coating listed in either Table of Standards or label theretoor literatureany representation is made that the coating may be used as, or is suitable for use as, a for which a lower standard is specified in the table or in paragraph(d)(1) or (d)(2), standard~~

Paragraph (d)(5) - Approved Emission Control System

Staff proposes the following updates to the existing rule language to enhance clarity and consistency with other Regulation IX coating rules and renumber the paragraph.

"(~~2~~5) Approved Emission Control System

~~(A) Approved Emission Control System~~

~~Owners and/or operators may comply with the provisions of paragraphs (c)(1) by using an emission control system, which has been approved in writing by the Executive Officer, for reducing VOC emissions. The control system must achieve a minimum capture efficiency using USEPA, ARB, and District methods specified in subparagraph (e)(4)(A) and a destruction efficiency of at least 85 percent by weight, and,~~

~~(B) The approved system shall reduce the VOC emissions, when using non-compliant coatings, to an equivalent or greater level that would be achieved by the provisions in paragraph (c)(1)~~A person may comply with the provisions of paragraphs (d)(1), (d)(2) or (d)(3), by using an approved emission control system, consisting of a collection and control device, provided such emission control system is approved pursuant to Rule 203 - Permit to Operate, in writing, by the Executive Officer for reducing emissions of VOC. The Executive Officer shall

approve such emission control system only if the VOC emissions resulting from the use of non-compliant coatings will be reduced to a level equivalent to or lower than the limits specified in paragraphs (d)(1), (d)(2) or (d)(3), as applicable. The required efficiency of an emission control system at which an equivalent or greater level of VOC reduction will be achieved shall be calculated by the following equation:

$$C.E. = \left[1 - \left\{ \frac{(VOC_{LWc})}{(VOC_{LWn,Max})} \times \frac{1 - (VOC_{LWn,Max}/D_{n,Max})}{1 - (VOC_{LWc}/D_c)} \right\} \right] \times 100\%$$

Where: C.E. = Control Efficiency, expressed as a percentage

VOC_{LWc} = VOC Limit of Rule 1106, less water and less exempt compounds, pursuant to subdivision (~~c~~d).

$VOC_{LWn,Max}$ = Maximum VOC content of non-compliant coating used in conjunction with a control device, less water and less exempt compounds.

$D_{n,Max}$ = Density of solvent, reducer, or thinner contained in the non-compliant coating, containing the maximum VOC content of the multi-component coating.

D_c = Density of corresponding solvent, reducer, or thinner used in the compliant coating system = 880 g/L."

Paragraph (d)(6) - Alternative Emission Control Plan

Staff proposes the following updates to the existing rule language to enhance clarity and renumber the paragraph.

"(~~3~~6) Alternative Emission Control Plan

~~Owners and/or operators may achieve compliance with the requirements~~A person may comply with the provisions of paragraphs (d)(1), (d)(2) and (d)(3)~~paragraph (c)(1)~~ by means of an Alternative Emission Control Plan, pursuant to Rule 108 - Alternative Emissions Control Plans."

Paragraph (d)(7) - Exempt Compounds

Staff proposes the following updates to the existing rule language to maintain consistency with other Regulation XI coating rules and renumber the paragraph.

"(7) Exempt Compounds

A person shall not manufacture, sell, offer for sale, distribute for use in the SCAQMD jurisdiction, or apply any marine or pleasure craft coating which contains any Group II Exempt Compounds listed in Rule 102 - Definition of Terms, in quantities greater than 0.1 percent by weight. Cyclic, branched, or linear, completely methylated siloxanes (VMS) are not subject to this provision."

Paragraph (d)(8) - Carcinogenic Materials

Staff proposes the following updates to the existing rule language to maintain consistency with other Regulation XI coating rules and renumber the paragraph.

"(8) Carcinogenic Materials

A person shall not manufacture, sell, offer for sale, distribute for use in the SCAQMD jurisdiction, or apply any marine or pleasure craft coating which contains cadmium, nickel, lead or hexavalent chromium that was introduced as a pigment or as an agent to impart any property or characteristic to the marine or pleasure craft coatings during manufacturing, distribution, or use of the applicable marine or pleasure craft coatings."

Paragraph (d)(9) – Transfer Efficiency

Staff proposes to add new language for transfer efficiency to align this rule with other Regulation IX coating rules and renumber the paragraph.

"(9) Transfer Efficiency

(A) Effective April 1st, 2016 a person shall not apply any marine coating or pleasure craft coating unless one of the following methods of coating transfer is used:

(i) electrostatic application, or

(ii) high-volume, low-pressure (HVLP) spray, or

(iii) brush, dip, or roller, or

(iv) Spray gun application, provided the owner or operator demonstrates that the spray gun meets the HVLP definition in paragraph (c)(~~18~~19) in design and use. A satisfactory demonstration must be based on the manufacturer's published technical material on the design of the spray gun and by a demonstration of the operation of the spray gun using an air pressure tip gauge from the manufacturer of the spray gun.

(v) Any such other marine or pleasure craft coating application methods as demonstrated, in accordance with the provisions of paragraph (h)(~~4~~6), to be capable of achieving equivalent or better transfer efficiency than the

marine or pleasure craft coating application method listed in clause (d)(9)(A)(ii), provided written approval is obtained from the Executive Officer prior to use.

(B) A person shall not apply any marine coating or pleasure craft coating by any of the methods listed in subparagraph (d)(9)(A) unless such coating is applied with properly operating equipment, operated according to procedures recommended by the manufacturer and in compliance with applicable permit conditions, if any."

Paragraph (d)(10) - Solvent Cleaning Operations, Storage and Disposal of VOC-containing Materials

Staff proposes the following updates to the existing rule language in efforts to make this rule consistent with other Regulation XI coating rules and renumber the paragraph.

(410) Solvent Cleaning ~~Operations,~~ Storage and Disposal of VOC-containing Materials

~~All solvent~~Solvent cleaning ~~operations~~ of application equipment, parts, products, tools, machinery, equipment, general work areas, and the storage and disposal of VOC-containing materials used in solvent cleaning operations shall be carried out pursuant to SCAQMD Rule 1171 - Solvent Cleaning Operations.

~~(5) RecordkeepNotwithstanding the provisions of subdivision (g), records shall be maintained pursuant to Rule 109.~~"

Subdivision (e) - Prohibition of Possession, Specification and Sale

Staff is proposing to include possession and sale in the existing provision for Prohibition of Specification to be consistent with Rule 1151 - Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations. Staff found non-compliant marine and pleasure craft coatings on the shelves in the boatyards, shipyards and marinas that were visited. In addition, staff found multiple non-compliant marine and pleasure craft coatings offered for sale at many marine stores in the SCAQMD jurisdiction. Staff proposes the following rule language to prohibit possession and sales of non-compliant marine and pleasure craft coating products subject to Rule 1106.

~~"(d) Prohibition of Specification~~

~~(1) A person shall not solicit or require any other person to use, in the district, any coating or combination of coatings to be applied to any marine vessel or marine component subject to the provisions of this rule that does not meet the limits requirements of this rule or of an Alternate Emission Control Plan approved pursuant to the provisions of paragraph (e)(3) of this rule.~~

~~(2) The requirements of paragraph (d)(1) shall apply to all written or oral agreements executed or entered into after November 4, 1988.~~"

"(e) Prohibition of Possession, Specification and Sale

(1) For the purpose of this rule, no person shall ~~supply, sell, offer for sale, market, manufacture, blend, repackage, apply,~~ store at a worksite~~, or solicit the application of~~ any marine coating or pleasure craft coating subject to this rule within the SCAQMD jurisdiction that is not in compliance with the requirements shown in the Tables of Standards of paragraphs (d)(1), (d)(2), and (d)(3) unless one or more of the following conditions apply:

(A) The marine or pleasure craft coating is for use at a facility that utilizes an approved emission control device pursuant to ~~sub~~paragraph (d)(5) and the coating meets the limits specified in permit conditions.

(B) The marine or pleasure craft coating is for use at a facility that operates in compliance with an approved Alternative Emissions Control Plan pursuant to ~~sub~~paragraph (d)(6), and the marine or pleasure craft coating is specified in the plan.

Staff determined that the following subparagraph was superfluous for this particular paragraph and it was removed:

~~(C) The requirements of paragraphs (d)(7) and (d)(8).~~

(2) For the purpose of this rule, no person shall solicit from, specify, or require any other person to use in the SCAQMD jurisdiction any marine or pleasure craft coating which, does not meet the:

(A) Applicable VOC limits required by paragraph (d)(1), (d)(2) or (d)(3) for the specific application unless:

(i) The marine or pleasure craft coating is located at a facility that utilizes an approved emission control device pursuant to paragraph (d)(5), and the marine or pleasure craft coating meets the limits specified in permit conditions; or,

(ii) The marine or pleasure craft coating is located at a facility that operates in compliance with an approved Alternative Emissions Control Plan pursuant to paragraph (d)(6), and the marine or pleasure craft coating is specified in the plan.

(B) The requirements of paragraphs (d)(7) and (d)(8).

A person subject to this rule can meet the requirement in subparagraph (e)(3)(A) by choosing either clause (e)(3)(A)(i) or (e)(3)(A)(ii), and meeting (e)(3)(A)(iii). A person must meet the requirement in subclause (e)(3)(A)(iii) regardless of which option – (e)(3)(A)(i) or (e)(3)(A)(ii) – is chosen.

(3) For the purpose of this rule, no person shall supply, sell, offer for sale, market, blend, package, repackage or distribute any marine or pleasure craft coating for use within the SCAQMD jurisdiction subject to the provisions in this rule which, does not meet the:

(A) Applicable VOC limits required by paragraphs (d)(1), (d)(2) and (d)(3) for the specific application, unless:

(i) The marine or pleasure craft coating is for use at a facility that utilizes an approved emission control device pursuant to paragraph (d)(5), and the coating meets the limits specified in permit conditions; or,

(ii) The marine or pleasure craft coating is for use at a facility that operates in accordance with an approved Alternative Emissions Control Plan pursuant to paragraph (d)(6), and the marine or pleasure craft coating is specified in the plan; and,

(iii) The person that supplies, sells, offers for sale, markets, blends, packages, repackages or distributes the marine or pleasure craft coating keeps the following records for at least five years and makes them available to the Executive Officer upon request:

(I) Marine or pleasure craft coating name and manufacturer;

(II) VOC content of the marine or pleasure craft coating;

(III) Documentation such as manufacturer specification sheets, material safety data sheets, technical data sheets, or any other air quality data sheets that demonstrate that the material is intended for use as a marine or pleasure craft coating;

(B) The requirements of paragraphs (d)(7) and (d)(8).

(4) For the purpose of this rule, no person shall solicit from, specify, require, offer for sale, sell, or distribute to any other person for use in the District any marine or pleasure craft coating application equipment which does not meet the requirements of subparagraph (d)(9)(A).

(5) For the purpose of this rule, no person shall offer for sale, sell, supply, market, offer for sale or distribute an HVLP spray gun for use within the SCAQMD unless ~~the~~ said person ~~offering for sale, selling, marketing or distributing the HVLP spray gun for use within the SCAQMD~~ provides accurate information to the spray gun recipient. Such accurate information shall include ~~on~~ the maximum inlet air pressure to the spray gun which would result in a maximum air pressure of 10 pounds per square inch gauge (psig) air pressure measured dynamically at the center of the air cap and at the air horns based on the manufacturer's published technical material on the design of the spray application equipment and by a demonstration of the operation of the spray application equipment using an air pressure tip gauge from the manufacturer of the gun. The information shall either be permanently marked on the gun, or provided on the company's letterhead or in the form of technical literature which clearly identifies the spray gun manufacturer, the seller, or the distributor.

(6) Paragraphs (d)(1), (d)(2) and (d)(3) shall not apply to marine coatings or pleasure craft coatings that are sold, offered for sale, or solicited, for shipment or use outside of the SCAQMD jurisdiction, or for shipment to other manufacturers for repackaging provided such coatings are sold, offered for sale, or solicited, for shipment or use outside the SCAQMD jurisdiction.

Subdivision (f) - Recordkeeping Requirements for Marine and Pleasure Craft Coating Manufacturers

Staff proposes to add new language for Recordkeeping for VOC Emissions and Recordkeeping Requirements for Emission Control System to align this rule with other Regulation IX coating rules.

"(f) Recordkeeping Requirements

(1) Recordkeeping for VOC Emissions

Records of marine coating usage and pleasure craft coating usage, as applicable, shall be maintained pursuant to SCAQMD Rule 109 - Recordkeeping for Volatile Organic Compound Emissions, and shall be made available to the Executive Officer upon request. The records shall also include the following information:

(A) Material name and manufacturer;

(B) Application method;

(C) Marine coating and pleasure craft coating categories, as applicable, and mix ratio specific to the coating;

(D) Regulatory VOC, for the marine coating and pleasure craft coating, as applicable;

(E) Documentation such as manufacturer specification sheets, material safety data sheets, technical data sheets, or any other air quality data sheets that indicate the material is intended for use as a marine coating, pleasure craft coating or solvent, as applicable;

(F) Current manufacturer specification sheets, material safety data sheets, technical data sheets, or air quality data sheets, which list the actual VOC and regulatory VOC, for each marine coating and pleasure craft coating, as applicable and,

(2) Recordkeeping Requirements for Emission Control System

Any person using an emission control system shall maintain daily records of key system operating parameters which will demonstrate continuous operation and compliance of the emission control system during periods of VOC emission producing activities. "Key system operating parameters" are those parameters necessary to ensure or document compliance with subparagraph (h)(57)(A), including, but not limited to, temperatures, pressure drops, and air flow rates."

Subdivision (g) - Administrative Requirements for Marine and Pleasure Craft Coating Manufacturers

Staff proposes to add new language to require a Compliance Statement Requirement and Labeling Requirements, and align this rule with other Regulation IX coating rules.

"(g) Administrative Requirements for Marine Coating Manufacturers

(1) Compliance Statement Requirement

Effective April 1st, 2016 for each individual marine coating and pleasure craft coating, marine coating and pleasure craft coating component, and ready to spray mixtures (based on the manufacturers stated mix ratio) sold, offered for sale, for shipment or use within the SCAQMD jurisdiction, the manufacturer shall include the following information on a product data sheet, or an equivalent medium:

(A) The actual VOC and regulatory VOC for marine coating and pleasure craft coating, as applicable; and,

(B) The weight percentage of volatiles, water, and exempt compounds; and,

(C) The density of the material (in grams per liter).

(2) Labeling Requirements

(A) The manufacturer of marine coatings and pleasure craft coatings or marine coating and pleasure craft coating components shall include on all containers the regulatory VOC content, as supplied (in grams of VOC per liter of coating, less water and exempt compounds)."

Additionally, staff proposes to add new language to include a manufacturer's distributor list (MD) and a manufacturer's annual quantity emission report (AQER) to facilitate compliance with the VOC requirements of the rule and to inventory the Marine and Pleasure Craft Coatings that come into the SCAQMD jurisdiction.

"(3) Reporting Requirements

(A) Annual Quantity Emissions Reports (AQER)

Effective April 1st, 2016 for each calendar year (January 1 through December 31) beginning with 2015 and continuing with each subsequent calendar year until 2018, a marine coating or pleasure craft coating manufacturer or distributor shall submit to the District by April 1st of the following calendar year, an annual quantity and emissions report for products subject to the rule that were sold or distributed for sale within the District. The report format shall be approved by the Executive Officer, and shall include the annual sales or distribution volume and the regulatory VOC content of marine coatings and pleasure craft coatings sold or distributed within the District.

(B) List of Distributors

Effective April 1st, 2016 for each calendar year (January 1 through December 31) beginning with 2015 and continuing with each subsequent calendar year until 2018, each manufacturer or distributor of a marine coating or pleasure craft coating that were sold or distributed for sale within the district, shall submit to the District by April 1st a list of all U.S. distributors to whom they supply products that are subject to this rule, including but not limited to, private label marine coating or pleasure craft coatings, and toll manufactured marine coatings or pleasure craft coatings. The report format shall be approved by the Executive Officer and shall include the distributor's name, address, contact person and telephone number."

Paragraph (h)(1), (h)(2) and (h)(3) - Test Methods

Staff proposes the following updates to the existing rule language.

"(~~e~~h) Test Methods

(1) Determination of VOC Content:

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

(A) ~~United States Environmental Protection Agency (~~U.S. EPA~~)~~ Reference Test Method 24 (Determination of Volatile Matter Content, Water Content, Volume Solids and Weight Solids of Surface Coatings, Code of Federal Regulations, Title 40, Part 60, Appendix A~~,~~). The exempt compounds' content shall be determined by South Coast Air Quality Management District (SCAQMD) Laboratory Test Method 303 (Determination of Exempt Compounds) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual; or,

(B) SCAQMD Method 304 [Determination of Volatile Organic Compounds (VOCs) in Various Materials] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual~~.~~; or,

(C) SCAQMD Method 313 [Determination of Volatile Organic Compounds VOC by Gas Chromatography-Mass Spectrometry] in the SCAQMD's "Laboratory Methods of Analysis for Enforcement Samples" manual.

(~~BD~~2) VOC content determined to exceed the limits established by this rule through the use of any of the above-referenced test methods shall constitute a violation of this rule.

(~~CE~~3) Exempt Perfluorocarbon Compounds

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; and

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

~~will~~ shall be analyzed as exempt compounds for compliance with subdivision (~~e~~d), only ~~when~~ at such time as manufacturers specify which individual compounds are used in the ~~coating~~ formulation of the coatings subject to this rule. In addition, prior to any such analysis, the manufacturers shall also identify the test methods approved by the U.S. EPA, California Air Resources Board (CARB),

and the SCAQMD ~~approved test methods prior to such analysis shall~~ that will be used to quantify the amount of each exempt compound."

Paragraph (h)(~~2~~4) - Determination of Metal Content
Staff proposes the following updates to the existing rule language as follows:

"(~~2~~4) Determination of ~~Metal Content~~Iridescent Particles in Metallic/Iridescent Coatings
The metal and silicon content in metallic/iridescent coatings subject to the provisions of this rule shall be determined by the SCAQMD Method 311 (Determination~~Analysis~~ of Percent Metal in Metallic Coatings by Spectrographic Method) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual."

Paragraph (h)(3) - Determination of Acid Content
Staff proposes the following updates to the existing rule language as follows:

"(~~3~~5) Determination of Acid Content in Marine and Pleasure Craft Coatings
The acid content of any coating subject to the provisions of this rule shall be determined by ASTM D~~-~~1613-~~85~~ 06 (2012) (Standard Test Method for Acidity in Volatile Solvents and Chemical Intermediates Used in Paint~~.~~, Varnish, Lacquer, and Related Products) ~~contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual~~."

Paragraph (h)(~~4~~6) - Transfer Efficiency
Staff proposes to add new language for transfer efficiency test methods to align this rule with other Regulation IX coating rules as follows:

"(~~4~~6) Transfer Efficiency
The transfer efficiency of alternative marine coating and pleasure craft coating application methods, as defined by clause (d)(9)(A)(v), shall be determined in accordance with the SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989," and SCAQMD "Guidelines for Demonstrating Equivalency With District Approved Transfer Efficiency Spray Gun September 26, 2002".

Paragraph (h)(~~5~~7) - Determination of Efficiency of Emission Control System
Staff proposes to update the language in paragraph (h)(5) to make it consistent with other Regulation XI coating rules as follows:

"(~~45~~7) Determination of Efficiency of Emission Control System

(A) The efficiency of the collection device of the emission control system as specified in paragraph ~~(c)(2)~~ (d)(5) shall be determined by the ~~USEPA~~ methods specified ~~cited in 55 Federal Register 26865 (June 29, 1990), or any other method approved by the USEPA, the California Air Resources Board, and the SCAQMD~~below~~.~~:

(i) U.S. EPA method cited in 55 Federal Register (FR) 26865, June 29, 1990; or

(ii) SCAQMD's "Protocol for Determination of Volatile Organic Compounds (VOC) Capture Efficiency"; or

(iii) Any other method approved by the U.S. EPA, CARB, and the District Executive Officer.

(B) The efficiency of the control device of the emission control system as specified in paragraph (~~c~~d)(~~2~~5) and the VOC content in the control device exhaust gases, measured and calculated as carbon, shall be determined by U.S. EPA Test Methods 25, 25A, or SCAQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) as applicable. U.S. EPA Test Method 18, or CARB Method 422 shall be used to determine emissions of exempt compounds."

Paragraph (h)(~~6~~8) - Multiple Test Methods and paragraph (h)(9)

Staff proposes to relabel the following paragraphs to make the language consistent will the rule.

"(~~5~~6~~8~~) 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.

(~~6~~7~~9~~) All test methods referenced in this section shall be the most recently approved version."

Subdivision (i) - Rule 442 Applicability

Staff proposes to add new rule language to include usage of solvents and make this rule consistent with other Regulation XI rules. The new rule language will be under subdivision (i) and will replace the exemptions subdivision (i). The new rule language is as follows:

"(~~h~~i) Rule 442 Applicability

Any ~~*marine coating operation*~~Marine Coating Operation or Pleasure Craft Coating Operation or any facility which is exempt pursuant to subdivision (j) from all or a portion of the VOC limits of subdivision (d) ~~this rule~~ shall comply with the provisions of Rule 442 - Usage of Solvents."

