

APPENDIX H

**RESPONSES TO COMMENTS ON THE 2002 DRAFT
SUBSEQUENT ENVIRONMENTAL ASSESSMENT**



Benjamin Moore & Co. *Paints • Stains • Clear Finishes*

TECHNICAL & ADMINISTRATIVE CENTER • 360 ROUTE 205 • P. O. BOX 4000 • FLANDERS, NEW JERSEY 07836 4000 • (201) 827-8600 • FAX (201) 252-2860

September 3, 2002

Dan Russell – 909 396-2333
 Planning, Rule Development and Area Sources
 South Coast Air Quality Management District
 21865 E. Copley Drive
 Diamond Bar, CA 91765

Dear Mr. Russell:

1-1

Benjamin Moore & Co. has been a participant in the National Reg/Neg which resulted in the National AIM VOC Rule and in the various work groups which commented on most stages of the current SCAQMD Rule 1113. Though out this process we have supported all proposals and recommendations of the National Paint and Coatings Association (NPCA) and we continue to do so.

In your CEQA document of 8/2/02 Appendix D you list a number of Benjamin Moore & Co. products, which you imply, validates your 1/1/03 TOS limits. In fact a number of our Technical Data Sheets (TDS) prove just the opposite (comments and attached web site references follow):

1-2

M58 is not a “floor coating” but an “Industrial Maintenance Traffic Marking Paint”:
<http://www.benjaminmoore.com/tds/1033/TDSM58A.pdf>

M40 and M41 are not “floor coating’s” but are an “Industrial Maintenance two component floor sealing and coating system which is “not for use by the home owner”:
<http://www.benjaminmoore.com/tds/1033/TDSM40A.pdf>
<http://www.benjaminmoore.com/tds/1033/TDSM41A.pdf>

M47/M48 is not a general I/M coating but a two component Coal Tar Epoxy Black with a VOC at 318g/l for use in waste treatment facilities:
<http://www.benjaminmoore.com/tds/1033/TDSM47M48A.pdf>

1-3

Benjamin Moore prides itself on being a premium quality paint company. You do include a couple of our “Regal” line and other premium paint TDS’s but not all. A more complete listing follows with a more accurate record of their VOC content required to make them effective, easy to use, and available in all colors of the rainbow for the premium paint home owner. As the following shows most of our premium products are compromised with the 2003 TOS and wiped out in 2006/8:

- Regal AquaGlo - Nonflat
<http://www.benjaminmoore.com/tds/1033/m7133303.pdf> VOC 177g/l to 238g/l
- Regal AquaPearl - Nonflat
<http://www.benjaminmoore.com/tds/1033/m7131003.pdf> VOC 136g/l to 209g/l
- Regal AquaVelvet - Nonflat
<http://www.benjaminmoore.com/tds/1033/m7131903.pdf> VOC 80g/l to 142g/l
- Regal WallSatin Flat
<http://www.benjaminmoore.com/tds/1033/m7121503.pdf> VOC 31g/l to 91g/l
- IronClad Latex Metal & Wood Enamel - Nonflat
<http://www.benjaminmoore.com/tds/1033/m7236303.pdf> VOC 190g/l to 314g/l
- Impervex Latex High Gloss Enamel – High Gloss Nonflat
<http://www.benjaminmoore.com/tds/1033/m7130903.pdf> VOC 240g/l to 256g/l
- MoorGlo Latex House & Trim – Exterior Nonflat
<http://www.benjaminmoore.com/tds/1033/TDS096A.pdf> VOC 147g/l to 215g/l

Moore’s Kitchen & Bath (322) is not an all purpose nonflat. Rather it is a fast drying paint for use in areas prone to mildew growth. It is available in white and light pastels only:
<http://www.benjaminmoore.com/tds/1033/m7132200.pdf>

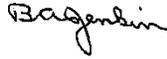
MONTAILE NJ • NEW YORK NY • NEWARK NJ • FLANDERS NJ • NUTLEY NJ • BOSTON MA • RICHMOND VA • JACKSONVILLE FL • JOHNSTOWN NY • CHICAGO IL • ST LOUIS MO
 CLEVELAND OH • HOUSTON TX • DALLAS TX • BIRMINGHAM AL • DENVER CO • LOS ANGELES CA • SANTA CLARA CA • TORONTO ON • MONTREAL PQ • LANSELY BC • BURLINGTON FN

Established 1883

1-4

A complete review of our TDS's found at <http://www.benjaminmoore.com/> will show the Board, that 50% of our products are out of compliance with the 2003 TOS and more than 75% are out of compliance with the 2006/8 TOS. These rules will eliminate most of our I/M Coatings, our floor paints, our varnishes, many of our sealers and stains and most of our premium quality/top line paints. Benjamin Moore & Co. requests a more complete presentation of our TDS's. In fact, they form the basis for our conviction that we need the flexibility of the NPCA proposals to remain, in California, the quality paint company we have been since 1883.

Sincerely,



Barry A. Jenkin
Benjamin Moore & Co.
Regulatory Affairs
973-252-2650
barry.jenkin@benjaminmoore.com

**COMMENT LETTER #1 FROM
BENJAMIN MOORE AND COMPANY**

(September 3, 2002)

Response to Comment #1-1

SCAQMD staff acknowledges your participation in developing the national AIM VOC rule, which regulates the architectural coating industry, as well as your support of the proposals by the National Paint and Coating Association. The project under consideration, however, is re-adoption of the 1999 amendment to Rule 1113, although there have been a number of subsequent modifications to the original proposal.

Response to Comment #1-2

“Floor coatings” is a generic term for a variety of high performance coatings used in areas with abrasion as a result of foot traffic or vehicular traffic. The Technical Data Sheet (TDS) for Benjamin Moore’s M58 Safety and Marking Latex describes the paint as marking traffic lanes and “designating parking spaces and other vehicular or foot traffic control markings.” Thus, staff listed M58 as both a floor coating and an industrial maintenance (IM) coating in Appendix D. Because M58 is already listed in Appendix D as an “industrial maintenance coating” with a VOC coating below 100 grams per liter, the conclusion that lower VOC content limits for industrial maintenance coatings can be achieved does not change.

Typically, the floor coating system includes a primer and topcoat, or a two-component single coat coating. The users include a variety of commercial and industrial users, with some limited residential applications. The TDS for Benjamin Moore’s M40 is described as “100 percent solids epoxy floor coating” and M41 is a penetrating sealer and finish coat. Whether classified as a “floor coating” or an “industrial maintenance coating”, both coating systems are classified as having zero VOC content and are additional examples of coatings able to comply with future lower VOC content limits.

It is proposed that the various categories of the “industrial maintenance primers and topcoats” be collapsed into a general IM coating category, which is defined to include coatings applied to substrates exposed to water, wastewater, chemical solutions, corrosive agents, chemical fumes, chemical mixtures, etc. Typical users include oil and gas production – onshore and offshore, refineries, pulp and paper mills, water and waste treatment facilities. The M47/48 coal tar epoxy satisfies the general IM coating classification, however, staff does acknowledge that, at 318 grams per liter, the M47/48 should not be identified as under 250 grams per liter in Appendix D.

Response to Comment #1-3

The SCAQMD staff has downloaded all the TDSs available for the list of Benjamin Moore premium paint products provided and reviewed the properties of each of the products. Staff is aware that if products are not reformulated to satisfy the future lower VOC content limits, the sale of such products will not be allowed. It is recognized that new products, however, will need to be formulated to comply with future lower VOC content limits. Industry input during the development of the 1999 amendments to Rule 1113 indicated that research and development of

new coatings where the resin technology is currently available takes approximately three to five years. Further, industry has indicated that if a resin technology is not currently available, research and development of new coatings takes approximately five to seven years. Based on this input from industry, the final compliance date specified in the 1999 amendments to Rule 1113, allowed at least seven years for the development of new products. Because the May 1999 amendments to Rule 1113 have already been in effect for more than three years, the expectation is that coating manufacturers have made progress in their research and development efforts of new formulations that comply with future VOC limits. Therefore, staff is proposing to maintain the same compliance schedule for the final limits adopted in May 1999.

Response to Comment #1-4

The SCAQMD staff's survey in Appendix D revealed that there are over 100 low-VOC IM coatings that comply with the original 2002 interim compliance date (now year 2003) and over 140 that comply with the 2006 final compliance date. The table in Appendix D includes some Benjamin Moore products. Because of the large number of currently available compliant coatings for both the 2003 and 2006 VOC content limit requirements and the long lead time for research and development of future compliant VOC coatings, the SCAQMD staff believes there is a firm basis supporting the PAR 1113. With regard to availability specifically of Benjamin Moore products, please refer to Response to Comment #1-3.

SENT BY: 9- 3- 2 ; 15:07 ; SMILAND & KHACHIGIAN 21389114129 396 3324;# 1/ 3

SMILAND & KHACHIGIAN
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TO: Mr. Michael Krauss
FIRM/COMPANY: South Coast AQMD
FACSIMILE NO.: (909) 396-3324
FROM: William M. Smiland, Esq.
RE: Proposed Amendment to Rule 1113 - CEQA
ATTACHED: Letter dated September 3, 2002

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WM. CHASE ADAMS
DANIEL S. KIPPEN

September 3, 2002

DUPLICATE BY FACSIMILE (909) 396-3324

Mr. Michael Krauss
South Coast AQMD
21865 East Copley Drive
Diamond Bar, CA 91765-4182

Re: Proposed Amendment to Rule 1113 - CEOA

Dear Mr. Krauss:

Introduction

This responds to your notice, dated August 2, 2002, relating to the draft SEA covering the referenced project.

2-1

Enclosed are copies of the opening and reply briefs we filed on behalf of our clients in the recent appeal invalidating the 1999 amendments. They and the evidence in the prior administrative record, to which they refer, are incorporated herein by reference.

Necessity

On May 14, 1999, the board formally directed staff to study the volatility of glycols in water-borne paints, including non-flats and industrial maintenance coatings. To the best of our knowledge, this directive has not been followed. The board also directed staff to study the relativity of mineral spirits in solvent-borne paints, and we are not aware that this directive has been honored, either.

2-2

The draft SEA acknowledges (at 4-21) that glycols are "low volatility" compounds. Yet it opines that the coatings (except low-odor paints and two-component industrial maintenance systems) should be prohibited. It merely states, without citing evidence, that unspecified inorganic compounds in unspecified paints "do and are intended to evaporate."

Emeritus
CHARLES H. CHASE

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Emeritus
ERNEST M. CLARK, JR.

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9- 3- 2 ; 15:07 ; SMILAND & K... 21389114129 396 3324;# 3/ 3

Mr. Michael Krauss
September 3, 2002
Page 2

2-3

The draft SEA discusses (at 4-17 to 4-21) the reactivity of mineral spirits based on early and preliminary data. It notes the potential of low reactivity various investigations of the 1990's. Yet it notes, without explanation, that it would "not be prudent" to learn the facts before adopting the prohibitions.

Our views in this issue are set forth at pages 25-35 of our opening brief and at pages 22-35 of our reply.

Aesthetics

2-4

The draft SEA finds (at 4-66 to 4-67) that aesthetic impacts will not be significant. It states that the 2003 and 2006 compliance dates should ensure sufficient "time" for unspecified manufacturers to reformulate unspecified products exhibiting desired characteristics. No evidence for the finding is included.

Our views on this impact are set forth at pages 50-56 of our opening brief and pages 49-52 of our reply brief.

Corrosion and Sanitation

2-5

The draft SEA appears not to address in any significant way the health and safety impacts of the amendments, including increased corrosion and decreased sanitation.

Our views on these impacts are described at pages 50-51 and 57-59 of our opening brief and at pages 49-50 and 52-54 of our reply brief.

Conclusion

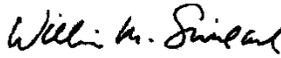
2-6

We respectfully submit that South Coast AQMD must cure the above violations of CEQA.

Certain legal defects in the draft staff report are being addressed in a letter to its authors submitted concurrently herewith.

Still other issues will be addressed in response to anticipated draft economic impact and federal law analyses.

Very truly yours,



William M. Smiland

**COMMENT LETTER #2 FROM
SMILAND AND KHACHIGIAN**

(September 3, 2002)

Response to Comment #2-1

The briefs attached to comment letter #2 have been incorporated into the administrative record, as have the SCAQMD's responding brief, regarding readoption of the 1999 amendments to Rule 1113, which includes the recent modifications.

The issue of reactivity and availability of solvent species has been a topic of research for the past several years by the Reactivity Research Working Group (RRWG), composed of industry groups, interested researchers, the EPA and other regulatory agencies. However, all studies conducted to date result in high levels of uncertainty, especially for solvent species with low volatility, which are also the major focus of the availability studies. The RRWG, as well as the paint industry, has identified the need for a new, state-of-the-art, atmospheric chamber to be developed to conduct additional assessments in an attempt to reduce the uncertainties of reactivity values for the solvent species, including those with low vapor pressure. In October 1999, the SCAQMD co-sponsored a US/German Ozone/Fine Particle Science and EPA/UCR Environmental Chamber Workshop to design and develop the new environmental chamber study at U.C. Riverside. The workshop included discussions on the state of the science related to ozone and fine particulate formation, as well as identification of additional studies needed for reactivity.

In response to this need, Dunn Edwards Paint Company has assisted with funding for a construction of a new atmospheric chamber at the College of Engineering - Center for Environmental Research and Technology (CE-CERT) in Riverside, California. The construction of this chamber, first of its kind in terms of technology, has experienced significant delays. To date, the chamber is still undergoing some final quality assurance before actual testing is initiated. The SCAQMD staff has been closely monitoring the progress of this chamber and is considering contracting with CE-CERT to conduct some studies upon completion of the chamber. Dr. William Carter, Principal Investigator, plans to further study the reactivity and availability of both glycols and mineral spirits, as well as other solvent species. The following are a few of the studies currently being conducted by CE-CERT:

- Development of a Next-Generation Environmental Chamber Facility For Chemical Mechanism and VOC Reactivity Evaluation – 6/1/99 to 6/30/2003
- Evaluation of Atmospheric Impacts of Selected Coatings VOC Emissions – 6/30/01 – 6/29/2004 (relative to reactivity and availability)
- Development and Evaluation of a Gas-Phase Atmospheric Reaction Mechanism for Low-NOx Conditions – 12/01/2001 – 11/30/2004

In addition, the SCAQMD in June 2002 adopted an ambitious three-year Advanced Air Pollution Research Plan. This research plan contains a proposal to research reactivity-based pollution control approaches. The SCAQMD is actively seeking co-sponsors for this as well as other projects included in the Research Plan. Since the commentator appears to be very interested in

the reactivity assessment, we would encourage him to consider co-funding these long-term and costly studies in the near future.

The original staff report and supporting information included a thorough analysis of the reactivity of mineral spirits and concluded that mineral spirits are considered to be reactive, and the overall reactivity varies depending on the specific formulations of mineral spirits. Dr. William Carter has continued his assessment of mineral spirits and published a report entitled Investigation of the Ozone Formation Potentials of Selected Branched Alkanes and Mineral Spirits Samples, on July 11, 2002. This study concludes that an all alkane mineral spirit formulation is less reactive than mineral spirits with 8 percent aromatics and alkenes. Furthermore, the study concludes that this may have a reduced impact on maximum 8-hour average ozone levels than on peak ozone levels, especially in scenarios with relatively low NOx conditions, which is not the case for South Coast Air Basin. This study, or any other study, does not conclude that mineral spirits are less reactive or more reactive than solvents found in waterborne formulations of paints.

Staff encourages the commentator to join the various groups in funding future efforts to continue assessing the science of reactivity and increasing the confidence in the data collected through atmospheric chamber studies.

Response to Comment #2-2

The commentator alleges that because glycol compounds have low evaporation rates they do not disperse widely enough or remain in the atmosphere long enough to contribute significantly to ozone formation. The SCAQMD disagrees. The commentator further alleges that the Draft SEA fails to analyze this issue. The commentator is incorrect in alleging that the SCAQMD has not considered a low-volatility approach for PAR 1113. In Chapter 5 of the Draft SEA, although not specifically focusing on glycol compounds, the SCAQMD extensively discussed the feasibility of such an approach in the broad context of architectural coatings. The SCAQMD noted that although CARB has included a low vapor pressure (LVP) exemption in their Consumer Products regulation, CARB staff indicates that the LVP exemption was placed into the proposed regulation because of specific additives found in consumer products, such as surfactants, paraffins, and other heavier compounds that are typically washed away before they evaporate into the air. Furthermore, CARB has indicated that the LVP exemption was not intended to apply to solvents used in AIM coatings, since these solvents are intended to evaporate into the air. For that reason, CARB has not provided an LVP exemption in their aerosol paints rule or in their suggested control measure for architectural coatings adopted in June 2000.

