

APPENDIX F

RESPONSES TO COMMENTS ON THE DRAFT SUBSEQUENT ENVIRONMENTAL ASSESSMENT

Comment Letter #1:	Sanitation Districts of Los Angeles County
Comment Letter #2:	Society for Protective Coatings
Comment Letter #3:	Benjamin Moore & Co.
Comment Letter #4:	Kessler & Associates, Inc.
Comment Letter #5:	National Paint & Coatings Association
Comment Letter #6:	Smiland & Khachigian
Comment Letter #7:	Southern California Association of Governments

The SCAQMD received a total of seven comment letters on the Draft SEA for PAR 1113. The SCAQMD also received CEQA-related comments during the March 31, 1999, and April 28, 1999 Public Consultation Meetings. The comment letters and responses to the comments contained in the seven letters as well as responses to Public Consultation Meetings comments are contained herein.

COMMENT LETTER #1

**SANITATION DISTRICTS OF
LOS ANGELES COUNTY**



COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY

1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
Telephone: (562) 699-7411, FAX: (562) 699-5422

CHARLES W. CARRY
Chief Engineer and General Manager

April 21, 1999

File No: 31-380.10B

Mr. Darren W. Stroud
South Coast Air Quality Management District
21865 E. Copley Drive
Diamond Bar, CA 91765-4182

Dear Mr. Stroud:

Comments on PAR 1113 Draft Subsequent Environmental Assessment

The County Sanitation Districts of Los Angeles County (LACSD) appreciate the opportunity to comment on PAR 1113 Draft Subsequent Environmental Assessment dated March 19, 1999. Our comments are as follows:

1-1

In the environmental assessment, SCAQMD staff determined the durability of low VOC coatings is comparable to conventional coatings based on qualitative descriptions from product data sheets. The information contained in the product data sheets must be verified through laboratory and field testing before the durability of the coating can be judged. LACSD is interested in working with the SCAQMD in evaluating the durability of low or zero VOC coatings for wastewater applications as part of the technology assessments.

1-2

SCAQMD should conduct additional research into the potential for public exposure to diisocyanates from spraying low or zero VOC two-component polyurethane. On page 4-57, SCAQMD commits to conducting a technical assessment one year prior to each rule limit to determine if environmental issues are associated with the manufacture and use of reformulated products. It is not clear whether the technology assessment will be started or completed one year prior to the implementation dates. The technology assessments should be completed one year prior to allow end-users adequate time to prepare for the new products.

1-3

In the response to the Du Pont comment letter section 8-3 on page C-8-1, staff stated that SCAQMD appreciates the need for end-users to evaluate the performance of low VOC coatings. Even though the compliance dates have been extended, end-users can only evaluate coatings as they become commercially available. Industrial maintenance coatings typically have a shelf life of one-year, therefore, it should not be assumed that end-users can use non-compliant coatings for an



Darren W. Stroud

2

April 21, 1999

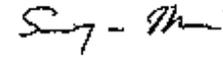
1-3
cont.

additional three years after the implementation dates.

Thank you for an opportunity to express our concerns and we look forward to working with SCAQMD in the technology assessment. If you have any questions, please contact Ms. Preeti Ghuman of this office at (562) 699-7411, extension 2138.

Yours very truly,

Charles W. Carry



for Gregory M. Adams
Assistant Departmental Engineer
Office Engineering Department

GMA:PKG:rk

cc: Naveen Berry

COMMENT LETTER #1
Sanitation Districts of Los Angeles County
April 21, 1999

- 1-1 The commentator asserts that the information contained in product data sheets regarding coating durability must be verified through laboratory and field testing. The SCAQMD staff evaluated the durability of low-VOC coatings based on both the qualitative (e.g. excellent adhesion) as well as quantitative (e.g. adhesion of 800 per ASTM Test Method D4541-05) information from the product data sheets. For PAR 1113 the SCAQMD staff conducted an exhaustive and comprehensive analysis of currently available low VOC compliant as well as conventional coatings that forms the primary basis for PAR 1113. This analysis evaluated hundreds of coatings from approximately 40 manufacturers and considered the following coating characteristics: VOC content, percent solids by volume, coverage, adhesion, durability, pot life, shelf life, gloss, and drying time. The conclusion of this analysis reveals that low-VOC compliant coatings are currently commercially available with comparable durability characteristics to meet the interim and final VOC content limits. The SCAQMD staff will continue to monitor future studies and encourage public participation. The commentator is also referred to response to comment #2-1.
- 1-2 The commentator indicates that SCAQMD staff should conduct additional research concerning the potential exposure of the public to the release of diisocyanate compounds during the spraying of zero- or low-VOC two component IM systems. At the time of the release of the Draft SEA on March 23, 1999, PAR 1113 contained a provision that prohibited the spraying of two component IM systems containing diisocyanate compounds beginning January 1, 2005. This provision was thought to be necessary to protect the public from the potential adverse effects of exposure to these compounds, which are mainly a concern during spraying applications for two-component coating systems. However, based on testimony received at the Public Consultation Meeting on March 31, 1999, and additional research conducted by the SCAQMD staff, the SCAQMD staff has concluded that the provision was overly conservative and is no longer necessary for the protection of public health. This conclusion is based on the following: (1) the chemistry of the two component systems does not permit the release of substantial quantities of diisocyanate compounds during spraying since the chemistry is designed to completely use up all the diisocyanate during mixing of the two components; (2) field monitoring shows at distances of 15 feet and greater detectable levels of these compounds are well below established and recommended exposure thresholds; and (3) provisions in PAR 1113 preclude the use of these coatings for residential uses. Therefore, based upon currently available information the SCAQMD does not expect that the spraying of zero- or low-VOC two component IM systems containing diisocyanate compounds will result in significant adverse acute human health impacts to the public. The commentator is referred to Human Health Impacts section of Chapter 4 in the Final SEA for a further discussion of this issue.

The SCAQMD will conduct and complete a technology assessment one-year prior to the interim and final VOC content limits becoming effective. The technology assessment will evaluate the

availability and feasibility of compliant coatings. Since the language regarding technology assessments is included in PAR 1113, the SCAQMD will be required to revise the VOC content limits or extend the compliance dates depending on the results of the technology assessment. This continuing evaluation requirement assures that future limits will always be based on the commercially available coating technology. Furthermore, if during the technology assessment it is determined that changes are necessary to Rule 1113, the changes will be evaluated to determine CEQA applicability and, if necessary, a CEQA analysis will be prepared.

- 1-3 The commentator indicates that the SCAQMD cannot assume that the end user will be able to use non-compliant IM coatings for up to three years after the VOC content limits go into effect because low-VOC compliant IM coatings have a shelf life of typically one year. The SCAQMD assumes for the purposes of this comment that the commentator is referring to the three-year sell-through provision of PAR 1113 when mentioning the ability to use non-compliant coating three years after the implementation dates. Based on the SCAQMD's research and analysis, there are currently commercially available IM, as well as other coating categories, with shelf lives up to three years. The SCAQMD can provide the commentator with the names of the companies that currently have compliant low-VOC IM coatings with shelf lives up to three years

The commentator should be aware that PAR 1113 contains a technology assessment provision whereby approximately one year prior to the interim and final compliance dates staff will perform a technology assessment of the availability of compliant coatings. If compliant IM coatings are unavailable by the completion of the technology assessment to meet the applicable limit, the SCAQMD will report back to the Governing Board as to the appropriateness of maintaining the existing VOC content limits. This continuing evaluation requirement assures that future limits will always be based on the current state of coating technology.

COMMENT LETTER #2

SOCIETY FOR PROTECTIVE COATINGS

Darren Stroud

From: Bernie Appelman [appelman@sspc.org]
 Sent: Wednesday, April 21, 1999 4:03 PM
 To: Darren W. Stroud
 Cc: Bernie Appelman
 Subject: Comments on draft SEA

SSPC: The Society for Protective Coatings
 40 24th Street, 6th Floor
 Pittsburgh, PA 15222-4656

April 21, 1999

South Coast Air Quality Management District
 21865 E. Copley Drive
 Diamond Bar, CA 91765-4182
 Attn: Darren W. Stroud

Dear Mr. Stroud

Comments by SSPC on SCAQMD Draft SEA on Proposed Amended Rule 1113

General Comments

SSPC is a not for profit technical organization representing facility owners (public and private), applicators, and suppliers of materials, equipment and services. SSPC has a history of cooperating with environmental health & safety regulatory organization to minimize the impact of coating operations on the health and welfare of the public and the work force..

SSPC's members use or supply coatings in the class defined as industrial maintenance. SSPC's comment are primarily directed at this category, although they may also be applicable to related categories such as rust preventive coatings,

2-1 Overall, we believe that the SEA did not acquire enough data (particularly field data) to support some of the conclusions regarding the impact. The analysis relied too heavily upon the unsubstantiated claims of a small number of manufacturers which may not represent the mainstream of industrial maintenance coatings technology.