Subdivision (j) - Exemptions:

Staff proposes minor corrections and ~~one new paragraph to address sales and use outside the jurisdiction to subdivision (j)~~two new exemptions to subdivision (j) addressing coatings with viscosities greater than 650 centipoise and coatings that are intended for vessels that submerge to at least 500 feet below the surface of the water. Subdivision (j) is numbered as subdivision (i) in the current rule. Paragraphs (j)(1), (j)(2) and (j)(3) are editorial corrections. The language in paragraph (i)(3) of the current rule can be removed as the date January 1, 1992 has long since passed. The language in paragraph (i)(4) of the current rule can also be removed since the VOC content limit for aluminum hulls is now shown in the Table of Standards I and II.

"(~~i~~j) Exemptions:

The provisions of this rule shall not apply to:

(1) ~~marine~~Marine coatings applied to interior surfaces of potable water containers.

(2) ~~touch~~Touch-up coatings, as defined by paragraph (c)(~~40~~41) of this rule.

~~(3) marine coatings purchased before January 1, 1992, in containers of one quart or less and applied to pleasure craft.~~

~~(4) antifoulant coatings applied to aluminum hulls.~~

(~~5~~3) Any aerosol coating product~~s~~.

~~(4) Paragraphs (d)(1), (d)(2) and (d)(3) shall not apply to marine coatings or pleasure craft coatings that are sold, offered for sale, or solicited, for shipment or use outside of the SCAQMD jurisdiction, or for shipment to other manufacturers for repackaging provided such coatings are sold, offered for sale, or solicited, for shipment or use outside the SCAQMD jurisdiction.~~

(4) The provisions of paragraph (d)(9) shall not apply to Marine or Pleasure Craft coatings with a viscosity of 650 centipoise or greater, as applied.

(5) The provisions of paragraphs (d)(1), (d)(2), and (d)(3) shall not apply to Marine coatings that are used for vessels that are intended to submerge to at least 500 feet below the surface of the water provided that the total combined usage of such coatings does not exceed one gallon per month and such coatings are in compliance with the VOC limits in the U.S. EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) for Shipbuilding and Ship Repair (Surface Coatings).

RULE 1106 – MARINE AND PLEASURE CRAFT COATING OPERATIONS

CHAPTER 3: IMPACT ASSESSMENT OF PROPOSED AMENDED RULE 1106

- Emission Impact Assessment
- Cost Analysis
- Incremental Cost-Effectiveness
- California Environmental Quality Act (CEQA)
- Socioeconomic Impact Assessment
- Draft Findings under California Health and Safety Code 40727
- Comparative Analysis
- Draft Conclusions and Recommendations
- Public Comments and Responses

EMISSION IMPACT ASSESSMENT

Staff does not anticipate any real quantifiable emission reductions or increases, since Proposed Amended Rule 1106 seeks to align the VOC content limit for certain coating categories with the U.S. EPA CTG, and other California APCDs/AQMDs, and will not lead to reformulation of coatings; thus, Proposed Amended Rule 1106 will be administrative in nature.

COST ANALYSIS

The proposed amendment to Rule 1106 is not expected to have a net cost impact, since industry will be able to continue business as usual and operate their equipment subject to Proposed Amended Rule 1106 in a similar manner to the current rules. Staff determined ten manufacturers of marine and pleasure craft coatings will be required to provide annual reports. However, the cost burden is not substantial and the associated costs are expected to be minimal.

INCREMENTAL COST-EFFECTIVENESS

Under Health and Safety Code § 40920.6, the SCAQMD is required to perform an incremental cost analysis when adopting a Best Available Retrofit Control Technology (BARCT) rule or feasible measure required by the California Clean Air Act. To perform this analysis, the SCAQMD must (1) identify one or more control options achieving the emission reduction objectives for the proposed rule, (2) determine the cost effectiveness for each option, and (3) calculate the incremental cost effectiveness for each option. To determine incremental costs, the SCAQMD must "calculate the difference in the dollar costs divided by the difference in the emission reduction potentials between each progressively more stringent potential control option as compared to the next less expensive control option." Staff reviewed the current standards throughout the state and determined that PAR 1106 represents BARCT for Marine and Pleasure Craft Coating Operations because there are no other more stringent limits available. PAR 1106 will not result in emission reductions and therefore no incremental cost analysis is required under Health and Safety Code § 40920.6.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Pursuant to the California Environmental Quality Act (CEQA) and the SCAQMD's Certified Regulatory Program (Rule 110), the SCAQMD will prepare appropriate CEQA documentation for Proposed Amended Rule 1106. Upon completion, the CEQA document will be released for public review and comment, and will be available at SCAQMD Headquarters, by calling the SCAQMD Public Information Center at (909) 396-2039, or by accessing SCAQMD's CEQA website at: www.aqmd.gov/ceqa.

SOCIOECONOMIC IMPACT ASSESSMENT

Proposed Amended Rule 1106 re-codifies existing requirements for Marine and Pleasure Craft Coating Operations found in current Rule 1106 and 1106.1. Since Proposed Amended Rule 1106 does not significantly affect air quality or emissions, no new significant cost burden is expected above and beyond what is currently required. Therefore, a socioeconomic assessment is not necessary or required. Additional reporting proposed for marine and pleasure craft coating manufacturers is not substantial and the associated costs are expected to be minimal.

DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE 40727

The draft findings include necessity, authority, clarity, consistency, non-duplication and reference, as defined in Health and Safety Code Section §40727. The draft findings are as follows:

Necessity - The SCAQMD Governing Board finds and determines that Proposed Amended Rule 1106, Marine and Pleasure Craft Coating Operations, is necessary to enhance readability and provide clarity of rule language.

Authority - The SCAQMD Governing Board obtains its authority to adopt, amend or repeal rules and regulations from Health and Safety Code §§ 39002, 40000, 40001, 40440, 40702, 40725 - 40728 and 41700.

Clarity - The SCAQMD Governing Board finds and determines that Proposed Amended Rule 1106 is written and displayed so that the meaning can be easily understood by persons directly affected by it.

Consistency – The SCAQMD Governing Board finds and determines that Proposed Amended Rule 1106 is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or federal or state regulations.

Non-Duplication – The SCAQMD Governing Board has determined that Proposed Amended Rule 1106 does not impose the same requirement as any existing state or federal regulation, and the proposed amendment is necessary and proper to execute the powers and duties granted to, and imposed upon, the SCAQMD.

Reference - In adopting this Proposed Amended Rule 1106, the SCAQMD Governing Board references the following statutes which SCAQMD hereby implements, interprets or makes specific: Health and Safety Code Sections 40001, 40440, and 40702.

COMPARATIVE ANALYSIS

California Health and Safety Code Section 40727.2 requires the comparative analysis with any federal or other SCAQMD rules that apply to the same equipment or source type as the proposed amendment. The existing VOC limits in current Rule 1106 and Rule 1106.1 as well as the proposed VOC limits in Proposed Amended Rule 1106 are not in conflict with the current National Emission Standards for Hazardous Air Pollutants (NESHAP) for Shipbuilding and Ship Repair Operations (Surface Coating), 40 CFR Part 63, dated June 18, 1996. The existing VOC limits in current Rule 1106 and Rule 1106.1 as well as the proposed VOC limits in Rule 1106 are not in conflict with the current U.S. EPA CTG, dated August 27, 1996. Proposed Amended Rule 1106 seeks to align the VOC limit for Inorganic Zinc Coating in current Rule 1106 from 650 g/L to 340 g/L to be consistent with the U.S. EPA VOC limit of 340 g/L.

The NESHAP for Shipbuilding and Ship Repair Operations (Surface Coating) sets forth Hazardous Air Pollutants ("HAP") emission limits for major source facilities that apply coatings used in volumes of 200 liters (52.8 gallons) or more. Affected sources under this NESHAP are Shipbuilding and Ship

Repair Operations (Surface Coating) operations that are major sources under federal law, or are coating operations located within the confines of a federal major source.

The CTG is intended to provide state and local air pollution authorities' information to assist them in determining RACT for VOCs for Shipbuilding and Ship Repair Operations (Surface Coating).

The proposed amendments to Rule 1106 are not expected to reduce or increase VOC emissions. Current Rules 1106 and 1106.1 and Proposed Amended Rule 1106 does not regulate Hazardous Air Pollutants (HAP) emissions directly. Therefore, the existing as well as the proposed VOC limits of Rule 1106 are not in conflict with federal regulations.

Table 3-1 has been prepared to show comparisons between SCAQMD Proposed Amended Rule 1106, the U.S. EPA CTG, and the NESHAP regulation.

TABLE 3-1: COMPARATIVE ANALYSIS

CATEGORY	SCAQMD RULE 1106 – Marine and Pleasure Craft Coating Operations	U.S.EPA CTG Control Techniques Guidelines for Shipbuilding and Ship Repair Operations (Surface Coating)	USEPA NESHAP 40 CFR Part 63 – NESHAP for HAP for Shipbuilding and Ship Repair Operations (Surface Coating)
Purpose	Reduces emissions of VOC and stratospheric ozone depleting and global warming compounds from Marine & Pleasure Craft Coating Operations.	Provides state and local air pollution authorities' information to assist them in determining RACT, to control VOCs from surface coating operations in the shipbuilding and ship repair industry.	Establishes National Emission Standards for Hazardous Air Pollutants for shipbuilding and ship repair (surface coating) facilities.
Applicability	Applies to local Marine and Pleasure Craft Coating Operations.	Applies to facilities that perform surface coating operations in the shipbuilding and ship repair industry. Does not include pleasure craft coating operations.	Applies to shipbuilding and ship repair (surface coating) operations at any facility that is a major source. Does not include pleasure craft coating operations.
Averaging Provisions	None.	None.	None.
Units	Mass/Volume: Grams/Liter or Pounds/gallon.	Mass/Volume: Grams/Liter.	Mass/Volume: Grams/Liter.
Operating Parameters	Has HVLP type transfer efficiency requirements for coating application equipment.	No HVLP type transfer efficiency requirements for application equipment.	Does not include the use of HVLP type transfer efficiency for application equipment.
Method to Determine VOC	U.S. EPA Method 24, or SCAQMD Method 304, or SCAQMD Method 313.	Does not mention U.S. EPA Methods for determining VOC.	U.S.EPA Method 24 of 40 CFR part 60, appendix A.
Capture Efficiency	U.S. EPA Method 55 or, SCAQMD's "Protocol for determining VOC capture efficiency.	Does not mention U.S. EPA Methods for capture efficiency.	Does not mention U.S.EPA Methods for capture efficiency.

CATEGORY	SCAQMD RULE 1106 – Marine and Pleasure Craft Coating Operations	U.S.EPA CTG Control Techniques Guidelines for Shipbuilding and Ship Repair Operations (Surface Coating)	USEPA NESHAP 40 CFR Part 63 – NESHAP for HAP for Shipbuilding and Ship Repair Operations (Surface Coating)
Control Device Efficiency	U.S.EPA Method 25 & 25A, or SCAQMD Method 25.1. Must use U.S. EPA Method 422 to determine emissions from exempt compounds	Does not mention U.S. EPA Methods for control device efficiency.	Does not mention U.S. EPA Methods for control device efficiency.
Work Practices	Defers to Rule 1171 for storage and disposal of VOC containing materials.	Does not contain any work practices recommendations.	VOC containing containers to be kept closed when not in use.
			Minimize spills of VOC containing materials.
Monitoring	None	None	None
Reporting	Annual Quantity Emissions Report and Annual Manufacturer's Distribution List required for reporting.	No mention for reporting	No mention for reporting
Recordkeeping	Defers recordkeeping to Rule 109, records to be kept annually.	No mention for recordkeeping.	Comprehensive records required annually to support compliance.
Other Elements	Prohibition of possession, specification and sale for non-compliant marine and pleasure craft coatings.	No mention of a prohibition of sale requirement.	No mention of a prohibition of sale requirement.
	Marine coatings applied to interior surfaces of potable water containers, touch-up coatings and aerosol containers.	No transfer efficiency requirements in the CTG.	Offers two exemptions: annual usage of less than 200 liters for an individual coating and aerosol containers.

DRAFT CONCLUSIONS AND RECOMMENDATIONS

Based on the foregoing, staff recommends the adoption of Proposed Amended Rule 1106 - Marine and Pleasure Craft Coating Operations.

PUBLIC COMMENTS AND RESPONSES

Staff held the public workshop for the rescinding of Rule 1106.1 - Pleasure Craft Coating Operations and the Proposed Amended Rule 1106 - Marine and Pleasure Craft Coating Operations on Wednesday, August 12, 2015. The following comments were made during the comment period, August 12 through August 31, 2015 and staff responses to those comments are shown below.

Stakeholder Comment #1 **American Coatings Association**

Under the section titled "Test Methods", we note that Method 313 shall be run to determine the VOC content of coatings. Also listed are other well-known and much more relevant methods such as Method 24. Setting aside the technical limitations and problems that still need to be resolved before Method 313 can deployed for compliance purposes, we are confused to why it would be included in the first place. Under the Scope and Application for Method 313 it states "Method 313 applies to materials such as paints, coatings, solvents, and other liquid/dispersed solid materials containing less than 150 g/L VOC material as measured by SCAQMD Method 304-91". Because all marine coatings categories in this rule are in excess of this limit and most likely not water based it is clear there is no technical requirement to introduce Method 313 and we strongly recommend SCAQMD remove this requirement from the proposed rule. We believe that Method 24 will be sufficient for determining VOC compliance and that Method 313 not only has outstanding technical issues that it must resolve, but simply is inappropriate because it is developed and intended only for water based coatings below 150 g/L.

Staff Response:
Staff has found marine and pleasure craft coatings that use water base chemistry and have regulatory VOC contents of 150 g/L. The material VOC would actually be even less than 150 g/L. Based on the existence of those marine and pleasure craft coatings and that SCAQMD Method 313 applies to coatings containing 150 g/L or less, staff finds it prudent to maintain SCAQMD Method 313.

Stakeholder Comment #2 **Disneyland Resort**

My primary concern is redefining the "Pleasure Craft: as it would move Disneyland's attraction vessels out of pleasure craft category. Disneyland attraction vessels (Mark Twain, Columbia, Jungle Cruise and etc.) are designed, operated as pleasure craft. Our coating system was mapped out of R1106.1 VOC standard table. As such I would suggest the District to add in the definition something like: "Pleasure craft also includes attraction vessels operated by amusement park", Can you please consider? I forgot to mention that our Mark Twain and Columbia attraction boats are greater than 20 meters long. Will this change your view? I hope not but just want to be sure we are covered.

Staff Response:
Staff realizes the need to include watercraft solely used for amusement park rides such as those at Disneyland, Knott's Berry Farm, Magic Mountain, and Raging Waters, in the pleasure craft coating category. Staff believes these types of watercraft can be captured under the pleasure craft definition by adding additional language to include them as follows:

"(29) PLEASURE CRAFT are marine or fresh water vessels that are less than 20 meters in length and are manufactured or operated primarily for recreational purposes, or are leased, rented, or chartered to a person or business for recreational purposes. Amusement theme parks that operate vessels in a fresh water environment solely for the purpose of an amusement park attraction shall be considered pleasure craft vessels regardless of their length. The owner or operator of a pleasure craft vessel shall be responsible for certifying that the intended use is for recreational purposes."

Stakeholder Comment #3 **VACCO**

VACCO greatly appreciates the opportunity to provide comments on the Proposed Rule 1106 and would like to request a provision in the proposed Rule 1106 for exemptions on United States Navy defense components. VACCO is the leading manufacturer of quiet and non -quiet air v valves and manifolds for use in naval ship applications. VACCO has thousands of active components on the U.S. Navy fleets. VACCO has contract agreements with U.S. Navy suppliers, such as Electric Boat and Bechtel, which include drawings and Military Specifications (MIL -SPEC) pe requirements. The chemicals/materials specified on drawings are based on approved standards from the U.S. Navy that cannot be replaced. VACCO supplies as many products to the U.S. Navy of which approximately 80% to 90% are installed on submarines and 10% to 20% are installed on Navy surface ships. To assure a lifetime of no corrosion, which is especially important for valves and manifolds in/near sea water, VACCO already has limited selections of materials to use in the manufacturing processes. The types of coating VACCO uses include, but not limited to, Pre -Treatment Primer, Special Marking Coating, Any Other Coating Type, etc. VACCO may contract other projects which may require different type of coatings in the future. Quantity of these types of coatings is minimal; no more than 3 gallons are used in a year yielding insignificant amount of emissions. VACCO is willing to work with the District addressing any concerns.

Currently VACCO has a few coatings specified on submarine component drawings that are used on valves; these coatings will then no longer be compliant due to the reduced VOC content limits. Alternate coatings with lower VOC contents would then be requested. Please acknowledge the difficulties of making changes on specifications from the U.S. Navy without performance testing & verification to their stringent standards. Although alternate coating that meets all product specifications and military specifications is an option, the U.S. Navy suppliers would need to propose and obtain final approval from the U.S. Navy. To ensure safety and consistency, changes on specifications are not preferred. It is important to manufacture products to the U.S. Navy specification to maintain the national defense system.

Staff Response:
Staff determined Pre-treatment Wash Primers and Special Marking Coatings that are intended to be used on submerged vessel (submarine) components require the use of these coatings per military specifications (Mil-Specs) and currently meet the VOC limits in Rule 1106 - Marine Coating Operations. However, these coatings will not meet the new aligned VOC limits in Proposed Amended Rule 1106, which seeks to align these VOC limits with other APCDs/AQMDs. Staff proposes to craft an exemption for this type of no more than 12 gallons per calendar year, of all products combined, for this type operation and will require that the products used will have to be in compliance with the U.S. EPA National Emission Standard for Shipbuilding and Ship Repair (Surface Coating) as provided in Part 63 of the Federal Register.

Stakeholder Comment #4 **Metropolitan Water District of Southern California**

As the nation's largest provider of treated drinking water, the Metropolitan Water District of Southern California (Metropolitan) owns, operates, and maintains numerous reservoirs, canals, water treatment plants, etc. Per the language in the Proposed Amended Rule (PAR) 1106, Marine Coatings, and the discussion provided in the August 2015 Preliminary Draft Staff Report, Metropolitan's watercraft operated at these locations are not subject to the rule as the locations would not be considered "marine

environments". However, for consistency with recent rulemaking activities for SCAQMD coating rules, we would like to recommend that PAR 1106 recognize the newer coating application technology utilized by the low-VOC high solids coatings that are available from the paint manufacturers. Specifically, the August 2015 PAR proposes the added requirements for Transfer Efficiency in (d)(9). For similar reasons discussed during the PAR 1107 rulemaking, the draft 7/10/2012 PAR 1107 (f)(8) language can also be used for PAR 1106 - the transfer efficiency requirements shall not apply to marine coatings with a viscosity of 650 centipoise or greater, as applied.

For various types of substrates and operations (e.g., metal parts, architectural, marine), application of the ultra-low VOC, high viscosity resin coatings (e.g., epoxy, polyurethane) can be facilitated by the ability to apply the coatings with specialized applicators such as heated plural component airless or air assisted spray guns, or unique cartridge gun systems. Incorporation of a requirement based on the coating viscosity will permit the use of the application equipment best suited for the material while retaining the benefits of using the low-VOC high solids coatings.

Staff Response:
Staff recalls the discussion of an exemption for transfer efficiency for metal parts and products coatings that were tested to have a viscosity of 650 or greater centipoise. The thought was that if a coating for a metal part or component was too thick to spray from an HVLP spray gun, the spray coating option would no longer be a viable application option. To spray such thick fluids, special plural type application equipment or very high pressures (greater than 1,000 psi) are necessary. Without the proposed exemption, shops forced to use HVLP equipment would otherwise have to thin the high solids coatings with VOC solvents to allow them to be sprayed, thus eliminating the benefit of the low-VOC high solids coatings. Rather than thin the coating in excess to spray it, a viable alternative would be to provide an exemption in the rule to allow a coating with 650 or more centipoise to be exempted from the transfer efficiency requirements.

Stakeholder Comment #5 **Radtech International**

RadTech International is pleased to comment on the proposed amendments to Rule 1106. We have over 800 members involved in UV/EB/LED technology. We recently provided literature to your staff related to the use of LED coatings in a Marine Coatings application by the United States Navy. We support the RadTech proposal to exempt UV/EB/LED processes from the rule in order to provide incentives for voluntary emission reductions.

Specifically, we have concerns over the extensive recordkeeping requirements in the rule because they would add an undue burden to our industry and would eliminate the current exemptions for UV/EB in Rule 109 which your board adopted several years ago. We also request the inclusion of a definition for energy curable materials in the rule and propose that ASTM D7767 (the test method for thin film UV/EB curable materials) be included in Section (h) Test Methods. Additionally, flexibility should be offered to UV/EB processes as related to the requirements for transfer efficiency in the rule. UV/EB materials not only meet but far exceed any proposed rule requirements and any added flexibility to companies that choose these pollution preventive processes will encourage voluntary emission reductions thereby furthering the district's mission.