Similarly, USEPA also did not include an LVP exemption in the National AIM Rule and USEPA staff has communicated to the SCAQMD that they do not support an LVP exemption for the architectural coatings rule. USEPA staff concludes that any VOCs (non-exempt solvent species) that are included in the approved test method are considered to be part of the overall VOC content of the coating, and should not be exempted. Using the currently approved test method, testing of coatings containing some of the LVP solvents includes identifying some LVP solvents as VOCs. As a result, because there is currently little science to support an LVP exemption for paints, the SCAQMD does not consider a low vapor pressure alternative to be feasible. See also Response 2-3.

Response to Comment #2-3

As implied by the commentator, there is a detailed discussion in the Draft SEA, pages 4-17 through 4-21, regarding why a reactivity-based regulatory approach has been rejected. The following summarizes that discussion. As discussed in Chapter 4 of the Draft SEA, the science of VOC reactivity is still in its early stages, with more comprehensive studies being conducted to refine VOC reactivity data. Until these studies are completed, the SCAQMD agrees with the EPA that it would not be prudent to implement a control strategy for VOC emissions based principally on VOC reactivity at this time. In its 1995 Report to Congress entitled “Study of Volatile Organic Compound Emissions From Consumer and Commercial Products,” the EPA concluded, “To be most effective, ozone control strategies ideally should be based not only on mass VOC and NO_x emissions but should consider the relative photochemical reactivity of individual species, the VOC-to-NO_x ratios prevalent in specific airsheds, and other factors which could work together to minimize the formation of ozone with adverse impacts. Reactivity data on VOC, especially those compounds used to formulate consumer products and commercial products, is extremely limited. Better data, which can be obtained only at great expense, is needed if the EPA is to consider relative photochemical reactivity in any VOC control strategy. In the meantime, a practical approach is to act on the basis of mass VOC emissions.” Thus, until more comprehensive VOC reactivity studies are completed that yield more refined speciation profiles for architectural coatings, the SCAQMD will continue to use a mass VOC control strategy. The SCAQMD welcomes any new scientific data that industry can provide to aid the SCAQMD in making a VOC reactivity-based strategy a viable control option.

In general, the relative contribution of reactivity of a specific VOC under different atmospheric conditions needs to be better understood before data can be used for policy-making. Dr. William Carter recently received funding for a three million dollar ozone chamber, which will include studying VOC reactivity. The SCAQMD is also contributing funding to this ozone chamber. The results of future studies may result in sufficient information to include reactivity-based control provisions in Rule 1113 and other coatings rules.

Some specific problems (scientific issues) associated with reactivity-based regulations include:

- Assumptions in the current airshed models are too simplified, and do not represent airshed conditions in Basin.
- Studying the reactivity of halogenated compounds is difficult because currently there is no way to simulate reactivity under current models and chamber conditions.
- Information on the reactivity of alcohol amines indicates that there is a high degree of uncertainty associated with the reactivity of these compounds and additional study is necessary.
- The reactivity of aromatics is still not well understood and current mechanism may not correlate well.
- Quantifying reactivity uncertainties is difficult – particularly for most compounds found in architectural coatings.

- The existing atmospheric chamber is not for studying reactivity in low-NOx environments.

As stated in the Draft SEA (page 4-20), the SCAQMD will continue to monitor and participate in all studies related to enhanced reactivity data of VOC species, including directly participating in studies pertaining to reactivity of solvents in architectural coatings. See also Response to Comment #2-1.

The trial court (Orange County Superior Court, Case Nos. 810488, 810492, 810699) dismissed these claims and the appellate court did not address these issues. Our views are in pages 88 to 91 of the “Respondent’s Opposition Brief to Appellants’ Opening Briefs” (Fourth Appellate District, Division Three, Court of Appeals of the State of California, National Paint and Coatings Association v. South Coast Air Quality Management District). Hardcopies of this document is available from the CEQA Section at the SCAQMD and requests can be made via e-mail at ceqa_admin@aqmd.gov or calling Lori Inga at (909) 396-3109.

Response to Comment #2-4

The SCAQMD does not concur with the commentator’s opinion that no evidence is included the Draft SEA regarding the finding that the aesthetic impact from the proposed project will be not significant. Based upon information on currently available compliant products, performance characteristics of existing and reformulated products are expected to be sufficient to withstand environmental effects on coatings, such as weathering. It is assumed that the commentator is implying that the performance characteristics of compliant low VOC coatings will be inferior to conventional coatings. Staff reviewed coating product data sheets (see the tables in Appendix D) to obtain durability information for low VOC coatings and conventional coatings. Based upon a comparison of the coating product information sheets, staff concluded that low VOC coatings have durability characteristics comparable to conventional coatings. Further, based on current availability of low and zero-VOC AIM coatings for a wide range of applications, it is anticipated that even more compliant coatings will be available by the 2003 and 2006 compliance dates. Finally, contrary to the commentator’s opinion, there is no evidence to suggest that reformulated coatings at lower VOC content limits will not exhibit desired aesthetic characteristics. In fact, based on the comparable durability of low VOC coatings compared to traditional high VOC coatings, aesthetics characteristics are expected to be similar.

The trial court (Orange County Superior Court, Case Nos. 810488, 810492, 810699) dismissed these claims and the appellate court did not address these issues. Our views are in pages 65 to 66 of the “Respondent’s Opposition Brief to Appellants’ Opening Briefs” (Fourth Appellate District, Division Three, Court of Appeals of the State of California, National Paint and Coatings Association v. South Coast Air Quality Management District). Hardcopies of this document is available from the CEQA Section at the SCAQMD and requests can be made via e-mail at ceqa_admin@aqmd.gov or calling Lori Inga at (909) 396-3109.

Response to Comment #2-5

The commentator has indicated that if all substrates were painted with reformulated coatings, health and safety impacts from increased corrosion and decreased sanitation would be severely compromised. This statement is contrary to the SCAQMD’s findings concerning commercially

available low-VOC compliant coatings. Based on the SCAQMD's research, investigation, and analysis, low-VOC compliant coatings are currently commercially available to meet the interim and final VOC content limits. Furthermore, the compliance deadlines have been expanded for the final VOC content limits to allow coating formulators additional time to correct potential coating application problems. Accordingly, since low-VOC compliant coatings are commercially available and additional time is provided for reformulation, the SCAQMD does not expect significant hazards and human health impacts from the implementation of PAR 1113.

The trial court (Orange County Superior Court, Case Nos. 810488, 810492, 810699) dismissed these claims and the appellate court did not address these issues. Our views are in page 63 to 64 of the "Respondent's Opposition Brief to Appellants' Opening Briefs" (Fourth Appellate District, Division Three, Court of Appeals of the State of California, National Paint and Coatings Association v. South Coast Air Quality Management District). Hardcopies of this document is available from the CEQA Section at the SCAQMD and requests can be made via e-mail at ceqa_admin@aqmd.gov or calling Lori Inga at (909) 396-3109.

Response to Comment #2-6

The SCAQMD disagrees with the commentator's implication that the environmental analysis contained in the Draft SEA is consistent and does not violate CEQA. The Draft SEA complies with all relevant CEQA requirements. The 2002 EA relies in part on the 1999 amendments but also incorporates subsequent study results that support the conclusion that compliant paints are available and perform well. Accordingly, suggested adverse effects from use of such paints, or substitution of higher VOC paints, will not occur.

Michael Krause

From: Mundhenk,Chris [cmundhenk@mwdh2o.com]
Sent: Wednesday, September 04, 2002 10:05 AM
To: Michael Krause
Cc: Kaufman,Carol Y; Shane,Delaine W
Subject: Proposed Amendments to Rule 1113: Architectural Coatings



Rule 1113
sponse Letter - MW

Dear Mr. Krause,

Attached please find Metropolitan's comment letter regarding the proposed amendments to Rule 1113. If you have any problems opening the document, please contact me at (213) 217-7658.

Sincerely,
Chris Mundhenk
Environmental Planning Team
Metropolitan Water District of Southern California

<<Rule 1113 Response Letter - MWD.pdf>>



MWD

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Executive Office

September 4, 2002

Mr. Laki Tisopulos
Assistant Deputy Executive Officer
Planning, Rule Development, & Area Sources
South Coast Air Quality Management District
21865 E. Copley Drive
Diamond Bar, California 91765-4182

Dear Mr. Tisopulos:

**Draft Subsequent Environmental Assessment
for the Proposed Amendments to Rule 1113 – Architectural Coatings**

The Metropolitan Water District of Southern California (Metropolitan) has received the Draft Subsequent Environmental Assessment (EA) for the Proposed Amendments to Rule 1113 – Architectural Coatings that was prepared by the South Coast Air Quality Management District (SCAQMD). The comments herein represent Metropolitan's response to your proposed amended rule as a potentially affected public agency.

3-1 Metropolitan is requesting that the text on page 3-22 be revised to reflect that Metropolitan distributes wholesale water obtained from the Colorado River and Northern California through 26 member agencies (cities, municipal water districts, and a county water authority). Also, Metropolitan provides more than one-half of the water used by approximately 17 million people in six counties covering the 5,200 square-mile coastal plain of Southern California. To provide this service, Metropolitan operates an extensive system of water conveyances, reservoirs, and water treatment plants.

3-2 Metropolitan continues to be very supportive of the SCAQMD's goal of reducing volatile organic compound (VOC) emissions from the application of architectural/industrial maintenance (AIM) coatings, and of the efforts to promote coatings reformulation towards zero-VOC coatings. As an end-user of AIM coatings on critical components of our water delivery system, Metropolitan provided input into the 1998/1999 rulemaking activities which culminated in the adoption of the May 14, 1999 amendments. The amendments provided the Essential Public Service Agencies (EPSAs) with an interim 340 g/l VOC limit for industrial maintenance coatings until July 2006 (at which time the universal 100 g/l industrial maintenance coating VOC limit would apply), and

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Re: Draft Proposed Amendments to Rule 1113
September 4, 2002
Page 2

3-2
cont.

established an EPSA technology assessment. These provisions of the original 1999 amendment, which are proposed to be continued in this readoption process, will enable Metropolitan to continue meeting our water delivery contractual responsibilities.

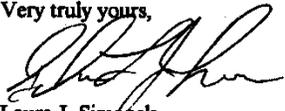
3-3

Relative to the proposed amended rule, Metropolitan concurs with the definition of “Essential Public Service Coating” provided in the August 6, 2002 SCAQMD Preliminary Draft Staff Report for Proposed Amended Rule 1113 – Architectural Coatings. Grammatical changes have been made to reflect the original intent of the rule (as written, it is understood that water treatment is considered part of the distribution system). Metropolitan supports the adoption of this specified language in the final SCAQMD Board package. The definition is as follows:

“ESSENTIAL PUBLIC SERVICE COATING is a protective (functional) industrial maintenance coating applied to components of transmission or distribution systems of power, municipal wastewater, and water, and bridges and other roadways during repair and maintenance procedures.”

We appreciate the opportunity to provide input to your planning process and we look forward to receiving future environmental documentation on this project. If we can be of further assistance, please contact Ms. Carol Kaufman of the Environmental Support Services at (213) 217-6207.

Very truly yours,


FOR Laura J. Simonek
Manager, Asset Management
and Facilities Planning Unit

CYK/CDM

cc: Lee Lockie, SCAQMD
Naveen Berry, SCAQMD
Dave De Boer, SCAQMD

**COMMENT LETTER #3 FROM
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA**

(September 4, 2002)

Response to Comment #3-1

SCAQMD appreciates your comments. Staff has updated Chapter 3 of the Final SEA to include your clarifications of MWD's extensive water system.

Response to Comment #3-2

The public agencies that provide essential services to the public were provided with a slightly higher interim VOC limit to provide an adequate amount of time to complete their technical assessment, as required by the Public Resources Code on contracting and purchasing. This technical assessment, as required by the public contracting procedure, requires a phased approach over a five-year period before a product can be added to their specifications. Private companies did not offer such information or limitations in their contracting or purchasing requirements. Nonetheless, the SCAQMD has amended its initial proposal and eliminated the separated Essential Public Service Coating Category, and extended the interim VOC limit implementation date to January 1, 2004 to align the requirement with CARB's State Control Measure (SCM).

Response to Comment #3-3

Refer to Response to Comment #3-2.

Michael Krause

From: Jim Sell [JSell@paint.org]
Sent: Wednesday, September 04, 2002 2:05 PM
To: Michael Krause
Subject: FW: Comments



#126643 v1 - 2
CEQA Comment r...



NPCA Recommend
TOS for 1113 dr...



Definitions second
draft 9-3-0...



Rational Specialty
Primer Addi...

> Dear Mr. Krause: Attached are the comments from the National Paint and
> Coatings Association concerning the draft Subsequent Environmental
> Assessment in support of the PAR Rule 1113.
>
> Bob Nelson
> Senior Director, Environmental Affairs
> National Paint and Coatings Association
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> Washington, DC 20005
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> bnelson@paint.org
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>
> <<#126643 v1 - 2 CEQA Comment revisions.doc>>
>
> <<NPCA Recommend TOS for 1113 draft4.doc>> <<Definitions second draft
> 9-3-02.doc>> <<Rational Specialty Primer Additional Information.doc>>
>
>

September 4, 2002

Mr. Michael Krause
CEQA --AIM Coatings Rule
South Coast Air Quality Management District
21865 E. Copley Drive
Diamond Bar, California 91765

Dear Mr. Krause:

The National Paint and Coatings Association (NPCA) is providing the following comments on the SCAQMD's Draft Subsequent Environmental Assessment (SEA) relating to the proposed readoption of revisions to Rule 1113 that were originally adopted in May 1999, as well as a number of revisions to the originally adopted rule.

4-1 The Draft SEA is largely identical to the Final SEA that was released by SCAQMD on May 4, 1999, shortly before the amendments were originally adopted. NPCA filed extensive comments on the original Draft SEA in April 1999, and we incorporate those comments, as we believe that they remain relevant. As we argued in the litigation over the 1999 amendments, we believe that the SCAQMD's responses to our comments have failed to acknowledge the consequences of the rulemaking, so that the Governing Board and public were not fully apprised of the impacts of the proposed rule. This shortcoming continues with the current Draft SEA. However, this comment letter will focus on issues beyond those raised in our April 1999 comments that relate to this particular proposed rulemaking, as well as additional information that has come to light in the last three years.

1. Time for Public Comment

4-2 We believe that the time for public comment on the Draft SEA is insufficient under the circumstances. While SCAQMD may only be legally obligated to provide 30 days, the time period afforded—from August 4 until September 4—is insufficient. The Draft was released at the height of the summer vacation season, and comments on this voluminous document encompassing a large number of coatings categories are due two days after Labor Day. As was noted by some of the workshop participants, there are a number of errors in the staff's analysis of product data sheets supporting the staff's conclusion that "compliant" products are available, and more time is necessary for a complete and thoughtful review. Industry was quite unprepared for the new rulemaking process, especially where SCAQMD had petitioned the Court of Appeal for rehearing, and the Supreme Court for review, of the decision vacating the 1999 rule amendments. We request that additional time be given for public comment. If there is a serious misunderstanding by the staff concerning the appropriateness and/or the limitations of the products they are relying upon to reach their conclusions, the accuracy of the analysis is seriously compromised.

2. Interim and Final Limits

4-3 We believe that it will be helpful to divide the analysis of impacts between the proposed 2003 and 2006 limits. Because SCAQMD attorneys argued in the litigation over the 1999 amendments that NPCA had allegedly never identified which limits it believed were infeasible, we are segregating our comments between the interim and final limits. NPCA is proposing an industry consensus table of standards for the 2003 limits, which we have attached as Appendix A. While NPCA agrees that these proposed alternative standards are technologically "feasible," this is not to say that there are no

4-3
cont. performance issues involved with these coatings, or that these issues are minor. Our testimony and comments throughout this process including the briefs in our litigation have registered our deep concerns with several of the proposed 2003 limits. We will discuss some of those issues below, and why we believe that these performance issues create potential impacts that have either not been addressed at all, or not been adequately addressed, in the Draft SEA.