Specific Comments

2-2 page 4-13 to 4-14 regarding need for more touch-up and repair work and more frequent recoating. It is stated that "staff met with numerous resin and coating manufacturers .. and also reviewed coating product data sheets."²
 We believe that low VOC coatings (eg at 250 to 100g/l or less) do not have proven field performance characteristics for application or durability. Resin manufacturers rarely have long term data on coating durability as they do not work directly with the end users. Also coating product data sheets provide very little information on the long term properties of coatings. The reason coating manufacturers have not been furnishing lower VOC coating is precisely because they are not suitable for many industrial maintenance exposures and applications.

2-3 page 4-15 regarding comparison between alkyds and acrylics as binders. Water-borne acrylics have definite application limitations under conditions of low temperature and high humidity. Under these conditions, proper film coalescence is not achieved and the coating is susceptible to being washed off and a weakened film results. Therefore acrylic

- 2-3
cont. waterborne coatings can not be used in these situations. In many instances adequate low VOC coatings are simply not available
- 2-4 page 4-33 regarding the potential hazard of substituting acetone for conventional solvents. We believe that because of its increased volatility, acetone may present a significant increase in fire or explosion hazard compared to conventional solvents. The report cites interviews with several local fire departments. We believe that this level of research and analysis is inadequate to support the conclusions and there is a need for additional investigation on this issue
- 2-5 page 5-8 regarding alternative C. The numbers developed in the SEA demonstrate that the impact of adopting alternative C (no reduction in VOC for industrial maintenance and rust preventive coatings in 2005) would be relatively small based on the percent of emission reduction loss. We believe that this alternative should be seriously considered and ultimately adopted by the SCAQMD if the current analysis is accurate. We believe that over the next 5 to 8 years there may be significant advances in coatings technology for industrial maintenance coatings based on lower VOC (eg 100g/l or less). Such advances would allow the industry to reduce VOC emissions below the level estimated for 2002. However, because of the uncertainty of R&D and the enormous challenge of developing ultra low VOC coatings with acceptable application and performance properties the VOC limits proposed for 2005 should be delayed until the technology is proven. Presently even the limits proposed in 2002 are not technologically feasible for many industrial maintenance applications.

SSPC appreciates the opportunity to submit these comments and would be willing to discuss in further detail any of the above comments.

Respectfully submitted

Bernard R. Appleman

COMMENT LETTER #2
Society for Protective Coatings
April 21, 1999

- 2-1 The SCAQMD conducted an exhaustive and comprehensive survey of currently available low-VOC coatings and conventional coatings. This analysis evaluated hundreds of coatings from over 40 coating manufacturers, including the largest coatings manufacturers that distribute coatings nationally as well as smaller local manufacturers. As a result, coatings were evaluated from manufacturers that are considered to be representative of AIM coating manufacturers.

The survey specifically included obtaining information on the following coating characteristics: VOC content, percent solids by volume, coverage, adhesion, durability, scrubability, pot life, shelf life, gloss and drying time. These coating characteristics were primarily obtained from coating product data sheets (see the tables in Appendix D and the related summary tables in Chapter 4). In addition, to obtaining information from the coating product data sheets, staff called manufacturers directly to obtain additional or supplemental information on coating characteristics.

Product data sheets are prepared by the coating manufacturers to provide their customers or potential clients with information regarding important characteristics of their coatings. The information contained in the product data information sheets is typically based on laboratory tests and may also include field study data. Some commentators have asserted that these product data information sheets are simply marketing tools and, therefore, insufficient, inadequate, or unreliable. Staff contends that the product data information sheets provide reliable information because this is data typically generated by the manufacturers themselves and is often the only information coating users have available to assist them in choosing products. Providing inaccurate information as a marketing tool does not make good business sense as it would alienate potential customers. Staff understands that some characteristics are described qualitatively rather than quantitatively, e.g., “excellent” versus “good” quality coatings. Other features, however, such as chemical or corrosion resistance, coverage area at a specified thickness per gallon, etc., are verifiable characteristics. Coatings customers depend on these coating characteristic descriptions to assist them with selecting coatings for their particular coating applications.

In addition to identifying and evaluating low VOC coatings, the survey of the product data information sheets also evaluated conventional coatings. The survey results, therefore, provided a side-by-side comparison of performance characteristics for both low VOC and conventional coatings based upon the information contained in the product data information sheets. The product data information sheets are considered to be good indicators of coating characteristics in light of the fact that the information provided therein was based on the manufacturers’ own field tests and was readily accessible. The data sheets were used to complement the coating survey. The survey evaluated and compared various attributes for both low VOC and conventional architectural coatings, such as drying time, surface preparation, solids content, coverage and durability. These specific coating characteristics were specifically identified and evaluated in response to industry

comments asserting that these characteristics are superior in conventional coatings. As a result, the industry contends that low VOC coatings will ultimately result in greater VOC emissions because they are less durable and require more coats, require more coating to cover the same surface area as conventional coatings, etc. These industry issues have been analyzed in detail in the “Air Quality” section of Chapter 4.

The SCAQMD’s survey revealed that there are currently approximately 103 low-VOC IM coatings that comply with the 2002 interim compliance date and 140 that comply with the 2006 final compliance date (Table F-1). The SCAQMD has never asserted that this information demonstrates that there are compliant coatings available for every coating application. The survey demonstrates that compliant coatings for both the 2002 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.

TABLE F-1

Currently Available Architectural Coatings that Comply with the
PAR 1113 Future Interim and Final VOC Content Limits

COATING TYPE	Current VOC Limit (gms/liter)	# of Samples	VOC Limit (gms/liter) Effective 7/1/2002	# of Samples	VOC Limit (gms/liter) Effective 7/1/2006	# of Samples
Floor Coatings	420	9	100	5	50	13
Industrial Maintenance Coatings	420	47	250	26	100	61
Non-Flat Coatings	250	10	150	29	50	16
Primers, Sealers, and Undercoaters	350	28	200	10	100	29
Quick-Dry Enamels	400	3	250	7	50	0
Quick-Dry Primers, Sealers and Undercoaters	exempt	9	200	6	100	17
Rust Preventative Coatings	400	6	no change	n/a	100	4
Stains	350	3	250	10	no change	n/a
Water-proofing Sealers	400	5	250	10	no change	n/a
Total # of Samples		120		103		140

A study by the National Technical System (NTS) was initiated to assess application and durability characteristics of zero-VOC, low-VOC, and high-VOC coatings. These results have been shown to be consistent with staff's own technology assessment.

The results of the study indicate that the zero-VOC IM coatings systems tested are equal and, in some cases, superior to high-VOC coatings for characteristics which include, but are not limited to, mar resistance, adhesion, abrasion resistance, corrosion protection, and some application characteristics. The NTS results also indicate that some zero-VOC nonflats, primers, sealers, and undercoaters have limited application characteristics when compared to high-VOC coatings. These include overall lower rankings for leveling, sagging, and brushing properties. Nevertheless, the results also demonstrate that there are some zero-VOC nonflats, primers, sealers, and undercoaters available with application characteristics that are generally comparable to conventional high-VOC coatings.

In addition to the laboratory results, the NTS study will continue with additional testing, including accelerated actual exposure, real time actual exposure, and actual field application characteristics. The 1998 CARB survey has also been completed. Staff plans to utilize the on-going testing results for future technology assessments.

- 2-2 Commentator is referred to response to comment #2-1.
- 2-3 Acrylic-based coatings are clearly a better coating for concrete and metal surfaces exposed to direct sunlight than alkyd-based coatings. Urethane and epoxy IM coatings, however, are the highest performing coatings recommended for use on concrete and steel.
- 2-4 The commentator asserts that the SCAQMD's analysis of the potential hazards impacts associated with the use of reformulated acetone-based compliant coatings is inadequate because it relies on information obtained from interviews with local fire departments and not an actual analysis of acetone's volatility as compared to other solvents. However, in making this assertion the commentator references the Public Services Impacts section of Chapter 4 in the Draft SEA not the Hazards Impact section as the commentator's assertion seems to be directed towards. Thus, it is unclear specifically what the commentator referring to. In any event, whether the commentator is referring to the Public Services Impacts, Hazards Impacts, or both sections the SCAQMD disagrees with the commentator's assertion for several reasons. First, in the context of PAR 1113, it should be noted that the use of acetone in the reformulation of compliant coatings is relatively small. Waterproofing sealers are the only affected coating categories where some amount of acetone reformulation is expected to occur. These categories constitute a very small group of coatings compared to the total coating categories impacted by PAR 1113. Acetone reformulation was considered to be the "worst-case" for the purposes of public services and hazards impacts associated with the implementation of PAR 1113. Thus, the SCAQMD's environmental impact analysis tends to overestimate the public services and hazards impacts from PAR 1113.