Staff Response:
The recordkeeping requirements in Proposed Amended Rule 1106 paragraph (d)(1) state, in part, "Records of marine coating usage and pleasure craft coating usage, as applicable, shall be maintained pursuant to SCAQMD Rule 109- Recordkeeping for Volatile Organic Compound emissions, and shall be made available to the Executive Officer upon request…". Rule 109 provides an exemption from the provisions in the rule pertaining to recordkeeping for super compliant material(s) provided the facility can demonstrate that the total permitted facility VOC emissions do not exceed four tons in any calendar year. Rule 109 defines a super compliant material as any material containing 50 grams or less of VOC per liter of material. The exemption provided in Rule 109 as discussed above is also applicable to Proposed Amended Rule 1106. This has always been staff's intent with the amendment.

To address the concerns of the UV/EB curable coatings industry, staff has written a definition into the Proposed Amended Rule 1106 for UV/EB curable thin film marine and pleasure craft coatings. The definition includes a reference to ASTM D7767-11 "Standard Test Method to Measure Volatiles from Radiation Curable Monomers, Oligomers, and Blends and Thin Coatings Made from Them".

Even though there are coatings that are regulated by other Regulation XI coating rules that are also less than 50 g/L VOC content, they are not exempt from the transfer efficiency requirements. Transfer efficiency requirements are necessary to not only enhance paint transfer onto a substrate, but also, in the case of spray coating applications, reduce excessive overspray. For example, an overall exemption from transfer efficiency requirements could result in the use of a conventional spray gun that uses high volume, high pressure, to spray coat a surface. This in turn could result in greater overspray than the use of a High Volume Low Pressure (HVLP) type spray gun. The excessive overspray generated by conventional, and other types of spray equipment that do not meet transfer efficiency requirements, typically emit PM10 particulates beyond property boundaries and becomes a nuisance with other entities in the area which typically results in overspray complaints. In addition, there is also a concern for particle fall-out during the spray coating operation. Fall-out occurs when particles are propelled at the substrate under high pressure and the particles bounce back from the substrate and fall-out to the ground. The fall-out material can then be washed into the storm drains and channels thus presenting additional issues with water contamination of rivers and the ocean where these type applications typically occur.

There were also five additional comment letters submitted by DDU Enterprises Inc., EPMAR Corporation, Heraeus Noblelight America LLC, UV Specialties LLC, and Wave Front Technology that mirrored the comment letter submitted by Radtech International.

REFERENCES

SCAQMD Final Staff Report for proposed amendment to: 1106 - Marine Coating Operations, December 1994.

SCAQMD Final Staff Report, Proposed Amended Rule 1106.1 - Pleasure Craft Coating Operations, January 1999.

Websites:

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http://en.wikipedia.org/wiki/Ablation

http://www.cureuv.com/marine-uv-cure-wet-look-wood-finish-products.html

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Environmental Assessment:

Proposed Amended Rule 1106 – Marine and Pleasure Craft Coating Operations and Rescission of Rule 1106.1 – Pleasure Craft Coating Operations

September 2015

SCAQMD No. 150804JI

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PREFACE

This document constitutes the Final Environmental Assessment (EA) for Proposed Amended Rule 1106 – Marine and Pleasure Craft Coating Operations and Rescission of Rule 1106.1 – Pleasure Craft Coating Operations. The Draft EA was released for a 30-day public review and comment period from August 19, 2015 to September 18, 2015. No comment letters were received during the public review period. The environmental analysis in the Draft EA concluded that Proposed Amended Rule 1106 and Rescission of Rule 1106.1 would not generate any significant adverse environmental impacts.

Minor modifications were made to the Draft EA. To facilitate identifying modifications to the document, added and/or modified text is underlined. None of the modifications alter any conclusions reached in the Draft EA, 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. Therefore, this document now constitutes the Final EA for Proposed Amended Rule 1106 and Rescission of Rule 1106.1.

CHAPTER 1 - PROJECT DESCRIPTION

Introduction

Affected Facilities

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Project Description

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 referred to herein as the District. By statute, the SCAQMD is required to adopt an Air Quality Management Plan (AQMP) demonstrating compliance with 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 Final 2012 AQMP concluded that reductions in emissions of particulate matter (PM), oxides of sulfur (SOx), oxides of nitrogen (NOx), and volatile organic compounds (VOC) are necessary to attain the current state and national ambient air quality standards for ozone, and particulate matter with an aerodynamic diameter of 2.5 microns or less (PM2.5). Ozone, a criteria pollutant that is formed when NOx and VOCs react in the atmosphere, has been shown to adversely affect human health.

The Basin is designated by the United States Environmental Protection Agency (U.S. EPA) as a non-attainment area for ozone and PM2.5 emissions because the federal ozone standard and the 2006 PM2.5 standard have been exceeded. For this reason, the SCAQMD is required to evaluate all feasible control measures in order to reduce direct ozone and PM2.5 emissions, including precursors, such as NOx and VOCs. The Final 2012 AQMP sets forth a comprehensive program for the Basin to comply with the federal 24-hour PM2.5 air quality standard, satisfy the planning requirements of the federal Clean Air Act, and provide an update to the Basin's commitments towards meeting the federal 8-hour ozone standard. In particular, the Final 2012 AQMP contains a multi-pollutant control strategy to achieve attainment with the federal 24-hour PM2.5 air quality standard. The 2012 AQMP also serves to satisfy the recent requirements promulgated by the EPA for a new attainment demonstration of the revoked 1-hour ozone standard, as well as to provide additional measures to partially fulfill long-term reduction obligations under the 2007 8-hour Ozone State Implementation Plan (SIP).

Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations of VOCs because of interference with oxygen uptake. In general, ambient VOC concentrations in the atmosphere are suspected to cause coughing, sneezing, headaches, weakness, laryngitis, and bronchitis, even at low concentrations. Some hydrocarbon compounds classified as VOC emissions are thought or known to be toxic air contaminants (TACs). With stationary and mobile sources being the major producers of VOCs, which contribute to ozone formation, reducing the quantity of VOCs in the district has been an on-going effort by the SCAQMD.

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 pursuant to Health and Safety Code §§40913, 40914, and 40920.5. The term "feasible" is defined in the Title 14 of the California Code of Regulations, §15364, as a measure "capable of being

[1] The Lewis-Presley Air Quality Management Act, 1976 Cal. Stats., ch 324 (codified at Health and Safety Code, §§40400-40540).
[2] Health and Safety Code, §40460 (a).
[3] Health and Safety Code, §40440 (a).

accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors."

AFFECTED FACILITIES

Rule 1106 (Marine Coating Operations) is applicable to all coating operations of boats, ships, and their appurtenances, and to buoys and oil drilling rigs intended for the marine environment. Currently, coating operations of vessels which are manufactured or operated primarily for recreational purposes are subject to the requirements of Rule 1106.1 (Pleasure Craft Coating Operations).

The current Rule 1106.1 is applicable to all coating operations of pleasure craft, as defined in paragraph (b)(10) of this rule, or their parts and components, for the purpose of refinishing, repairing, modification, or manufacturing such craft. This rule also applies to establishments engaged in activities described in the North American Industry Classification System (NAICS) codes 81149 – Other Personal and Household Goods Repair and Maintenance and 713930 - Marinas. Pleasure craft coating operations which are currently subject to the requirements of Rule 1106.1 are not subject to the requirements of Rule 1106. Descriptions of crafts utilizing the coatings affected by these rules as well as the types of paints can be found in the Project Background section.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

PAR 1106 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 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 Final EA to address the potential adverse environmental impacts associated with the proposed project. The 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.

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 and 15126.6(f), no alternatives are proposed to avoid or reduce any significant effects because there are no significant adverse impacts, and pursuant to CEQA Guidelines §15126.4(a)(3), mitigation measures are not required for effects not found to be significant. The analysis in the

form of the environmental checklist in Chapter 2 supports the conclusion of no significant adverse environmental impacts.

No comment letters were received on the Draft EA during the public comment period.

PROJECT LOCATION

The potentially affected facilities are located within the SCAQMD jurisdiction. The SCAQMD has jurisdiction over an area of approximately 10,743 square miles, consisting of the four-county South Coast Air Basin (Basin) (Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties), and the Riverside County portions of the Salton Sea Air Basin (SSAB) and Mojave Desert Air Basin (MDAB) (Figure 1-1).

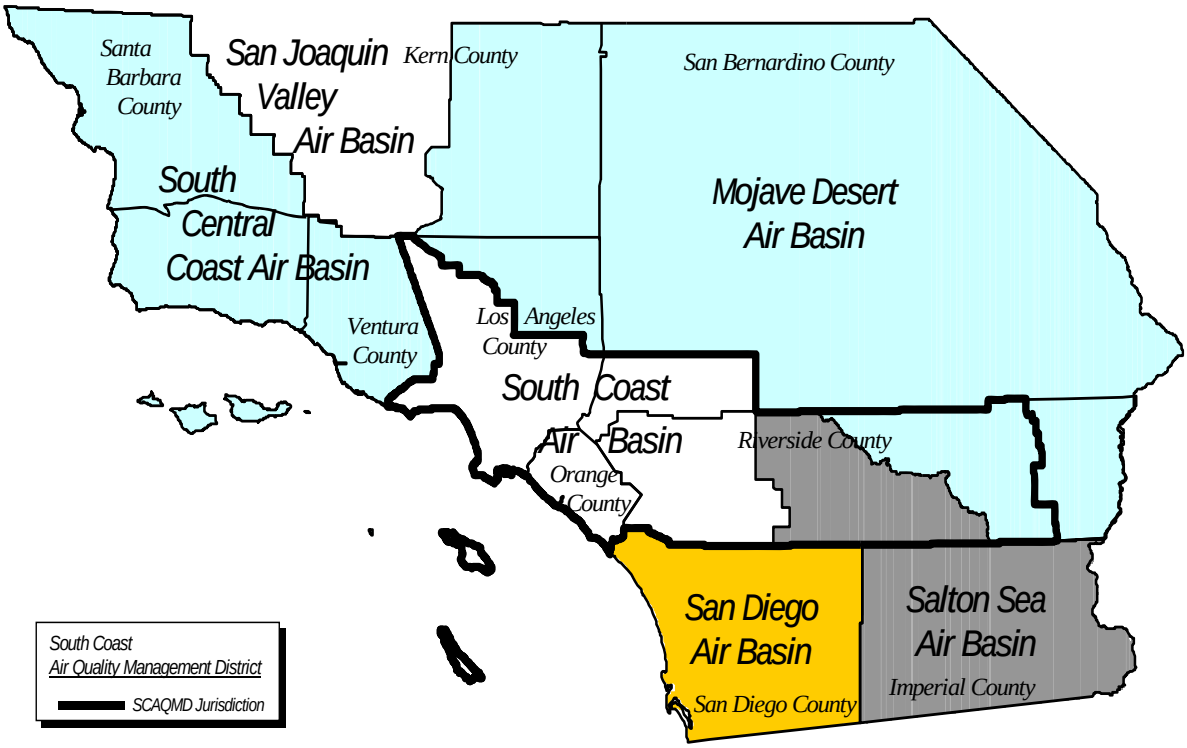

Figure 1-1
Boundaries of the South Coast Air Quality Management District

PROJECT OBJECTIVE

The specific objectives of PAR 1106 are to:

- Rescind Rule 1106.1 but maintain the requirements;
- revise VOC content limits for some coating categories in order to align limits with U.S. EPA Control Techniques Guidelines and other California APCD's/AQMD's;
- add new coating categories;
- add provisions for pollution prevention measures and enhanced enforceability,
- make minor revisions to the applicability subdivision and revise/add new definitions to the definitions subdivision; and
- include clarifications and editorial corrections.

PROJECT BACKGROUND / TECHNOLOGY OVERVIEW

Rule 1106 was adopted on November 4, 1988, and has been subsequently amended seven times. The most recent amendment was on January 13, 1995, which incorporated corrective action items in efforts to resolve deficiencies determined by U.S. EPA. The corrective action items in that amendment included an equation for control device equivalency, an applicability statement, test methods that were required to be specified, language regarding multiple test methods and the most recent test method added, an updated definition for aerosol coatings and exempt compounds, and a permanent exemption for aerosol containers was added to satisfy U.S. EPA requirements.

Rule 1106.1 was adopted on May 1, 1992, and has been subsequently amended three times. The most recent amendment was on February 12, 1999, which removed Pleasure Craft Coating Operations from existing Rule 1106 - Marine Coating Operations. Many of the existing coating categories in Rule 1106 at that time were not representative of the pleasure craft coating industry. Consequently, the SCAQMD adopted Rule 1106.1 with the intent of identifying the special categories of coatings applied on pleasure craft.

Coatings:

Ships, Yachts, Boats

Water going vessels, commonly referred to as ships, yachts, and boats have coatings specifically designed for the two main portions of a boat; top side and bottom side. The deciding factor is, with the boat at rest, anything above the water line is considered the top side and anything below the water line is considered bottom side.

Top Side

The top side of the ship, yacht or boat is the visual portion of the boat from the water-line up. These coatings not only have to perform well in protecting the substrate in a marine environment, but also have to look good as well. The substrates can include wood of many various types, fiberglass and composites, steel, stainless steel, aluminum, brass and bronze. These coatings can be applied by hand application, usually with a paint brush, or by atomized spray. There are several categories of top side coatings that are included in Rules 1106 and 1106.1, such as one-component, two-component, varnish, antenna coatings, pre-treatment wash primers etc.

Bottom Side

A boat that is docked or moored in both fresh water and sea water is susceptible to what the marine industry calls fouling. Fouling is typically broken down into hard growth, such as barnacles, mussels, or shipworms, and soft growth, such as marine plant growth like algae and grass which would if unabated, continue to grow and cause excessive drag on the boat during operation. Fouling could also cause severe damage to the hull substrate such as corrosion to steel and aluminum hulls and shipworms boring into wooden hulls. Fouling also poses a potential threat to the environment through transporting harmful marine organisms to other waterways. The solution to fouling comes by way of an antifoulant coating which is used to inhibit the growth of foulant from adhering to the bottom of the boat. There are two different types of antifoulant coatings- though there is aluminum substrate and "other", a hard bottom paint and an ablative bottom paint.

Hard Bottom Paint

Hard bottom paint is an epoxy type paint formulated with copper, oranotin (an organic compound with one or more tin atoms in its molecules) compounds and other biocides and pesticides to control marine growth from adhering to the hull. The copper is used for hard growth such as mussels and barnacles, and biocides and pesticides are used to control the soft growth such as algae and other marine organisms like ship worms. Hard bottom paints control marine growth by biocide and pesticide release which are released slowly from the pores of the paint while in water. Other types of hard bottom paint include Teflon and silicone which make the coating surface too slick for marine growth to adhere to. This type of coating is typically used for boats that spend long periods of time at rest in the water.

Ablative Bottom Paint

Ablative bottom paint is specially formulated to be a sacrificial coating designed to be slowly worn away during boat operation. For the marine environment, ablation is simply a wear away type coating where the coating continuously wears off at a slow rate during boat operation, thus exposing a new layer with fresh antifoulant compounds. However, there have been environmental concerns with the use of copper in these bottom paints and the toxic effects it has on marine life. The Port of San Diego continues to investigate how much copper can be reduced from copper-based antifoulant coatings and Washington State passed a law which may phase in a ban on copper antifoulant coatings on recreational vessels beginning in January 2018. Some innovative bottom paints that do not rely on copper or tin have been developed in response to the increasing scrutiny that copper-based ablative bottom paints have received as environmental pollutants.

Application:

High Volume Low Pressure (HVLP)

HVLP spray guns are the staple of spray guns and were created to meet the transfer efficiency requirements of governmental agencies, including the SCAQMD. HVLP spray guns can meet the high transfer efficiency requirement and operate at less than 10 pounds per square inch (psi) at the air cap. HVLP spray guns are used in the South Coast Air Basin to spray coatings for a multitude of categories including automotive coatings, metal coatings, wood coatings, industrial coatings and marine coatings.

Low Volume Low Pressure (LVLP)
LVLP spray guns are a subset of non-conventional spray guns and may be used in the spraying of marine or pleasure craft coatings, provided they meet the transfer efficiency requirements as identified in Rule 1106 clause (d)(8)(A)(v). LVLP offers an alternative to HVLP because they have less air flow requirements and can be used with a smaller compressor. This makes LVLP appealing for mobile painters and applicators that use a small air compressor. Manufacturers of LVLP spray guns state that LVLP can operate at less than 10 psi at the air cap and achieve transfer efficiencies equivalent to HVLP application. The working speed of LVLP is not as fast as HVLP spray guns.

Low Volume Medium Pressure (LVMP)
LVMP spray guns are a subset of the non-conventional spray guns and may also be used in the spraying of marine or pleasure craft coatings, provided the requirements in Rule 1106 clause (d)(8)(A)(v) for transfer efficiency are met, including achieving equivalent or better transfer efficiency to HVLP using the test method protocols prescribed in Rule 1106 to determine transfer efficiency, and obtaining written approval from the Executive Officer prior to use.

Reduced Pressure (RP)
RP spray guns are a subset of non-conventional spray guns and may be used in the spraying of marine or pleasure craft coatings provided the requirements in Rule 1106 clause (d)(8)(A)(v) for transfer efficiency are met, including achieving equivalent or better transfer efficiency to HVLP using the test method protocols prescribed in Rule 1106 to determine transfer efficiency, and obtaining written approval from the Executive Officer prior to use. RP spray guns also use smaller air compressors because they need less air flow requirements than HVLP spray guns, which makes RP attractive for mobile painters. RP can be an alternative to HVLP and has a fast working speed comparable to HVLP guns.

Pressure Fed (PF)
PF spray guns are unique as compared to the other types of spray guns in that they are equipped with auxiliary containers used for holding larger quantities of coating product. PF spray guns can be used in the spraying of marine or pleasure craft coatings provided all the requirements in Rule 1106 clause (d)(8)(A)(v) for transfer efficiency are met, including achieving equivalent or better transfer efficiency to HVLP using the test method protocols prescribed in Rule 1106 to determine transfer efficiency, and obtaining written approval from the Executive Officer prior to use.

New Conventional (NC)
Staff has identified an additional subset of conventional spray guns being marketed as New Conventional (NC). Manufacturers of such spray guns claim the NC spray guns offer the same wide pattern (spray) as the old conventional spray guns, but have better transfer efficiency and have the ability to spray thick fluids. This technology could be used for spraying marine or pleasure craft coatings, but only if the spray gun meets all the requirements in Rule 1106 clause (d)(8)(A)(v) for transfer efficiency, including achieving equivalent or better transfer efficiency to HVLP using the test method protocols prescribed in Rule 1106 to determine transfer efficiency, and obtaining written approval from the Executive Officer prior to use.

Transfer Efficiency Requirements

PAR 1106 incorporates similar transfer efficiency requirements found in Rule 1151 - Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations, for applying a marine or pleasure craft coating. The transfer efficiency requirement for spray application is use of electrostatic, HVLP spray equipment, and other spray guns that meet the HVLP definition of definition of paragraph (b)(18) in design and use. Demonstration must be based on the manufacturer's published technical material on the design of the spray gun and by demonstration of the operation of the spray gun using an air pressure tip gauge from the manufacturer of the spray gun [See clause (d)(8)(A)(v)].

Brush and roller coating are applied directly from the paint brush bristles or the roller to the substrate and have a very high coating to substrate transfer efficiency. Dip coatings are simply a container filled with paint where an object is dipped into the coating, which also provides a very high coating to substrate transfer efficiency. Brush, roller and dip coating processes are proposed to be included as compliant transfer efficiency processes as specified in clause (d)(8)(A)(iii) of the transfer efficiency requirements in order to be to be consistent with the Coating Application Methods provision in the state Suggested Control Measure.

In addition, PAR 1106 provides two test methods for spray guns that do not meet the HVLP definition in design and use to determine if such spray guns can meet the transfer efficiency requirements: SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989" and SCAQMD "Guidelines for Demonstrating Equivalency With District Approved Transfer Efficiency Spray Gun September 26, 2002" [See paragraph (h)(4) of PAR 1106 in Appendix A]. Any spray gun used in the SCAQMD jurisdiction must meet the criteria for these test methods to qualify as a compliant transfer efficient spray gun for use in the SCAQMD jurisdiction.

In addition to specifying the VOC limits for pleasure craft coating operations, the current Rule 1106.1 requires that coatings be applied either by hand or HVLP spray application equipment. HVLP spray equipment utilizes very low air pressure (i.e., less than 10 psi) to atomize the coating material and propel the atomized droplets at a low velocity and high volume to the surface being coated. The HVLP requirement in Rule 1106.1 affects only those coatings which are sprayed.

Subsequent to the release of the Draft EA, an exemption pertaining to high viscosity / high solids coatings for metal parts and products was included in PAR 1106:

> (4) The provisions of paragraph (d)(9) shall not apply to Marine or Pleasure Craft coatings with a viscosity of 650 centipoise or greater, as applied.