4-4 However, as stated in our testimony at the August 21 workshop, the 2006 limits represent not just serious performance tradeoffs, but as a practical matter are technological impossible to meet, except with the most exotic coatings that are completely ill-suited for many applications. We will discuss the final limits separately below.

3. The Project Definition

4-5 An EIR must contain an accurate and consistent project description, as that description is the entire basis of an informative, legally adequate document. *County of Inyo v. City of Los Angeles*, 71 Cal.App.3d 185, 192 (1977); CEQA Guidelines, § 15124. We have serious objections to the description of the “project” in the Draft SEA, insofar as the scope of the project has been used to minimize the potential impacts that are created when acceptably-performing coatings are no longer available for particular applications, and to avoid the use of mitigating provisions and alternatives that would have no significant impacts or loss of emissions.

4-6 First, the interim and final limits rely upon dramatically different coatings technologies to achieve incremental emissions decreases in the same coatings categories. When the Air Resources Board adopted its Suggested Control Measure in 2000, which followed in large part the original Rule 1113 interim limits for these categories, those interim limits were in fact the entire project. Here, the Draft SEA has included in essence two separate rulemakings into one “project”.

4-7 Second, while the “project” consists of all of the revisions that the SCAQMD has proposed to Rule 1113, each proposed category of coatings affected by the proposed amendment is itself a discrete “project.” There is no apparent relationship among the categories subject to the rulemaking, other than that they are “coatings.” An adequate identification and analysis of the potential environmental and other impacts of the proposed amendments requires a category-by category (and indeed application-by-application) analysis of the feasibility of lowering the VOC limits for each coatings category and of the impacts from such reductions. As NPCA asserted in the litigation over the 1999 amendments, by using a “project” description that lumped otherwise unrelated individual “projects” together, the SEA improperly avoids claims of environmental impacts of discrete issues by arguing that the rule would obtain a “net benefit” of VOC reduction from all regulated categories.

4-8 Unless the interim and final limits are related (and they are not), and unless any two or more coatings categories are related with regard to potential impacts (and they are not in large part), then the proposed amendments cannot be analyzed as one “project” for the purpose of determining the significance of impacts. Otherwise, we believe the document misleads the Board and the public by obfuscating significant impacts created by one coatings limit, by offsetting unrelated benefits from another. For example, if the “project” were a new electric rail line and a ban of gasoline-powered cars, then one could argue that the increased emissions from the generation of electricity for the rail line was offset by the reduced emissions from the cars. If, however, the project were a rail line and a ban of gasoline-powered lawnmowers, then the reductions in emissions from

4-8
cont. | lawnmowers could not compensate for the increased emissions for electricity generation, because they are completely unrelated. The same is true of coatings. Emissions reductions obtained by low-VOC nonflat paints in consumer house paint has no relationship to potential emissions increases due to product failure and/or more frequent repainting of industrial maintenance coatings used for corrosion control.

Therefore, in order to comply with CEQA, each of the proposed VOC limits must be separately analyzed for potential environmental and other impacts, and separately analyzed for interim and final limits.

3. The 2003 Limits

a. General Technical Information

4-9 | The CEQA analysis discusses the involvement of industry representatives in developing and reviewing technical tests and evaluations of coatings technology to determine the availability of adequate coatings for the 2003 limits. Unfortunately, as industry representatives have consistently pointed out orally and in writing (including the August 21st workshop and in comments on yearly staff reports), industry’s input has often been ignored. In this connection staff should review the comments of industry representatives concerning staff’s annual AIM coatings technology reports and those made at the workshop. These comments have included:

- 4-10 | • The absence of field application tests for coatings (including the abandoned NTS field study);
- 4-11 | • Improper handling of test panels (storage in boxes for six months which did not allow for coatings cure in an exposed environment);
- 4-12 | • Application of coatings exclusively with draw down bars, thus precluding conclusions about real world applications with spray guns or brushes;
- 4-13 | • There was a change in the VOC reporting method for the KTA-Tator study. It was originally based on actual measured VOC, and changed to the PDS documented VOC.
- 4-14 | • The KTA-Tator report contains findings that do not support a conclusion that the products tested met the definitions of the product class to which they purportedly belonged. There was no evidence that non-flat high gloss products were tested (missing initial gloss measurements, and exposure gloss measurements support the fact that nothing was tested in this class). Any testing should have verified that products first meet the requirements of the test protocol for their particular coatings categories before any evaluations of their properties are done.

4-15 | The real world application issue is a major one, both in the failure to apply materials in the field and in not using real world application techniques. It is in this area—how a coating is actually applied under real world conditions—where the majority of failure issues arise. The KTA-Tator analysis is completely at variance with how a paint manufacturer would compare coatings, and as a result gives misleading conclusions, as noted by industry comments.

4-16 | Staff has “answered” these concerns by asserting that it anticipated that there might not be a consensus among the industry representatives concerning the results of the

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cont. tests and evaluations and their implications. This demonstrates that staff misunderstands the purpose of such tests and evaluations. The purpose is to provide a reasoned decision of potential benefits and trade-offs, in the face of peer reviewed criticism, with all aspects of the evaluation being identified to the decisionmaker. In this connection, staff's annual reports to the Board have not detailed any of industry's concerns, including those registered by members of the Technical Advisory Committee. In this connection the staff's practice continues to violate one of the principles about which the Court of Appeal was most concerned—that decisionmakers be given all of the information available, "...to force decisionmakers to have a 'real confrontation' with the sometimes ugly consequences of a yes vote."

4-17 SCAQMD has claimed that the NTS Study supports the claim that no significant impacts will occur due to the interim limits. As with the KTA-Tator study, the NTS results relied on by staff when the May 1999 revisions were passed were only from a laboratory study. Moreover, over the objection of industry, the staff did not test the performance of coatings under real-world application conditions prior to the District making conclusions about product performance in May 1999. The NTS data could not answer the questions raised by industry, or respond to the data provided by public agencies, which was glossed over when they received their special exemption.

4-18 The post May 1999 field exposure tests conducted under the NTS included a comparison of corrosion resistance for IM coatings that showed that the only coating that had blistering without surface scribe is a water-based product (significant because corrosion penetrated the film itself rather than through intentional scribing of the film to expose metal). The Draft SEA does not address the potentially significant impact of product failure in the industrial maintenance setting (in which rust preventative products cannot be used), or the effect of increasing emissions by more coatings use, more frequent recoating, and/or substitution with rust preventative or other coatings.

4-19 With respect to nonflat and quick dry coatings, NTS demonstrated that high-VOC coatings outperform low- and zero-VOC coatings in the key areas of: Application Properties, Film Appearance; Wet and Dry Film Properties. Application properties include level and flow of the coating, crucial to the uniformity of the film. Waterborne coatings dried faster than high-VOC solvent borne coatings, but this could create problems if a coating must be applied in relatively cool and/or humid conditions, under which the waterborne coating would take longer to dry. Additionally, the faster dry time implies "less open" time in which the applied material remains sufficiently "wet edged" to allow brush strokes into it to tie it into the coating being applied to the substrate next to it, i.e., lap marks. As to household chemical resistance, a critical property for nonflats and quick dries, the high-VOC systems consistently performed the best. "Block resistance," the property that prevents two coated surfaces from adhering to each other after contact (essential for opening and closing coated windows and doors) is a key coating property which was tested but the NTS report has no information on it. Again, the Draft SEA fails to address these issues, much less whether they can have the effect of increasing emissions by more coatings use, more frequent recoating, and/or substitution with better-performing coatings.

4-20 **b. Industrial Maintenance and Essential Public Service Coatings.**

One of the central issues we raised in the litigation concerned the special treatment afforded to public utilities, which led to an exemption from the general industrial maintenance coating in the 1999 amendments. These users were granted a special coating category—"essential public services coatings"—with a higher VOC limit

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cont. until 2006. The appellate court singled out this exemption as being of particular concern, because it served to quiet public agency complaints about the technological feasibility of the general industrial maintenance coating VOC limit. As far as we know, these concerns remain valid, and have not been addressed in the Draft SEA.

4-21 As part of the exemption, the public utilities were allowed to test compliant coatings to determine whether they would be suitable. They are currently conducting such tests and we understand they have completed a number of them. We have asked the staff to share these results with us and have been informed that staff does not have the results. It is difficult to believe that there are not at least some exchanges going on between the staff and the public utilities on this matter, which would include some indication of the technological feasibility of the general industrial maintenance coating for the uses for which the utilities were given the higher limit. Surely this information is pertinent to the decision to impose in 2003 the limit on end users of industrial maintenance coatings that are not public utilities, and staff should share this information with the Board and the public. In its absence, we can only assume that the results have not disproved the original comments of the public agencies.

c. Chemical Storage Tanks.

4-22 The addition of a maximum of 10% oxygenated solvents in a mixture precludes using this category for gasoline containing methanol or ethanol as an additive. Due to the ban on using MTBE as an additive, these are the most commonly used additives now and are much more aggressive than MTBE. Also the addition of a PH requirement for acids would preclude the use of this category for organic fatty acids which can be as aggressive as mineral acids and so also need to be included. The Draft SEA does not address the potential impacts on this proposed limit to the chemical storage tank category, which include the unavailability of any compliant product and potential tank failures (and release of gasoline and other chemicals stored in tanks)

d. Zinc-Rich Primers

4-23 The proposed rule excludes zinc-rich industrial maintenance coatings from the category of metallic pigmented coatings. The importance of zinc-rich primers to extend the service life (corrosion protection) of industrial maintenance and new construction coating systems cannot be overstated. Based on long term actual field exposure studies it has been determined that the sacrificial protection provided by zinc-rich primers will extend the corrosion protection of coating systems for steel between 40 to 50 % when compared to barrier type primer system. Only two organic zinc-rich primers have been certified in accordance with ANSI/NSF Standard 61 for contact with drinking water, and neither meet a 250 g/l max. VOC restriction. The use of organic zinc rich primers on the interior of potable water tanks significantly extends the service life and results in lower VOC emissions due to less frequent repainting.

4-24 The May 1999 SCAQMD Staff Report has very few references to zinc-rich primers other than a mention of a water-based epoxy zinc-rich primer from Sherwin-Williams (Zinc Clad VI) with a VOC content of 48 g/l. The Sherwin William PDS for Zinc Clad VI lists the VOC content at 163 g/l. Very few organic or inorganic zinc-rich primers are available with VOC content under 250 g/l. There are water-based inorganic zinc-rich primers with less than 50g/l VOC content, but there have been many problems and lawsuits regarding the use of water-based inorganic zinc-rich primers. Dry time and intercoat adhesion problems have been the primary problems with the water-based type inorganic zinc-rich primers. In order to be successful, the metal substrate must be sand blasted and have absolutely NO contamination. Even if a worker touches the surface that

- 4-24
cont. point will cause a fault and will result in failure. While this may pose less of a problem in controlled environments like shop applications, it is an insurmountable barrier for in-field applications. Additional problems with such waterborne systems include the fact that they cannot be applied at lower temperatures.
- 4-25 Both organic and inorganic zinc-rich primers extend the service of life of coating systems for steel substrates because of their sacrificial protection properties. The overall performance properties of the lower VOC materials that are available should be severely questioned along with other limitations. The Draft SEA does not address these issues, or the potential impacts of failure and increased emissions if the higher VOC primers are no longer available.
- 4-26 **e. Floor Coatings**
A higher limit 250 g/l limit is needed for floor coatings, due to the lack of chemical resistant urethane flooring products that will meet the VOC limitations and have adequate performance properties. Chemical resistant urethane flooring products are used in environments where a tough, hard, chemical- and abrasion-resistant surface is needed. Its use is prevalent in aircraft hangars and automotive repair facilities where there is constant abuse from corrosive chemicals, such as jet fuel, gasoline, transmission fluid, brake fluid and other automotive and aviation chemicals. In addition to these chemicals the coatings receive a lot of abrasion and impact. The two component polyester urethane is the product of choice for these types of applications.
- 4-27 The technology is not currently available for two component polyester urethane products that will meet the 100 g/l limit for floor coatings. There is some newer technology available based on polyaspartic chemistry for creating 100% solids two component urethane products. This technology has some serious drawbacks related to performance in these environments. In particular, the chemical resistant is much lower, the UV resistance is lower, and there are issues related to the chemical odor of indoor applications of polyaspartic chemistry. These drawbacks are significant enough that the viability of this technology for any type of floor coating has been questioned.
- 4-28 SCAQMD has indicated that two component polyurethane resin technology is available for floor coatings. This technology is known to have some severe stability limitations since it is based on polyols that are aqueous polyesters which can hydrolyze over time. Hydrolysis is chemical decomposition involving the splitting of a chemical bond with the addition of water. This stability problem is physically seen as viscosity increases and a PH decreases. Indications are that the stability of these types of resins may be limited to twelve months and with only a six month stability for the finished product.
- 4-29 The result of keeping the limit at the 100 g/l proposal is that use of two component polyester urethane products will be banned, and the performance of flooring systems in aircraft hangars and automotive repair facilities will be greatly reduced. This could result in a shorter coating life span and in the long term could lead to even higher VOC emissions due to more frequent repainting. The Draft SEA does not recognize or address these potential impacts.
- 4-30 The coatings which do not meet this limit but would meet the 250 g/l limit included in the CARB SCM and in other District rules are, for the most part, waterborne systems with actual emissions (the VOC content on a material basis) of less than 100 g/l. For this reason, introducing a waterborne floor coating category could effectively expand

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the number of useful coatings available without significantly impacting VOC emissions. This alternative could lessen the potential impacts that the proposed rule creates.

f. Waterproofing Sealers

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Rule 1113 does not include a generalized waterproofing sealer category. Only two types of waterproofing sealers are recognized by the rule: 1) a film forming waterproofing sealer for concrete and masonry with resistance to water, as well as having additional resistance properties (resistant against alkalis, acids, ultraviolet light, and staining) and 2) a colorless waterproofing sealer for wood substrates. However, there are many penetrating waterproofing sealers that do not fit either of these two category definitions. These include, for example, coatings that are used for multiple substrates; colored waterproofing sealers for wood; and coatings that are used on masonry and concrete as a sealer for one or some but not all of the items listed in the definition – “water, alkalis, acids, ultraviolet light, and staining.” None of these alternate use patterns would be recognized as waterproofing sealers under the rule

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CARB agreed with industry concerns and included in the SCM a general waterproofing sealer category (instead of the wood waterproofing sealer category) defining it as follows: “Waterproofing Sealer: A coating labeled and formulated for application to a porous substrate for the primary purpose of preventing the penetration of water.”

In the SCM, the limit of such general waterproofing sealers is 250 g/l. The absence of this category means that there are some waterproofing applications for which there will be no compliant products. The Draft SEA does not identify this issue, nor deal with the potential impacts of the use of noncompliant or poorly-performing products for these uses.

g. Specialty Primers

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Stain Blocking: The definition does not take into account the data from the NTS study, which clearly showed that stain blocking properties were absent from ALL of the waterborne primers tested at any VOC; and that they were present in ALL of the solvent borne primers tested. This data was one of the reasons CARB included stain blocking as a condition qualifying a primer for the specialty primer definition and limit. In the absence of any stain blocking properties, there are potential impacts from the substitution of noncompliant products.

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Cementitious Surfaces: The main function of a primer is to be compatible with the substrate. Maximum penetration of the vehicle is vital in order to anchor the primer successfully as well as to allow it to thoroughly stabilize the surface for the topcoat. Emulsion or latex systems are limited in the amount of substrate penetration due to the size of the polymeric material.

Also, with lowering of the VOCs for primers to 200 g/l, the coating’s ability to flow, level, penetrate and maintain a wet edge is questionable. The results are holidays, dry spray particles and heavy overlapped films. The use of acetone to achieve a VOC of 200-grams per liter would further contribute to the problems of film formation and application problems, especially cobwebbing. Many materials are simply not soluble with the percentage of acetone needed to bring the VOCs down to 200 g/l.