Second, the SCAQMD did not solely rely on information from local fire departments in analyzing the impacts associated with the use of reformulated acetone-based coatings. The SCAQMD conducted its own independent review of the flashpoint, vapor pressure, and flammable range, (e.g., the span between the lower explosive limit (LEL) and the upper explosive limit (UEL)) of acetone, currently used solvents, and replacement solvents (see Tables 3-14 and 4-7 in Final SEA). This analysis revealed that acetone in comparison with currently used solvents has comparable volatility and flammability characteristics. In addition, the SCAQMD conducted extensive environmental review of the use of acetone when it exempted acetone as a VOC in Rule 102 – Definitions of Terms (SCAQMD #950914JN, November 1995). Based on these analyses coupled with the information received from local fire departments, the SCAQMD concluded that PAR 1113 would not create significant adverse public services or hazards impacts.

Specifically, in the context of public services impacts, potential adverse impacts to fire departments can occur two ways: (1) more frequent responses; and (2) more frequent inspections. To determine whether PAR 1113 would significantly increase or alter fire department's level of service (i.e., increased responses to fires, explosions, or inspections), the SCAQMD sought their input. Feedback received from these authorities indicates that, based upon their extensive professional experience as a result of years of regulating the use and storage of flammable materials, the use of acetone will pose no greater risks than the use of existing solvents such as: MEK, toluene, butyl acetate, etc., even though acetone is slightly more flammable. Based on this input and other related information, SCAQMD staff concluded that PAR 1113 would not result in any significant impacts to public services compared to the existing situation. Thus, the commentator under estimates the importance of the input from fire departments in determining public services impacts from PAR 1113. Furthermore, the SCAQMD expects that anyone handling acetone-based coatings or any other flammable liquids will strictly adhere to the storing, dispensing, and handling requirements of these materials to lessen the danger of fire and explosion

In regards to hazard impacts, the SCAQMD also analyzed the probability of increased accidents and their consequences associated with acetone reformulation. First, the SCAQMD found that many coatings are already formulated with acetone and, therefore, are already being transported in the district. Second, many conventional coatings are formulated with other solvents that are considered as flammable as acetone (e.g., t-butyl acetate, toluene, xylene, MEK, isopropanol, butyl acetate, and isobutyl alcohol). Based upon staff review of coating product information sheets, future compliant low VOC coatings are expected to be formulated with less or non-flammable materials such as texanol, propylene glycol, etc. Consequently, it is anticipated that future compliant coatings will follow the existing trend of moving away from hazardous coating formulations to less or non-hazardous formulations.

Additionally, it is expected that an incident (i.e., spill or explosion), involving the transporting of acetone-based coatings will produce less toxic impacts than other conventional coatings containing solvents such as toluene, xylene, MEK, etc. Acetone has a higher TLV (750 ppm), PEL (750 ppm) and

IDLH (20,000 ppm) compared to other conventional solvents. These high exposure limits coupled with acetone's higher vapor pressure indicate that acetone would evaporate quickly in a spill such that extended human exposure to significant levels that could cause harm are unlikely. Further, acetone is also considered to have the same or less toxic effects as other conventional solvents. As a result, even if exposure were to occur, which is highly unlikely, the human health effects would be the same or less compared with existing architectural coatings.

Information received from various fire authorities indicates that even though acetone is slightly more flammable than other conventional solvents it would be treated the same in the event of a fire or explosion because conventional solvents are also flammable. Since PAR 1113 does not increase the probability that a transport accident will occur and the fire authorities would handle this type of incident the same compared with coatings formulated with conventional solvents as with acetone-based coatings, the hazard impacts are not considered to be significant.

- 2-5 The SCAQMD disagrees with the commentator's assertion that the VOC emission reductions from industrial maintenance and rust preventative coatings is relatively small. As shown in Table 5-2 of the Final SEA, the industrial maintenance and rust preventative coating categories are expected to generate VOC emission reductions of approximately 6.45 tons per day, which represents almost 30 percent of the total VOC emission reductions from the proposed amendments. Considering that it is becoming more difficult to identify sources from which VOC emission reductions can be obtained, a 6.45 tons per day reduction represents a substantial amount.

The Final SEA for PAR 1113 will be provided to the Governing Board for their consideration prior to the public hearing for PAR 1113. Whether the proposed project is adopted is ultimately the Board's decision based upon the information contained in the CEQA document, the staff report, and received during the public testimony portion of the public hearing.

Based upon staff review of the product information materials for AIM coatings, there is currently a wide range of AIM coatings available that complies with the interim VOC content limits contained in PAR 1113. Further, based upon the results of the SCAQMD's NTS study, these currently available coatings that comply with the interim and final VOC content limit requirements have comparable coating and durability characteristics compared to existing high VOC coatings. Based upon the availability of coatings and resin technologies that already comply with the interim compliance date, the 2002 compliance dates provides sufficient time to further increase the availability of coatings that comply with the interim limits.

With regard to the 2005 compliance limits, staff review of the coating product information materials indicated that there are a limited number of currently available compliant coatings. Further, there are some resin technologies available that could be used to formulate coatings that could comply with the 2005 VOC content limits. In addition, industry input indicates 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. While it is anticipated that the previously proposed 2005 final compliance date would provide sufficient time for research and development of compliant low VOC content coatings, staff has further extended the deadline to 2006.

PAR 1113 contains a technology assessment provision whereby approximately one year prior to the interim and final compliance dates staff will perform a technology assessment of the availability of compliant coatings. If compliant coatings are unavailable by the completion of the technology assessment, staff will report back to the Board as to the appropriateness of maintaining the existing VOC content limits.

COMMENT LETTER #3

BENJAMIN MOORE & CO.



April 21, 1999

South Coast Air Quality Management District
 Darren W. Stroud
 21865 E. Copley Drive
 Diamond Bar, CA 91765-4182

Re: Notice of Completion of a Draft Subsequent Environmental Assessment
 Proposed Amended Rule 1113 - Architectural Coatings

Dear Mr. Stroud:

3-1 Benjamin Moore & Co. has developed and manufactured AIM Coatings for over 115 years. Since the early fifties manufacture and distribution has been at our Commerce, CA plant where we employ over 80 people. Currently we make for sale to our 61 "licensed" private paint dealers approximately 300 different lines of paint available in an infinite breadth of color through our "color matching system" and product finishes. The current PAR1113 will outlaw over 70% of these products and will destroy our business in the South Coast and my companies reputation as a manufacturer of very high quality AIM Coatings.

3-2 The above referenced document grossly simplifies the paint business and is intentionally misleading when it comes to describing AIM Coatings categories. As a national paint company we have pleaded for uniform language relative to the USEPA AIM VOC Rule Part 59 400 to 413 when it comes to definitions, administration and labeling, while recognizing the need for a different Table of Standards (TOS) for the South Coast. Staff has not been responsive to this need. We have repeatedly voiced our objection to limits that are past the limit of current or foreseeable technology and are not enforceable by Method 24 and the Federal definition of VOC that excludes the volume of water in the calculation or test. This concern has also been virtually ignored by Staff. Finally we have requested additional deterministic specialty categories with higher limits for coatings that don't fit in the all encompassing categories with the extremely low limits as proposed by Staff. Rather than listen to these requests we have been given two new categories where, if used, we are penalized for products so positioned, specifically "floor coatings" and "rust preventative coatings".

3-3 For Staff to claim 50 g/l paints are available to meet all our customers needs on the basis of hearsay, marketing brochures, and raw material suppliers sales literature when we have 115 years of sales history to the contrary stretches the truth beyond breaking. We are not in the business of selling solvent, rather we are in the business of selling top quality paint. The trend is very much toward water based paint because of cost, health and safety and ease of use. To regulate us out of the solvent paint business using the propositions outline in this SEA document is at best unfair and false. Our customers will not pay more for product that only provides low VOC. In fact in our case our "0" VOC products discussed in the "DRAFT Staff Report ..." of 2/17/99 on page 49 have been so unsuccessful in the market place that they have been withdrawn from sale.

3-4 Finally Staff continuously asserts there are new magic ingredients that make water paint technology user friendly yet many of these materials are VOC's in themselves. We have requested exemptions for these materials on the basis of low volatility and/or lack of reactivity. This has also been categorically rejected with only an averaging carrot given in response. We can not avail ourselves of this option when the down side is a \$25,000 per day fine.

We hope these concerns are addressed and the writer can be contacted at 973-252-2650 if there are any questions.

Sincerely,

Barry A. Jenkin (Regulatory Affairs)

PLAINFIELD, NJ • NEW YORK, NY • NEWARK, NJ • PHOENIX, AZ • RALEIGH, NC • ROSELAND, MA • RICHMOND, VA • WASHINGTON, DC • CHICAGO, IL • ST. LOUIS, MO
 CLEVELAND, OH • HOUSTON, TX • DALLAS, TX • BIRMINGHAM, AL • DENVER, CO • LOS ANGELES, CA • SAN FRANCISCO, CA • TAMPA, FL • MEMPHIS, TN • LITTLE ROCK, AR • BIRMINGHAM, AL

Established 1883

COMMENT LETTER #3

Benjamin Moore & Co.