For various types of substrates and operations (e.g., metal parts, architectural, marine), application of the ultra-low VOC, high viscosity resin coatings (e.g., epoxy, polyurethane) can be facilitated by the ability to apply the coatings with specialized applicators such as heated plural component airless or air assisted spray guns, or unique cartridge gun systems. Incorporation of this exemption based on the coating viscosity will permit the use of the application equipment best suited for the material while retaining the benefits of using the low-VOC high solids coatings. Without the proposed exemption, facilities required to use HVLP equipment would otherwise have to thin the

high solids coatings with VOC-containing solvents to allow them to be sprayed, thus eliminating the benefit of the low-VOC high solids coatings. Therefore, a provision was added to the proposed rule to allow a coating with 650 or more centipoise to be exempted from the transfer efficiency requirements. This proposed exemption is not expected to cause any adverse environmental impacts because these high solids, high viscosity coatings already contain low levels of VOCs and are already currently being utilized in the marine coatings industry. Thus, it is not expected that additional facilities would begin using these products because of the proposed exemption.

An exemption was also included for pre-treatment wash primers and special marking coatings that are intended to be used on submerged vessel (submarine) components [(typically used per military specifications (Mil-Specs)] and currently meet the VOC limits in Rule 1106 - Marine Coating Operations. However, these coatings will not meet the new aligned VOC limits in PAR 1106, which seeks to align these VOC limits with other APCDs/AQMDs.

> (5) The provisions of paragraphs (d)(1), (d)(2), and (d)(3) shall not apply to marine coatings that are used for vessels that are intended to submerge to at least 500 feet below the surface of the water provided that the total combined usage of such coatings do need exceed 12 gallons per calendar year and such coatings are in compliance with the VOC limits in the U.S. EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) for Shipbuilding and Ship Repair (Surface Coatings).

The usage of these materials are required based on approved standards from the U.S. Navy that cannot be replaced. To assure a lifetime of no corrosion on these components, facilities already have limited selections of materials to use in these specific manufacturing processes. Therefore, an exemption for these types of coatings was included of no more than 12 gallons per calendar year, of all products combined, for this type of operation and will require that the products used will have to be in compliance with the U.S. EPA National Emission Standard for Shipbuilding and Ship Repair (Surface Coating) as provided in Part 63 of the Federal Register. This proposed exemption is not expected to cause any adverse environmental impacts because these products are utilized for a very specific type of application/industry, and therefore, very limited quantities are currently used or expected to be used in the future. Additionally, because of the limited, specialized usage/application of these products, it is not expected that additional facilities would begin using these coatings as result of the proposed exemption. Finally, this limited exemption will not encourage or allow additional usage of these higher VOC coatings beyond what is already in use in the existing setting.

A definition was also added to PAR 1106 for Ultraviolet/Electron Beam (UV/EB) curable thin film marine and pleasure craft coatings. The definition includes a reference to ASTM D7767-11 "Standard Test Method to Measure Volatiles from Radiation Curable Monomers, Oligomers, and Blends and Thin Coatings Made from Them".

> (9) ENERGY CURABLE COATINGS are single-component reactive products that cure upon exposure to visible-light, ultra-violet light or to an electron beam. The VOC content of thin film Energy Curable Marine and Pleasure Craft Coatings may be determined by manufacturers using ASTM Test Method 7767-11 "Standard Test

Method to Measure Volatiles from Radiation Curable Acrylate Monomers, Oligomers, and Blends and Thin Coatings Made from Them".

The use of energy curable coatings is considered an alternative compliance technology. UV/EB curing refers to a process in which coatings and other materials may be cured or dried, rather than using traditional thermal methods (natural gas-fueled) which typically use more energy and generate greater emissions. The UV light spectrum in a UV lamp and the focused electrons in an EB interact with specially formulated chemistries to cure materials, typically more quickly, and using less energy than traditional dryers (see Appendix B[4]). UV/EB curing has some environmental benefits over traditional solvent-based coatings by significantly reducing the amount of solvents needed in the coating itself and by reducing the burning of fossil fuels to cure/dry the product[5].

PROJECT DESCRIPTION

PAR 1106 subsumes Rule 1106.1 within Rule 1106, adds a prohibition of possession and sale provision, adds transfer efficiency requirements (similar to other SCAQMD coatings rules), and includes various clarifications and administrative changes. Additionally, five new coating categories have been established, and the VOC limits for the following five specialty coatings categories are being lowered based on existing limits that several other air agencies already require [Ventura County Air Pollution Control District (VCAPCD), San Diego Air Pollution Control District (SDAPCD), and Bay Area Air Quality Management District (BAAQMD)] and to align limits with U.S. EPA Control Techniques Guidelines.

Amendment	Action
Prohibition elements	Add sales and possession specifications
Five new coatings categories	1) aluminum substrate antifoulant- 560 g/L 2) mist coating- 340 g/L 3) nonskid coating- 340 g/L 4) marine deck sealant primer- 420 g/L 5) organic zinc coating- 340 g/L
Five VOC limit revisions	1) pre-treatment wash primer- from 780 to 420 g/L 2) solvent-based inorganic zinc- 650 to 340 g/L 3) special marking- 490 to 420 g/L 4) antenna coating- 530 to 340 g/L 5) repair and maintenance thermoplastic coating- 550 to 340 g/L

The specific amendments of PAR 1106 are the following:

- Rescind Rule 1106.1 and subsume the requirements of Rule 1106.1 into PAR 1106 (which would regulate both marine and pleasure craft operations under one rule);
- revise VOC content limits for pretreatment wash primers, antenna, repair and maintenance thermoplastic, inorganic zinc, and specialty marking coatings in order to align limits with U.S. EPA Control Techniques Guidelines and other California APCD's/AQMD's;

4 *Sustainability Advantages of Ultraviolet and Electron Beam Curing*, 2008 – a UV/EB industry trade association publication

5 http://www.radtech.org

- add new categories for marine aluminum antifoulant, mist, nonskid and organic zinc coatings and marine deck primer sealant;
- add provisions for pollution prevention measures and enhanced enforceability,
- make minor revisions to the applicability subdivision and revise/add new definitions to the definitions subdivision;
- add two tables of standards that will contain VOC limits;
- include clarifications and editorial corrections to the entire rule as necessary.

The amendments to this rule are expected to provide enhanced compliance with the VOC limits through the proposed reporting, recordkeeping and the prohibition provisions requirements. The proposed amendment will include an Annual Quantity Emission Report (AQER) and a Manufacturer's Distribution List. The AQER will require manufacturers and distributors to report the VOC content limits and the volume of product for each marine and pleasure craft coating sold in the SCAQMD's jurisdiction. In addition, manufacturers will be required to submit to the SCAQMD an annual Manufacturer's Distribution List to show all distributors who distribute these types of products into the SCAQMD jurisdiction. Since local affected operations are expected to already comply with the proposed requirements, the proposed amendments are not expected to achieve additional VOC reductions.

Copies of PAR 1106 and rescinded Rule 1106.1 is included in Appendix A.

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:	Final Environmental Assessment (EA) for Proposed Amended Rule (PAR) 1106 – Marine and Pleasure Craft Coating Operations and Rescission of Rule 1106.1 – Pleasure Craft Coating Operations
Lead Agency Name:	South Coast Air Quality Management District
Lead Agency Address:	21865 Copley Drive Diamond Bar, CA 91765
CEQA Contact Person:	Mr. Jeff Inabinet (909) 396-2453
PAR 1106 Contact Person	Mr. Don Hopps (909) 396-2334
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:	PAR 1106 would subsume Rule 1106.1 (pleasure craft coating operations) within Rule 1106 (marine coating operations), add a prohibition of possession and sale provision, add transfer efficiency requirements (similar to other SCAQMD coatings rules), and include administrative changes. Additionally, five new coating categories have been established, and the volatile organic compound (VOC) limits for five specialty coatings categories are being lowered based on existing limits that several other air agencies already require (Ventura County Air Pollution Control District, San Diego Air Pollution Control District, and Bay Area Air Quality Management District) and to align limits with U.S. EPA Control Techniques Guidelines. Since affected facilities are already expected to be in compliance with the proposed requirements, no physical changes are expected to take place and no additional VOC reductions are expected because the lower VOC limits are already being met.
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 of Significance

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: September 18, 2015 Signature: Jillian Wong

Jillian Wong, Ph.D.
Program Supervisor

ENVIRONMENTAL CHECKLIST AND DISCUSSION

As discussed in Chapter 1, the main focus of PAR 1106 is to bring VOC emission limits associated with marine and pleasure craft coating operations in line with other agencies and to collect usage data. The objectives of PAR 1106 are to:

- Rescind Rule 1106.1 and subsume the requirements of Rule 1106.1 into PAR 1106 (which would regulate both marine and pleasure craft operations under one rule);
- revise VOC content limits for pretreatment wash primers, antenna, repair and maintenance thermoplastic, inorganic zinc, and specialty marking coatings in order to align limits with U.S. EPA Control Techniques Guidelines and other California APCD's/AQMD's;
- add new categories for marine aluminum antifoulant, mist coating, nonskid and organic zinc coatings and marine deck primer sealant;
- add provisions for pollution prevention measures and enhanced enforceability,
- make minor revisions to the applicability subdivision and revise/add new definitions to the definitions subdivision;
- add three tables of standards that will contain VOC limits; and
- include clarifications and editorial corrections to the entire rule as necessary.

The proposed amendments to this rule are expected to provide enhanced compliance with the VOC limits through the proposed reporting, recordkeeping and the prohibition provisions requirements. The proposed amendments will include an Annual Quantity Emission Report (AQER) and a Manufacturer's Distribution List. The AQER will require manufacturers and distributors to report the VOC content limits and the volume of product for of each marine and pleasure craft coating sold in the SCAQMD's jurisdiction. In addition, manufacturers will be required to submit to the SCAQMD, an annual Manufacturer's Distribution List to show all distributors who distribute these types of products into the SCAQMD jurisdiction.

Since all of the affected facilities/operations are expected to already comply with the proposed requirements, the proposed amendments are not expected to achieve additional VOC reductions. Potential impacts from the proposed project are evaluated below in the appropriate environmental topic area.

Amendment	Action	Environmental Analysis
Prohibition elements	Add sales and possession specifications	Clarification of existing prohibition requirements; will result in benefit from eliminating VOC emissions from non-compliant usage.
Five new coatings categories	1) aluminum substrate antifoulant- 560 g/L 2) mist coating- 340 g/L 3) nonskid coating- 340 g/L 4) marine deck sealant primer- 420 g/L 5) organic zinc coating- 340 g/L	VOC limits set at current general or "other" limits; no change from current requirements.

Amendment	Action	Environmental Analysis
Five VOC limit revisions	1) pre-treatment wash primer- from 780 to 420 g/L 2) solvent-based inorganic zinc- 650 to 340 g/L 3) special marking- 490 to 420 g/L 4) antenna coating- 530 to 340 g/L 5) repair and maintenance thermoplastic coating- 550 to 340 g/L	Coatings are already formulated and available with lower VOC limits and are currently being used. Thus, no new coating reformulation is expected to be necessary to comply with amendments.

		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) Adoption of PAR 1106 would subsume Rule 1106.1 within Rule 1106, add a prohibition of possession, specification and sale provision, add transfer efficiency requirements (similar to other SCAQMD coatings rules), and include various clarifications and administrative changes. Additionally, the VOC limits for five specialty coatings categories are being lowered based on existing limits that several other agencies already require (VCAPCD, SDAPCD, and BAAQMD) and to align limits with U.S. EPA Control Techniques Guidelines. The proposed amendments are expected to provide enhanced compliance with the VOC limits through monitoring. Since local affected operations are expected to already comply with the proposed requirements, no physical changes are expected at affected facilities and no additional VOC reductions are expected since the VOC limits are already being met. The proposed project is

expected to affect facilities at existing locations. The proposed project does not require construction of new buildings or potential equipment replacement. Therefore, adoption of PAR 1106 would not require the construction of new 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. Further, PAR 1106 would not involve the demolition of any existing buildings or facilities, require any subsurface activities, require the acquisition of any new land or the surrendering of existing land, or the modification of any existing land use designations or zoning ordinances. Thus, the proposed project is not expected to degrade the visual character of any site where a facility is located or its surroundings, affect any scenic vista or damage scenic resources. By reducing VOC emissions, the aesthetic environment benefits from the reduction in environmental degradation. Since the proposed project does not require existing facilities to operate at night, it is not expected to create any new source of substantial light or glare.

Based upon these considerations, significant adverse aesthetics impacts are not anticipated and will not be further analyzed in this 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 FORESTRY 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 forestry 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 existing commercial businesses that may be affected by the adoption of PAR 1106 are primarily located within urbanized port areas that are typically designated as industrial or commercial and are not designed for agricultural purposes or where forests are located. 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 proposed project would not require converting farmland to non-agricultural uses because the affected marine and pleasure craft coating operations are expected to occur completely within the confines of existing affected commercial and industrial facilities. For the same reasons, PAR 1106 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 and forestry resource impacts are not anticipated and will not be further analyzed in this Final EA. Since no significant agriculture and forestry resource 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?	☐	☐	☐	☑

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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)?	☐	☐	☐	☑
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 1106 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.

To determine whether or not greenhouse gas emissions from the proposed project may be significant, impacts will be evaluated and compared to the 10,000 MT CO2eq./year threshold for industrial projects.

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 Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 MT/yr CO2eq for industrial facilities	
Ambient Air Quality Standards for Criteria Pollutants [d]		
NO2 1-hour average annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) and 0.0534 ppm (federal)	
PM10 24-hour average annual average	10.4 $\mu g/m^3$ (construction)[e] & 2.5 $\mu g/m^3$ (operation) 1.0 $\mu g/m^3$	
PM2.5 24-hour average	10.4 $\mu g/m^3$ (construction)[e] & 2.5 $\mu g/m^3$ (operation)	
SO2 1-hour average 24-hour average	0.25 ppm (state) & 0.075 ppm (federal – 99th percentile) 0.04 ppm (state)	
Sulfate 24-hour average	25 $\mu g/m^3$ (state)	
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) and 35 ppm (federal) 9.0 ppm (state/federal)	
Lead 30-day Average Rolling 3-month average	1.5 $\mu g/m^3$ (state) 0.15 $\mu g/m^3$ (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 $\mu g/m^3$ = microgram per cubic meter ≥ = greater than or equal to
MT/yr CO2eq = metric tons per year of CO2 equivalents > = greater than

III. a) The 2012 AQMP Control Measure CTS-02 – Further Emission Reductions from Miscellaneous Coatings, Adhesives, Solvents and Lubricants and the Reasonably Available Control Measures (RACM) Demonstration (Appendix VI of 2012 AQMP), contains unspecified emission reduction goals for VOCs that apply to a variety of emission sources. This control measure seeks to reduce VOC emissions from miscellaneous coating, adhesive, solvent and lubricant categories by further limiting the allowable VOC content in formulations. Examples of the miscellaneous categories to be considered include, but are not limited to, coatings used in aerospace and marine applications; adhesives used in a variety of sealing applications; fountain solutions; solvents for graffiti abatement activities; and lubricants used as metalworking fluids to reduce heat and friction to prolong the life of the tool, improve product quality, and carry away debris. Based on the general emission reduction goals in the 2012 AQMP, PAR 1106 would partially implement Control Measure CTS-02 by aligning limits with U.S. EPA Control Techniques Guidelines and other California APCD's/AQMD's. Upon adoption, PAR 1106 will be forwarded to the California Air Resources Board (CARB) for approval and subsequent submittal to the U.S. EPA for inclusion into the State Implementation Plan (SIP).

PAR 1106 would affect marine and pleasure craft coating operations. Since affected facilities/operations are anticipated to already comply with the proposed requirements, the proposed amendments are not expected to achieve additional VOC reductions to be credited toward CTS-02.

Implementing PAR 1106 is not expected to conflict with or obstruct implementation of the applicable air quality control plan because the 2012 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 2012 AQMP) would bring the District into attainment with all applicable national and state ambient air quality standards. Further, PAR 1106 is not expected to significantly conflict or obstruct implementation of the applicable air quality plan, but instead, would contribute to attaining and maintaining the ozone and PM standards by achieving VOC reductions.

For these reasons, implementation of all other SCAQMD VOC rules along with AQMP control measures, when considered together, is expected to reduce VOC emissions throughout the region overall by 2023. Therefore, implementing the proposed project will not conflict or obstruct implementation of the 2012 AQMP. Accordingly, this impact issue will not be further analyzed.

III. b) For a discussion of these items, refer to the following analysis:

Rule Objective and Facility Applicability
The objectives of PAR 1106 include the following:

- Rescind Rule 1106.1 but maintain the requirements;
- revise VOC content limits for some coating categories in order to align limits with U.S. EPA Control Techniques Guidelines and other California APCD's/AQMD's;
- add new coating categories;
- add provisions for pollution prevention measures and enhanced enforceability,
- make minor revisions to the applicability subdivision and revise/add new definitions to the definitions subdivision;

- include clarifications and editorial corrections.

Currently, Rule 1106 is applicable to all coating operations of boats, ships, and their appurtenances, and to buoys and oil drilling rigs intended for the marine environment, and Rule 1106.1 is applicable to all coating operations of pleasure craft, as defined in paragraph (b)(10) of this rule, or their parts and components, for the purpose of refinishing, repairing, modification, or manufacturing such craft. Staff believes the proposed project will provide enhanced compliance with the VOC limits through the proposed reporting, recordkeeping and the prohibition provisions requirements. The proposed amendments will include an Annual Quantity Emission Report (AQER) and a Manufacturer's Distribution List. The AQER will require manufacturers and distributors to report the VOC content limits and the volume of product for of each marine and pleasure craft coating sold in the SCAQMD's jurisdiction. In addition, manufacturers will be required to submit to the SCAQMD, an annual Manufacturer's Distribution List to show all distributors who distribute these types of products into the SCAQMD jurisdiction.

Construction Impacts

The proposed project is not expected to require any new construction activities since the affected industry are not expected to require any physical changes to comply with the proposed amendments, and operate their equipment subject to PAR 1106 in a similar manner to the current rules (Rules 1106 and 1106.1). Staff believes the proposed project will provide enhanced compliance with the VOC limits through monitoring. Therefore, no existing facilities are expected to be required to install any new equipment or new emission control devices. Additionally, the proposed project would not require any construction activities associated with the reformulation of any marine or pleasure craft coating products or any changes to the current usage of marine or pleasure craft coatings at the existing affected facilities.

Facilities that choose to use energy curable coatings would not likely require any major physical changes or modifications to install a UV/EB system. Further, there would be no additional emissions from the UV/EB coating process or additional vehicle trips.

As a result, there would be no significant adverse construction air quality impacts resulting from the proposed project for criteria pollutants.

Operational Impacts- Criteria Pollutants

PAR 1106 is expected to have a direct and beneficial reduction of VOC emissions. No other criteria pollutants are expected to be directly affected by PAR 1106 because of the narrow regulatory focus of Rules 1106 and 1106.1. Based on SCAQMD staff research, the affected coatings facilities should already use materials that are compliant with the proposed amendments. Therefore, there would be no change in operational emissions from the existing affected facilities. The proposed project is not expected to result in any significant adverse operational air quality impacts from the existing affected facilities.

Since the Draft EA was released for public review and comment, two exemptions were included in PAR 1106. A high viscosity / high solids coatings exemption was included for metal parts and products:

(4) The provisions of paragraph (d)(9) shall not apply to Marine or Pleasure Craft coatings with a viscosity of 650 centipoise or greater, as applied.

For various types of substrates and operations (e.g., metal parts, architectural, marine), application of the ultra-low VOC, high viscosity resin coatings (e.g., epoxy, polyurethane) can be facilitated by the ability to apply the coatings with specialized applicators such as heated plural component airless or air assisted spray guns, or unique cartridge gun systems. Incorporation of this exemption based on the coating viscosity will permit the use of the application equipment best suited for the material while retaining the benefits of using the low-VOC high solids coatings. Without the proposed exemption, facilities required to use HVLP equipment would otherwise have to thin the high solids coatings with VOC-containing solvents to allow them to be sprayed, thus eliminating the benefit of the low-VOC high solids coatings. Therefore, a provision was added to the proposed rule to allow a coating with 650 or more centipoise to be exempted from the transfer efficiency requirements. This proposed exemption is not expected to cause any adverse environmental impacts because these high solids, high viscosity coatings already contain low levels of VOCs and are already currently being utilized in the marine coatings industry. Thus, it is not expected that additional facilities would begin using these products because of the proposed exemption.

An exemption was also included for pre-treatment wash primers and special marking coatings that are intended to be used on submerged vessel (submarine) components [(typically used per military specifications (Mil-Specs)] and currently meet the VOC limits in Rule 1106 - Marine Coating Operations. However, these coatings will not meet the new aligned VOC limits in PAR 1106, which seeks to align these VOC limits with other APCDs/AQMDs.

(5) The provisions of paragraphs (d)(1), (d)(2), and (d)(3) shall not apply to marine coatings that are used for vessels that are intended to submerge to at least 500 feet below the surface of the water provided that the total combined usage of such coatings do need exceed 12 gallons per calendar year and such coatings are in compliance with the VOC limits in the U.S. EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) for Shipbuilding and Ship Repair (Surface Coatings).