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There has been discussion of the use of new curing compounds and bond breakers that break down with ultraviolet or that are compatible with coatings. Upon contacting

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cont. the manufacturers of these materials, they all say if the coating literature says a substrate must be free of contaminants, it must be thoroughly and completely clean before the coating is applied. One of the manufacturers continued with the comment that if the bond breaker was applied in a heavy coat, sand blasting might be necessary to remove any residue on the substrate. Even with power washing the walls, there is often residue remaining on the wall. If there is failure due to the loss of adhesion of a primer, the building will need to be recoated. This creates added VOCs to the environment, from recoating of both the primer and the topcoat.

4-36 There have been many failures of waterborne coatings, both one and two-part systems being applied to either highly alkaline cementitious surfaces, or as a result of going over a previously power washed surface that contains residue of the form oils used in manufacturing the cementitious panels. The primer, and often the topcoat applied to it, peels off in large sheets, resulting in the entire building being recoated. This is not a rare occasion, but is often seen in the field. Specialty primers, manufactured for application over green, highly alkaline concrete surfaces, where there are often residual form oils, are often used after these failures occur. Without this addition to the specialty primer definition, the result may be more VOCs are emitted as the building needs to be repainted. The technology for a low VOC waterborne primer that works under these “all conditions” has not been developed, although many companies have spent much time and money to develop such a product.

4-37 One of our members recently tested waterborne coatings with many different additives over residual form oils. Five top selling water based commercial primers were tested, as well as the addition of various adhesion additives claiming to improve the adhesion over oily surfaces. In addition, enough solvent was added to a water based primer to take it to 200 g/l, as well as 350 g/l. A 350 g/l solvent borne coating was used as a control. The 350 g/l solvent borne coating exhibited very good adhesion, with one of the commercial water based primers performing as an equal. This primer was labeled at 350 g/l. The other commercial primer (also at 350 g/l) had adequate adhesion, as well as the water based primer that had 350 g/l total solvent. The other commercial water based primers, all formulated at 200 g/l failed the adhesion test. None of the additives were able to cut through the form oils, even with a 200 g/l water based product.

4-38 Another problem often seen in the field is with surfaces previously coated with silanes and siloxanes. The silanes and siloxanes work very well, but often, after three, five, or more years, there is a desire to change the appearance of the building. Latex primers or coatings will not adhere to a surface previously coated with silanes or siloxanes. Only solvent-borne primers will penetrate these hard to resurface substrates, forming a strong bond with the surface.

4-39 There are other problems often associated with tilt-up walls, as well as cured or fresh concrete or masonry. One is the high alkalinity of the substrate. Exposure of latex primers to high alkalinity conditions will result in the breakdown of the latex, causing delamination of the cured primer. This will cause the material to come off the walls. The other problem, which is part of the current definition, is the chalky surfaces. Even after power washing, many of these substrates still have excessive chalk. Water-based systems cannot penetrate these chalky surfaces, which will again result in a failure to bond the primer to the substrate. The coating system will fail, the walls will have to be reprimed and repainted. Specialty primers should also include the highly alkaline surfaces, because these are also the surfaces that will have excessive chalk.

4-40 The use of a solvent-borne primer is to provide a sound surface for many types of topcoats, including water-borne or latex system. The coverage rate for a solvent primer is

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cont. high, typically 200 to 300 square feet per gallon. In addition, by tying up chalky residue, and by penetrating form oil residue, or previously coated silane/siloxane substrates, the solvent primers actually reduce the need for recoating due to premature coating failure by adhesive failure.

4. The Final 2006 Limits

a. General Feasibility Concerns

4-41 As we have consistently noted, the final limits will require two things to happen, given the current state of coatings technology. These limits are so drastic, and the technology available to meet them so limited, that users will be required to use “exotic” or difficult technology, and/or will have to apply technology that is not demonstrated to work for a particular application, simply because it is the only legal solution. As the original SEA acknowledged, compliant coatings are not available for all applications. SCAQMD’s own consultant, EMU, stated that it was “imperative” that compliant coatings be “economical, user-friendly, architecturally and aesthetically sound, and provide functional and environmental durability.” This standard is not met by the final limits. The EMU study stated “Interviews with industrial paint chemists revealed that most of these commercial low VOC paints do not perform as well as the conventional high VOC paints.” The potential impacts of these performance shortcomings in the final limits are not even acknowledged. At best, the Draft SEA glosses over these issues, and the substantial potential impacts that they present.

4-42 We find particularly troubling the information contained in Table 3-1 of the Draft SEA, setting forth the information on the number of compliant products from the CARB survey. The percentage of coatings currently available that meet the final limits range from 0% to 81%. In the critical nonflat and IM categories, only 3% and 11%, respectively, comply with the proposed final limits. Given the scope of the coatings categories in the proposed rule, even a “high” percentage of compliant products could mean that large numbers of actual coatings applications would not have compliant products available once the rule came into effect. In the absence of compliant coatings, the Draft SEA does not even attempt to identify what users will use, much less the potential impacts of using those compliant coatings. It simply assumes that compliant coatings will be available – a conclusion that is contrary to all of the information identified in the document.

4-43 The comparison of product data information sheets for low- and high-VOC products does not establish technological feasibility or the lack of any impacts. The data sheets do not address the varying conditions that can affect a coating’s application and durability, and were not a substitute for analytical chemistry and real world testing, which still has not been undertaken. We are planning to have more detailed comments on the data sheets to SCAQMD shortly, and have requested (unsuccessfully to date) that SCAQMD produce copies of any data sheets it has reviewed since the 1999 amendments were adopted so that industry can review the information upon which staff is relying. We believe that reliance upon these data sheets may also be erroneous, because of staff’s improper determination of the categories in which the coatings belong.¹

¹ As an example, Benjamin Moore has provided the following information relating to the staff’s review of PDS sheets (with regard to the interim limits) as delineated in Appendix D to the Draft SEA: M58 is not a “floor coating” but an “Industrial Maintenance Traffic Marking Paint”; M40 and M41 are not “floor coatings” but are an “Industrial Maintenance two component floor sealing and coating system “not

b. The FHA Study

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SCAQMD asserted that the Federal Highway Administration (FHA) study supports the claim of compliant products for the final limits. The FHA study demonstrates that SCAQMD ignored information contained in the study, such as the conclusion that “long-term natural exposure data should be used in the selection of waterborne coatings for bridge corrosion control application.” SCAQMD relied on the finding that low-VOC coatings performed as well or better than high-VOC coatings, but failed to recognize that none of the “low-VOC” coatings in the FHA study had VOC content below 120 g/l, and the “direct to metal” acrylics were at 250 g/l (compared to the final limit for IM coatings of 100 g/l).

4-45

The only liquid zero-VOC coating in the FHA study with good corrosion resistance was liquid inorganic zinc, and this coating has significant application and cost issues, including (1) requiring that the substrate be abrasively blasted clean to at least near-white metal, (2) being washed away in humid conditions, and (3) being usually followed by an organic coating, so in practice the system is not zero VOC. The other zero VOC metallized coatings are hot metal spray coatings (not paint in a can), with alarming application and potential health issues created by applying such coatings with flame. Also, the high-VOC control system performed well (and better than non-zinc epoxy systems), while the low-VOC organic zinc system experienced significant cutback from the intentional scribe, compared to the high-VOC system. The FHA study, in short, supports industry’s claims that, while low- and zero-VOC coatings exist, they are not suitable or practicable for all application environments or requirements. The Draft SEA does not address these issues, nor the potential impacts identified in the FHA study.

b. Nonflats

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While there are a very few exterior latex nonflat coatings at 0-50 g/l, these are the exception rather than common. To require this level will result in multitudes of product problems and limitations, including lack of color durability and restricted color availability. In addition, the products will tend to last for shorter periods of time and require more frequent repainting. It is important to remember that in latex coatings the VOCs are introduced to achieve specific performance characteristics. Without these VOCs, those performance characteristics are missing. Since these VOCs add to raw material costs (in contrast to the water for which the solvent is substituted), they are added at the lowest level compatible with the performance requirements. Specifically, the VOC additives are coalescents and glycols. The coalescents are added to help coalesce the latex film. Without it, a softer resin would need to be used. Softer resins have problems with dirt pickup and block resistance, as well as decreased durability. The glycols are used to provide both freeze/thaw stability and improved application properties (flow, leveling, open time). Decreasing or eliminating the glycols results in decreasing these performance parameters; eliminating the glycols result in significantly reduced performance, as well as opening the possibility to freeze thaw spoilage. The conclusion that there are compliant products available and that no significant impacts will occur as a result of the use of those products is contrary to fundamental paint chemistry, and not explained by the Draft SEA.

for use by the home owner”; and M47/M48 is not a general I/M coating but a two component Coal Tar Epoxy Black for use in waste treatment facilities with a VOC at 318. We anticipate that further review will demonstrate additional errors and the lack of adequately performing products.

4-47

Conclusion

We appreciate the opportunity to provide these comments on the Draft SEA, and look forward to SCAQMD's response. NPCA and its members remain available to discuss any questions or comments you may have about the foregoing.

Sincerely

Robert J. Nelson
Senior Director Environmental Affairs
National Paint & Coatings Association

Jim Sell
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National Paint & Coatings Association

Appendix A Submitted 9-4-02 1 of 3
 NPCA Suggested Changes to PAR 1113 – Architectural Coatings

TABLE OF STANDARDS
 VOC Limits

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

COATING	Current Limit*	Effective 1/1/1998	Effective 1/1/1999	Effective 7/1/2001	Effective 7/1/2002	Effective 1/1/04	Effective 1/1/2005	Effective 7/1/2006	Effective 7/1/2008
Bond Breakers	350								
Chemical Storage Tank Coatings – REVISED DEFINITION	420					340		400	
Clear Wood Finishes									
Varnish	350								
Sanding Sealers	350								
Lacquer		550					275		
Clear Brushing Lacquer	680						275		
Concrete-Curing Compounds	350								
Dry-Fog Coatings	400								
Essential Public Service Coating	420				340	250***		400	
Fire-proofing Exterior Coatings			350						
Fire-Retardant Coatings									
Clear	650								
Pigmented	350								
Flats				100					50 See foot note ***
Floor Coatings	420				250 400			60	
Graphic Arts (Sign) Coatings	500								
High Temperature Industrial Maintenance Coatings	420				550			420	
Industrial Maintenance Coatings	420				260	250***		400	
Industrial Maintenance Zinc-rich Primer NEW CATEGORY	420					340			

4-48

4-48
cont.

Japans/Faux Finishing Coatings			350						
Magnesite Cement Coatings			450						
Mastic Coatings	300								
Metallic Pigmented Coatings	500								
Multi-Color Coatings		250							
Non-Flat Coatings	250			150			50		

TABLE OF STANDARD (Continued)									
Non-Flat - High Solids NEW CATEGORY						<u>200</u>			
Non-Flat - High Gloss						<u>250</u>			
Pigmented Lacquer		550						275	
Pre-Treatment Wash Primers	780								
Primers, Sealers, and Undercoaters	350					200			490
Quick-Dry Enamels	400					250			50
Quick-Dry Primers, Sealers, and Undercoaters	350**					200			490
Recycled Coatings						250			490
Roof Coatings	300					<u>250</u>			
Bituminous Roof Coatings	300					250			
Rust Preventative Coatings	420					<u>400</u>			490
Shellac									
Clear	730								
Pigmented	550								
Specialty Primers - REVISED DEFINITION	350								490
Stains	350					250			
Swimming Pool Coatings									
Repair	650								
Other	340								
Traffic Coatings		150							
Waterproofing Sealers Wood Concrete/Masonry	400 400					250			
Waterproofing Sealers - Other NEW CATEGORY						<u>250</u>			
Wood Preservatives									
Below-Ground	350								
Other	350								

4-48
cont.

4-48
cont.

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

** The specified limit applies unless the manufacturer submits a report pursuant to Rule 1113(g)(2).

*** Limit for both PES and IM will be depend on the successfully completion of technology assessment.

**** NPCA recommendation the 50g/l limit should only be implemented when a test method with suitable accuracy and reproducibility is adopted-- the two must go together.

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VOC LIMITS

Gram of VOC Per Liter of Material

<u>Coating</u>	<u>Limit</u>
Low Solids	120

Prepared 9-04-02

NPCA Suggested Changes to the Definitions Used in Rule 1113

Prepared 9-3-02

(b) Definitions

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

- (1) **AEROSOL COATING PRODUCT** means a pressurized coating product containing pigments or resins that dispenses product ingredients by means of a propellant, and is packaged in a disposable can for hand-held application, or for use in specialized equipment for ground marking and traffic marking applications.
- (2) **APPURTENANCES** are accessories to a stationary structure, including, but not limited to: hand railings, cabinets, bathroom and kitchen fixtures, fences, rain-gutters and down-spouts, window screens, lamp-posts, heating and air conditioning equipment, other mechanical equipment, large fixed stationary tools, signs, motion picture and television production sets, and concrete forms.

4-49

- (3) **ARCHITECTURAL COATINGS are coatings applied to stationary structures or to their appurtenances at the site of installation, to portable building at the site of installation, to pavements, or curbs. Coatings applied in shop applications or to non-stationary structures such as airplanes, ships, boats, railcars, and automobiles, and adhesives are not considered architectural coatings for the purposes of this rule.**

Rational: The definition should contain reference to "field application to make it clear that the regulation applies only to "field applied coatings and not to residential fixtures , wood paneling etc. that are coated in a factory. The above definition was adopted by CARB and has been accepted across the state and should be used in the SCAQMD.

- (4) **BELOW-GROUND WOOD PRESERVATIVES** are wood preservatives formulated to protect below-ground wood.
- (5) **BITUMINOUS COATINGS MATERIALS** are black or brownish coating materials, soluble in carbon disulfide, consisting mainly of hydrocarbons and which are obtained from natural deposits, or as residues from the distillation of crude petroleum oils, or of low grades of coal
- (6) **BITUMINOUS ROOF COATINGS** are coatings formulated and recommended for roofing that incorporate bituminous coatings materials.

4-50

- (7) BOND BREAKERS are coatings applied between layers of concrete to prevent the freshly poured top layer of concrete from bonding to the substrate over which it is poured.
- (8) **CHEMICAL STORAGE TANK COATINGS are coatings used as interior tank linings for the storage of oxygenated solvents, oxygenated solvent mixtures or acid based products.**
Rational: The definition should remain the same as originally written in the originally adopted May 1999 version of Rule 1113. The addition of a maximum of 10% oxygenated solvents in a mixture would preclude using this category of coatings for gasoline containing methanol or ethanol as an additive. Due to the ban on using MTBE as an additive these are the most commonly used additives now and are much more aggressive than MTBE. Also the addition of a PH requirement for acids would preclude the use of this category of coatings for organic fatty acids which can be as aggressive as mineral acids and so also need to be included in this category of coatings
- (9) CLEAR BRUSHING LACQUERS are clear wood finishes, excluding clear lacquer sanding sealers, formulated with nitrocellulose or synthetic resins to dry by solvent evaporation without chemical reaction and to provide a solid, protective film, which are intended exclusively for application by brush, and which are labeled as specified in paragraph (d)(7).
- (10) CLEAR WOOD FINISHES are clear and semi-transparent coatings, including lacquers and varnishes, applied to wood substrates to provide a transparent or translucent solid film.
- (11) COATING is a material which is applied to a surface in order to beautify, protect, or provide a barrier to such surface.
- (12) COLORANTS are solutions of dyes or suspensions of pigments.
- (13) CONCRETE-CURING COMPOUNDS are coatings applied to freshly poured concrete to retard the evaporation of water.
- (14) DRY-FOG COATINGS are coatings which are formulated only for spray application so that when sprayed, overspray droplets dry before falling on floors and other surfaces.
- (15) ESSENTIAL PUBLIC SERVICE COATING is a protective (functional) coating applied to components of power, municipal wastewater, water, bridges and other roadways, including transmission or distribution systems during repair and maintenance procedures.
- (16) EXEMPT COMPOUNDS (See Rule 102-Definition of Terms.)