April 21, 1999

- 3-1 The SCAQMD has conducted a thorough technology assessment of coatings available today that comply with the proposed limits for July 1, 2002 and July 1, 2006. Based on a detailed analysis of qualitative and quantitative data, staff has concluded that coatings with equivalent performance are available for the interim and final limits. The commentator is encouraged to review the technology discussed in detail for each coating category in the Staff Report for Proposed Amended Rule 1113, as well as the comprehensive list of coatings included as Appendix D of the Subsequent Environmental Assessment.

Nonetheless, the SCAQMD has added an Averaging Provision to provide additional compliance flexibility for coating manufacturers, which allows a manufacturer to average their emissions from a long list of coating categories. This provision would allow the manufacturer to continue selling a line of coatings that may not comply with the actual VOC limit, by offsetting those emissions with sales of coatings that are below the compliance limits. Some manufacturers have recognized the potential cost savings of this flexible approach. In addition, the SCAQMD will assess, in conjunction with industry, these coatings as a part of the technology assessments to evaluate the performance. If the future technology assessments do not demonstrate adequate performance, the SCAQMD will revise the limit or further extend the deadlines prior to implementation.

The SCAQMD has incorporated industry suggestions into the Averaging Provision to provide for a simplified, flexibility option that would allow compliance with the proposed amendments with lesser socioeconomic impacts.

- 3-2 The SCAQMD has worked closely with USEPA and educational institutions over the past several years to identify alternative test methods for measuring the VOC content of low-VOC architectural coatings. Under a contract with USEPA, the Research Triangle Institute has developed alternative test methods to Method 24. These include a modified Method 24, a single-injection headspace analysis, a multiple headspace extraction analysis, and an automated thermal desorption (ATD) analysis. The ATD approach has provided results that were closest to the Method 24 measured values. The SCAQMD fully anticipates the development and approval of an alternative test method over the next few years, prior to implementation of VOC limits at or below 50 g/l.

Staff has analyzed the national AIM rule's categories and definitions, as well as the VOC limits. Staff believes that adding additional categories into the Table of Standards with the default 250 g/l limit

will add to confusion, instead of simplifying the rule. For example, the national AIM rule has separate categories for interior and exterior nonflats, but has the same VOC limit. This does not add any simplicity to the rule, just redundancy. The current Rule 1113 – Architectural Coatings currently contains an exemption for coatings sold in containers having a capacity of one quart or less (Rule 1113(g)(1)(A)). Staff has added two coating categories, floor coatings and rust preventative coatings, consistent with the national AIM rule. However, the current and future proposed VOC limits are different than those found in the national AIM rule. Staff has adopted the national AIM rule definitions and provisions for some categories, where appropriate.

3-3 The commentator is referred to response to comment 2-1.

3-4 Staff makes no assertions regarding “magic ingredients” in water-based coatings. Staff has acknowledged in the past that even water-based coatings may contain VOCs. The important point, however, is that the primary solvent component of water-based coatings is water, not organic solvents. Water does not contribute to ozone formation as does VOC solvents.

Staff has received recommendations in the past to include exemptions for coatings formulated with solvents that are considered to have low volatility or low vapor pressure based on CARB’s consumer products rule, which has a low vapor pressure exemption. According to CARB, however, its low vapor pressure exemption was initially meant for high molecular weight resins, surfactants, detergents, and paraffins/waxes commonly found in consumer products. Based on new data, CARB is proposing to delay implementation of the low vapor pressure exemption. CARB plans to evaluate how much of these new solvent mixtures that meet the LVP definition are found in consumer products and design a study to assess the fate of LVP solvents. The study is expected to occur no earlier than the end of 1999.

The low vapor pressure exemption was originally intended by CARB to be limited to consumer products where the organic compounds are washed away. These typically do not evaporate into the air. For architectural coatings, the solvents evaporate and go into the air. For that reason, CARB has not included a low vapor pressure exemption for aerosol paints.

The approved EPA test method for measuring VOC (Method 24) measures low vapor pressure compounds as VOCs. Therefore, they should not be considered exempt in architectural coatings regulations according to EPA. For this reason, a low vapor pressure exemption is not considered to be a feasible alternative.

Exemptions, or an architectural coatings rule that is based on solvent reactivity has also been discussed and considered in the past. A reactivity-based approach has also been rejected for the following reasons. 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 VOC reactivity-based strategy a viable control option.

In general, the relative contribution 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. A working group will be established to guide reactivity research. It is expected that it will take 18 to 24 months to have the chamber running. The results of future studies may result in sufficient information to include reactivity-based control provisions in Rule 1113 and other coatings rules.

Reactivity-based regulations have also been discussed at Industry Working Group meetings (meeting #2, 10/7/98; meeting #3, 11/4/98; and meeting #4, 12/9/98). At Industry Working Group meeting #3, Dr. Carter explained that EPA does consider whether a VOC is reactive or non-reactive. EPA staff feels the high uncertainties of the MIR values would not make it a sound strategy until values are refined. EPA and private groups have established NARSTO to coordinate research related to reactivity policy.

While vehicle exhaust has been extensively studied for reactivity, it was only three years ago that glycols, esters, ketones, etc. were being studied. Uncertainty values vary for the best understood species by 30 percent for absolute reactivity and 20 percent for relative reactivity. For species that have not been studied extensively, uncertainty can be much greater. The value of the uncertainties is very difficult to isolate, but attempts to numerically identify uncertainties have been made.

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 frustrating 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-NO_x environments.

NO_x levels, absolute concentrations, also affect reactivity. Temperature and light intensity can also affect reactivity, but this relationship has not yet been studied. In urban areas, time and place of VOC and NO_x emissions can also have effect; Absolute reactivity is scenario dependent and is more variable, whereas relative reactivity is less scenario dependent, and therefore less variable, and is the more important scale. The current scenarios represent the center of urban areas' NO_x levels. The maximum incremental reactivity varies for each VOC species. Generally, under current scenarios, the VOC:NO_x ratio is approximately 6.0, which is consistent with NO_x levels in the downtown area of Los Angeles.

Although the above information indicates that the science regarding VOC reactivities is currently not well developed, the SCAQMD acknowledges that when the science becomes reasonably well developed a reactivity-based regulatory approach may provide an alternative or additional means to assist in making progress towards attaining and maintaining the state and national ambient air quality standards for ozone. To address potential future advances in knowledge about reactivity, the SCAQMD has added language to PAR 1113 provision (f)(3), which requires the Executive Officer to further conduct a study to assess the reactivity of architectural coatings.

Although the averaging compliance option in PAR 1113 is one means of complying with the rule provisions, it is not anticipated to be the only means. It is expected that the interim and final compliance dates provide sufficient time for research and development of compliant coatings. This assertion is based on the current availability of low and zero VOC coatings. Staff evaluated the coating product information sheets for a substantial number of both low VOC and currently compliant conventional coatings comprising a number of AIM coating categories. This evaluation identified coating characteristics such as VOC content, drying time, pot life, shelf life, durability characteristics, etc. The products evaluated are listed in the Tables in Appendix D, which are summarized in Table 4-2 in Chapter 4 of the Final SEA. This survey of product information sheets demonstrates that for a number of AIM coating categories, compliant coatings already exist. Given the time available for research and development, the number of compliant coatings for the affected coating categories is expected to increase substantially

COMMENT LETTER #4

KESSLER & ASSOCIATES, INC.

Kessler & Associates, Inc.

April 21, 1999

Mr. Darren Stroud, Air Quality Specialist
CEQA Section of the Planning, Rule Development, and Area Sources Division
South Coast Air Quality Management District
21865 E. Copley Drive
Diamond Bar, CA 91765

Subject: Comments on Draft Subsequent Environmental Assessment for
Proposed Amended Rule 1113 – *Architectural Coatings*

Dear Mr. Stroud:

Kessler & Associates, Inc., a government affairs firm, represents Dunn-Edwards Corporation (Dunn-Edwards) a Los Angeles, California-based manufacturer and seller of quality architectural coatings. This letter is in response to the South Coast Air Quality Management District's (SCAQMD's) Draft Subsequent Environmental Assessment (EA) prepared for Proposed Amended Rule 1113 – *Architectural Coatings*.

4-1

Thank you for allowing us the opportunity to comment on the potential impacts of this proposed rulemaking. We have restricted our comments to those areas of the EA where additional technical data or analyses are necessary to more accurately assess potential environmental impacts. Our comments on the Notice of Preparation have not been addressed in this document with respect to the reactivity of specific VOCs and the contribution of emissions from architectural coatings on the formation of ozone in the South Coast Air Basin.