The usage of these materials are required based on approved standards from the U.S. Navy that cannot be replaced. To assure a lifetime of no corrosion on these components, facilities already have limited selections of materials to use in these specific manufacturing processes. Therefore, an exemption for these types of coatings was included of no more than 12 gallons per calendar year, of all products combined, for this type of operation and will require that the products used will have to be in compliance with the U.S. EPA National Emission Standard for Shipbuilding and Ship Repair (Surface Coating) as provided in Part 63 of the Federal Register. This proposed exemption is not expected to cause any adverse environmental impacts because these products are utilized for a very specific type of application/industry, and therefore, very limited quantities are currently used or expected to be used in the future. Additionally, because of the limited, specialized usage/application of these products, it is not expected that additional facilities would begin using these coatings as result of the proposed exemption. Finally, this limited exemption will not encourage or allow additional usage of these higher VOC coatings beyond what is already in use in the existing setting.

A definition was also added to PAR 1106 for Ultraviolet/Electron Beam (UV/EB) curable thin film marine and pleasure craft coatings. The definition includes a reference to ASTM D7767-11

"Standard Test Method to Measure Volatiles from Radiation Curable Monomers, Oligomers, and Blends and Thin Coatings Made from Them".

(9) ENERGY CURABLE COATINGS are single-component reactive products that cure upon exposure to visible-light, ultra-violet light or to an electron beam. The VOC content of thin film Energy Curable Marine and Pleasure Craft Coatings may be determined by manufacturers using ASTM Test Method 7767-11 "Standard Test Method to Measure Volatiles from Radiation Curable Acrylate Monomers, Oligomers, and Blends and Thin Coatings Made from Them".

The use of energy curable coatings is considered an alternative compliance technology. UV/EB curing refers to a process in which coatings and other materials may be cured or dried, rather than using traditional thermal methods (natural gas-fueled) which typically use more energy and generate greater emissions. The UV light spectrum in a UV lamp and the focused electrons in an EB interact with specially formulated chemistries to cure materials, typically more quickly, and using less energy than traditional dryers (see Appendix B[6]). UV/EB curing has some environmental benefits over traditional solvent-based coatings by significantly reducing the amount of solvents needed in the coating itself and by reducing the burning of fossil fuels to cure/dry the product[7].

Operational Impacts- Toxic Air Contaminants

In assessing potential impacts from the adoption of proposed rules and amendments, SCAQMD staff not only evaluates the potential air quality impacts, but also determines potential health risks associated with implementation of the proposed amendments.

As stated previously, the proposed project will provide enhanced compliance with VOC limits through monitoring lower VOC limits, and wording clarifications. The proposed amendments do not generate any additional toxic emissions at any of the affected facilities. Based on SCAQMD staff research, no changes are necessary in current marine and pleasure craft coating formulations that currently comply with the new lower VOC limits. Therefore, no changes in toxicity are expected. As a result, there will be no increase in toxic air contaminant emissions from the affected facilities due to the proposed rule amendments.

III. c) As Lead Agency, the SCAQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR. Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant[8].

This approach was upheld by the Court in *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal. App. 4th 327, 334. The Court determined that

6 *Sustainability Advantages of Ultraviolet and Electron Beam Curing*, 2008 – a UV/EB industry trade association publication

7 http://www.radtech.org

8 SCAQMD Cumulative Impacts Working Group White Paper on Potential Control Strategies to Address Cumulative Impacts From Air Pollution, August 2003, Appendix D, Cumulative Impact Analysis Requirements Pursuant to CEQA, at D-3, http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/cumulative-impacts-working-group/cumulative-impacts-white-paper-appendix.pdf?sfvrsn=4.

where it can be found that a project did not exceed the SDAPCD's established air quality significance thresholds, the City of Chula Vista properly concluded that the project would not cause a significant environmental effect, nor result in a cumulatively considerable increase in these pollutants. The court found this determination to be consistent with CEQA Guidelines §15064.7, stating, "The lead agency may rely on a threshold of significance standard to determine whether a project will cause a significant environmental effect." The court found that, "Although the project will contribute additional air pollutants to an existing nonattainment area, these increases are below the significance criteria…" "Thus, we conclude that no fair argument exists that the Project will cause a significant unavoidable cumulative contribution to an air quality impact." As in *Chula Vista*, here the District has demonstrated, when using accurate and appropriate data and assumptions, that the project will not exceed the established SCAQMD significance thresholds. See also, *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal. App. 4th 899. Here again the court upheld the lead agency's approach to utilizing the established air quality significance thresholds to determine whether the impacts of a project would be cumulatively considerable. Thus, it may be concluded that the Project will not cause a significant unavoidable cumulative contribution to an air quality impact.

Based on the foregoing analysis, project-specific air quality impacts from implementing the proposed project would not exceed air quality significance thresholds (Table 2-1); therefore, based on the above discussion, cumulative impacts are not expected to be significant for air quality. Therefore, potential adverse impacts from the proposed project would not be "cumulatively considerable" as defined by CEQA Guidelines §15064(h)(1) for air quality impacts. Per CEQA Guidelines §15064(h)(4), the mere <u>existence</u> of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulative considerable.

III. d) Affected facilities are also not expected to increase exposure by sensitive receptors to substantial pollutant concentrations from the implementation of PAR 1106 for the following reasons: 1) the affected facilities are existing facilities located primarily in port commercial/industrial areas; 2) no construction and operational emission increases are associated with the proposed project. Therefore, no significant adverse air quality impacts to sensitive receptors are expected from implementing PAR 1106.

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 result in the use of construction equipment. As a result, no odor impacts associated with diesel exhaust from either on-road or off-road mobile sources are expected to occur. No change in marine and pleasure craft coating formulations currently utilized at the affected facilities is expected to occur. ~~It is expected that the proposed amendments would improve air quality, visibility, and reduce odors from reducing VOC emissions.~~ Therefore, the proposed project is not expected to create new significant adverse objectionable odors.

III. f) The affected facilities would continue to be required to comply with all applicable SCAQMD, CARB, and U.S. EPA rules and regulations. The proposed project is not in conflict or expected to diminish an existing air quality rule or future compliance requirements. Further, adopting and implementing the proposed project enhances existing air pollution control rules that are expected to assist the SCAQMD in its efforts to attain and maintain with a margin of safety the state and federal ambient air quality standards for ozone and PM2.5 because VOCs are considered to be precursor pollutants that contribute to the formation of ozone and PM2.5. Accordingly the proposed project would not diminish any air quality rules or regulations.

III. g) & h) Changes in global climate patterns have been associated with global warming, an average increase in the temperature of the atmosphere near the Earth's surface, recently attributed to accumulation of GHG emissions in the atmosphere. GHGs trap heat in the atmosphere, which in turn heats the surface of the Earth. Some GHGs occur naturally and are emitted to the atmosphere through natural processes, while others are created and emitted solely through human activities. The emission of GHGs through the combustion of fossil fuels (i.e., fuels containing carbon) in conjunction with other human activities, appears to be closely associated with global warming.[9] State law defines GHG to include the following: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6) (HSC §38505(g)). The most common GHG that results from human activity is CO2, followed by CH4 and N2O.

GHGs and other global warming pollutants are perceived as solely global in their impacts and that increasing emissions anywhere in the world contributes to climate change anywhere in the world. A study conducted on the health impacts of CO2 "domes" that form over urban areas cause increases in local temperatures and local criteria pollutants, which have adverse health effects.[10]

The analysis of GHGs is a much different analysis than the analysis of criteria pollutants for the following reasons. For criteria pollutants, the significance thresholds are based on daily emissions because attainment or non-attainment is primarily based on daily exceedances of applicable ambient air quality standards. Further, several ambient air quality standards are based on relatively short-term exposure effects on human health (e.g., one-hour and eight-hour standards). Since the half-life of CO2 is approximately 100 years, for example, the effects of GHGs occur over a longer term which means they affect the global climate over a relatively long time frame. As a result, the SCAQMD's current position is to evaluate the effects of GHGs over a longer timeframe than a single day (e.g., annual emissions). GHG emissions are typically considered to be cumulative impacts because they contribute to global climate effects.

On December 5, 2008, the SCAQMD adopted an interim CEQA GHG Significance Threshold for projects where SCAQMD is the lead agency (SCAQMD, 2008). This interim threshold is set at

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9 Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.). 2007. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007. Cambridge University Press. http://www.ipcc.ch/publications_and_data/ar4/wg1/en/contents.html

10 Jacobsen, Mark Z. "Enhancement of Local Air Pollution by Urban CO2 Domes," Environmental Science and Technology, as describe in Stanford University press release on March 16, 2010 available at: http://news.stanford.edu/news/2010/march/urban-carbon-domes-031610.html.

10,000 metric tons of CO2 equivalent emissions (MTCO2eq) per year. Projects with incremental increases below this threshold will not be cumulatively considerable.

The Program EIR for the 2012 AQMP concluded that implementing the control measures in the 2012 AQMP would provide a comprehensive ongoing regulatory program that would have the co-benefit of reducing overall GHGs emissions in the District. Specifically, PAR 1106 adds a prohibition of possession and sale provision, adds transfer efficiency requirements (similar to other SCAQMD coatings rules), and includes various clarifications and administrative changes. Additionally, five new coating categories have been established, and the VOC limits for five specialty coatings categories are being lowered based on existing limits that several other air agencies already require (VCAPCD, SDAPCD, and BAAQMD) and to align limits with U.S. EPA Control Techniques Guidelines. Thus, the proposed project does not introduce the need to emit GHG emissions, but rather ~~reduce~~ ensures that VOC emissions remain low from activities subject to this rule. Therefore, PAR 1106 is not expected to create significant cumulative 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 evaluation of potential air quality impacts from PAR 1106, SCAQMD staff has concluded that PAR 1106 does not have the potential to generate significant adverse air quality impacts. Since no significant adverse air quality and greenhouse gases impacts were identified, no mitigation measures are necessary or required.

		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?	☐	☐	☐	☑

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☑
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) PAR 1106 would not require any new construction or require any major modifications to buildings or other structures to comply with the new requirements for marine and pleasure craft coating operations, thus, no grading activities or disruption of soil or plant life. As a result, PAR 1106 would not directly or indirectly affect any species identified as a candidate, sensitive or special status species, riparian habitat, federally protected wetlands, or migratory corridors. For this same reason, PAR 1106 is not expected to adversely affect special status plants, animals, or natural communities.

IV. e) & f) PAR 1106 would not conflict with local policies or ordinances protecting biological resources or local, regional, or state conservation plans because it would not cause new development. Additionally, PAR 1106 would not conflict with any Habitat Conservation Plan, Natural Community Conservation Plan, or any other relevant habitat conservation plan for the same reason identified in Item IV. a), b), c), and d) above. Likewise, the proposed project would not in any way impact wildlife or wildlife habitat.

Based upon these considerations, significant adverse biological resources impacts are not anticipated and will not be further analyzed in this Final EA. Since no significant adverse biological 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
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?	☐	☐	☐	☑
e)	Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code §21074?	☐	☐	☐	☑

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 1106 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. Since no construction-related activities requiring soil disturbance would be associated with the implementation of PAR 1106, no impacts to historical or cultural resources are anticipated to occur. Further, PAR 1106 is not expected to require any physical changes to the environment, which may disturb paleontological or archaeological resources or disturb human remains interred outside of formal cemeteries.

V. e) The proposed project is not expected to require physical changes to a site, feature, place, cultural landscape, sacred place or object with cultural value to a California Native American Tribe. Furthermore, the proposed project is not expected to result in a physical change to a resource determined to be eligible for inclusion or listed in the California Register of Historical Resources or included in a local register of historical resources. For these reasons, the proposed project is not expected to cause any substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code §21074.

It is important to note that as part of releasing this CEQA document for public review and comment, the SCAQMD also provided a formal notice of the proposed project to all California Native American Tribes (Tribes) that requested to be on the Native American Heritage Commission's (NAHC) notification list per Public Resources Code §21080.3.1 (b)(1). The NAHC notification list provides a 30-day period during which a Tribe may respond to the formal notice, in writing, requesting consultation on the proposed project.

In the event that a Tribe submits a written request for consultation during this 30-day period, the SCAQMD will initiate a consultation with the Tribe within 30 days of receiving the request in accordance with Public Resources Code §21080.3.1 (b). Consultation ends when either: 1) both parties agree to measures to avoid or mitigate a significant effect on a Tribal Cultural Resource and agreed upon mitigation measures shall be recommended for inclusion in the environmental document [see Public Resources Code §21082.3 (a)]; or, 2) either party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached [see Public Resources Code §21080.3.2 (b)(1)-(2) and §21080.3.1 (b)(1)].

Based upon these considerations, significant adverse cultural resources impacts are not expected from implementing the proposed project and will not be further assessed in this 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?	☐	☐	☐	☑
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) Adoption of PAR 1106 would subsume Rule 1106.1 within Rule 1106, add a prohibition of possession and sale provision, add transfer efficiency requirements (similar to other SCAQMD coatings rules), and include various clarifications and administrative changes. Additionally, five new coating categories have been established, and the VOC limits for five specialty coatings categories are being lowered based on existing limits that several other air agencies already require (VCAPCD, SDAPCD, and BAAQMD) and to align limits with U.S. EPA Control Techniques Guidelines. The proposed amendments are expected to provide enhanced compliance with the VOC limits through monitoring. The proposed project also adds a definition for energy curable coatings. UV/EB applications typically cure materials more quickly, using less energy than traditional dryers. The proposed amendments are not expected to create any additional demand for energy at any of the affected facilities. Since it is unlikely that the affected facilities would require new equipment or modifications at existing facilities, current energy demand requirements would not change. As a result, PAR 1106 would not conflict with energy conservation plans, use non-renewable resources in a wasteful manner, or result in the need for new or substantially altered power or natural gas systems. Since PAR 1106 would affect primarily existing facilities, it will not conflict with adopted energy conservation plans because existing facilities would be expected to continue implementing any existing energy conservation plans. Additionally, operators of affected facilities are expected to implement existing energy

conservation plans or comply with energy standards to minimize operating costs. Accordingly these impact issues will not be further analyzed in the Final EA.

VI. b), c) & d) The proposed project adds a definition for energy curable coatings. Energy cured materials typically dry/cure more quickly, using less energy than conventional drying methods, which typically use natural gas as a fuel source (see Appendix B[11]). The proposed amendments are not expected to increase any electricity or natural gas demand in any way and would not create any significant effects on peak and base period demands for electricity and other forms of energy because no new physical changes to the affected facilities is anticipated. The adoption of PAR 1106 will not create any significant effects on local or regional energy supplies, create any significant effects on peak and base period demands for electricity and other forms of energy, or result in the need for new or substantially altered power or natural gas utility systems since the affected industry will be able to continue business as usual and operate their equipment subject to PAR 1106 in a similar manner to existing practices.

PAR 1106 is not expected to generate significant adverse energy resources impacts and will not be discussed further in this Final EA. Since no significant energy impacts were identified, no mitigation measures are necessary or required.

	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?	☐	☐	☐	☑

[11] *Sustainability Advantages of Ultraviolet and Electron Beam Curing,* 2008 – a UV/EB industry trade association publication

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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) Southern California is an area of known seismic activity. Structures must be designed to comply with the Uniform Building Code Zone 4 requirements if they are located in a seismically active area. The local city or county is responsible for assuring that a proposed project complies with the Uniform Building Code as part of the issuance of the building permits and can conduct inspections to ensure compliance. The Uniform Building Code is considered to be a standard safeguard against major structural failures and loss of life. The goal of the code is to provide structures that will: 1) resist minor earthquakes without damage; 2) resist moderate earthquakes without structural damage but with some non-structural damage; and 3) resist major earthquakes without collapse but with some structural and non-structural damage.

The Uniform Building Code bases seismic design on minimum lateral seismic forces ("ground shaking"). The Uniform Building Code requirements operate on the principle that providing appropriate foundations, among other aspects, helps to protect buildings from failure during earthquakes. The basic formulas used for the Uniform Building Code seismic design require determination of the seismic zone and site coefficient, which represent the foundation conditions at the site. Accordingly, buildings and equipment at existing affected facilities are likely to conform with the Uniform Building Code and all other applicable state codes in effect at the time they were constructed.

No new buildings or structures are expected to be constructed in response to the proposed project, so no change in geological existing setting is expected. Additionally, no modification to existing equipment would be necessary. Therefore, PAR 1106 is not expected to affect a facility's ability to continue to comply with any applicable Uniform Building Code requirements. Consequently, PAR 1106 is not expected to expose persons or property to geological hazards such as earthquakes, landslides, mudslides, ground failure, or other natural hazards. As a result, substantial exposure of people or structure to the risk of loss, injury, or death involving seismic-related activities is not anticipated and will not be further analyzed in this Final EA.

VII. b), c), d) & e) Since PAR 1106 would affect primarily existing facilities, it is expected that the soil types present at the affected facilities that are susceptible to expansion or liquefaction would be considered part of the existing setting. New subsidence impacts are not anticipated since no excavation, grading, or fill activities will occur at affected facilities. Further, the proposed project does not involve drilling or removal of underground products (e.g., water, crude oil, et cetera) that could produce new, or make worse existing subsidence effects. Additionally, the affected areas are not envisioned to be prone to new risks from landslides or have unique geologic features, since the affected facilities are primarily located in ports or marinas in industrial or commercial areas where such features have already been altered or removed. Finally, since adoption of PAR 1106 would be expected to affect operations at primarily existing facilities, the proposed project is not expected to alter or make worse any existing potential for subsidence, liquefaction, etc.

Based on the above discussion, the proposed project is not expected to have an adverse impact on geology or soils. Since no significant adverse impacts are anticipated, this environmental topic will not be further analyzed in the Final EA. 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?	☐	☐	☐	☑
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) The proposed project will not create a significant hazard to the public or the environment through the routine transport, use, and disposal of hazardous materials, due to the fact that the proposed amendments do not require the transport, use, and disposal of hazardous materials beyond current operations. Based on the fact that the proposed rules do not require the transport, use and disposal of hazardous materials, PAR 1106 will not create a significant hazard to the public or environment through a reasonably foreseeable release of these materials into the environment.

No additional formulation is anticipated, thus, there is little likelihood that affected facilities will emit new hazardous emissions or handle hazardous materials, substances or waste within one-quarter mile of an existing or proposed school as a result of implementing the proposed project. The affected facilities are typically located in port/marina areas, but the proposed project does not introduce any hazardous materials, so the existing setting does not change. Further, PAR 1106 is intended to ensure the reduction of overall VOC emissions in the District. It is expected that the proposed amendments would improve air quality, visibility and reduce odors surrounding existing facilities and, would do likewise for any existing or proposed schools within one-quarter mile of affected facilities.

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. For any facilities affected by the proposed project that are on the Government Code §65962.5 list, it is anticipated that they would continue to manage any and all hazardous materials and hazardous waste, in accordance with federal, state and local regulations.

VIII. e) Since PAR 1106 would incorporate new requirements for marine and pleasure craft coating operations, implementation of PAR 1106 is not expected to increase or create any new hazardous emissions in general, which could adversely affect public/private airports located in close proximity to the affected sites. Implementation of PAR 1106 is not expected to create any additional safety hazards for people residing or working in the project area.

VIII. f) The proposed project will not impair implementation of, or physically interfere with any adopted emergency response plan or emergency evacuation plan. Any existing facilities affected by the proposed project will typically have their own emergency response plans. Any new facilities will be required to prepare emergency response and evacuation plans as part of the land use permit review and approval process conducted by local jurisdictions for new development. Emergency response plans are typically prepared in coordination with the local city or county emergency plans to ensure the safety of not only the public (surrounding local communities), but

the facility employees as well. Since the proposed project does not involve the change in current uses of any hazardous materials, or generate any new hazardous waste, no changes to emergency response plans are anticipated.

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. Adopting PAR 1106 is not expected to hinder in any way with the above business emergency response plan requirements.

VIII. g) Since the affected facilities are primarily located in port/marina areas where wildlands are typically not prevalent, risk of loss or injury associated with wildland fires is not expected as a result of implementing PAR 1106.

VIII. h) Affected marine and pleasure craft coating facilities must comply with all local and county requirements for fire prevention and safety. The proposed project does not require any

activities which would be in conflict with fire prevention and safety requirements, and thus would not create or increase fire hazards at these existing facilities.

PAR 1106 is intended to ensure the reduction of VOC emissions at marine and pleasure craft coating facilities. Typically, these facilities use and store flammable materials. Pursuant to local and county fire prevention and safety requirements, facilities are required to maintain appropriate site management practices to prevent fire hazards. PAR 1106 will not interfere with fire prevention practices.