- (17) FIRE-PROOFING EXTERIOR COATINGS are opaque coatings formulated to protect the structural integrity of outdoor steel and other outdoor construction materials and listed by Underwriter's Laboratories, Inc. for the fire protection of steel.
- (18) FIRE-RETARDANT COATINGS are coatings listed by Underwriter's Laboratories, Inc. as fire-retardant coatings with a flame spread index of less than 25.
- (19) FLAT COATINGS are coatings that register a gloss of less than 15 on an 85-degree meter or less than 5 on a 60-degree meter.
- (20) FLOOR COATINGS are opaque coatings that are formulated for application to flooring; including but not limited to decks, porches, gymnasiums, bowling alleys; for purposes of abrasion resistance.
- (21) 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 can be calculated by the following equation:

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

- 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

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

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

Where: W_s = weight of volatile compounds emitted during curing, in grams
 W_w = weight of water emitted during curing, in grams
 W_{es} = weight of exempt compounds emitted during curing, in grams
 V_m = volume of the material prior to reaction, in liters
 V_w = volume of water emitted during curing, in liters
 V_{es} = volume of exempt compounds emitted during curing, in liters

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

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

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 the material in liters

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

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

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

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

4-51

4-51
cont.

- (B) acute or chronic exposure to corrosive, caustic or acidic agents, or to chemicals, chemical fumes, chemical mixtures, or solutions;**
- (C) repeated exposure to temperatures in excess of 250 degrees Fahrenheit;**
- (D) repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial solvents, cleaners, or scouring agents; or**
- (E) exterior exposure of metal structures.**

Effective January 1 2004, Industrial Maintenance Coatings are not for residential use or for use in areas of industrial, commercial, or institutional facilities not exposed to such extreme environmental conditions, such as office space and meeting rooms.

Rational: This modification of the definition will make it more compatible with the ARB definition.

- (26) JAPANS/FAUX FINISHING COATINGS are glazes designed for wet-in-wet techniques used as a stain or glaze to create artistic effects, including but not limited to, dirt, old age, smoke damage, and simulated marble and wood grain.
- (27) LACQUERS are clear or pigmented wood finishes, including clear lacquer sanding sealers, formulated with nitrocellulose or synthetic resins to dry by evaporation without chemical reaction.
- (28) LOW-SOLIDS COATINGS are coatings containing one pound or less of solids per gallon of material.

4-52

- (29) MAGNESITE CEMENT COATINGS are coatings formulated for **application to** magnesite cement decking to protect the magnesite cement substrate from erosion by water.
- (30) MASTIC COATINGS are coatings formulated to cover holes and minor cracks and to conceal surface irregularities, and applied in a thickness of at least 10 mils (dry, single coat).

4-53

- (31) METALLIC PIGMENTED COATINGS are coatings containing at least 0.4 pound of elemental metallic pigment per gallon (50 grams/liter) of coating as applied.

Eliminate last sentence in definition: "Zinc-Rich Industrial Maintenance Coatings are not considered metallic pigmented coatings."

4-53
cont.

Rational: This will keep definition consistent with the ARB and EPA definitions for this category.

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

(33) NONFLAT COATINGS are coatings that register a gloss of 15 or greater on an 85-degree meter and a gloss of 5 or greater on a 60-degree meter.

4-54

(34) NON-FLAT - HIGH SOLIDS COATING is a non-flat coating that has volume solids in excess of 33%.

Rational: Refer to September 3, 2002 letter from Valspar Corporation.

(35) NON-FLAT- HIGH GLOSS COATING is a non-flat coating that registers a gloss of 70 or above on a 60 degree meter.

4-55

Rational: The ARB 2000 Architectural Coatings survey showed that High Gloss Non-flats have a higher average VOC content than either Medium or Low Gloss Non-flats, and substantially less sales volume. Consequently, the SCM included a separate category for High Gloss-Non-flats with a VOC content limit of 250 g/l. Industry test show that lower VOC High Gloss Non-flats both interior and exterior are generally worse for freeze/thaw resistance; open time scrub resistance; and block resistance. Therefore, the amended Rule 1113 should include a separate category for High Gloss Non-flat coatings with a VOC content limit of 250 g/l consistent with the SCM

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

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

(38) QUICK-DRY Enamels are non-flat coatings which comply with the following:

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

(B) When tested in accordance with ASTM D 1640 they shall: set-to-touch in two hours or less, dry-hard in eight hours or less, and be tack-free in four hours or less by the mechanical test method; and

(C) Shall have a 60° dried film gloss of no less than 70.

- 4-56 (39) QUICK-DRY PRIMERS, SEALERS, AND UNDERCOATERS are primers, sealers, and undercoaters which are intended to be applied to a surface to provide a firm bond between the substrate and subsequent coats and which are dry-to-touch in one-half hour and can be recoated in two hours (ASTM D 1640). **Eliminate reference to “subsumed to”**
- (40) REACTIVE DILUENT is a liquid which is a VOC during application and one in which, through chemical and/or physical reaction, such as polymerization, becomes an integral part of the coating.
- (41) RECYCLED COATINGS are coatings collected through Household Hazardous Waste Collection Programs or other waste minimization and resource recovery programs. Recycled coatings shall be formulated such that not less than 50 percent of the total weight consists of secondary post-consumer waste paint, with not less than 10 percent of the total weight consisting of post-consumer waste paint.
- (42) ROOF COATINGS are non-bituminous coatings formulated for application to exterior roofs and for the primary purpose of preventing penetration of the substrate by water, or reflecting heat and ultraviolet radiation. Metallic pigmented roof coatings, which qualify as metallic pigmented coatings, shall not be considered to be in this category, but shall be considered to be in the metallic pigmented coatings category.
- (43) RUST PREVENTATIVE COATINGS are coatings formulated for use in preventing the corrosion of metal surfaces in residential and commercial situations.
- 4-57 (44) SANDING SEALERS are clear wood coatings formulated for **application to** bare wood for sanding and to seal the wood for subsequent application of coatings. To be considered a sanding sealer a coating must be clearly labeled as such.
- (45) SEALERS are coatings applied to substrates to prevent subsequent coatings from being absorbed by the substrate, or to prevent harm to subsequent coatings by materials in the substrate.
- (46) SHELLACS are clear or pigmented coatings formulated solely with the resinous secretions of the lac beetle (laccifer lacca), thinned with alcohol, and formulated to dry by evaporation without a chemical reaction.
- (47) SOLICIT is to require for use or to specify, by written or oral contract.
- 4-58 (48) SPECIALTY PRIMER is a coating formulated and recommended for application to a substrate **to block stains, odors or efflorescence;** to seal fire,

4-58
cont.

smoke or water damage; or to condition excessively chalky surfaces; or recommended for application to exterior wood or wood-based surfaces, or for highly alkaline cement, plaster, and other cementitious surfaces.

An excessively chalky surface is one that is defined as having chalk rating of four or less as determined by ASTM D-4214 – Photographic Reference Standard No. 1 or the Federation of Societies for Coatings Technology “Pictorial Standards for Coatings Defects”.

***Rational:** The SCAQMD definition does not take into account the data from the NTS study. This data showed that stain blocking properties were absent from all of the waterborne primers tested no matter the VOC content; and that stain blocking properties were present in all of the solventborne primers tested. This data was one of the reasons CARB included stain blocking as a condition qualifying a primer for the specialty primer definition and limit. In addition, the NPCA believes that the unique properties for blocking efflorescence and the priming of bare exterior wood surfaces or highly alkaline cement, plaster, and other cementitious surfaces should also qualify a primer to be specialty primer. Refer to attached document on Specialty Primers for additional explanation of rational for change in definition.*

- (49) STAINS are opaque or semi-transparent coatings which are formulated to change the color but not conceal the grain pattern or texture.
- (50) SWIMMING POOL COATINGS are coatings specifically formulated to coat the interior of swimming pools and to resist swimming pool chemicals.
- (51) SWIMMING POOL REPAIR COATINGS are chlorinated, rubber-based coatings used for the repair and maintenance of swimming pools over existing chlorinated, rubber-based coatings.
- (52) TINT BASE is an architectural coating to which colorants are added.
- (53) TRAFFIC COATINGS are coatings formulated for application to public streets, highways, and other surfaces including, but not limited to, curbs, berms, driveways, and parking lots.
- (54) UNDERCOATERS are coatings formulated for application to substrates to provide a smooth surface for subsequent coats.
- (55) VARNISHES are clear wood finishes formulated with various resins to dry by chemical reaction on exposure to air.
- (56) VOLATILE Organic COMPOUND (VOC) See Rule 102.

4-59

4-60

- 4-61 (57) **WATERPROOFING WOOD SEALERS** are colorless coatings which are formulated for the sole purpose of preventing penetration of porous substrates by water on wood substrates.
Rational: Eliminate this category and replace by Waterproofing Sealers Other [see definition below]. Some waterproofing sealers are for multiple substrates or for concrete but do not meet all of the criteria built into the definition of waterproofing concrete/masonry sealer. These coatings are still waterproofing sealers. This was discussed at the February 28, 2002 Rule 1113 Work Group meeting and at the August 21, 2002 Public Work Shop. Thus there is a need for a generic waterproofing category instead of waterproofing wood sealer; recommended limit of 250 g/l.
- 4-62 (58) **WATERPROOFING CONCRETE/MASONRY SEALERS** are clear or pigmented film forming compounds that are formulated for sealing concrete and masonry to provide resistance against water, alkalis, acids, ultraviolet light, and staining.
- 4-62 (59) **WATERPROOFING SEALERS OTHER** are coatings labeled and formulated for the application to a porous substrate for the primary purpose of preventing the penetration of water.
Rational: Refer to Waterproofing Wood Sealers
- 4-63 (60) **WOOD PRESERVATIVES** are coatings formulated to protect wood from decay or insect attack by the addition of a wood preservative chemical registered by the California Environmental Protection Agency.
- 4-63 (61) **INDUSTRIAL MAINTENANCE – ZINC-RICH PRIMERS** are coatings applied direct to metal substrates and formulated to contain a minimum of seventy four percent metallic zinc powder (zinc dust) by weight of total solids. The resin binder may be inorganic or organic
Rational: Refer to detailed comments on Zinc-Rich Coatings that have been submitted by the TNEMEC Company, August 30, 2002.

SPECIALTY PRIMERS

Priming of Highly Alkaline Cement, Plaster and Other Cementitious Surfaces

4-64

The main function of a primer is to be compatible with the substrate. Maximum penetration of the vehicle is vital in order to anchor the primer successfully as well as to allow it to thoroughly stabilize the surface for the topcoat. Emulsion or latex systems are limited in the amount of substrate penetration due to the size of the polymeric material. With the lowering the VOC's to primers to 200-grams/liter, the ability to flow, level, penetrate and maintain a wet edge is questionable. The results are holidays, dry spray particles and heavy overlapped films. The use of acetone to achieve a VOC of 200-grams per liter would further contribute to the problems of film formation and application problems, especially cobwebbing. Many materials are simply not soluble with the percentage of acetone needed to bring the VOC's down to 200-grams/liter.

4-65

There has been discussion of the use of new curing compounds and bond breakers that break down with ultraviolet or that are compatible with coatings. Upon contacting the manufacturers of these materials, they all say if the coating literature says it must be free of contaminants, the walls must be thoroughly cleaned. One of the manufacturers continued with the comment that if the bond breaker was applied in a heavy coat, sand blasting might be necessary to remove the residue. Even with power washing the walls, there is often residue remaining on the wall. If there is failure due to the loss of adhesion of a primer, the building will need to be recoated. This creates added VOC's to the environment, from recoating of both the primer and the topcoat.

4-66

There have been many failures of waterborne coatings, both one and two-part systems being applied to either highly alkaline cementitious surfaces, or as a result of going over a previously power washed surface that contains residue of the form oils used in manufacturing the cementitious panels. The primer, and often the topcoat applied to it, peels off in large sheets, resulting in the entire building being recoated. This is not a rare occasion, but is often seen in the field. Specialty primers, manufactured for application over green, highly alkaline concrete surfaces, where there are often residual form oils, are often used after these failures occur. Without this addition to specialty primer definition, the result may be more VOC's are emitted as the building needs to be repainted. The technology for a low VOC waterborne primer that works under all these conditions has not been developed, although many companies have spent much time to develop such a product.

4-67

One of our members recently tested waterborne coatings, with many different additives over residual form oils. Five top selling waterbased commercial primers were tested, as well as the addition of various adhesion additives claiming to improve the adhesion over oily surfaces. In addition, enough solvent was added to a waterbased primer to take it to 200-grams per liter, as well as 350-grams per liter. A 350- gram per liter solvent borne coating was used as a control. The 350-gram per liter solvent borne coating exhibited very good adhesion, with one of the commercial waterbased primers performing as an equal. This primer was labeled at 350-grams per liter. The other commercial primer (also at 350-grams per liter) had adequate adhesion, as well as the waterbased primer that had

4-67
cont. 350-grams per liter total solvent. The other commercial waterbased primers, all formulated at 200-grams per liter failed the adhesion test. None of the additives were able to cut through the form oils, even with a 200-gram per liter waterbased product.

4-68 Another problem often seen in the field is with surfaces previously coated with silanes and siloxanes. The silanes and siloxanes work very well, but often, after three, five or more years, there is a desire to change the appearance of the building. Latex primers or coatings will not adhere to a surface previously coated with silanes or siloxanes. Solvent-borne primers will penetrate these hard to resurface substrates, forming a strong bond with the surface.

4-69 There are other problems often associated with tilt-up walls, as well as cured or fresh concrete or masonry. One is the high alkalinity of the substrate. Exposure of latex primers to high alkalinity conditions will result in the breakdown of the latex, causing delamination of the cured primer. This will cause the material to come off the walls. The other problem, which is part of the current definition, is the chalky surfaces. Even after power washing, many of these substrates still have excessive chalk. Water-based systems cannot penetrate these chalky surfaces, which will again result in a failure to bond the primer to the substrate. The coating system will fail, the walls will have to be reprimed and repainted. Specialty primers should also include the highly alkaline surfaces, because these are also the surfaces that will have excessive chalk.

4-70 The use of a solvent-borne primer is to provide a sound surface for many types of topcoats, including water-borne or latex system. The coverage rate for a solvent primer is high, typically 200 to 300 square feet per gallon. In addition, by tying up chalky residue, and by penetrating form oil residue, or previously coated silane/siloxane substrates, the solvent primers actually reduce the need for recoating due to premature coating failure by adhesive failure.

Economic Impact

4-71 The modification of this definition to the Specialty Primer Category would be to include products for highly alkaline surfaces and for penetrating form oils, bond breakers or silane/siloxane coated substrates would not add a significant amount of VOC's, but would reduce the economic hardship to building contractors, occupants and owners. Many cases have been reported where latex primers peel off the wall, even after the contractor has done an exceptional job of pressure washing the walls. Once the latex primer disbonds, the wall must be cleaned again, and recoated. Often, the topcoat has already been applied as well. This results in an economic hardship for the contractor, the coating manufacturer, as well as the building owner.

4-72 The use of a solvent-borne primer to provides a sound surface for many types of topcoats, including water-borne or latex systems. The coverage rate for a solvent primer is high, typically 200 to 300 square feet per gallon. In addition, by tying up chalky residue, and by penetrating form oil residue, the solvent primers actually reduce the need for recoating due to premature coating failure by loss of adhesive. There is also the problem of additional VOC being released in the atmosphere. If a water-based primer is used, at 200

4-72
cont.

grams per liter, and applied twice, the result is more VOC's released than if a specialty primer was used.

Recommendation

We recommend the addition to the definition of the "Specialty Primer" category:

4-73

*A Specialty Primer is coating formulated and recommended for application to a substrate to block stains, odors, efflorescence; to seal fire, smoke or water damage; or to condition excessively chalky surfaces; or recommended for application to exterior wood or wood-based surfaces, or for highly alkaline cement, plaster, and other cementitious surfaces. An excessively chalky surface is one that is defined as having a chalk rating of four or less as determined by ASTM D-4214 – Photographic Reference Standard No. 1 or the Federation of Societies for Coatings Technology "Pictorial Standards for Coatings Defects".

This Specialty Primer category would retain the VOC level of 350-grams/liter.

Prepared 9/4/02

**COMMENT LETTER #4 FROM
NATIONAL PAINT AND COATING ASSOCIATION (NPCA)**

(September 4, 2002)

Response to Comment #4-1

The August 2002 Draft SEA for the currently proposed amendments to Rule 1113 does rely substantially on the 1999 Final SEA for the 1999 amendments to Rule 1113 because the currently proposed project would essentially readopt the 1999 amendments, with some modifications, that was voided by the court in June 2002. Comprehensive responses to all comments submitted by this commentator on the Draft SEA for the 1999 amendments were prepared and are included in Appendix F of the August 2002 Draft SEA.