Page 1-1 – Introduction

4-2

We have a general comment concerning the intent of this rulemaking. Rule 1113 does not regulate volatile organic compound (VOC) emissions, but rather regulates the VOC

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Mr. Darren Stroud

April 21, 1999

Page 2

4-2
cont.

content of architectural coatings. Regulation based on content rather than emissions assumes a direct correlation between VOC content and effect on ozone. This concept is not *a priori* correct.

Furthermore, all VOCs may not contribute equally, if at all, to ozone formation. This theme is continued throughout Chapter 4 – Air Quality Impacts.

Page 1-7 – Air Quality

4-3

The Draft EA states, “The adoption and implementation of PAR 1113 is expected to produce long-term VOC emission reductions.” Whether limiting VOC content of architectural coatings actually reduces emissions and, ultimately, ozone formation is unclear by the District’s analysis. District staff has indicated that current Urban Airshed Models cannot demonstrate measurable results from a source as small as the District’s estimate for the entire coatings category. Therefore, implementation of the Proposed Rule may not result in a reduction in ozone formation.

Reactivity

4-4

We believe that a reactivity-based regulatory scheme will provide the District with the means of reaching and maintaining the ozone standard in a manner that is more cost-effective and equitable in its impact on the regulated community. A reactivity-based approach is consistent with the mandates of the Clean Air Act (Sections 183(e)). In addition, regulation based on VOC mass content without regard to reactivity allows the possibility of adverse environmental impacts through reformulation using ingredients that are more reactive.

Kessler & Associates, Inc.

Mr. Darren Stroud

April 21, 1999

Page 3

Page 1-11 and Page 4-32 – Maintenance at Public Facilities

4-5

Staff concluded that “no significant public service impacts are anticipated from the proposed rulemaking for maintenance at public facilities.” In the absence of long-term testing of complying coatings used for maintenance of water treatment facilities, bridges, safety railings, fire escapes, and other essential public uses, this finding is unfounded.

Page 2-3 – Background

4-6

According to this document, “...due to the lack of durability information contained in the EMU study, the SCAQMD contracted with National Technical Systems (NTS) to conduct a comparison study that will evaluate the durability and application characteristics of ...coating categories.”

We must note that the environmental impacts of the Proposed Amended Rule will depend, to a large extent, on the durability and application characteristics of complying substitutes for coatings unavailable in the future due to the proposed lower limits. Insofar as the results of the NTS study are not available, the District lacks the factual basis for assessing environmental impacts, and has instead relied upon unfounded speculation and unsubstantiated competitive marketing claims.

We believe, therefore, that the Amendments to Rule 1113 and the CEQA analysis are premature, given the AQMD’s inability to fully consider this crucial factor. We urge District staff to consider these results in future rulemaking efforts and in the Technology Assessments which have been added to the rule to ensure that high quality, durable coatings are available.

Kessler & Associates, Inc.

Mr. Darren Stroud

April 21, 1999

Page 4

Page 2-4 - Background

4-7

The term "technical assessment" as used by District staff in this document actually refers to a literature search of product data sheets and promotional articles. AQMD staff has relied on unverified claims made in marketing materials and is using this as justification for establishing future VOC limits and timelines. This is an inadequate basis for this rule. A genuine, scientific technology assessment requires extensive testing of various coatings on a variety of substrates in both interior and exterior exposures representative of conditions experienced in the South Coast Air Basin.

Page 3-19 – Strategy for Attaining the National and State Ozone Standards

4-8

Page 3-19 states, "without additional AIM regulations, the summer-day average inventory for AIM coating emissions will increase due to population growth by the following: 68.2 tons per day in 1997; 74.7 tons per day by 2005; and 79.4 tons per day by the year 2010. If left unregulated, AIM coating emissions alone would account for more than 26 percent of the VOC emissions inventory targeted for 2010."

This comment does not reflect the market-driven technological advancements that have occurred and will continue to occur, even in the absence of regulation. During the past 50 years, market forces have driven the demand for coatings with lower-VOC levels. In 1950, virtually all architectural coatings were solventborne; by 1975 (25 years later and in the absence of regulation), more than 70 percent by volume were low-VOC waterborne products. Similar market forces such as consumer preference for low-odor, health and safety concerns, and price competition operate to reduce VOC content to the lowest possible levels consistent with desired performance characteristics.

Kessler & Associates, Inc.

Mr. Darren Stroud

April 21, 1999

Page 5

4-8
cont.

This is apparent in the recently released CARB AIM survey data. The AQMD should base the AQMP inventory on this information. The 1998 Draft CARB survey indicates a 82 percent/18 percent waterborne to solventborne split as opposed to the 1993 survey which showed 74 percent and 26 percent respectively.

Page 4-4 – Film Thickness

4-9

Viscosity data as well as solids volume data is needed to speculate on applied film thickness. However, no viscosity data is listed in this Draft EA. Averaged coverage data from data sheets is not accurate. Actual application comparisons are required. Higher volume solids are evident in averages for lower VOC floor, industrial maintenance coatings, and water proofing sealers.

Page 4-11 - More Priming

4-10

The product data sheets may indicate comparable coverage, but substrate-specific testing is required to verify claims that additional surface preparation, including priming is not required to successfully applying reformulated products.

Page 4-12 – More Topcoats

4-11

The additives cited in the EA to improve flow and leveling problems and deal with oily or contaminated surfaces are expensive and can compromise the final properties of the film. For example, they may cause water sensitivity, embrittlement, and loss of ultraviolet (UV) resistance. Actual testing is required to determine the extent to which more topcoats may be required to successfully apply reformulated products.

Kessler & Associates, Inc.

Mr. Darren Szoud

April 21, 1999

Page 6

Pages 4-13 – 4-14 – More Touch-Ups and Repair

4-12

The document cites the use of “hypersurfactants and reactive diluants” that have improved the overall performance of low to zero-VOC coatings to achieve “comparable” if not superior performance to traditional, solvent containing coatings. These coatings have performance limitations and their costs can be substantially higher than that for traditional coatings. Actual testing is required to determine the durability of such coatings and the extent to which additional touch-up may be necessary.

Page 4-14 – 4-15 – More Frequent Recoating

4-13

The use of UV absorbers or free radical scavengers to increase coating life can result in significant costs and can produce undesirable side effects. These products often have objectionable odors and result in coating discoloration.

Page 4-17 - More Reactivity

4-14

As mentioned in our comments above, Dunn-Edwards encourages the District to move towards a reactivity-based regulatory scheme for preventing the exceedance of the ozone standard as quickly as practicable.

This document does not discuss the negative reactivity that certain VOCs have in the atmosphere. Dr. William Carter of UCR contends that under certain conditions involving lower NOx levels or higher VOC-to-NOx ratios, VOCs actually inhibit the formation of ozone rather than contribute to it.

Kessler & Associates, Inc.

Mr. Darren Stroud

April 21, 1999

Page 7

Page 4-19 (bottom of page) – More Reactivity

4-15

The statement quoted from the paper entitled "Application of Reactivity Criteria to Architectural Coatings" is true only with respect to replacement of solventborne flat coatings with waterborne flat coatings. The paper cited continues to explain why reactivity is significant with regard to the "non-flat coatings category, which constitutes 23% of volume and is almost evenly divided at present between waterborne latex enamels and solventborne alkyd enamels. Considering reactivity, we may find that regulation results in the substitution of latex enamels for alkyd enamels and is environmentally counterproductive; i.e., exacerbates the ozone problem.

Page 4-20 – More Reactivity

4-16

This section references the state-of-the-art ozone chamber to be constructed at UCR. We trust that future rulemaking will be based on the data collected using this reactivity chamber's data and scientific findings. The assumption that VOCs contribute equally to the formation of ozone in the ambient air is not justified by the current science. This EA does not reference the negative reactivity that certain VOCs have in the ambient air. Dr. William Carter, noted scientist in the area of atmospheric reactivity, mentioned the role of negative VOCs in lowering ozone levels at a recent AQMD meeting regarding this rule.

Page 4-39 - Solid/Hazardous Waste Impacts

4-17

The significance criteria cited on page 4-39 indicates that a project will have significant adverse solid or hazardous waste impacts if it results in the disposal of materials that exceed the capacity of designated landfills.

Kessler & Associates, Inc.

Mr. Darren Stroud

April 21, 1999

Page 8

4-17
cont.

Dunn-Edwards does not concur that this is the appropriate measure of a significant solid waste impact. A more appropriate baseline, we believe, is the amount of paint, coatings, and containers currently landfilled or deposited at household hazardous waste roundups.

4-18

The discussion outlines possible increased solid waste generation due to: freeze/thaw problems, shorter shelf lives, and shorter pot life for two-component systems; however, there are other problems associated with the use of these replacement coatings which may result in increased solid waste impacts in the Basin. More gallons of waterborne coatings are needed to cover a comparable area due to their lower solids content; therefore, more containers would be manufactured, used, and, ultimately, disposed of in a landfill.