In conclusion, potentially significant adverse hazard or hazardous material impacts resulting from adopting and implementing PAR 1106 are not expected and will not be considered further. 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?	☐	☐	☐	☑

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☑
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), b), c), d) & g) Adoption of PAR 1106 would subsume Rule 1106.1 within Rule 1106, add a prohibition of possession and sale provision, add transfer efficiency requirements (similar to other SCAQMD coatings rules), and include various clarifications and administrative changes. Additionally, five new coating categories have been established, and the VOC limits for five specialty coatings categories are being lowered based on existing limits that several other air agencies already require (VCAPCD, SDAPCD, and BAAQMD) and to align limits with U.S. EPA Control Techniques Guidelines. The proposed amendments are expected to provide enhanced compliance with the VOC limits through monitoring. The proposed amendments would not result in increased water usage because no new reformulations are anticipated to comply with the lower VOC content limit for the five specialty coatings categories, as these coating categories already meet the proposed lower VOC limits. Additional water usage will not result from the proposed project.

No additional wastewater generation is expected to result from the proposed project. Further, PAR 1106 has no provision that would require the construction of additional water resource facilities, increase the need for new or expanded water entitlements, or alter existing drainage patterns. The proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge. PAR 1106 would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Further, the adoption of PAR 1106 would not create a change in the current volume of existing wastewater streams from the affected facilities. In addition, the proposed project is not expected to require additional wastewater disposal capacity, violate any water quality standard or wastewater discharge requirements, or otherwise substantially degrade water quality.

Adoption of PAR 1106 could affect future operations at existing facilities that are typically located in industrial or commercial areas that are already paved and have drainage infrastructures in place. However, due to the fact that current operations already comply with the proposed lower VOC limits, no new major construction is anticipated. Based on the current affected facility inventory in the District, implementation of PAR 1106 is not expected to involve major construction activities including site preparation, grading, etc., so no changes to storm water runoff, drainage

patterns, groundwater characteristics, or flow are expected. Therefore, these impact areas are not expected to be affected by PAR 1106.

PAR 1106 is not expected to have significant adverse water demand or water quality impacts for the following reasons:

- The proposed project does not increase demand for water by more than 5,000,000 gallons per day.
- The proposed project does not require construction of new water conveyance infrastructure.
- The proposed project does not create a substantial increase in mass inflow of effluents to public wastewater treatment facilities.
- The proposed project does not result in a substantial degradation of surface water or groundwater quality.
- The proposed project does not result in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The proposed project does not result in alterations to the course or flow of floodwaters.

IX. i) The proposed project is not expected to change existing operations at affected facilities, nor would it result in the generation of increased volumes of wastewater, because no increased water usage is expected due to the proposed project. As a result, there are no potential changes in wastewater volume expected from facilities as a result of the adoption of PAR 1106. It is expected that facilities and operations will continue to handle wastewater generated in a similar manner and with the same equipment as the wastewater that is currently generated. Further, PAR 1106 is not expected to cause affected facilities to violate any water quality standard or wastewater discharge requirements since there would be no additional wastewater volumes generated as a result of adopting PAR 1106.

IX. e), f) & h) The proposed project would incorporate new requirements for marine and pleasure craft coating operations. As a result, PAR 1106 would not require construction of new housing, contribute to the construction of new building structures, or require major modifications or changes to existing structures. Further, PAR 1106 is not expected to require additional workers at affected facilities because the proposed project does not affect how equipment is operated. Therefore, PAR 1106 is not expected to generate construction of any new structures in 100-year flood areas as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood delineation map. As a result, PAR 1106 is not expected to expose people or structures to significant new flooding risks, or make worse any existing flooding risks. Because PAR 1106 would not require construction of new structures or the addition of new employees, the proposed project will not affect in any way any potential flood hazards inundation by seiche, tsunami, or mud flow that may already exist relative to existing facilities or create new hazards at existing facilities. Additionally, since PAR 1106 does not require additional water usage or demand, sufficient water supplies are expected to be available to serve the project from existing entitlements and resources, and no new or expanded entitlements would be needed.

Based upon these considerations, significant hydrology and water quality impacts are not expected from the adoption of PAR 1106 and will not be further analyzed in this Final EA. Since no significant hydrology and water quality impacts were identified, no mitigation measures are necessary or required.

		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) PAR 1106 would not require any new construction or require major modifications to buildings or other structures to comply with the new requirements for marine and pleasure craft coating operations at any of the currently existing facilities. Therefore, PAR 1106 does not include any components that would require physically dividing an established community.

X. b) There are no provisions in PAR 1106 that would affect land use plans, policies, or regulations beyond what is currently required from affected sources, such as prohibition of use. Land use and other planning considerations are determined by local governments and no land use or planning requirements would be altered by the new requirements for marine and pleasure craft coating operations. Therefore, as already noted in the discussion under "Biological Resources," PAR 1106 would not affect in any habitat conservation or natural community conservation plans, agricultural resources or operations, and would not create divisions in any existing communities. Present or planned land uses in the region would not be significantly adversely affected as a result of implementing the proposed project.

Based upon these considerations, significant adverse land use and planning impacts are not expected from the implementation of PAR 1106 and will not be further analyzed in this Final EA. 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 1106 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 only affects coating formulations at marine and pleasure craft coating operations, PAR 1106 does not require and would not have any 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 1106 are not anticipated.

Based upon these aforementioned considerations, significant mineral resources impacts are not expected from the implementation of PAR 1106. 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) PAR 1106 would incorporate new requirements and VOC content limits for marine and pleasure craft coating operations that do not generate noise. PAR 1106 would not require any new construction or require major modifications to buildings or other structures to comply with the proposed amended rule at any of the currently existing facilities. All of the affected activities occur within existing facilities. Compliance with the new requirements for marine and pleasure craft coating operations are not expected to adversely affect operations at affected facilities because the existing facilities are expected to already meet the currently proposed requirements. Thus, the proposed project is not expected to expose persons to the generation of excessive noise

levels above current facility levels because no change in current operations is expected to occur as a result of the proposed project. It is expected that any facility affected by PAR 1106 would continue complying with all existing local noise control laws or ordinances.

In commercial environments, Occupational Safety and Health Administration (OSHA) and California-OSHA have established noise standards to protect worker health. It is expected that operators at affected facilities will continue complying with applicable OSHA or Cal/OSHA noise standards, which would limit noise impacts to workers, patrons and neighbors.

XII. b) PAR 1106 is not anticipated to expose people to, or generate excessive groundborne vibration or groundborne noise levels since complying with PAR 1106 is not expected to alter operations at affected facilities. Therefore, any existing noise or vibration levels at affected facilities are not expected to change as a result of implementing PAR 1106. Since existing operations are not expected to generate excessive groundborne vibration or noise levels, and PAR 1106 is not expected to alter physical operations, no groundborne vibrations or noise levels are expected from the proposed project.

XII. c) No increase in periodic or temporary ambient noise levels in the vicinity of affected facilities above levels existing prior to implementing PAR 1106 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 marine and pleasure craft coating operations. See also the response to items XII.a) and XII.b).

XII. d) Even if an affected facility is located near a public/private airport, there are no new noise impacts expected from any of the existing facilities as a result of complying with the proposed project. Similarly, any existing noise levels at affected facilities are not expected to increase appreciably. Thus, PAR 1106 is not expected to expose people residing or working in the vicinities of public airports to excessive noise levels.

Based upon these considerations, significant adverse noise impacts are not expected from the implementation of PAR 1106 and are not further evaluated in this Final EA. 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 adverse effects, either direct or indirect, on the district's population or population distribution as no additional workers are anticipated to be required for affected facilities to comply with the proposed amendments. Human population within the jurisdiction of the SCAQMD is anticipated to grow regardless of implementing PAR 1106. As such, PAR 1106 would not result in changes in population densities or induce significant growth in population.

XIII. b) Because the proposed project affects marine and pleasure craft coating facilities but does not require additional employees, PAR 1106 is not expected to result in the creation of any new industry that would affect population growth, directly or indirectly, induce the construction of single- or multiple-family units, or require the displacement of people elsewhere. Since the proposed project does not require any construction activities or any additional employees, it would not warrant any new or replacement housing.

Based upon these considerations, significant adverse population and housing impacts are not expected from the implementation of PAR 1106 and are not further evaluated in this Final EA. 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) & b) PAR 1106 would incorporate new requirements and VOC content limits for marine and pleasure craft coating operations that would have no effect on public services, as no new physical changes at affected facilities are expected. The proposed project does not require any action which would alter and, thereby, adversely affect existing public services, or require an increase in governmental facilities or services to support the affected existing facilities. Current fire, police and emergency services are adequate to serve existing facilities, and the proposed project will not result in the need for new or physically altered government facilities in order to maintain acceptable service ratios, response times, or other performance objectives because no change in operations is expected to occur at affected facilities.

Because the proposed project does not require or involve the use of new hazardous materials or generate new hazardous waste, it will not generate an emergency situation that would require additional fire or police protection, or impact acceptable service ratios or response times.

XIV. c) & d) As indicated in discussion under item XIII. Population and Housing, implementing PAR 1106 would not induce population growth or dispersion because no additional workers are

expected to be needed at the existing affected facilities. Therefore, with no increase in local population anticipated as a result of adopting and implementing PAR 1106, additional demand for new or expanded schools or parks is also not anticipated. As a result, no significant adverse impacts are expected to local schools or parks.

Based upon these considerations, significant adverse public services impacts are not expected from the implementation of PAR 1106 and are not further evaluated in this Final EA. 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 1106 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 1106, which only affect marine and pleasure craft coating operations. Further, PAR 1106 would not affect in any way 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 1106. 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) Adoption of PAR 1106 would subsume Rule 1106.1 within Rule 1106, add a prohibition of possession and sale provision, add transfer efficiency requirements (similar to other SCAQMD coatings rules), and include various clarifications and administrative changes. Additionally, five new coating categories have been established, and the VOC limits for five specialty coatings categories are being lowered based on existing limits that several other air agencies already require (VCAPCD, SDAPCD, and BAAQMD) and to align limits with U.S. EPA Control Techniques Guidelines. The proposed amendments are expected to provide enhanced compliance with the VOC limits through monitoring.

PAR 1106 is not expected to require the replacement of equipment at affected facilities, and therefore, no new solid or hazardous waste impacts specifically associated with PAR 1106 are expected. The affected facilities are expected to be currently in compliance with the proposed amendments, and as a result, no substantial change in the amount of solid or hazardous waste streams is expected to occur. The character of solid or hazardous waste streams are not expected to occur as a result of the adoption of PAR 1106, as no physical change at affected facilities are expected. PAR 1106 is not expected to increase the volume of solid or hazardous wastes from affected facilities, require additional waste disposal capacity, or generate waste that does not meet applicable local, state, or federal regulations. With regard to potential wastewater impacts, please see the discussion under item IX., "Hydrology and Water Quality."

Based upon these considerations, PAR 1106 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, adopting PAR 1106 is not expected to interfere with any affected facility's ability to comply with applicable local, state, or federal waste disposal regulations. 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)?	☐	☐	☐	☑

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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) Adoption of PAR 1106 would subsume Rule 1106.1 within Rule 1106, add a prohibition of possession and sale provision, add transfer efficiency requirements (similar to other SCAQMD coatings rules), and include various clarifications and administrative changes. Additionally, five new coating categories have been established, and the VOC limits for five specialty coatings categories are being lowered based on existing limits that several other air agencies already require (VCAPCD, SDAPCD, and BAAQMD) and to align limits with U.S. EPA Control Techniques Guidelines. The proposed amendments are expected to provide enhanced compliance with the VOC limits through monitoring. The adoption of PAR 1106 would not change or cause additional transportation demands or services because no physical change in operations at affected facilities is expected to occur. Therefore, the proposed project would not increase traffic or adversely impact the existing traffic load and capacity of the street system, as the amount of product to be delivered is not anticipated to change nor generate additional services to affect transportation demand. Because the current existing marine and pleasure craft coating

facilities are expected to be in compliance with the proposed amendments, no increase in material delivery trips is expected as a result of the proposed project.

Since no construction-related trips and no additional operational-related trips per facility are anticipated, the adoption of PAR 1106 is not expected to significantly adversely affect circulation patterns on local roadways or the level of service at intersections near affected facilities. Since no construction is required, no significant construction traffic impacts are anticipated.

XVII. c) PAR 1106 will not require operators of existing facilities to construct buildings or other structures or change the height and appearance of the existing structures, such that they could interfere with flight patterns. Therefore, adoption of PAR 1106 is not expected to adversely affect air traffic patterns. Further, PAR 1106 will not affect in any way air traffic in the region because it will not require transport of any PAR 1106 materials by air.

XVII. d) No physical modifications are expected to occur by adopting PAR 1106 at the affected facilities. Additionally, no offsite modifications to roadways are anticipated for the proposed project that would result in an additional design hazard or incompatible uses.

XVII. e) Equipment replacements or retrofits associated with adopting PAR 1106 are not expected to occur at the potentially affected existing facilities. Therefore, no changes to emergency access at or in the vicinity of the affected facilities would be expected. As a result, PAR 1106 is not expected to adversely impact emergency access.

XVII. f) No changes to the parking capacity at or in the vicinity of the affected facilities are expected with adopting PAR 1106. Adoption of PAR 1106 does not change existing operations, so no new workers at affected facilities or area sources are expected to be necessary to comply with the proposed amendments. Since adoption of PAR 1106 is not expected to require additional workers, no traffic impacts are expected to occur and additional parking capacity will not be required. Therefore, PAR 1106 is not expected to adversely impact on- or off-site parking capacity. PAR 1106 has no provisions that would conflict with alternative transportation, such as bus turnouts, bicycle racks, et cetera.

Based upon these considerations, PAR 1106 is not expected to generate significant adverse project-specific or cumulative transportation/traffic impacts and, therefore, this topic will not be considered further. 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?	☐	☐	☐	☑
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, PAR 1106 is not expected to significantly adversely affect plant or animal species or the habitat on which they rely because PAR 1106 implements new requirements for marine and pleasure craft coating operations, which will primarily be conducted at existing affected facilities. All of the currently affected facilities are located at sites that have already been greatly disturbed and that currently do not support such habitats. PAR 1106 is not expected to induce construction of any new land use projects that could affect biological resources.

XVIII. b) Based on the foregoing analyses, cumulative impacts in conjunction with other projects that may occur concurrently with or subsequent to the proposed project are not expected to adversely impact any environmental topic. Related projects to the currently proposed project include existing and proposed amended rules and regulations, as well as AQMP control measures, which produce emission reductions from most industrial and commercial sectors. Furthermore, because PAR 1106 does not generate project-specific impacts, cumulative impacts are not

considered to be "cumulatively considerable" as defined by CEQA guidelines §15065(a)(3). For example, the environmental topics checked 'No Impact' (e.g., aesthetics, agriculture resources, air quality, biological resources, cultural resources energy, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, solid/hazardous waste and transportation and traffic) would not be expected to make any contribution to potential cumulative impacts. Also, in the case of air quality impacts, the net effect of implementing the proposed project with other proposed amended rules and regulations, and AQMP control measures is an overall reduction in District-wide emissions, thus, contributing to the attainment of state and national ambient air quality standards. Therefore, it is concluded that PAR 1106 has no potential for significant cumulative or cumulatively considerable impacts in any environmental areas.

XVIII. c) Based on the foregoing analyses, PAR 1106 is not expected to cause significant adverse effects to human beings. Significant adverse air quality impacts are not expected from the implementation of PAR 1106. Based on the preceding analyses, no significant adverse impacts to aesthetics, agriculture resources, biological resources, cultural resources, energy, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, solid/hazardous waste and transportation and traffic are expected as a result of the implementation of PAR 1106.

As discussed in items I through XVIII above, the proposed project would have no potential to cause significant adverse environmental effects.

APPENDIX A

PROPOSED AMENDED RULE 1106 AND PROPOSED RESCINDED RULE 1106.1

(Adopted November 4, 1988)(Amended May 5, 1989)(Amended June 2, 1989)
(Amended March 2, 1990)(Amended November 2, 1990)(Amended December 7, 1990)
(Amended August 2, 1991)(Amended January 13, 1995)
(Proposed Amended Rule 1106 October 2015)

PROPOSED AMENDED RULE 1106. MARINE AND PLEASURE CRAFT COATING OPERATIONS

(a) Purpose

The purpose of this rule is to reduce emissions of volatile organic compounds (VOC) and stratospheric ozone depleting and global warming compounds from Marine and Pleasure Craft Coating Operations.

(~~a~~b) Applicability

This rule applies to:

(1) MARINE COATING OPERATIONS:

~~This rule applies to~~Which means all coating operations of boats, ships, and vessels, and their appurtenances, including but not limited to structures, such as piers, docks ~~and~~, ~~to~~buoys and oil drilling rigs, intended for exposure to either a marine or fresh water environment.~~Coating operations of vessels which are manufactured or operated primarily for recreational purposes are subject to the requirements of Rule 1106.1 – Pleasure Craft Coating Operations.~~

(2) PLEASURE CRAFT COATING OPERATIONS:

Which means all coating operations for purposes of refinishing, repairing, modifying, or manufacturing of pleasure craft as defined in paragraph (c)(~~29~~30) of this rule, and to their parts and components.

(~~b~~c) Definitions

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

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

(2) AIR DRIED COATING is any coating that is formulated by the manufacturer to be cured at a temperature below 90 °~~o~~C (194 °~~o~~F).

(3) ANTENNA COATING is any coating applied to equipment and associated structural appurtenances which are used to receive or transmit electromagnetic signals.

(4) ~~ANTIFOULING~~ ANTIFOULANT COATING is any coating applied to the underwater portion of ~~a~~ boats, ships, vessels, ~~vessel~~ or pleasure craft to prevent or reduce the attachment of biological organisms~~. An antifouling coating~~ and shall be registered with the ~~Environmental Protection Agency (EPA) as a pesticide~~United States Environmental Protection Agency ("U.S. EPA") as a pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act (7 United States Code Section 136).

(5) BAKED COATING is any coating that is formulated by the manufacturer to be cured at a temperature at or above 90 °~~o~~C (194 °~~o~~F).

(6) CLEAR WOOD COATINGS are clear and semi-transparent topcoats applied to wood substrates to provide a transparent or translucent film.

(7) DISTRIBUTOR means any person to whom a ~~consumer~~ product is sold or supplied for the purposes of resale or distribution in commerce, except that manufacturers, retailers, and consumers are not distributors.

(~~6~~8) ELASTOMERIC ADHESIVE is any adhesive containing natural or synthetic rubber.

(9) ENERGY CURABLE COATINGS are single-component reactive products that cure upon exposure to visible-light, ultra-violet light or to an electron beam. The VOC content of thin film Energy Curable Marine and Pleasure Craft Coatings may be determined by manufacturers using ASTM Test Method 7767-11 "Standard Test Method to Measure Volatiles from Radiation Curable Acrylate Monomers, Oligomers, and Blends and Thin Coatings Made from Them".

(~~7~~910) EXEMPT COMPOUNDS ~~are any of the following compounds:~~(See Rule 102 - Definition of Terms).

~~(A) Group I (General)~~

~~trifluoromethane (HFC-23)~~

~~pentafluoroethane (HFC-125)~~

~~1,1,2,2-tetrafluoroethane (HFC-134)~~

~~tetrafluoroethane (HFC-134a)~~

~~1,1,1-trifluoroethane (HFC-143a)~~

~~1,1-difluoroethane (HFC-152a)~~

~~chlorodifluoromethane (HCFC-22)~~

~~dichlorotrifluoroethane (HCFC-123)~~

~~2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124)~~

~~dichlorofluoroethane (HCFC-141b)~~

~~chlorodifluoroethane (HCFC-142b)~~

~~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~~

~~(B) Group II~~

~~methylene chloride~~

~~1,1,1-trichloroethane (methyl chloroform)~~

~~trichlorotrifluoroethane (CFC-113)~~

~~dichlorodifluoromethane (CFC-12)~~

~~trichlorofluoromethane (CFC-11)~~

~~dichlorotetrafluoroethane (CFC-114)~~

~~chloropentafluoroethane (CFC-115)~~

~~The use of Group II compounds and/or carbon tetrachloride may be restricted in the future because they are toxic, potentially toxic, upper-atmosphere ozone depleters, or cause other environmental impacts. By January 1, 1996, production of chlorofluorocarbons (CFC), 1,1,1,-trichloroethane (methyl chloroform), and carbon tetrachloride will be phased out in accordance with the Code of Federal Regulation Title 40, Part 82 (December 10, 1993).~~

(~~8~~10~~11~~) EXTREME HIGH GLOSS COATING is any coating which achieves at least 95 percent reflectance on a 60°~~o~~ meter when tested by ASTM Test Method D-523-14 —"Standard Test Method for Specular Gloss".

(~~11~~12) FINISH PRIMER/SURFACER is any coating applied with a wet film thickness of less than 10 mils (one mil = 0.001 of an inch) and is applied prior to the application of a Marine or Pleasure Craft Coating for the purpose of providing corrosion resistance, adhesion for subsequent coatings, a moisture barrier, and promotes a uniform surface necessary for filling in surface imperfections.

(~~912~~13) GRAMS OF VOC PER LITER OF COATING, LESS WATER AND LESS EXEMPT COMPOUNDS, OR REGULATORY VOC, is the weight of VOC per combined volume of VOC and coating solids and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where: W_s = weight of volatile compounds in grams
W_w = weight of water in grams
W_{es} = weight of exempt compounds in grams
V_m = volume of material in liters
V_w = volume of water in liters
V_{es} = volume of exempt compounds in liters

(~~13~~14) GRAMS OF VOC PER LITER OF MATERIAL, OR ACTUAL VOC, is the weight of VOC per volume of material and shall be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where: W_s = weight of volatile compounds in grams
W_w = weight of water in grams
W_{es} = weight of exempt compounds in grams
V_m = volume of material in liters

(~~1014~~15) HEAT RESISTANT COATING is any coating which during normal use must withstand temperatures of at least 204 °~~o~~C (400 °~~o~~F).