Response to Comment #4-2

Since the Draft SEA for PAR 1113 identified no significant adverse environmental impacts a 30-day public comment period is deemed appropriate. Public Resources Code §21091 allows a CEQA document with significant adverse environmental impacts (EIR) a public review and comment period no less than 30 days. For a document with no significant adverse environmental impacts (negative declaration) the comment period can be as short as 20 days. Further, no one contacted the SCAQMD requesting an extension of the comment period. The commentator appears to have had sufficient time to review the Draft SEA since he has provided a comprehensive comment letter comprised of over 70 individual comments. Further, as indicated by the commentator, the August 2002 Draft SEA relies substantially on the EA for the amendments to Rule 1113 that were originally adopted in 1999. The commentator also provided a comment on that CEQA document (see comment letter #5 in Appendix F) of the August 2002 Draft SEA).

Staff has reviewed the concerns raised with the coatings data and updated in Appendix D, which were retrieved from various coating manufacturer's Technical Data Sheets. One coating company has contacted and advised the SCAQMD that the data on its TDS was incorrect. This information, however, does not change the overall conclusions in the Draft SEA.

Response to Comment #4-3

Because of the large number of currently available compliant coatings for both the 2003 and 2006 VOC content limit requirements and the long lead time for research and development of future compliant VOC coatings, the SCAQMD believes there is a firm basis supporting the proposed amendments to Rule 1113. The SCAQMD's survey of manufacturers' product information sheets for AIM coatings revealed that there are over 100 low-VOC IM coatings that comply with the 2003 interim compliance date and over 140 that comply with the 2006 final compliance date (Table F-1). The survey demonstrates that compliant coatings for both the 2003 and 2006 VOC content limits are available for a number of coating applications. In addition to demonstrating that future compliant coatings are currently available for many applications, one of the most important points demonstrated by the survey is that there are resin technologies currently available that may be transferred to other coating categories and coating applications. Further, according to the SCAQMD's survey, many of these currently available coatings that

comply with the future VOC content limits can meet desired performance characteristics as compared to conventional high-VOC coatings. Further, the Draft SEA has comprehensively evaluated the potential adverse environmental impacts associated with the implementation of PAR 1113 and has concluded that no significant adverse significant impacts are anticipated.

Staff reviewed coating product data sheets (see the tables in Appendix D) to obtain performance, in particular durability, information for low-VOC coatings and conventional coatings. Based upon a comparison of the coating product information sheets, staff concluded that low VOC coatings have durability characteristics comparable to conventional coatings. Further, based on current availability of low and zero-VOC AIM coatings for a wide range of applications, it is anticipated that even more compliant coatings will be available by the 2003 and 2006 compliance dates. Finally, contrary to the commentator's opinion, there is no evidence to suggest that reformulated coatings at lower VOC content limits will not exhibit desired performance characteristics. In fact, based on the comparable durability of low VOC coatings compared to traditional high VOC coatings, performance characteristics are expected to be similar.

Response to Comment #4-4

The SCAQMD disagrees with the commentator's opinion that the only commercially available and technologically feasible coatings that meet the 2006 limits are exotic ones completely ill-suited for many applications. Please refer to response to comment #4-3 and the following responses to the commentator's specific comments.

Response to Comment #4-5

The SCAQMD is aware of the CEQA requirements regarding providing an accurate project description. The project description in the CEQA document clearly lists the changes to the rule and provides a table outlining the coating category, current limits, future limits and estimated emission reductions. This is in compliance with the CEQA Guidelines §15124 which states the project description "should not supply extensive detail beyond that needed for evaluation and review of the environmental impact."

This comment also implies that once the interim and final VOC content limits become effective, not only will currently available coatings no longer be used, but no replacement compliant coatings will be available. Thus, the analysis of potential adverse environmental impacts from implementing PAR1113 has been minimized. First, the implication that compliant coatings will not be available is not consistent with current information regarding AIM coatings (refer to response to comment #4-3). Second, the Draft SEA contains a comprehensive analysis of potential adverse environmental impacts as a result of implementing PAR 1113. Finally, although not required because no significant adverse environmental impacts were identified, the Draft SEA includes an analysis of the relative merits of a range of reasonable project alternatives. Consequently, the Draft SEA for PAR 1113 complies with all relevant CEQA requirements, including those related to providing an accurate project description.

Response to Comment #4-6

The SCAQMD disagrees with commentator’s opinion that two different compliance limits constitute two separate rulemakings. The CEQA Guidelines §15378 defines “project” as the “whole of an action” and both the interim and final limits are required from the same rule subject to the same coating users. In addition, if divided, the SCAQMD staff believes this would be viewed as piecemealing the project to lessen the impacts from overall proposed project. Further, the analysis of both compliance phases of PAR 1113 is consistent with CEQA Guidelines §15165, which states in part, “Where individual projects are, or a phased project is, to be undertaken and where the total undertaking comprises a project with significant environmental effect, the lead agency shall prepare a single program [CEQA document] for the ultimate project as described in Section 15168.” Because the Subsequent EA for PAR 1113 addresses impacts from an ongoing regulatory program, it is consistent with the requirements for a program CEQA document, as identified in CEQA Guidelines §15168.

Response to Comment #4-7

The Draft SEA fulfills the requirements of CEQA by analyzing the impacts from the “whole of an action.” The action is the lowering of the VOC content limit for certain coating categories in Rule 1113. Users of the coatings are required to satisfy the limits by the compliance date but are not required to satisfy the interim limit if the final limit is achieved first. Regardless of the date when the lower VOC content limits are reached, either limit will contribute a VOC emission reduction and, therefore, a “net benefit” would still be obtained by the rule. Finally, by evaluating all affected coating categories together, rather than discreetly, the environmental analysis maximizes potential adverse environmental impacts, thus, providing full disclosure of impacts and providing the public with an opportunity comment on the full extent of the impacts that may be generated by implementing the proposed project. SCAQMD is not required to individually analyze each portion of a project. If the project were divided into each individual category, SCAQMD could be accused of “piecemealing” the project to minimize impacts.

Response to Comment #4-8

The SCAQMD is unaware of any CEQA requirement or case law requiring a lead agency to subdivide a project for the CEQA analysis. Apparently, the commentator is also unaware of any such legal requirement, since none is cited. The standard practice that the SCAQMD has always followed when analyzing the environmental effects of new or amended SCAQMD rules, is to evaluate all components of the new or amended rule to determine the total environmental effects of the project. This approach is consistent with CEQA as explained in Response 4-7. To analyze component parts of PAR separately is inconsistent with current and past SCAQMD CEQA policy and procedures and would be a violation of CEQA itself (see for example CEQA Guidelines §15165). Further, this identical argument for subdividing various limits for Rule 1113 in the CEQA analysis was previously rejected by a trial court.

The example of the rail line and the lawnmowers is irrelevant because these are clearly unrelated projects and there is not requirement in CEQA to analyze unrelated projects that have no bearing on one-another. Clearly, changes in VOC content limits over time for coatings used on the same substrates are related. For example, the users of a particular coating may be the same for another architectural coating, and the users of one coating affected by both interim and final limits will

most likely be the same. The user of quick dry enamel, for instance, will not change as a result of the lowering of the VOC content, and someone not using quick dry enamel will not suddenly begin to use the product because the VOC content limit has been lowered.

Further, potential impacts from reformulating coating products are related if they have similar adverse effects to the same environmental categories. The relationship between the coating categories exists because the rule regulates architectural coatings, which is different from coatings that are applied to wood furniture, metal product, plastic, rubber, glass, etc. The change in VOC content limits of the affected architectural coatings is the action taking place all at once and will affect users of architectural coatings. The argument that some users may not use all the coatings subjected by the rule is not valid because some users may in fact use a number of coatings affected by the proposed amendments. To dismiss the “worst-case” scenario would be an underestimation of potential adverse impacts from the proposed project. The fact that an overall “net benefit” results from the reduction in VOC emissions from the various related coating categories will not change if the project is split into different projects. As each affected coating category lowers the VOC content limit, the air quality will benefit.

Response to Comment #4-9

The SCAQMD disagrees with the commentator’s opinion that the regulated industry’s input is ignored. The SCAQMD has incorporated changes to PAR 1113 recommended by the regulated industry and has not incorporated other recommendations because the SCAQMD may not have agreed with the comments or recommendations at the August 21st workshop and on the yearly staff reports, but that does not mean the SCAQMD ignored them. Below, staff addresses the specific comments listed.

Response to Comment #4-10

The SCAQMD is not sure what the commentator is referring regarding an abandoned NTS Field Study, since no such NTS study was abandoned. Instead, the SCAQMD completed all three phases of the NTS study, which included laboratory testing, accelerated outdoor (field) exposure tests, and the real-time exterior (field) exposure tests. All three phases were conducted with oversight from the Technical Advisory Committee (TAC). The SCAQMD assumes that the commentator is referring to the application coating study discussed as a possible extra study, which industry requested to address its question about the application characteristics of low VOC coatings relative to high VOC coatings. As an active member of the Working Group, the commentator is fully aware that the protocol and check lists for the application study could not be completed because the industry and TAC member responsible for organizing a group of qualified painting contractors to conduct the application study was unable to do so. While the SCAQMD is still interested in participating in an application study, such a study would not likely add any important new information on the relative performance characteristics between low VOC and high VOC coatings. As the NTS study has already demonstrated, while low VOC coating may not apply as well as high VOC coatings. Low VOC coatings exhibit excellent durability characteristics which are more important considerations for the use of such coatings as industrial maintenance coatings. More recently, commercial use of low-VOC coatings have expanded even for businesses that are concerned about the aesthetics, an area which better applying coatings outperform in. Thus, large local companies, including studios and amusement parks are using coatings that currently comply with the proposed interim and final limits for most

categories. Specifically, Universal Studios has been applying these coatings for studio work for over five years in a variety of ambient conditions. Clearly, aesthetics is extremely important in studio work and Universal would not use these low-VOC products if field application characteristics and subsequent film appearance was inferior to the higher VOC products they used in the past.

Additionally, a large amusement park was constructed using primarily low-VOC paints from a variety of categories. During construction the field application of these coatings resulted in excellent aesthetic properties. Additionally, these products, even after nearly two years of exposure, are exhibiting excellent durability characteristics.

Response to Comment #4-11

This issue was discussed in numerous Working Group Meetings, as well as addressed in the Annual Status Reports published by the SCAQMD over the past three years. NTS staff handled all zero-VOC, low-VOC, and high-VOC coated panels in the same manner. Since the NTS Study was designed for a comparative analysis, this handling method was deemed to have the same impact, if any, on all the coated panels since they were handled under identical conditions.

Response to Comment #4-12

This issue was discussed in numerous Working Group Meetings, as well as addressed in the Annual Status Reports published by the SCAQMD over the past three years. As reported earlier, in order to maintain a consistent film thickness, as recommended by the coating manufacturer, the NTS staff used a draw-down bar for coating the substrate instead of brushing, rolling or spraying the coating. This method of application is allowed under the established approved test methods (ASTMs).

Response to Comment #4-13

The SCAQMD assumes that the commentator is referring to reporting VOC information as tested versus as reported by the manufacturer. As the commentator is aware, the tested VOC information presented in the initial draft report was inconsistent and a decision was made to use reported VOC levels as a measure. Nonetheless, the SCAQMD's laboratory conducted its own VOC analysis on many of the coatings included in the assessment and found that the measured VOC data were consistently very close to the measured VOC values. As a result, the study findings would not be affected.

Response to Comment #4-14

In the KTA TATOR study, as well as the State Control Measure (SCM), high-gloss non-flats are defined as coatings with a gloss of no less than 70 on a 60 degree meter. This was the criterion used by the TAC, who had oversight over the coatings selected and used in the assessment. The TAC relied upon gloss values published in the manufacturer's data sheets. The actual measurement for gloss shows that none of the coatings included in the testing, which includes the products with a VOC content less than 150 g/l, as well as more than 150 g/l, met the gloss values. The actual gloss values of waterborne coatings have been an issue within the industry for several years, and prompted the Master Painter's Institute to conduct a special study entitled

New MPI Gloss Levels Study 'Spotlights' Industry Problem. This study also concluded that the industry has caused a lot of confusion in its marketing literature by moving away from actually reporting gloss levels at both the 60 degree and 85 degree meter. MPI proposed to adopt standardized gloss reporting methods as a resolution to this on-going issue. The study still accurately reported the comparison between lower VOC and higher VOC coatings of comparable gloss. Therefore, the study supports the conclusion that lower VOC coatings do not have worse performance characteristics.

Additionally, the staff report includes lists of approved products by MPI, including nonflat coatings that meet the high gloss criteria of 70 or greater on a 60 degree meter. This clearly shows that compliant nonflat high gloss coatings are available and meet the MPI standards for performance, including gloss. The commentator is encouraged to review this information available through MPI's website (www.paintinfo.com).

Response to Comment #4-15

The commentator's organization, NPCA, has members represented in the TAC, which had oversight on the KTA TATOR Assessment. As indicated in Response to Comment #4-10, the SCAQMD, with help from the TAC, has designed a field application assessment, but has been unable to conduct such a study in the absence of qualified contractors who are interested in conducting the study. If the commentator has recommendations for a group that can conduct the field application assessment, as well as funding, the SCAQMD encourages the commentator to forward that information to staff. Moreover, studies that were performed documented performance characteristics such as durability that are relevant to "real world" application.

Response to Comment #4-16

The tests and evaluations do disclose the positive and negative results of a coating's performance, durability, etc. These results are presented in the annual report to the Governing Board. The purpose of the annual report is to present the results of the test studies, which was done. If industry representatives believe significant comments were omitted, they can comment directly to the Board on that agenda item. The staff report for each rule development process presents all the information gathered regarding the amendments and reasons considered when making decisions regarding the amendments, including the industry comments. The staff report also includes summaries of comments received on the rule and supporting documentation as well as SCAQMD responses to these comment summaries. Further, the public hearing process allowed affected parties to directly address the Governing Board members with their viewpoints and influence the decision making process.

Response to Comment #4-17

Please refer to responses to comments #4-10 and #4-15. Additional study results beyond those available in 1999 are now available which support the conclusions that no significant adverse impact will result from the rule amendments. The agencies that provide essential services to the public were provided with a slightly higher interim VOC limit to provide an adequate amount of time to complete their technical assessment, as required by the Public Resources Code on contracting and purchasing. This technical assessment, as required by the public contracting procedure, requires a phased approach over a five-year period before a product can be added to

their specifications. Private companies that do not provide essential public services to the public did not offer such information or limitations in their contracting or purchasing requirements. Nonetheless, to ensure that all feasible measures are implemented and in response to comments received, the SCAQMD has revised its initial proposal and eliminated the separate Essential Public Service Coating Category, and extended the interim VOC limit implementation date for industrial maintenance coating category to January 1, 2004 to align the requirement with CARB's SCM. Staff believes that compliant coatings are adequately demonstrated and should be used by 2004. If public agencies or other wish to continue to use higher VOC coatings after the 2004 compliance date, it is likely that there will be such coatings available under averaging programs and the sell-through provision.

Response to Comment #4-18

The commentator is focusing on the one waterborne industrial maintenance coating system that failed, but fails to mention that the best performing industrial maintenance coating systems tested were comprised of coatings that met the final proposed limit of 100 g/l. If all the results are assessed and analyzed, instead of just one of 27 coating systems analyzed, it is clear that more frequent recoating, more quantity of coatings, and substitution would not occur. The SCAQMD welcomes the commentator to meet with staff to discuss the results of all the systems tested.

The commentator's opinion that the Draft SEA did not evaluate the effect of more frequent recoating is incorrect. In the "Air Quality" section of Chapter in the Draft SEA there is a specific discussion of the issues raised by the industry, including more frequent recoating. The assertion that low VOC coatings require more frequent application is based on the opinion that low VOC coatings are less durable than high VOC coatings. According to the discussion in the Draft SEA, information provided by Eastern Michigan University shows that low VOC coatings, acrylic coatings, have superior durability characteristics than high VOC coatings, alkyd coatings. Consequently, the opinion that low VOC coatings are less durable is inconsistent with the information provided by Eastern Michigan University, as discussed in the Draft SEA.