4-19

There is another significant problem associated with the use of zero-VOC latex-based systems as outlined in our meetings with District staff and national resin suppliers. Zero-VOC products do not include biocides necessary to eliminate an environment favorable to the growth of bacteria, molds, and fungi that can spoil a product batch.

Products ruined by microorganisms must be disposed of in a landfill. They are not appropriate for recycling or household hazardous waste programs. Dunn-Edwards is committed to limiting the amount of solid and hazardous waste generated in California. Our goal is not to fill landfills with paints and coatings.

4-20

Analysis of solid waste impacts from the proposed amendments to Rule 1113 should be based on an increased amount of paints and coatings deposited in landfills or attempted to be dropped off at household pickup areas, not a comparison to the total landfill capacity in the South Coast Basin area.

Kessler & Associates, Inc.

Mr. Darrin Stroud

April 21, 1999

Page 9

Page 5-5 – Discussion of Alternatives

4-21

We do not concur with the discussion of Alternative A – The No Project Alternative. The recently released CARB survey demonstrates that VOC content reductions occur as a result of market demand and may continue in the future even in the absence of any additional rulemaking on architectural coatings.

4-22

We support an extended compliance deadline as a component of the proposed rule. We believe this would allow for additional, much-needed time to develop reliable lower-VOC products, particularly industrial maintenance, and rust preventative coatings. Additional research and development time is critical to ensure that coatings developed do not result in the potential negative air quality impacts outlined in our comments above.

Dunn-Edwards appreciates the District's efforts in examining innovative and meaningful approaches to dealing with ozone nonattainment. We look forward to working with District staff on this and other important technological issues. These issues are the keys to the viability of our industry and our mutual goal of clean air.

Sincerely yours,



Howard Berman, Esq.
Senior Vice President and
Environmental Counsel

Kessler & Associates, Inc.

COMMENT LETTER #4
Kessler & Associates, inc.
April 21, 1999

- 4-1 The commentator's assertion that the Draft SEA for PAR 1113 did not address the reactivity of VOCs and the contribution of emissions from architectural coatings to ozone formation is untrue. Specific responses to all comments received on the NOP/IS for PAR 1113 were prepared and included in Appendix C of the Draft SEA. In addition, these topics were addressed in Chapter 4 of the Draft SEA for PAR 1113. With regard to reactivity, response to comment #1b-1 in Draft SEA Appendix C specifically responded to the commentator's comment. With regard to architectural coatings' contribution to ozone formation, this was addressed specifically in responses to comments #1-3 and #1a-1 of Appendix C of the Draft EA. When preparing responses to the commentator's comment on this issue, the response referred the commentator to the response to comment #1-3.

In addition to specific responses to NOP comments on reactivity, the Draft SEA includes an analysis regarding the issue of more reactivity in Chapter 4. The Draft SEA also includes a discussion of the VOC emissions inventory from AIM coatings, which contribute to ozone formation, in Chapter 3. Finally, Chapter 5 of the Draft EA included a discussion of why a reactivity-based project alternative was rejected as infeasible.

- 4-2 VOC content is a good indication of emissions, since VOCs in architectural coatings are intended to evaporate into the air. In addition, air quality modeling performed for the 1997 AQMP demonstrates not only the contribution VOC emissions make toward ambient ozone concentrations but also the need for further reducing VOC emissions to comply with the national and California ambient air quality standards. Further, ground level ozone formation is a result of complex chemical reactions involving both VOCs and NO_x. VOCs react with hydroxyl radicals to form organic peroxy radicals which subsequently react with nitric oxide (NO) to form nitrogen dioxide (NO₂). Nitrogen dioxide photo-dissociates to form NO and oxygen atoms. The oxygen atoms rapidly associate with molecular oxygen to form ozone. The amount of ozone formed is a function of the number of conversions of NO to NO₂ due to the organic "chain reactions." When VOC emissions are lowered, the number of NO-to-NO₂ conversions decrease. Discussions on the atmospheric chemistry of ozone formation can be found in the 1991 National Research Council report, "Rethinking the Ozone Problem in Urban and Regional Air Pollution." Specifically, page 116 states... "the presence of VOCs causes enhanced NO-to-NO₂ conversion and hence the production of concentrations of ozone that exceed those encountered in the clean background troposphere." Additionally, the SCAQMD's preliminary analysis indicates that additional reductions of VOC and NO_x emissions beyond those included in the AQMP will likely be necessary to meet the recently promulgated National Ambient Air Quality Standards for ozone and PM_{2.5}.

Because of the extreme ozone nonattainment status of the South Coast Air Basin, the SCAQMD must control both NO_x and VOC emissions if the area is to achieve ambient air quality standards.

The AQMP for this district targets all feasible, cost-effective VOC emission reduction strategies from sources under its jurisdiction.

With regard to the comment that all VOCs may not contribute equally to ozone formation, i.e., reactivity, the commentator is referred to the response to comment #3-4.

- 4-3 The commentator is referred to the response to comment #4-2. In addition, architectural coatings is one of the largest remaining source category of VOC emissions.
- 4-4 The commentator is referred to the response to comments #3-4 and #4-1.
- 4-5 The commentator is referred to response to comment 2-1.
- 4-6 Since the initiation of the NTS study, SCAQMD staff has conducted its own technology assessment that is consistent with the results received so far from the NTS study. The commentator is also referred to response to comment 2-1.
- 4-7 The commentator is referred to response to comment 2-1.
- 4-8 The SCAQMD acknowledges that both regulation and the market have caused VOCs to be reduced. The Draft 1998 CARB survey data will be incorporated in the Category of Emission Source reports by CARB later this year. Subsequently, the SCAQMD will revise its emissions inventory for architectural coatings.
- 4-9 Though viscosity data may be beneficial for determining film thickness, it is difficult to evaluate since it is effected by ambient temperature and humidity. For example, a the viscosity of a coating may increase under cooler temperatures and drop under high temperatures. Thus, percent solids by volume is the most stable and reliable indicator. The commentator is also referred to response to comment #2-1.
- 4-10 Based upon the SCAQMD's technology assessment, the SCAQMD believes that given the lead time for reformulation the priming needs of low VOC coatings will be comparable to higher VOC solvent-borne coatings. Nevertheless, substrate-specific testing to verify priming requirements will be incorporated into future technology assessments for primers, sealers, and undercoaters.
- 4-11 The SCAQMD recognizes that there are tradeoffs of different coating characteristics that must be balanced for an optimal formulation. The NTS study finds that some zero-VOC coatings have better application characteristics than other zero-VOC coatings, and that some have application characteristics, including leveling, sag resistance, blister resistance, and final film properties similar to some higher-VOC coatings. This indicates that some manufacturers have been able to overcome or balance application properties with the addition of rheology modifiers and other additives.

- 4-12 The NTS study shows comparable durability of low to zero-VOC coatings with traditional, solvent containing coatings. The commentator is also referred to response to comment #4-11.
- 4-13 According to Light Stabilizers for Paints (Dr Andreas Valet, 1997) and “Additives for Trade Sales and Industrial Coatings” (Ciba, 1997), UV absorbers and free radical scavengers are additives which protect the structural integrity of coatings against corrosion and degradation. No data has been provided which substantiates the commentator’s claim that UV absorbers or free radical scavengers cause coating discoloration and objectionable odors. Further, these coatings are used on exterior surfaces and, as such, would not be expected to result in additional adverse odor impacts.
- 4-14 The Draft SEA for PAR 1113 discussed the lack of information regarding a reactivity-based regulation. With regard to the comment regarding NO_x-to-VOC ratios and the effect on ozone formation, the commentator is referred to the response to comment #3-4. The commentator is also referred to the response to comment #4-1.
- 4-15 The commentator is referred to the responses to comments #3-4 and #4-1.
- 4-16 With regard to VOC reactivity, including “negative reactivity” and Dr. Carter’s work on VOC reactivity, the commentator is referred to the responses to comments #3-4 and #4-1. To the extent that the ozone chamber to be constructed at U.C. Riverside provides necessary and reliable information about reactivity of individual VOCs, this information will be used as appropriate in future amendments to existing coatings rules or entirely new rules. The SCAQMD supports future reactivity studies pertaining to architectural coatings.
- 4-17 The commentator advocates using the total amount of paint, coatings, and containers currently landfilled or deposited at hazardous waste roundups as the solid waste significance threshold instead of the total landfill capacity in the district. The SCAQMD disagrees with the commentator’s proposal for several reasons. First, the SCAQMD as the lead agency has the discretion to establish its own significance thresholds for its projects (CEQA Guidelines §15064.7 (a)). Significance thresholds used by the SCAQMD are derived from a number of sources including SCAQMD rules and regulations, other lead agencies that have established significance thresholds, and Appendix G of the CEQA guidelines, which is considered indicative of public health and environmental impacts. Appendix G indicates that a project would be considered to result in a significant Utility and Service Systems impact if landfills serving the project did not have sufficient capacity to meet the project’s solid waste needs. Thus, the SCAQMD’s solid waste significance threshold is consistent with the total-landfill-capacity threshold approach in the CEQA Guidelines.