(~~1115~~16) HIGH GLOSS COATING is any coating which achieves at least 85 percent reflectance on a 60° ~~o~~ meter when tested by ASTM Method D-523-14 – "Standard Test Method for Specular Gloss".

(~~1216~~17) HIGH TEMPERATURE COATING is any coating that during normal use ~~which~~ must withstand temperatures of at least 426 °~~o~~C (800 °~~o~~F).

(~~17~~18) HIGH BUILD PRIMER/SURFACER is any coating applied with a wet film thickness of 10 mils or more (one mil = 0.001 of an inch) prior to the application of a topcoat for purposes of providing corrosion resistance, adhesion of subsequent coatings, a moisture barrier, or promoting a uniform surface necessary for filling in surface imperfections.

(~~18~~19) HIGH-VOLUME, LOW-PRESSURE (HVLP) means spray application equipment designed to atomize 100 percent by air pressure only and is

operated between 0.1 and 10 pounds per square inch~~,~~ gauge~~,~~ (psig)~~,~~ air atomizing pressure measured dynamically at the center of the air cap and at the air horns.

(~~19~~20) INORGANIC ZINC COATING is a coating that contains 960 grams per liter or more elemental zinc incorporated into an inorganic silicate binder that is applied to steel to provide galvanic corrosion resistance.

(~~13~~20~~20~~21) LOW ACTIVATION INTERIOR COATING is any coating used on interior surfaces aboard ~~ships~~ boats, ships, and vessels, to minimize the activation of pigments on painted surfaces within a radiation environment.

(~~21~~22) LOW-SOLIDS COATINGS are coatings containing one pound or less of solids per gallon of material.

(~~14~~22~~2~~23) MARINE COATING is any coating, except unsaturated polyester resin (fiberglass) coatings, containing volatile organic materials and applied by any means to ~~ships,~~ boats, ships, and vessels, and their appurtenances, structures such as piers~~,~~ ~~and~~ docks~~,~~ ~~intended for exposure to a marine environment, and also to~~ buoys and oil drilling rigs~~,~~ intended for ~~the~~ exposure to either a marine or fresh water environment.

(~~23~~24) MARINE DECK SEALANT PRIMER is any sealant primer intended by the manufacturer to be applied to wooden marine decks. A sealant primer is any product intended by the manufacturer to be applied to a substrate, prior to the application of a sealant, to enhance the bonding surface.

(~~15~~24~~2~~25) METALLIC HEAT RESISTANT COATING is any coating which contains more than 5 grams of metal particles per liter of coating as applied and which must withstand temperatures over 80 °~~o~~C (~~175~~176 °~~o~~F).

(~~25~~26) MIST COATING is any low viscosity, thin film, epoxy coating applied to an inorganic zinc primer that penetrates the porous zinc primer and allows the occluded air to escape through the film prior to curing.

(~~16~~26~~2~~27) NAVIGATIONAL AIDS COATING is any coating that is applied to ~~are~~ buoys or other Coast Guard waterway markers that are recoated aboard ship at their usage site and immediately returned to the water.

(~~27~~28) NONSKID COATING means any coating applied to the horizontal surface of a marine vessel for the specific purpose of providing slip resistance for personnel.

(~~28~~29) ORGANIC ZINC COATING is a coating that contains 960 grams per liter or more elemental zinc incorporated into an organic silicate binder that is applied to steel to provide galvanic corrosion resistance.

~~(17) PRETREATMENT WASH PRIMER is any coating which contains at least 1/2 percent acids, by weight, to provide surface etching and is applied directly to metal surfaces to provide corrosion resistance, adhesion, and ease of stripping.~~

(~~29~~30) PLEASURE CRAFT are marine or fresh water vessels that are less than 20 meters in length and are manufactured or operated primarily for recreational purposes, or are leased, rented, or chartered to a person or business for recreational purposes. Vessels operated in amusement~~Amusement~~ theme parks ~~that operate vessels~~ in a fresh water environment solely for the purpose of an amusement park attraction shall be considered pleasure craft vessels regardless of their length. The owner or operator of a pleasure craft vessel shall be responsible for certifying that the intended use is for recreational purposes.

(~~30~~31) PLEASURE CRAFT COATING is any marine coating, except unsaturated polyester resin (fiberglass) coatings, applied by brush, spray, roller, or other means to a pleasure craft. A pleasure craft coating that is sold, offered for sale, or solicited for use within the South Coast Air Quality Management District (SCAQMD) jurisdiction must be designated by the manufacturer as a pleasure craft coating by any sticker or label affixed on the container, or where it is indicated in any sales or advertising literature, that the coating may be used as, or is suitable for use as, a pleasure craft coating.

(~~31~~32) PRETREATMENT WASH PRIMER is a coating which contains a minimum of 1/2 percent acid, by weight, applied directly to bare metal surfaces to provide necessary surface etching.

(~~1832~~33) REPAIR AND MAINTENANCE THERMOPLASTIC COATING is any resin-bearing coating, such as vinyl, chlorinated rubber, or bituminous coatings, in which the resin becomes pliable with the application of heat, and is used to recoat portions of a previously coated substrate which has sustained damage to the coating following normal coating operations.

(~~1933~~34) SEALANT FOR WIRE-SPRAYED ALUMINUM is any coating of up to one mil (one mil = 0.001 of an inch) in thickness of an epoxy material which is reduced for application with an equal part of an appropriate solvent (naphtha, or ethylene glycol monoethyl ether).

(~~34~~35) SEALER is a coating applied to bare wood to seal surface pores to prevent subsequent coatings from being absorbed into the wood.

(~~2035~~36) SOLVENT CLEANING OPERATION is ~~the removal of loosely held uncured adhesives, uncured inks, uncured coatings, and contaminants from parts, products, tools, machinery, equipment, and general work areas. Contaminants include, but are not limited to, dirt, soil, and grease. In a cleaning process which consists of a series of cleaning methods, each distinct method shall constitute a separate solvent cleaning operation~~as defined in Rule 1171 - Solvent Cleaning Operations.

(~~2136~~37) SPECIAL MARKING COATING is any coating used for items such as flight decks, ~~ships'~~ vessel identification numbers~~,~~ and other demarcations for safety~~/~~ or identification~~applications~~.

(~~2237~~38) TACK COAT is an epoxy coating of up to two mils ~~(0.002 inch)~~ (one mil = 0.001 of an inch) thick applied to an existing epoxy coating. The existing epoxy coating must have aged beyond the time limit specified by the manufacturer for application of the next coat.

(~~38~~39) TEAK PRIMER is a coating applied to teak wood or previously oiled teak wood decks in order to improve the adhesion of a seam sealer.

(~~39~~40) TOPCOAT is any final coating applied to the interior or exterior of a marine or pleasure craft.

(~~2340~~41) TOUCH-UP COATING is any coating operation incidental to the main coating process but necessary ~~used~~ to cover minor imperfections ~~prior to shipment appearing after the main coating operation~~or minor mechanical damage incurred prior to ~~intended~~ use.

(~~41~~42) TRANSFER EFFICIENCY means the amount of coating solids adhering to the object being coated divided by the total amount of coating solids sprayed; expressed as a percentage.

(~~2442~~43) UNDERSEA WEAPONS SYSTEM COATING is any coating applied to any or all components of a weapons system intended for exposure to a marine environment and~~that is~~ intended to be launched or fired ~~underwater~~undersea.

(~~43~~44) VARNISHES are clear or pigmented wood topcoats formulated with various resins to dry by chemical reaction.

(~~2544~~45) VOLATILE ORGANIC COMPOUND (VOC) is ~~any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds~~as defined in Rule 102 - Definition of Terms.

(~~264~~546) WIRE-SPRAYED ALUMINUM is any molten multi-aluminum coating applied to a steel substrate using oxygen fueled combustion spray ~~methods~~equipment.

(~~e~~d) Requirements

(1) VOC Content of Marine Coatings

Except as otherwise provided in this rule, a person shall not apply a marine coating within the SCAQMD jurisdiction with a VOC content in excess of the following limits shown in the Table of Standards I, expressed as grams of VOC per liter of coating, as applied, less water and less exempt solvents:

	~~Baked~~	~~Air Dried~~
~~General Coating~~	~~275 g/L~~	~~340 g/L~~
~~Specialty Coating~~		
~~Heat Resistant~~	~~360~~	~~420~~
~~Metallic Heat Resistant~~		~~530~~
~~High Temperature~~		~~500~~
~~Pre-Treatment Wash Primer~~	~~780~~	~~780~~
~~Underwater Weapons Systems~~	~~275~~	~~340~~
~~Elastomeric Adhesives with 15%, by Weight, Natural or Synthetic Rubber~~		~~730~~
~~Solvent-Based Inorganic Zinc~~		~~650~~
~~Navigational Aids~~		~~340~~
~~Sealant for Wire-Sprayed Aluminum~~		~~610~~
~~Special Marking~~		~~490~~
~~Tack Coat~~		~~610~~
~~Low Activation Interior Coating~~		~~420~~
~~Repair and Maintenance Thermoplastic~~		~~550~~
~~Extreme High-Gloss Coating~~	~~420~~	~~490~~
~~Antenna Coating~~		~~530~~
~~Antifoulant~~		~~400~~
~~High Gloss~~	~~275~~	~~340~~

TABLE OF STANDARDS I

MARINE COATING CATEGORY	VOC LIMITS Less water and exempt compounds Grams per Liter (g/L)	
	BAKED	AIR DRIED
	CURRENT LIMIT	CURRENT LIMIT
Antenna Coating		340
Antifoulant Coatings:		
Aluminum Substrates		560
Other Substrates		400
Elastomeric Adhesives (with 15%, by Weight, Natural or Synthetic Rubber)		730
Inorganic Zinc Coating		340
Low Activation Interior Coating		420
Mist Coating		610
Navigational Aids Coating		340
Nonskid Coating		340
Organic Zinc Coating		340
Pre-Treatment Wash Primer	420	420
Repair and Maintenance Thermoplastic Coating		340
Sealant for Wire-Sprayed Aluminum		610
Special Marking Coating		420
Specialty Coatings:		
Heat Resistant Coating	360	420
Metallic Heat Resistant Coating		530
High Temperature Coating		500
Tack Coating		610
Topcoats:		
Extreme High-Gloss Coating	420	490
High Gloss Coating	275	340
Underwater Weapons Systems Coating	275	340
Any Other Coating Type	275	340

(2) VOC Content of Pleasure Craft Coatings

Except as otherwise provided in this rule, a person shall not apply a pleasure craft coating within the SCAQMD jurisdiction with a VOC content in excess of the following limits shown in the Table of Standards II, expressed as grams of VOC per liter of coating, as applied, less water and less exempt solvents:

TABLE OF STANDARDS II

VOC LIMITS

Less water and exempt compounds Grams per Liter (g/L)	
PLEASURE CRAFT COATING CATEGORY	CURRENT LIMIT
Antifoulant Coatings:	
Aluminum Substrate	560
Other Substrate	330
Clear Wood Coatings:	
Sealers	550
Varnishes	490
Primer Coatings:	
Finish Primer/Surfacer	420
High Build Primer/Surfacer	340
Marine Deck Sealant Primer	760
Pretreatment Wash Primer	780
Teak Primer	775
Topcoats:	
Extreme High Gloss Coating	490
High Gloss Coating	420
Any Other Coating Type	420

(3) VOC Content of Low-Solids Coatings

Except as otherwise provided in this rule, a person shall not apply a marine coating or a pleasure craft coating within the SCAQMD jurisdiction with a VOC content in excess of the following limit shown in the Table of Standards III, expressed as grams of VOC per material of coating, as applied:

TABLE OF STANDARDS III

VOC LIMIT – MARINE & PLEASURE CRAFT COATINGS Grams per liter of material VOC	
COATING CATEGORY	CURRENT LIMIT
Low-Solids Coating	120

(4) Most Restrictive VOC Limit

If any representation or information on the container of any coating subject to this rule, or any label or sticker affixed to the container, or in any sales, advertising, or technical literature that indicates that the coating meets the definition of or is recommended for use for more than one of the marine

coating categories listed in ~~sub~~paragraph (d)(1) or the pleasure craft coating categories listed in ~~sub~~paragraph (d)(2), or the low-solids coating category listed in ~~sub~~paragraph (d)(3), then the lowest VOC content limit shall apply. ~~anywhere on the container of any coating listed in either Table of Standards or label theretoor literatureany representation is made that the coating may be used as, or is suitable for use as, a for which a lower standard is specified in the table or in paragraph(d)(1) or (d)(2), standard~~

(~~2~~5) Approved Emission Control System

~~(A) Approved Emission Control System~~

~~Owners and/or operators may comply with the provisions of paragraph (c)(1) by using an emission control system, which has been approved in writing by the Executive Officer, for reducing VOC emissions. The control system must achieve a minimum capture efficiency using USEPA, ARB, and District methods specified in subparagraph (e)(4)(A) and a destruction efficiency of at least 85 percent by weight, and,~~

~~(B) The approved system shall reduce the VOC emissions, when using non-compliant coatings, to an equivalent or greater level that would be achieved by the provisions in paragraph (c)(1)~~A person may comply with the provisions of paragraphs (d)(1), (d)(2) or (d)(3), by using an approved emission control system, consisting of a collection and control device, provided such emission control system is approved pursuant to Rule 203 - Permit to Operate, in writing, by the Executive Officer for reducing emissions of VOC. The Executive Officer shall approve such emission control system only if the VOC emissions resulting from the use of non-compliant coatings will be reduced to a level equivalent to or lower than the limits specified in paragraphs (d)(1), (d)(2) or (d)(3), as applicable. The required efficiency of an emission control system at which an equivalent or greater level of VOC reduction will be achieved shall be calculated by the following equation:

$$C.E. = \left[1 - \left\{ \frac{(VOC_{LWc})}{(VOC_{LWn,Max})} \times \frac{1 - (VOC_{LWn,Max}/D_{n,Max})}{1 - (VOC_{LWc}/D_c)} \right\} \right] \times 100\%$$

Where: C.E. = Control Efficiency, expressed as a percentage

VOC_{LWc} = VOC Limit of Rule 1106, less water and less exempt compounds, pursuant to subdivision (ed).

$VOC_{LWn,Max}$ = Maximum VOC content of non-compliant coating used in conjunction with a control device, less water and less exempt compounds.

$D_{n,Max}$ = Density of solvent, reducer, or thinner contained in the non-compliant coating, containing the maximum VOC content of the multi-component coating.

D_c = Density of corresponding solvent, reducer, or thinner used in the compliant coating system = 880 g/L.

(~~3~~6) Alternative Emission Control Plan

~~Owners and/or operators may achieve compliance with the requirements~~A person may comply with the provisions of paragraphs (d)(1), (d)(2) and (d)(3)~~paragraph (e)(1)~~ by means of an Alternative Emission Control Plan, pursuant to Rule 108 - Alternative Emissions Control Plans.

(7) Exempt Compounds

A person shall not manufacture, sell, offer for sale, distribute for use in the SCAQMD jurisdiction, or apply any marine or pleasure craft coating which contains any Group II Exempt Compounds listed in Rule 102 - Definition of Terms, in quantities greater than 0.1 percent by weight. Cyclic, branched, or linear, completely methylated siloxanes (VMS) are not subject to this provision.

(8) Carcinogenic Materials

A person shall not manufacture, sell, offer for sale, distribute for use in the SCAQMD jurisdiction, or apply any marine or pleasure craft coating which contains cadmium, nickel, lead or hexavalent chromium that was introduced as a pigment or as an agent to impart any property or characteristic to the marine or pleasure craft coatings during manufacturing, distribution, or use of the applicable marine or pleasure craft coatings.

(9) Transfer Efficiency

(A) Effective April 1st, 2016 a person shall not apply any marine coating or pleasure craft coating unless one of the following methods of coating transfer is used:

(i) electrostatic application, or

(ii) high-volume, low-pressure (HVLP) spray, or

(iii) brush, dip, or roller, or

(iv) Spray gun application, provided the owner or operator demonstrates that the spray gun meets the HVLP definition in paragraph (c)(~~18~~19) in design and use. A satisfactory demonstration must be based on the manufacturer's published technical material on the design of the spray gun and by a demonstration of the operation of the spray gun using an air pressure tip gauge from the manufacturer of the spray gun.

(v) Any such other marine coating or pleasure craft coating application methods as demonstrated, in accordance with the provisions of paragraph (h)(46), to be capable of achieving equivalent or better transfer efficiency than the marine coating or pleasure craft coating application method listed in clause (d)(9)(A)(ii), provided written approval is obtained from the Executive Officer prior to use.

(B) A person shall not apply any marine coating or pleasure craft coating by any of the methods listed in subparagraph (d)(9)(A) unless such coating is applied with properly operating equipment, operated according to procedures recommended by the manufacturer and in compliance with applicable permit conditions, if any.

(410) Solvent Cleaning ~~Operations;~~ Storage and Disposal of VOC-containing Materials

~~All solvent~~Solvent cleaning ~~operations~~ of application equipment, parts, products, tools, machinery, equipment, general work areas, and the storage and disposal of VOC-containing materials used in solvent cleaning operations shall be carried out pursuant to SCAQMD Rule 1171 - Solvent Cleaning Operations.

~~(5) RecordkeepNotwithstanding the provisions of subdivision (g), records shall be maintained pursuant to Rule 109.~~

~~(d) Prohibition of Specification~~

~~(1) A person shall not solicit or require any other person to use, in the district, any coating or combination of coatings to be applied to any marine vessel or marine component subject to the provisions of this rule that does not meet the limits requirements of this rule or of an Alternative Emission Control Plan approved pursuant to the provisions of paragraph (c)(3) of this rule.~~

~~(2) The requirements of paragraph (d)(1) shall apply to all written or oral agreements executed or entered into after November 4, 1988.~~

(e) Prohibition of Possession, Specification and Sale

(1) For the purpose of this rule, no person shall ~~supply, sell, offer for sale, market, manufacture, blend, repackage, apply,~~ store at a worksite, ~~or solicit the application of~~ any marine coating or pleasure craft coating subject to this rule within the SCAQMD jurisdiction that is not in compliance with the requirements shown in the Tables of Standards of paragraphs (d)(1), (d)(2), and (d)(3) unless one or more of the following conditions apply:

(A) The marine or pleasure craft coating is for use at a facility that utilizes an approved emission control device pursuant to ~~sub~~paragraph (d)(5) and the coating meets the limits specified in permit conditions.

(B) The marine or pleasure craft coating is for use at a facility that operates in compliance with an approved Alternative Emissions Control Plan pursuant to subparagraph (d)(6), and the marine or pleasure craft coating is specified in the plan.

~~(C) The requirements of paragraphs (d)(7) and (d)(8).~~

(2) For the purpose of this rule, no person shall solicit from, specify, or require any other person to use in the SCAQMD jurisdiction any marine or pleasure craft coating which, does not meet the:

(A) Applicable VOC limits required by paragraph (d)(1), (d)(2) or (d)(3) for the specific application unless:

(i) The marine or pleasure craft coating is located at a facility that utilizes an approved emission control device pursuant to paragraph (d)(5), and the marine or pleasure craft coating meets the limits specified in permit conditions; or,

(ii) The marine or pleasure craft coating is located at a facility that operates in compliance with an approved Alternative

Emissions Control Plan pursuant to paragraph (d)(6), and the marine or pleasure craft coating is specified in the plan.

(B) The requirements of paragraphs (d)(7) and (d)(8).

(3) For the purpose of this rule, no person shall supply, sell, offer for sale, market, blend, package, repackage or distribute any marine or pleasure craft coating for use within the SCAQMD jurisdiction subject to the provisions in this rule which, does not meet the:

(A) Applicable VOC limits required by paragraphs (d)(1), (d)(2) and (d)(3) for the specific application, unless:

(i) The marine or pleasure craft coating is for use at a facility that utilizes an approved emission control device pursuant to paragraph (d)(5), and the coating meets the limits specified in permit conditions; or,

(ii) The marine or pleasure craft coating is for use at a facility that operates in accordance with an approved Alternative Emissions Control Plan pursuant to paragraph (d)(6), and the marine or pleasure craft coating is specified in the plan; and,

(iii) The person that supplies, sells, offers for sale, markets, blends, packages, repackages or distributes the marine or pleasure craft coating keeps the following records for at least five years and makes them available to the Executive Officer upon request:

(I) Marine or pleasure craft coating name and manufacturer;

(II) VOC content of the marine or pleasure craft coating;

(III) Documentation such as manufacturer specification sheets, material safety data sheets, technical data sheets, or any other air quality data sheets that demonstrate that the material is intended for use as a marine or pleasure craft coating;

(B) The requirements of paragraphs (d)(7) and (d)(8).