Response to Comment #4-19

Although the NTS Study showed inferior application characteristics, that is sagging, leveling, etc., for the zero-VOC and low-VOC coatings tested as compared to their higher-VOC counterparts, he fails to mention that the same products showed superior durability characteristics that are key to showing that less frequent recoating would be needed and that substitution would not occur, since these products last longer (see also response 4-18 regarding durability of low VOC coatings). In past comments, industry has focused concerns on durability of low-VOC coatings. However, industry members during the development of the NTS Study, as well as the subsequent KTA TATOR assessment, were unable to reach consensus on what characteristics are more important. Different manufacturers place different emphasis on what characteristic is most important. Establishing the same minimum standards/criteria of performance in conducting such evaluations and comparisons would have been highly desirable. Staff would welcome industry's input on minimum performance standards, which could be incorporated into designing technology assessments for the final VOC content limits

Response to Comment #4-20

Based on comments received from the industry, staff is proposing to delete the Essential Public Service Coating Category, and extend the implementation date for the Industrial Maintenance Coating Category from the originally proposed January 1, 2003 to January 1, 2004. This revised proposal includes a VOC limit of 250 g/l, and to respond to the court's concerns, as well as implement all feasible measures, effective January 1, 2004, which aligns the implementation date with the CARB's SCM. Staff believes that compliant coatings are adequately demonstrated and should be used by 2004. By delaying compliance for the remainder of IM users until 2004, the proposal provides further assurance that IM users will be easily able to obtain compliant, well-performing products.

The Essential Public Service Coatings category was initially provided with a higher interim VOC limit of 340 g/l in order to provide sufficient time for the providers of essential services to test and update their specifications. Based on discussions at various working group meetings, the commentator is well aware of the stringent testing program of these service providers. The testing consists of a two-year laboratory assessment, followed by one-year field exposure tests, and then a two-year pilot testing phase before these public agencies can incorporate a new coating into their specifications. Private companies have not documented the same level of testing required before revising their specifications. Further, essential public service coatings were included in the analysis of impacts in the August 6, 2002 Draft SEA.

Response to Comment #4-21

The Essential Public Service Report requested by the commentator is currently not available. The study is to be completed in several phases and is designed to test and evaluate VOC compliant coatings necessary for maintenance and new construction projects for agencies essential to the public. Approximately 100 VOC-compliant industrial maintenance coating systems have already been applied and are undergoing environmental testing over a three-to four-year period.

The first phase of the program consists of evaluating immersion and atmospheric coating systems. The second phase, in addition to atmospheric and immersion coatings includes the technology assessment of chemical containment and roof coating systems. Approximately 90 percent of the coatings in the second phase are already undergoing environmental testing.

SCAQMD Staff plans to present the results of this study to the industry and the Governing Board upon completion.

Response to Comment #4-22

The May 1999 amendments had established an interim VOC limit of 250 g/l (effective July 1, 2002) and a final VOC limit of 100 g/l (effective July 1, 2006) for industrial maintenance coatings. In response to comments from coating manufacturers for higher interim VOC limits for coatings used in chemical storage tanks, which would normally be subject to the industrial maintenance coating limits. The May 1999 amendments had established a separate chemical storage tank coating category with a VOC limit of 420 g/l until July 1, 2006 when a VOC limit of 100 g/l thereafter. Since then, CARB had developed its SCM which was subsequently

implemented by many districts. The SCM, as the commentator is aware, has extended the 250 g/l VOC limit for industrial maintenance coatings to January 1, 2004 and offer no separate category for chemical storage tank coatings. In response to comments received staff is now preparing to align the implementation of the interim VOC limit of the industrial maintenance coating category in Rule 1113 with the SCM allowing more time for reformulation for all industrial maintenance coatings including chemical storage tank coating. Along with the extension of the interim VOC limits for industrial maintenance coatings, staff is also proposing to delete the chemical storage tank coating category, as in the SCM, to ensure that all feasible measures are implemented.

Response to Comment #4-23

The SCAQMD's technology assessment demonstrated the availability of both organic and inorganic zinc-rich industrial maintenance primers. Specifically, the Sherwin-Williams Company markets and sells an organic zinc-rich industrial maintenance primer (Zinc Clad VI) that has a VOC content well below the 250 g/l interim limit for industrial maintenance coatings. This specific product, along with a Sherwin Williams Company's waterborne urethane topcoat, was one of the best performing industrial maintenance coating systems in the laboratory-, accelerated exterior-, and real time-exposure studies conducted by National Technical Systems, and discussed in the original and current staff report. However, as indicated by other commentators, currently there are no NSF/ANSI approved zinc-rich industrial maintenance primers with VOC content of less than 340 g/l. The SCAQMD's technology assessment has not resulted in finding NSF/ANSI-approved zinc-rich industrial maintenance primers with a VOC content less than 250 g/l. Therefore, staff has added a separate category called "Zinc-Rich Industrial Maintenance Primers" and has proposed an interim limit of 340 g/l effective January 1, 2003, with a final VOC limit of 100 g/l, effective July 1, 2006.

Response to Comment #4-24

See response to Comment #4-23.

Response to Comment #4-25

See response to Comment #4-23.

Response to Comment #4-26

The SCAQMD disagrees with the commentator that technology does not currently exist for formulating urethane floor coatings with good chemical resistance. As indicated in the Response to Comment #8-7, the SCAQMD's technology assessment indicates availability and widespread use of urethane-based floor coatings with VOC levels below 100 g/l and 50 g/l. These products are specifically recommended for use in aircraft hangars, automotive repair, and other similar uses. The SCAQMD encourages the commentator to share the empirical data collected and evaluate the products included in Appendix D to conduct a side-by-side comparison of these products.

As a part of the technology assessment prior to the May 1999 amendments, staff analyzed hundreds of coatings, including a number of floor coatings, that comply with both the 100 g/l interim VOC limit, as well as the 50 g/l VOC limit to be implemented in July 2006. Furthermore, the technology assessment completed by KTA TATOR, assessed the performance of both single- and multi-component floor coatings. This analysis indicated that the best performing floor coating was a two-component epoxy coating, and one of the two single component compliant floor coatings performed better than the higher VOC floor coatings for most characteristics, and the other performed worse. Additionally, staff has identified numerous additional single- and multi-component floor coatings utilizing a variety of acrylic and urethane chemistries. These products have been added to Appendix D of the Draft Subsequent Environmental Assessment. Based on the SCAQMD's technology assessment and KTA TATOR's laboratory assessment, the interim VOC limit of 100 g/l and the final VOC limit of 50 g/l are feasible. Staff has also revised the industrial maintenance coatings definition to clarify that coatings used on floors exposed to the extreme environmental conditions listed in the industrial maintenance coatings definition will be subject to the VOC limits of industrial maintenance coatings.

Response to Comment #4-27

See response to Comment #4-26.

Response to Comment #4-28

Documentation provided by manufacturers of two-component and single-component polyurethane products that comply with the proposed 100 g/l and 50 g/l VOC limits differs from the commentator's perspective. The commentator does not provide any technical support or empirical data to support its claim about the poor performance of the low-VOC products. The SCAQMD recognizes that shelf life of some of the lower-VOC products is not as long as the shelf life of higher-VOC products, but believes that this issue does not present significant implementation difficulties.

Response to Comment #4-29

The SCAQMD disagrees with the commentator that the 100 g/l will ban the use of two-component polyester urethane products. The commentator is referred to Appendix D, which includes numerous two-component and single-component urethane coatings for the listed uses. As indicated by the results of the NTS Study, the most durable industrial maintenance systems were the low-VOC products, some of which were two-component polyurethane topcoats. Therefore, more frequent recoating or substitution is not expected to occur with the use of these low-VOC polyurethane floor coatings.

Response to Comment #4-30

The SCAQMD appreciates the information provided by the commentator on the floor coatings, both on VOC content on a regulatory and material basis. The SCAQMD recognizes that the material VOC for waterborne coatings is lower than the regulatory VOC. However, the VOC limits for all coating categories, with the exception of Low-Solids Coatings, are listed as the regulatory VOC content. As a part of the technology assessment prior to the May 1999

amendments, the staff analyzed hundreds of coatings, including a number of floor coatings, that comply with both the 100 g/l interim VOC limit, as well as the 50 g/l VOC limit to be implemented in July 2006. Furthermore, the technology assessment completed by KTA TATOR, assessed the performance of both single- and multi-component floor coatings. This analysis indicated that the best performing floor coating was a two-component coating, and one of the two single component compliant floor coatings performed better than the higher VOC floor coatings for most characteristics, and the other performed worse. Additionally, staff has identified numerous additional single- and multi-component floor coatings and revised Appendix D of the Draft Subsequent Environmental Assessment. Based on the SCAQMD's technology assessment and KTA TATOR's laboratory assessment, the interim VOC limit of 100 g/l and the final VOC limit of 50 g/l are feasible.

Response to Comment #4-31

The SCAQMD agrees with the commentator. The “Waterproofing Wood Sealer” category and definition has been revised to a “Waterproofing Sealer” category to address the commentator's issues.

Response to Comment #4-32

See response to Comment #4-31.

Response to Comment #4-33

The following 8 comments refer to primers that are used on concrete, as well as some problems that may exist if surfaces are not prepared adequately. Specifically, the commentator refers to adhesion issues associated with the use of low-VOC primers over concrete substrates that are not completely cured or has surface contaminants, including bond breakers, form-release oils, laitance, and efflorescence.

The Society for Protective Coatings has specific guidance on the curing, preparation, and coating of concrete. Listed below are just a few of the excerpts from the guidance that lists the importance of proper curing, surface preparation, and coating methods:

- Concrete shall be allowed to cure for 28 days or until a minimum strength of 300 psi is achieved, and coatings shall not be applied until a test is used to determine the moisture level remaining in concrete. The most common test method is ASTM D 4263, “Standard Method for Indicating Moisture in Concrete by the Plastic Sheet Method.” The concrete should only be coated when this shows that there is minimal moisture left in the concrete.
- Concrete and other cementitious surfaces are alkaline, coatings applied directly to them shall be alkali-resistant. Thus, oil-based coatings such as alkyds must never be applied directly to these surfaces. Alkalinity causes drying oils to become saponified and disbanded. If an oil-based coating is desired on cementitious surface, it must be applied over a latex emulsion (waterborne) or another alkali-resistant primer.

- Efflorescence is the result of migrating alkaline products (lime) as concrete cures and moisture migrates to the surface. These alkaline products react with carbon dioxide to deposit fluffy white crystals called efflorescence on the surface. The guidelines specifically indicate that “this loose material should be removed, preferably by dry brushing, before painting the concrete”
- Laitance is formed during working and curing of new concrete, and is usually the result of overworking the mixture, resulting in a powdery surface. Upon fully curing, this is converted into a thin, brittle layer that is poorly bonded. The guidelines specifically indicate that “Like mill scale, it must be removed mechanically before coating, or its later disbondment will damage the coating.”
- The placement of concrete is done with only five basic mechanisms. The surface texture and general appearance of placed concrete will vary with the specific method used. Surface hardners may be applied to uncured concrete surface to increase hardness and chemical resistance and to decrease permeability. However, these hardners prevent good adhesion, so the concrete surface must be lightly abrasive-blasted to roughen it before coating application.
- One of the methods for placing concrete is Cast-in-Place, which includes placing the concrete into vertical forms, which is vibrated to reduce the number of air voids. These forms are usually precoated with form release agents for their easy removal from the concrete after it has cured. The guidelines specifically indicate that “residual release agent on the concrete must be removed before it is coated.”

SSPC has the above as general guidelines for the coating of concrete regardless if the coating is a low-VOC waterborne or high-VOC solvent-based product. However, the SSPC strongly recommends against the use of oil-based alkyd coatings directly onto the concrete.

During the development of the KTA TATOR Study, the industry members had the opportunity, including representatives of Textured Coatings of America (TAC), to provide additional issues that need to be included as a part of the assessment work. TCA wanted the District’s contractor to analyze the effectiveness of primers when coating concrete substrates contaminated with form-release oils. Since the contractor was unable to locate an ~~establish~~established test method or protocol for testing such an unusual practice, the District requested TCA to forward a protocol for conducting such an assessment for subsequent approval by the TAC. However, TCA failed to provide a protocol, and the specific testing was not conducted.

The Specialty Primers category was proposed and adopted at the public hearing on May 14, 1999 based on comments heard by the Governing Board. The commentator states that the NTS Study results indicated that “ALL” solvent-based, alkyd primers performed better than “ALL” waterborne primers included in the assessment. The NTS Study evaluated numerous general primers, sealers, and undercoaters (PSUs) for numerous characteristics, and the results indicated that although solvent-based PSU performed better than waterborne PSUs for stain-blocking, waterborne PSUs performed better than their solvent-based counterparts for most other characteristics. Based on the NTS laboratory results for stain-blocking, the SCAQMD, along

with the TAC, decided to further evaluate the stain-blocking aspect under the KTA TATOR assessment. In this study, both latex waterborne and alkyd, solvent-based PSUs marketed as stain-blocking primers were selected for a side-by-side comparison. The results of the KTA TATOR study clearly show that two of the three waterborne stain-blocking primers performed equally to their solvent-based counterparts for stain-blocking, as well as other characteristics. One of the three low-VOC formulations performed worse. Therefore, based on the technology assessment conducted specifically for stain-blocking, staff will not propose modifying the definition of the Specialty Primers.

Response to Comment #4-34

The SCAQMD's technology assessment has shown a wide variety of primers available that meet the 200 g/l interim limit. These primers are available for a variety of uses, including use on cementitious surfaces. The compliant products provide excellent adhesion to properly prepared substrates. Additionally, the commentator believes that the use of acetone as a co-solvent is the only method of reformulating the product. If a manufacturer wants to maintain a solvent-based alkyd primer, there are other exempt solvents that can be used, including but not limited to, perchlorobenzoflouride (PCBTF). However, other resin chemistries used for primer systems exhibit similar or superior performance characteristics, including adhesion, as compared to alkyd systems, which can suffer from saponification when used on cementitious surfaces.

Response to Comment #4-35

It is generally acknowledged that a surface should be prepared based on the manufacturers recommendations for best performance. The Society for Protective Coatings recommends that concrete should be fully cured prior to subsequent coating. The commentator recommends not following such guidelines and using specialty primers to overcome issues associated with coating of uncured concrete. If the concrete is allowed to fully cure and is then prepared for coating (i.e., removing any dirt, oils, residue) as recommended, the problems cited by the commentator would not occur. Further, latex primers perform equally or superior to solvent-based primers in terms of durability.

Response to Comment #4-36

See response to Comment #4-35. The commentator is again referring to not following surface preparation guidelines published by the manufacturer of low-VOC coatings, as well as recommended practices for surface preparation by SSPC. Staff's technology assessment has shown that numerous manufacturers have developed low-VOC primers that exhibit good adhesion to properly cured and prepared concrete.

Response to Comment #4-37

The commentator is again recommending that the VOC limit of primers for concrete be revised based on poor surface preparation techniques. Additionally, the commentator's description of its in-house testing seems to indicate that the low-VOC primers were used without removing the form-oils or solvent was added to adjust the VOC of the product as supplied. This is probably

not following the recommended surface preparation practice or application practices of the manufacturer.

Response to Comment #4-38

The low-VOC primers adhere very well to properly prepared concrete substrates. The commentator continues to state that the latex primers do not work on improperly prepared substrates. The SCAQMD in all of its documentation, as well as the manufacturer of low-VOC primers do not claim that the products perform well when a contractor is not following recommended practices for application.

Response to Comment #4-39

The commentator indicates that alkalinity may contribute to excessive chalking. The Specialty Primers Category already includes provisions for allowing this category to be used when the primer is designed for conditioning excessively chalky surfaces, having a chalk rating of four or less as determined by ASTM D-4214 – Photographic Reference Standard No. 1 or the Federation of Societies for Coatings Technology “Pictorial Standards for Coatings Defects.” The Society for Protective Coatings recommends that concrete should be fully cured prior to subsequent coating. The commentator recommends not following such guidelines and using specialty primers to overcome issues associated with coating of uncured concrete. If the concrete is allowed to fully cure and is then properly prepared for coating (i.e., removing any dirt, oils, residue) as recommended, the problems cited by the commentator would not occur. As a result, latex primers would perform equally or superior to solvent-based primers in terms of durability.