Second, the establishment of total-landfill-capacity significance threshold provides uniformity for all SCAQMD projects. This approach allows the SCAQMD to keep a running total of the cumulative effects of its projects since it has one threshold to measure against. To adopt the commentator’s

proposal would mean that the SCAQMD would have to adopt separate significance thresholds for each project. This would lead to confusion amongst the public and result in potential inconsistent application by SCAQMD staff for rule and permitting projects.

Finally, the SCAQMD has no information as to the amount of paints, coatings, or containers currently landfilled or deposited at hazardous waste roundups. The commentator has conveniently omitted this information from its comment. Without such information, the SCAQMD cannot assess the validity of whether such a threshold is suited for the SCAQMD's purposes.

- 4-18 The commentator alleges that the solid waste impacts analysis does not include all potential impacts associated with PAR 1113. The commentator asserts that more solid waste (e.g., disposal of containers) could be generated since more water-borne coatings are required to cover a comparable area due to their low solids content. As part of the environmental impacts analysis for PAR 1113, the SCAQMD conducted an exhaustive and comprehensive analysis of currently available low VOC coatings that forms the primary basis for PAR 1113. This analysis evaluated hundreds of coatings from approximately 40 manufacturers and considered the following coating characteristics: VOC content, percent solids by volume, coverage, adhesion, durability, pot life, shelf life, gloss, and drying time (see the tables in Appendix D and the related summary tables in Chapter 4 of the Final SEA). The analysis of resin manufacturers and coating formulators product data sheets provides the most accurate information available to the SCAQMD, which is based on qualitative and quantitative information (e.g., laboratory testing, actual product usage data, and field testing data). The SCAQMD's analysis of these product data sheets indicates that overall low-VOC compliant coatings had comparable performance characteristics to conventional coatings for both the interim and final VOC content limits.

The SCAQMD's product data sheet analysis has since been corroborated by the results from the NTS study specifically in the context of the interim VOC content limits. For the final VOC content limits, the results of the NTS study indicate that some of the compliant coatings may have some application concerns, while other zero-VOC coatings have comparable application characteristics when compared to conventional high-VOC coatings. As a result, the SCAQMD has given coating formulators seven years to reformulate their coatings to correct coating application problems. This time period is consistent with input received from resin manufacturers and coating formulators that it takes five to seven years to reformulate coatings to make it commercially available based on emerging resin technology. PAR 1113 contains a technology assessment provision whereby approximately one year prior to the interim and final compliance dates staff will perform a technology assessment of the availability of compliant coatings. If compliant coatings are unavailable by the completion of the technology assessment to meet the final limit, the SCAQMD will report back to the Governing Board as to the appropriateness of maintaining the existing VOC content limits. Accordingly, the overall the solids content and coverage area for low-VOC affected coatings are comparable to conventional coatings. Therefore, solid waste impacts resulting from alleged solids content and coverage issues are not expected from PAR 1113.

Additionally, the solid waste impacts analysis represents the “worst-case” because it assumes that five and one percent (total six percent) of all coatings as well as ten percent of all IM and floor coatings could potentially be landfilled for freeze-thaw, shelf-life, and pot-life problems. This analysis overestimates the solid waste impacts associated with PAR 1113 because it is highly unlikely that this amount of coatings would all fail at the same time and be disposed of on the same day. Therefore, even if additional solid waste were generated as alleged by the commentator, it would fall somewhere in the SCAQMD’s analysis. Thus, the SCAQMD has extensively analyzed the solid waste impacts associated with PAR 1113.

Regarding the SCAQMD’s review of resin manufacturer’s and coating formulator’s product data sheets and the preliminary results from the NTS study the commentator is referred to response to comment #2-1.

- 4-19 The commentator indicates that zero-VOC latex-based technology does not include biocides necessary to prevent spoilage from bacteria, molds, and fungi. As a result, the commentator alleges that spoiled paint will have to be landfilled, and thus, increasing in landfill impacts. The SCAQMD is aware that true zero-VOC technology may not contain biocides. However, the SCAQMD’s proposed interim and final limits are set to allow for the addition of some VOC. For example, the final limits for nonflat paints, which are predominantly consists of latex-based technology, is set at 50 g/l. The allowance of some VOC will allow coating formulators to include rheology modifiers and biocide to spoilage as alleged by the commentator. Therefore, the SCAQMD does not anticipate that significant solid waste impacts will be generated as a result of paint spoilage.

However, in the event there is some disposal of latex-based paint due to spoilage from bacteria, molds, and fungi, significant solid waste impacts will not occur. Since the SCAQMD’s analysis overestimates the solid waste impacts associated with PAR 1113, the disposal of latex-based paints due to spoilage would fall within the range of the SCAQMD’s analysis. The commentator is referred to response to comment #4-18.

- 4-20 The commentator is referred to response to comment #4-17.

- 4-21 The behavior of manufacturers in developing lower-VOC coatings and the public’s acceptance of those products have occurred in conjunction with regulatory limits being placed on the products. There is no indication that the market would have moved at the same speed or to the same extent absent environmental regulations. The fact that EPA published a national AIM coatings rule in September 1998 to meet the obligations of Section 183(e) of the Clean Air Act, also indicates their position that regulations are necessary to drive the market forces. In addition, a study prepared for Inform Inc., a non-profit environmental research organization, entitled *Stirring Up Innovation: Environmental Improvements in Paints and Adhesives*, found that environmental regulation have been a strong driving force promoting innovation in the paint industry.

4-22 With regard to the need for additional time to develop compliant coatings, the commentator is referred to the response to comment #2-5.

COMMENT LETTER #5

NATIONAL PAINT & COATINGS ASSOCIATION

April 21, 1999



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 South Coast Air Quality Management District
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RE: Comments on the Completed Draft Subsequent Environmental Assessment for Proposed Amended Rule (PAR) 1113 - Architectural and Industrial Maintenance (AIM) Coatings

The NPCA is providing comments on the South Coast Air Quality Management District's (SCAQMD) Completed Draft Subsequent Environmental Assessment (SEA). NPCA in December 1998 provided comments on the predecessor document – the Initial Staff Draft Subsequent Environmental Assessment.

While we acknowledge that the current proposal has increased some of the proposed limits above those proposed in the Initial Staff Draft, the underlying fundamental problems that we raised in regard to the Initial Staff Draft have not been adequately addressed in the Completed Draft document. Additionally, the Completed Draft raises some new factual issues.

I. General Comments on Completed Draft Subsequent Environmental Assessment

A. Rush to Judgment Without Adequate Information

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The primary defect with the rulemaking process remains that the District is unnecessarily moving ahead on a fast track rulemaking schedule before pertinent data is made available by staff and can be adequately reviewed by industry and the District. This is essential to making an informed decision concerning the technological and economic feasibility of the proposed revised VOC limits under Rule 1113.

This pertinent data includes the National Technical System (NTS) comparative study concerning coatings performance and additional details from the CARB AIM emissions inventory, especially coatings speciation data. (Only summaries of the CARB inventory and the NTS study has been released to the public to date.) The District's fast track rulemaking schedule precludes sufficient time for a thorough examination and discussion of the results of all of the information collected in these two important data gatherings.

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In this connection we note that the District has changed the date for a Board decision from February 12, 1999 to May 14, 1999. But we also note that the



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District in its February 17 Draft Staff Report stated its expectation that it would be only a "few weeks" until the NTS study would be finished. The importance of this study to the decision making process cannot be overemphasized. The key issue for decision is not whether low VOC coatings currently exist that are below currently applicable VOC limits. They do. The issue is whether they are adequate to meet all of the performance needs for all of the coatings in their category and whether reasonable inferences for even lower VOC levels can be made based upon current coating technologies and performance characteristics. The NTS study that is to make side-by-side comparisons of performance characteristics of lower and higher VOC coatings in specific coatings categories and subcategories is therefore essential to this rulemaking. As of this writing the full study has not been released to industry.

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In addition, important features of the study are being deleted in order to meet the May 14 scheduled Board decision. We now understand that this includes the elimination of field tests of the application performance characteristics of the coatings. Laboratory tests are to be substituted in their place.

In this connection it must also be noted that in general there is no substitute for field testing application, performance and durability characteristics of coatings and this is especially true in the case of the radical reformulations being recommended by staff.