(4) For the purpose of this rule, no person shall solicit from, specify, require, offer for sale, sell, or distribute to any other person for use in the SCAQMD jurisdiction any marine or pleasure craft coating application equipment which does not meet the requirements of subparagraph (d)(9)(A).

(5) For the purpose of this rule, no person shall offer for sale, sell, supply, market, offer for sale or distribute an HVLP spray gun for use within the SCAQMD unless ~~the~~ said person ~~offering for sale, selling, marketing or distributing the HVLP spray gun for use within the SCAQMD~~ provides accurate information to the spray gun recipient. Such accurate information shall include ~~on~~ the maximum inlet air pressure to the spray gun which would result in a maximum air pressure of 10 pounds per square inch gauge (psig) air pressure, measured dynamically at the center of the air cap and at the air horns, based on the manufacturer's published technical material on the design of the spray application equipment, and by a demonstration of the operation of the spray application equipment using an air pressure tip gauge from the manufacturer of the gun. The information shall either be permanently marked on the gun, or provided on the company's letterhead or in the form of technical literature which clearly identifies the spray gun manufacturer, the seller, or the distributor.

(6) Paragraphs (d)(1), (d)(2) and (d)(3) shall not apply to marine coatings or pleasure craft coatings that are sold, offered for sale, or solicited, for shipment or use outside of the SCAQMD jurisdiction, or for shipment to other manufacturers for repackaging provided such coatings are sold, offered for sale, or solicited, for shipment or use outside the SCAQMD jurisdiction.

(f) Recordkeeping Requirements

(1) Recordkeeping for VOC Emissions

Records of marine coating usage and pleasure craft coating usage, as applicable, shall be maintained pursuant to SCAQMD Rule 109 - Recordkeeping for Volatile Organic Compound Emissions, and shall be made available to the Executive Officer upon request. The records shall also include the following information:

(A) Material name and manufacturer;

(B) Application method;

(C) Marine coating and pleasure craft coating categories, as applicable, and mix ratio specific to the coating;

(D) Regulatory VOC, for the marine coating and pleasure craft coating, as applicable;

(E) Documentation such as manufacturer specification sheets, material safety data sheets, technical data sheets, or any other air quality data sheets that indicate the material is intended for use as a marine coating, pleasure craft coating or solvent, as applicable;

(F) Current manufacturer specification sheets, material safety data sheets, or technical data sheets, which list the actual VOC and regulatory VOC, for each marine and pleasure craft coating, as applicable; and,

(2) Recordkeeping Requirements for Emission Control System

Any person using an emission control system shall maintain daily records of key system operating parameters which will demonstrate continuous operation and compliance of the emission control system during periods of VOC emission producing activities. "Key system operating parameters" are those parameters necessary to ensure or document compliance with subparagraph (h)(~~5~~7)(A), including, but not limited to, temperatures, pressure drops, and air flow rates. These records shall be made available to the Executive Officer upon request.

(g) Administrative Requirements for Marine Coating Manufacturers

(1) Compliance Statement Requirement

Effective April 1st, 2016 for each individual marine coating and pleasure craft coating, marine coating and pleasure craft coating component, and ready to spray mixture**s** (based on the manufacturers stated mix ratio) sold, offered for sale, for shipment or use within the SCAQMD jurisdiction, the manufacturer shall include the following information on a product data sheet, or an equivalent medium:

(A) The actual VOC and regulatory VOC for marine coating and pleasure craft coating, as applicable; and,

(B) The weight percentage of volatiles, water, and exempt compounds; and,

(C) The density of the material (in grams per liter).

(2) Labeling Requirements

(A) The manufacturer of marine coatings and pleasure craft coatings or marine coating and pleasure craft coating components shall include on all containers the regulatory VOC content, as supplied (in grams of VOC per liter of coating less water and exempt compounds).

(3) Reporting Requirements

(A) Annual Quantity Emissions Reports (AQER)

Effective April 1st, 2016 and thereafter, for each calendar year (January 1 through December 31) beginning with 2015 and continuing with each subsequent calendar year until 2018, a marine coating or pleasure craft coating manufacturer or distributor shall submit to the SCAQMD by April 1st of the following calendar year, an annual quantity and emissions report for products subject to the rule that were sold or distributed for sale within the SCAQMD jurisdiction. The report format shall be approved by the Executive Officer, and shall include the annual sales or distribution volume and the regulatory VOC content of marine coatings and pleasure craft coatings sold or distributed within the SCAQMD jurisdiction.

(B) List of Distributors

Effective April 1st, 2016 and thereafter, for each calendar year (January 1 through December 31) beginning with 2015 and continuing with each subsequent calendar year until 2018, each manufacturer or distributor of a marine coating or pleasure craft coating that were sold or distributed for sale within the SCAQMD jurisdiction, shall submit to the SCAQMD by April 1st a list of all U.S. distributors to whom they supply products that are subject to this rule, including but not limited to, private label marine coating or pleasure craft coatings, and toll manufactured marine coatings or pleasure craft coatings. The report format shall be approved by the Executive Officer and shall include the distributor's name, address, contact person and telephone number.

(~~e~~h) Test Methods

(1) Determination of VOC Content:

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

(A) ~~United States Environmental Protection Agency (~~U.S. EPA~~)~~ Reference Test Method 24 (Determination of Volatile Matter Content, Water Content, Volume Solids and Weight Solids of Surface Coatings, Code of Federal Regulations, Title 40, Part 60, Appendix A~~,~~). The exempt compounds' content shall be determined

by South Coast Air Quality Management District (SCAQMD) Laboratory Test Method 303 (Determination of Exempt Compounds) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual; or,

(B) SCAQMD Method 304 [Determination of Volatile Organic Compounds (VOCs) in Various Materials] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual~~.~~; or,

(C) SCAQMD Method 313 [Determination of Volatile Organic Compounds VOC by Gas Chromatography-Mass Spectrometry] in the SCAQMD's "Laboratory Methods of Analysis for Enforcement Samples" manual.

(~~B~~D2) VOC content determined to exceed the limits established by this rule through the use of any of the above-referenced test methods shall constitute a violation of this rule.

(~~C~~E3) Exempt Perfluorocarbon Compounds

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; and

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

~~will~~ shall be analyzed as exempt compounds for compliance with subdivision (~~c~~d), only ~~when~~ at such time as manufacturers specify which individual compounds are used in the ~~coating~~ formulation of the coatings subject to this rule. In addition, prior to any such analysis, the manufacturers shall also identify the test methods approved by the U.S. EPA, California Air Resources Board (CARB), and the SCAQMD ~~approved test methods prior to any such analysis shall~~ that will be used to quantify the amount of each exempt compound.

(~~2~~4) Determination of ~~Metal Content~~Iridescent Particles in Metallic/Iridescent Coatings

The metal and silicon content in metallic/iridescent coatings subject to the provisions of this rule shall be determined by the SCAQMD Method 311 (Determination~~Analysis~~ of Percent Metal in Metallic Coatings by Spectrographic Method) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(~~3~~5) Determination of Acid Content in Marine and Pleasure Craft Coatings

The acid content of any coating subject to the provisions of this rule shall be determined by ASTM D-1613-~~85~~ 06 (2012) (Standard Test Method for Acidity in Volatile Solvents and Chemical Intermediates Used in Paint~~.~~, Varnish, Lacquer, and Related Products)~~ contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual~~.

(46) Transfer Efficiency

The transfer efficiency of alternative marine coating and pleasure craft coating application methods, as defined by clause (d)(9)(A)(v), shall be determined in accordance with the SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989," and SCAQMD "Guidelines for Demonstrating Equivalency With SCAQMD Approved Transfer Efficiency Spray Gun September 26, 2002".

(~~4~~57) Determination of Efficiency of Emission Control System

(A) The efficiency of the collection device of the emission control system as specified in paragraph ~~(c)(2)~~(d)(5) shall be determined by the ~~USEPA~~ methods specified ~~cited in 55 Federal Register 26865 (June 29, 1990), or any other method approved by the USEPA, the California Air Resources Board, and the SCAQMD~~below~~.~~:

(i) U.S. EPA method cited in 55 Federal Register (FR) 26865, June 29, 1990; or

(ii) SCAQMD's "Protocol for Determination of Volatile Organic Compounds (VOC) Capture Efficiency"; or

(iii) Any other method approved by the U.S. EPA, CARB, and the SCAQMD Executive Officer.

(B) The efficiency of the control device of the emission control system as specified in paragraph (~~c~~d)(~~2~~5) and the VOC content in the control device exhaust gases, measured and calculated as carbon,

shall be determined by U.S. EPA Test Methods 25, 25A, or SCAQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) as applicable. U.S. EPA Test Method 18, or CARB Method 422 shall be used to determine emissions of exempt compounds.

(~~5~~6~~8~~) 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.

(~~6~~7~~9~~) All test methods referenced in this section shall be the most recently approved version.

(~~h~~i) Rule 442 Applicability

Any ~~*marine coating operation*~~Marine Coating Operation or Pleasure Craft Coating Operation or any facility which is exempt pursuant to subdivision (j) from all or a portion of the VOC limits of subdivision (d) ~~this rule~~ shall comply with the provisions of Rule 442 - Usage of Solvents.

(~~i~~j) Exemptions

The provisions of this rule shall not apply to:

(1) ~~marine~~Marine coatings applied to interior surfaces of potable water containers.

(2) ~~touch~~Touch-up coatings, as defined by paragraph (c)(~~40~~41) of this rule.

~~(3) marine coatings purchased before January 1, l992, in containers of one quart or less and applied to pleasure craft.~~

~~(4) antifoulant coatings applied to aluminum hulls.~~

(~~5~~3) Any aerosol coating product~~s~~.

(4) The provisions of paragraph (d)(9) shall not apply to Marine or Pleasure Craft coatings with a viscosity of 650 centipoise or greater, as applied.

(5) The provisions of paragraphs (d)(1), (d)(2), and (d)(3) shall not apply to marine coatings that are used for vessels that are intended to submerge to at least 500 feet below the surface of the water provided that the total combined usage of such coatings does not exceed 12 gallons per calendar year and such coatings are in compliance with the VOC limits in the U.S. EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) for Shipbuilding and Ship Repair (Surface Coatings).

(Adopted May 1, 1992)(Amended March 8, 1996)
(Amended June 13, 1997)(Amended February 12, 1999)
(Proposed Rescinded Rule 1106.1 October 2, 2015)

Proposed Rescinded Rule 1106.1. PLEASURE CRAFT COATING OPERATIONS

Rescinded by the South Coast Air Quality Management District Board on October 2, 2015.

APPENDIX B

SUSTAINABILITY ADVANTAGES OF ULTRAVIOLET AND ELECTRON BEAM (UV/ EB) CURING

(a UV/EB industry trade association publication)

Sustainability Advantages of Ultraviolet and Electron Beam Curing

By Ronald Golden

Consumers and suppliers of consumer products are taking an increasingly active interest in environmental issues and "sustainable development." A number of RadTech members have been approached by their customers with requests to provide information on the contributions that their products can make to the sustainability initiative. In some cases, sustainability may be considered as a criterion in purchasing decisions.

Sustainability Advantages of Ultraviolet and Electron Beam Curing

Ultraviolet (UV) and electron beam (EB) curing offer several significant "sustainability" features compared to conventional thermal curing processes:

- Reduced use of solvents, lower VOC and HAPS.
- Reduced energy usage.
- Reduced fossil fuel usage.
- Lower greenhouse gas emissions.
- Reduced or eliminated "end-of-pipe" pollution controls.
- Reduced transportation requirements.
- UV and EB inks, coatings and adhesives do not dry out by evaporation…
  - — That makes it easier to recover and recycle printing and coating materials.
  - — That means they require less solvent to clean up.
- UV and EB printed/coated packaging materials are recyclable and repulpable.
- UV/EB curing materials have very low vapor pressures (reduced worker exposure).

These features have been confirmed by studies that consistently demonstrated that UV and EB curing enable reduced energy usage and greenhouse gas emissions, primarily because of their very high applied solids, and because UV or EB energy is used instead of heat for curing. Thermal curing must heat large volumes of air and/or generate radiant infrared energy to:

- Maintain the thermal curing oven at temperature;
- Evaporate and remove water and/or solvent;

TABLE 1

Pressure-sensitive adhesive application parameters

		Technology		
	Units	UV-Cured acResin	Solvent	WB Dispersion
Coating Weight	g/m^2	20	20	20
Coating Solids	%	99	47	55
Line Speed	m/min	200	167	100
Web Width	m/min	0.8	0.8	0.8
Production Rate	m^2/hr	9,600	8,016	4,800
Annual Production Time	hr/yr	8,000	8,000	8,000
Annual Production	m^2/yr	76,800,000	64,128,000	38,400,000

TABLE 2

Electrical energy consumption for web coating pressure-sensitive adhesive

		Technology		
	Units	UV-Cured acResin	Solvent	W/B Dispersion
Electricity Consumption				
Adhesive Preparation	kWh/m^2	0.008	0.008	
Coating Application	kWh/m^2	0.009	0.011	
Curing	kWh/m^2	0.028	0.013	
Finishing	kWh/m^2	0.006	0.001	
Solvent Incineration	kWh/m^2	0	0.01	
Electricity Subtotal	kWh/m^2	0.051	0.04	0.14
Annual Electricity Consumption	kWh	3,916,800	2,757,504	5,376,000
Average Cost of Electricity to Industrial Users[5]	$/kWh	0.062	0.062	0.062
Annual Electricity Cost		242,842	170,965	333,312
Normalized Electricity Cost	$/million m^2	3,162	2,666	8,680

- Stay below the lower explosive limit when solvents are present;
- Heat the substrate to the curing temperature; and
- Cure the ink and/or coating.

Moreover, any volatile organic solvent emissions from thermal curing ovens require "end-of-pipe" controls (incineration or solvent capture). Both processes require additional energy input and generate corresponding greenhouse gases.

In contrast, with UV or EB curing processes, reactive monomers replace all or most of the diluting medium and become part of the cured polymer so little if any added volatile solvent or water is needed in the formulation, and effective applied solids can approach 100 percent. Curing is initiated by UV or EB radiation and is almost instantaneous, the substrate remains cool, and air circulation is mainly for equipment and substrate cooling, and evacuation of any volatiles.

Previous analyses comparing UV/EB processes to competitive solvent and waterborne technologies have also shown substantial reductions in pollution and hazardous waste associated with spent solvent-borne materials and cleanup, as well as significant improvements in product performance and productivity, often at an overall lower net cost.[1]

RadTech Sustainability Task Force

RadTech International North America has formed a Sustainability Task Force—comprising a group of raw material suppliers; ink, coatings and adhesives formulators; equipment manufacturers; end-use converters; and packaging manufacturers—to study and quantify these sustainability characteristics. Specifically, the RadTech Sustainability Task Force has established the following goals:

- Develop comprehensive life cycle analyses for all applicable technology options.
- Develop quantitative comparisons of energy, emissions and resource use of UV/EB processes versus conventional thermal curing alternatives.
- Develop a model to help decision-makers to quantify sustainability factors when evaluating technology options.

Pressure-Sensitive Adhesive Case Study

The most complete published quantitative analysis comparing ultraviolet and waterborne technologies was a 1997 study of the conversion to UV curing from thermal curing of waterborne inks and coatings for exterior aluminum can decoration and coating at Coors Brewing Company.[2] A previous *RadTech Report* article[3] reported how the conversion resulted in a reduction of up to 80 percent in total energy usage in Btu, including electrical power and natural gas. Greenhouse gas emissions showed a corresponding reduction of up to 67 percent. Moreover, these benefits were achieved at a lower net cost for the finished product.

The RadTech Sustainability Task Force was seeking a more recent study to develop a similar comparison using current energy and emissions factors. BASF Corporation generously provided RadTech with the raw data from their ecoefficiency evaluation of water-borne, solvent and UV web-applied pressure sensitive adhesives[4] as the

TABLE 3

Natural gas consumption for web coating pressure-sensitive adhesive

	Technology			
	Units	UV-Cured acResin	Solvent	W/B Dispersion
Natural Gas Subtotal	1000 ft3/m^2	0	0.0033	0.003
Curing	1000 ft^3/yr	0	147,494	115,200
Solvent Incineration	1000 ft^3/yr	0	64,128	0
Annual Natural Gas Demand	1000 ft^3	0	211,622	115,200
Normalized Natural Gas Consumption	1000 ft^3/ million m^2	0	3,300	3,000
Natural Gas Price to Industrial Users[6]	$/1000 ft^3	N/A	8.00	8.00
Annual Natural Gas Cost		0	1,693,000	922,000

basis for the following quantitative analysis. Table 1 shows the application parameters. Tables 2, 3 and 4 show a comparison of the energy demand components for each coating technology.

The higher solids of the UV coating also means reduced energy required to transport the coating from the formulator to the application site. Table 4 shows the transportation energy required to deliver enough of each type of coating to cover 76,800,000 square meters at an applied coat weight of 20 g/m^2.

Table 5 shows a comparison of the total energy requirements of each of the three technologies, normalized to Btu/square meter of coated surface. Conversion of electrical energy MWh to Btu is based on an average heat rate of 9.713 million Btu/MWh; conversion of natural gas usage to Btu is based on 1,031 Btu per cubic foot.

On a normalized basis (Btu per square meter of coated substrate) the UV-cured resin requires up to 89 percent less energy, compared to solvent and waterborne systems.

TABLE 4

Transportation energy requirements on an equal coverage basis

	Technology			
	Units	UV-Cured acResin	Solvent	W/B Dispersion
Normalized Annual Coating				
Solids	MT	1,538	1,538	1,538
Liquid Annual Coating				
Volume	MT	1,553	3,272	2,796
Net Truckload	MT	20	20	20
Truckloads/Year		76	160	137
Diesel Fuel Usage*	gal/yr	6,781	14,365	12,275
Energy Consumption**	Million Btu/yr	943	1,997	1,706

*Based on an average 500-mile delivery trip and fuel mileage of 5.7 mpg[7]

**Based on 139,000 Btu per gallon of diesel fuel[8]

Greenhouse Gas Emissions

Both generation of electrical energy and combustion of natural gas generate corresponding greenhouse gas emissions (Table 6).

Factors for conversion of electrical MWh and combustion of various fuels to greenhouse gas emissions are based on data published by the U.S. Energy Information Administration and the U.S. Environmental Protection Agency (EPA).[9] On a normalized basis (MT CO2 per million square meters of coated substrate), the UV-cured resin generates up to 87 percent less carbon dioxide, compared to thermal curing solvent and waterborne systems.

UV-Cured Products Are Recyclable

Trials at Beloit Corporation confirmed that UV/EB inks and coatings repulp easily.[10] Mill scale trials show that UV/EB-coated waste can be incorporated into standard furnish with no detrimental effects on product quality. The study concluded that UV- and EB-printed and coated

TABLE 5

Overall energy requirements on an equal coverage basis

		Technology		
	Units	UV-Cured acResin	Solvent	W/B Dispersion
Electricity Consumption	MWh/yr	3,917	2,758	5,376
Natural Gas-Curing	kft^3/yr	0	147,494	115,200
Natural Gas-VOC Incineration	kft^3/yr	0	64,128	
Transportation	Million Btu/yr	943	1,997	1,706
Total Energy Demand	Million Btu/yr	38,986	246,963	172,695
Normalized Total Annual Energy Demand	$Btu/m^2/yr$	508	3,851	4,497

paper can be recycled into tissue and/or fine paper grades using commercially available equipment.

Moreover, the high gloss and abrasion resistance of UV- and EB-cured coatings in some cases, can enable replacement of laminated structures with printed inks and coatings. Laminated paper and plastics are difficult to recycle due to problems with separating two incompatible types of materials. UV/EB printed inks and coatings break down under recycling process conditions, permitting effective recycling of both paper and plastic structures that formerly were intractable in laminated form.

Summary

In summary, UV and EB curing have numerous "sustainability" characteristics:

- Substantial reductions in energy demand.
- Substantial reductions in fossil fuel usage.
- Substantial reductions in greenhouse gas emissions.
- Reduced transportation costs and emissions.
- Safer workplace.
- Recyclable inks, coatings and product wastes.
- Positive performance advantages and economic returns.

Where Do We Go From Here?

The RadTech Sustainability Task Force has already developed "cradle-to-grave-to-cradle" life cycle analyses for the various coating and printing technologies, including energy usage, carbon footprint, transportation, emissions controls, waste, recyclability and more at each stage of production of raw materials and finished products, as well as the end use of the products and their disposal and recycling. Current plans include working with industry, academic and government partners on demonstration projects to develop additional data and practical insights. The resulting data will be used to develop additional quantitative analyses, as well as a working model for technology comparison, including economic factors. ◗

TABLE 6

Greenhouse gas (CO_2) emissions

		Technology		
	Units	UV-Cured acResin	Solvent	W/B Dispersion
Transportation	MT/yr	70	146	125
Electricity Consumption	MT/yr	2,389	1,682	3,279
Natural Gas	MT/yr	-	11,600	6,315
Total	MT/yr	2,459	13,429	9,719
Normalized Greenhouse Emissions	MT CO_2/ million m^2	32	209	253

References

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