Response to Comment #4-40

The commentator does not list the typical coverage provided by a product with a VOC content of less than 200 g/l. Staff has found that the overall solids by volume content is generally the same for waterborne primers recommended for use on concrete as their solvent-based counterparts. The Environmental Assessment included as part of the Staff Report to the Governing Board analyzes this issue in detail. It resulted in a finding that even under a hypothesis that a waterborne primer provides less coverage, there is still an overall emissions benefit. As a result, there is no significant adverse environmental effect from this issue.

Response to Comment #4-41

The SCAQMD disagrees with the commentator that the 2006 limits should be stricken. The technology assessment conducted in 1998 and 1999 showed the presence of numerous industrial maintenance coating systems that comply with the proposed July 2006 limits. Additionally, the NTS Study clearly showed that some of the best performing industrial maintenance systems were the products that complied with the July 2006 limits. Additional information gathered over the past few months shows availability of numerous additional coatings that comply with the July 2006 limit. Therefore, the final limits for July 2006 are feasible and are proposed to remain in the rule. Nonetheless, the proposed rule contains provisions for another technology assessment prior to implementation of the final limits, as well as a commitment to assess reactivity as an alternative ozone control strategy.

Response to Comment #4-42

This data are based on the CARB Survey for sales in 1996. Numerous nonflat and industrial maintenance coatings that comply with the final limit were available in 1999, and more products are available in 2002. Appendix D lists additional coatings staff has found for both nonflats and industrial maintenance coatings that comply with the interim and final VOC limits. The trend is towards formulations that exhibit a broad range of characteristics, and the same product has broader applicability. For example, Sherwin Williams Company, a member of the NPCA, has nonflat and industrial maintenance coatings, both interior and exterior, that comply with the July 1, 2006 proposed limits. Harmony, a nonflat coating, is available for a variety of interior uses and has a VOC content of < 10 g/l. The Centurion two-component polyurethane has a VOC content of 66 g/l, which meets the final 2006 limit, and is recommended for a variety of uses. The following is a description of this product from Sherwin Williams Company's website:

Centurion Water Based Urethane

New from Sherwin-Williams is Centurion Water Based Urethane, an advanced technology, VOC-compliant polyester urethane coating. This high-gloss abrasion-resistant urethane has excellent weathering properties and provides performance characteristics comparable to premium-quality solvent based urethanes.

Centurion Water Based Urethane retains its appearance over a wide range of chemical, weather and mechanical conditions and can be applied directly to water based and solvent based organic zinc rich primers. It provides a 2-hour pot life and dries to the touch in 1-1/2 hours at 77 degrees and 50 percent relative humidity. The versatile coating can be brushed, rolled or spray applied.

Centurion Water Based Urethane is suitable for use in USDA-inspected facilities. This low-odor, non-flammable product is also recommended for use over prepared substrates in industrial and marine environments, such as: off-shore platforms, structural steel, paper mills, power plants, conveyors, marine applications, industrial equipment, exterior surfaces of steel tanks, rail cars and locomotives, chemical processing equipment, bridges and refineries.

Sierra Performance and Fuhr have nonflat exterior paints with zero-VOCs and is recommended for all exterior uses. Duromar and Enviroline have also introduced a wide variety of industrial maintenance coatings that are recommended for a variety of uses. The commentator is referred to Appendix C of the staff report for a more comprehensive list of nonflat and industrial maintenance products that comply with the 2006 limits. Staff disagrees with the commentator's assertion that large numbers of coating applications would not have compliant products available and invites the commentator to submit documentation in support of the assertion.

Response to Comment #4-43

See response to Comment #4-42. The SCAQMD has sent a package of product data sheets for the variety of coatings, and has previously informed the commentator that these product data sheets are available from the manufacturers and their websites, should the commentator choose to expedite his review of the SCAQMD's technology assessment. The SCAQMD appreciates the feedback from the manufacturers of the coatings regarding miscategorization of some products. The tables have been revised based on comments received.

Response to Comment #4-44

The SCAQMD disagrees with the commentator about the conclusions of the FHWA study. The best performing products were the metallized spray coatings for bridge applications that have zero-VOC. The SCAQMD agrees with the commentator that these products should be included in real time exterior exposure tests and therefore were included in the Essential Public Service Coating Technology Assessment. The commentator is also ignoring the fact that the interim VOC limit for industrial maintenance coatings is 250 g/l, and that the study included numerous coating systems that comply with the interim limit proposed by the SCAQMD. Therefore, the study included coating systems for both the proposed interim and final limits for industrial maintenance coatings.

Response to Comment #4-45

The SCAQMD disagrees with the commentator's assertions that the FHWA study concluded that the metallized coatings are unsafe, especially since bridges are coated with trained professionals only. Additionally, the zero-VOC inorganic zinc coating performed well for corrosion resistance, but typically is topcoated. However, there are numerous organic topcoats included in the study that comply with the proposed interim limit for industrial maintenance coatings. The commentator is selecting portions of the study by indicating that the high-VOC control system performed well when compared to non-zinc epoxy systems, but clearly ignores the control's performance to zinc-rich epoxy systems. CalTrans currently uses an acrylic coating for all of their bridges applications in the Southern California area. The previous year, they only used 102 gallons of coatings with a VOC content greater than 250 g/l, two of which were products with a VOC content of 260 g/l, and one with a VOC content of 300 g/l. This clearly shows that the acrylic products are in use and perform at a satisfactory level. Lastly, the FHWA study's scope was to evaluate coatings for bridges only, and not for all types of application environments. The commentator is simply trying to use the specific bridge study and attempting to reach conclusions for all application environments. The SCAQMD's staff report and reference materials have studies for all different application environments that show that low-VOC industrial maintenance products perform just as well, and in some instances better, than their high-VOC counterparts.

Response to Comment #4-46

The SCAQMD disagrees with the commentator that very few latex nonflat coatings are currently available that comply with the final 50 g/l limit. Additionally, the SCAQMD has identified other types of resin chemistries that may be used for exterior nonflat uses, including urethane and other co-polymer systems with VOC contents less than 50 g/l. The commentator is encouraged to review Appendix C of the Staff Report that includes a comprehensive list of nonflat coatings (both interior and exterior) that meet the 50 g/l limit.

Response to Comment #4-47

Thank you for your participation in this rulemaking and CEQA process. All comments received will be considered as part of the amendment process for PAR 1113 and included in the administrative record.

Response to Comment #4-48

The SCAQMD has the following comments on the Table of Standards Proposed by the Commentator, based on the order in the table:

- The SCAQMD agrees with the commentator that the implementation date for interim limits for most coatings should be revised to January 1, 2003.
- The SCAQMD has deleted the Chemical Storage Tank Coating category. This category is considered to be an industrial maintenance coating and the proposed interim limit is 250 g/l effective July 1, 2004.
- The SCAQMD agrees with the commentator and has deleted the category for Essential Public Service Coating, thereby requiring the same limits and implementation dates as the industrial maintenance coatings category.
- The SCAQMD disagrees that the final limit of 50 g/l for flat coatings should be deleted. The Staff Report includes listings of products that meet the proposed VOC limit of 50 g/l for flat coatings.
- The SCAQMD disagrees with the commentator that the interim limit for floor coatings should be revised to 250 g/l and the final limit should be deleted. This issue has been addressed in earlier responses to comments.
- The SCAQMD disagrees with the commentator that the final limits for High Temperature Industrial Maintenance Coatings should be deleted. The SCAQMD has revised the interim VOC limit to align the schedule with the CARB's SCM.
- The SCAQMD agrees with the commentator and has revised the implementation date for the industrial maintenance coatings category to January 1, 2004, thereby aligning it with the CARB's SCM. The SCAQMD disagrees with the commentator that the final limit should be deleted. This issue has been addressed in earlier responses to comments.
- The SCAQMD agrees with the commentator and has revised its proposal to include a separate zinc-rich industrial maintenance category based on lack of NSF/ANSI approved zinc-rich primers with a VOC content of 250 g/l or less, but disagrees with the commentator that the final limit should be deleted. As mentioned earlier, the technology for zinc-rich industrial maintenance primers with VOC contents of less than 250 g/l and 100 g/l exists today, and performs equally or superior to its higher-VOC counterparts. The four year time frame should allow manufacturers of the low-VOC zinc-rich industrial maintenance coatings to seek NSF/ANSI approval. Furthermore, local water agencies are evaluating other products that do not require use of zinc-rich primers for potable water.
- The SCAQMD disagrees that a new category for Nonflat High Solids is necessary. The solids content of the compliant nonflat products is comparable to their higher-VOC counterparts.
- The SCAQMD disagrees with the commentator that the Nonflat High Gloss category should be created and have a higher VOC of 250 g/l. This issue has been addressed in earlier responses to comments.

- The SCAQMD disagrees that the final limits for Primers, Sealers, and Undercoaters, Quick-Dry Enamels, Quick-Dry Primers, Sealers, and Undercoaters should be deleted. This issue has been addressed in earlier responses to comments.
- The SCAQMD agrees with the commentator that the final limits for Recycled Coatings should be deleted. The proposal has been revised to reflect this change.
- The SCAQMD disagrees with the commentator that the final limit for Rust Preventative Coatings should be removed. The Staff has found numerous products that meet the proposed final limit of 100 g/l, and various comments from industry in the public workshop and consultation meetings have indicated that lower-VOC industrial maintenance coatings can be used for rust preventative uses. Some of these acrylic products have a VOC content of less than 100 g/l.
- The SCAQMD disagrees with the Commentator that the Specialty Primers definition needs to be revised and that the final limit needs to be deleted. This issue has been addressed in earlier responses to comments.
- The SCAQMD agrees with the commentator and has revised the category from Waterproofing Wood Sealers to Waterproofing Sealers.

Response to Comment #4-49

The SCAQMD disagrees with the commentator's revision to the Architectural Coatings definition. The SCAQMD has revised the Applicability section to reflect the field-only use of architectural coatings.

Response to Comment #4-50

The SCAQMD has deleted the Chemical Storage Tank Coating category. This category is considered to be an industrial maintenance coating and the proposed interim limit is 250 g/l effective July 1, 2004.

Response to Comment #4-51

The SCAQMD is proposing to modify the definition for Industrial Maintenance Coatings to include the wording suggested by the commentator.

Response to Comment #4-52

The SCAQMD agrees with the proposed change and has revised its proposal.

Response to Comment #4-53

The SCAQMD disagrees with the proposed modification to the Metallic Pigmented Coatings.

Response to Comment #4-54

The SCAQMD disagrees that a new category for Nonflat High Solids is necessary. The solids content of the compliant nonflat products is comparable to their higher-VOC counterparts

Response to Comment #4-55

The SCAQMD disagrees with the commentator that the Nonflat High Gloss category should be created and have a higher VOC of 250 g/l. This issue has been addressed in earlier responses to comments.

Response to Comment #4-56

The SCAQMD agrees with the commentator and has revised the proposed definition.

Response to Comment #4-57

The SCAQMD agrees with the commentator and has revised the proposed definition.

Response to Comment #4-58

The SCAQMD disagrees with the commentator's proposed definition. This issue has been addressed in earlier responses to comments.

Response to Comment #4-59

The SCAQMD agrees with the commentator and has revised the proposed definition.

Response to Comment #4-60

The SCAQMD agrees with the commentator and has revised the proposed definition.

Response to Comment #4-61

The SCAQMD agrees with the commentator and has revised the proposed definition.

Response to Comment #4-62

The SCAQMD agrees with the commentator and has revised the proposed definition.

Response to Comment #4-63

The SCAQMD agrees with the commentator and has revised the proposed definition.

Response to Comment #4-64

The commentator is referring to primers that may be used when surface preparation is not conducted, as recommended by NACE or SSPC prior to coating a concrete substrate. This does not justify the need to add additional parameters to the Specialty Primers category. The CARB's SCM also does not include products for blocking odors or efflorescence in their definition of Specialty Primers. The commentator is encouraged to review the definition in the SCM. The District's technology assessment has shown that PSUs with a VOC content less than 200 g/l (ranging from 0 g/l to 200 g/l) are available for a variety of uses, and with proper surface preparation, perform at an equal or superior level than their higher-VOC solvent-based

counterparts. The list of these products was included in the original staff report, and an additional list of new products is included in the current staff report. The NTS Study evaluated the PSU for a variety of different characteristics and found that performance was equivalent or superior their higher-VOC counterparts. The commentator can formulate low-VOC primers using a broad range of resins or choose to use exempt solvents, whichever is preferred and most cost-effective for his company.

Response to Comment #4-65

The commentator is again referring to not following surface preparation guidelines published by the manufacturer of low-VOC coatings, as well as recommended practices for surface preparation by SSPC. The recommendations are to use the products on substrates that have been thoroughly cleaned and free of oils, powdery residue, and other contaminants. For use on concrete, the concrete must be completely cured prior to application of the lower-VOC PSUs. The commentator is again referring to not following surface preparation guidelines published by the manufacturer of low-VOC coatings, as well as recommended practices for surface preparation by SSPC. It is common knowledge that for coating concrete, form release oils should be thoroughly removed and concrete should be fully cured prior to applying subsequent coatings to prevent adhesion problems by latex primers.

Response to Comment #4-66

The commentator is again referring to not following surface preparation guidelines published by the manufacturer of low-VOC coatings, as well as recommended practices for surface preparation by SSPC. Staff's technology assessment has shown that numerous manufacturers have developed low-VOC primers that exhibit good adhesion to properly cured and prepared concrete. This testing was conducted in the NTS Study. The District has included numerous products in their original staff report and current staff report that are below the 200 g/l VOC limit, and exhibit good adhesion characteristics.

Response to Comment #4-67

The commentator is again recommending that the VOC limit of primers for concrete be revised based on poor surface preparation techniques. The commentator is referred to response to Comment #4-64. Additionally, the commentator's description of its in-house testing seems to indicate that the low-VOC primers were used without removing the form-oils or solvent was added to adjust the VOC of the product as supplied, even if the co-solvent in the original formulation was different and optimally added for maximum performance. This is not following the recommended surface preparation practice or application practices of any manufacturer of low-VOC PSUs. One cannot simply add some random solvent to a waterborne coating and expect any type of predictable performance.

Response to Comment #4-68

The NTS Study proved that low-VOC primers adhere very well to properly prepared substrates. The commentator continues to state that the latex primers do not work on improperly prepared

substrates. The District in all of its documentation, as well as the manufacturer of low-VOC primers do not claim that the products perform well when a contractor is not following recommended practices for application.

Response to Comment #4-69

The commentator indicates that alkalinity may contribute to excessive chalking. The Specialty Primers Category includes provisions for allowing this category to be used when the primer is designed for conditioning excessively chalky surfaces, having a chalk rating of four or less as determined by ASTM D-4214 – Photographic Reference Standard No. 1 or the Federation of Societies for Coatings Technology “Pictorial Standards for Coatings Defects”. In this particular case of excessive chalkiness, the current definition of Specialty Primers will allow the use of a product with a VOC content of up to 350 g/l.

Response to Comment #4-70

The Society for Protective Coatings (SSPC) recommends that concrete should be fully cured prior to subsequent coating. The commentator recommends not following such guidelines and using specialty primers to overcome issues associated with coating of uncured concrete. If the concrete is allowed to fully cure, and prepared for coating (i.e., removing any dirt, oils, residue) as recommended, the problems cited by the commentator would not occur and latex primers perform equally or superior to solvent-based primers in terms of durability. The rate of curing of concrete can vary based on a variety of variables, including temperature, humidity, and the actual composition of the raw materials utilized. The SSPC does not recommend coating of uncured concrete, since that practice may lead to coating failure.

.Response to Comment #4-71

The potential economic hardship to building contractors, owners, and occupants would be minimized if the painting contractor implements SSPC guidelines for curing and preparing concrete prior to coating.

Response to Comment #4-72

The commentator does not list the typical coverage provided by a product with a VOC content of less than 200 g/l. Staff has found that the overall solids by volume content is generally the same for waterborne primers recommended for use on concrete as their solvent-based counterparts. It resulted in a finding that even under a hypothesis that a waterborne primer provides less coverage, there is still an overall emissions benefit.

Response to Comment #4-73

The staff disagrees with the proposed definition and has concluded that the current proposed definition of the Specialty Primers Definition includes all of the problematic areas where a higher VOC primer is necessary. These specific problem areas are included in the proposed definition.