Staff acknowledges the importance of this kind of information in making its determinations. For example, the Completed Draft SEA states: "Due to the lack of durability information contained [in a previous study] the SCAQMD contacted the National Technical Systems to conduct a comparison study that will evaluate the durability and application characteristics between low- and zero-VOC coatings compared with high VOC coatings." (Completed Draft SEA at page 2-3.) Undoubtedly in an effort to meet the May 14 Board decision date, staff now plans to conduct the application characteristics tests in the laboratory instead of conducting lengthier, but more reliable, field tests. Again this underlines the "rush to judgment" nature of this rulemaking for which the earliest compliance dates for proposed revised VOC limits is January 1, 2002

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The failure to provide for an adequate review and comment on the full results of NTS study (originally expected by staff to be available "a few weeks" after February 17, 1999, and thus before the issuance of the Completed Draft SEA) seriously undermines the adequacy of the staff's findings in the Completed Draft SEA relating to coatings performance issues. This is particularly true with respect to the current and foreseeable coatings technologies that are considered by staff to be available or feasible in the future which staff uses to justify many of its findings of "no significant environmental impact", especially relating to air quality issues. Staff's efforts to shore up this deficiency in Chapter Four and Appendix D of the Completed Draft SEA by a partial review of coatings product

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cont. data sheets that are not analyzed in terms of their specifically intended substrate and application specifications and requirements is not an adequate substitute for the full results of the NTS study. Nor is it the reasoned analysis required by CEQA.
- 5-5 It is the consensus of the NPCA membership that at a minimum five years would be required for coatings reformulation, field testing and development if feasible limits were proposed by the SCAQMD.
- 5-6 Although the proposed revisions would allow for a technology review to ascertain the "product availability" of the lower VOC coatings one year before they are to become effective, this time frame is too short to respond to with the development of effective coatings should the SCAQMD determine that the limits are feasible.
- 5-7 The determination also will turn upon the staff's interpretation of what it considers to be "available". We take little comfort from the staff's determinations in this document concerning what they may consider to be "available" coatings. For example, citing the 1998 CARB Survey, the staff finds "availability" of coatings in the industrial maintenance coatings category at the proposed VOC limits for 2002 when the survey shows that currently only 27% of the coatings meet the proposed 2002 level and only 11% meet the proposed 2005 limit. (Completed Draft SEA at page 3-3) The report does indicate that the coatings are available for "some applications", suggesting not all applications. But totally absent from staff's discussion of this topic is any indication that it will apply the "availability" criteria in a manner that draws distinctions among the performance characteristics and requirements of the coatings subcategories that make up the industrial maintenance coatings category. As this is not being done in the current proposed rule amendment, we have little reason to believe that it will be done in future technology assessments under the amended rule.
- 5-8 In any case, even if SCAQMD should determine that the VOC limits are not feasible for all coatings in a category, the standards may nonetheless become part of EPA enforceable SIP requirements that can be enforced irrespective of the SCAQMD's determination.
- All of this means that the establishment in Rule 1113 of low VOC limits as being potentially feasible at some time in the future raises the very real risk that they will be imposed irrespective of whether they are ultimately proven to be technologically unfeasible. The federal enforceability of these SIP requirements further compels the conclusion that SCAQMD staff should develop realistic proposals for future limits. As will be demonstrated in our more specific comments, this has not occurred. And again this argues for delaying consideration of the proposal until information already being developed by staff is made more available for industry review.

B. Four General Recommendations

The gist of the four general recommendations that were made in our December 1998 comments on the Initial Staff Draft Subsequent Environmental Assessment remains the same.

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| 5-9 | <ul style="list-style-type: none"> • Postpone the currently scheduled May 14, 1999 presentation on the proposed revisions to Rule 1113 to the SCAQMD Board until both the NTS comparative study and the CARB inventory results are made fully available to the regulated community, which includes chemists with extensive knowledge of the paint technology issues involved in this matter, has an opportunity to review and discuss the findings of the studies with District staff. |
| 5-10 | <ul style="list-style-type: none"> • The NTS study should be expanded to include ongoing real world weathering and durability testing that manufacturers and applicators can monitor in the future. It should not be truncated to exclude initially planned tests such as coatings field application tests. |
| 5-11 | <ul style="list-style-type: none"> • The District relies for much of its proposed lower VOC coatings limits on currently available low VOC coatings technology. A low VOC product technology in a general class of coatings may be successfully used currently to meet the performance requirements of one or more application and exposure environments. However, there must first be a thorough evaluation of this technology before it can be mandated as being <u>feasible for all or even most of the application, performance, and exposure requirements of the general class of coatings to which it belongs.</u> |
| 5-12 | <ul style="list-style-type: none"> • The SCAQMD AIM rule should adopt the national AIM rule as a template, incorporating the national rule's product definitions, reporting and labeling requirements, as well as the national rule's "less than or equal to" one liter package size exemption. It must be acknowledged that the SCAQMD will specify lower VOC limits for coatings than those of the national rule. This may necessitate the greater division of separate coatings categories in the SCAQMD AIM rule than those that exist in the national rule. But the basic components of both rules should be as uniform as possible to reduce the inefficiencies associated with having to address the special VOC reduction needs of the SCAQMD. |

II. Comments on Specific Features of the Completed Draft Subsequent Environmental Assessment

Below are our comments on specific features of the Completed Draft Subsequent Environmental Assessment.

A. Inadequate Technology Assessments Based on Product Information Sheets

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Completed Draft SEA at page 2-4

"Since the NTS study was initiated, staff continued to conduct its technology assessment of low- and zero-VOC coatings affected by the proposed amendments and has gained additional information pertaining to their performance characteristics Based on this assessment, staff believes that both the proposed compliance limits and deadlines are achievable. Staff will nevertheless reassess the deadlines based upon the laboratory results of the NTS study. These results are expected to be completed sometime in the March/April 1999 time frame."

Comment: Staff's "analysis" of the performance characteristics of compliant products was based almost entirely, if not exclusively, on manufacturer's claims from product information sheets and with no reference to the real-life performance characteristics of the coatings and their specific end uses. Manufacturer product data sheets are often promotional in nature and based upon applying coatings in ideal conditions, e.g., thorough preparation of substrate and ideal weather conditions. Moreover, it is now April 21, 1999, and the NTS data are still not fully available for review and comment.

B. Completed Draft SEA Indicates Only VOC Limit Deadlines and Not the Limits Themselves May Change Depending on Final Results of NTS Study

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Completed Draft SEA at page 3-2

"The Eastern Michigan Study "concluded that low- and zero-VOC coatings are currently available for the proposed coating categories, but did not reach conclusions regarding the overall performance of these coatings, as compared to current solvent-based coating formulations."

Staff will reassess the deadlines based on the laboratory results of the NTS study."

Comment: Does this second paragraph mean that staff will not reassess the proposed VOC limits based on the NTS study? If this is so then it suggests that the staff is already convinced that its recommended VOC limits are

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technologically feasible and that the final results of the NTS study will not change its view.

C. Completed Draft SEA Demonstrates that Distinctions Between Different Coatings Technologies and Performance and Application Requirements Not Understood by Staff

Completed Draft SEA at pages 4-3 to 4-4

"...[T]he appellate court has already determined that six of the eight issues asserted by industry and contractors had been adequately addressed in the previously prepared CEQA document [¶] It should be noted that during the November 1996 rulemaking process, the eight issues as mentioned above were discussed in detail for flats and lacquers . . . in the Draft and Final Subsequent Environmental Assessment for the November 1996 rule amendments. In each case it was concluded that the coating manufacturers' and contractors' claims for an increase in emissions as a result of the reformulation of the low-VOC coatings were not supported by any credible or empirical evidence. The Los Angeles County Superior Court has upheld this conclusion to date."

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Comment: These prior analyses were, with some minor exceptions, done for other products and SCAQMD does not demonstrate why these analyses would apply to the product categories at issue in this rulemaking which involves completely different products. This is an example, but not the only one, where the staff's analysis demonstrates a lack of understanding or disregard of important distinctions that exist between different coatings technologies and end user performance requirements. Elsewhere in the Completed Draft SEA, the staff dismisses concerns raised about surface preparation requirements for different coatings by stating that all coatings require surface preparation. This is a truism that avoids the key issue. The key issue here is the degree of surface preparation that is required for different coatings technologies.

D. More Thickness Discussion Demonstrates Misunderstanding of Industry's Position on Issue and SCAQMD's Continued Failure to Draw Distinctions Among Coatings Formulated for Different Performance and Application Requirements

Completed Draft SEA at pages 4-5 to 4-5 (More Thickness)

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"SCAQMD staff evaluated product data sheets for approximately 340 conventional and low-VOC coatings to compare solids content Staff has asserted in the past and continues to maintain that a coating with more solids will actually cover a greater surface area. . . . [¶] These results indicate that currently available low-VOC coatings are not necessarily formulated with a higher solids content. Further, a higher solids content does not result in a

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significant reduction in the coverage area. The information from the coating product data sheets tends to corroborate a positive correlation between solids content and the coverage area."

Comment: Coatings are developed to be applied with different mil thickness to meet their particular performance requirements. To make valid comparisons on this score, high and low VOC coatings formulated for particular performance requirements must be compared with each other. It is clear that this was not done by staff. It is also clear that staff did not actually test the surface area coverage for zero-, low-, and high-VOC products. For some applications, no such products exist. Also, the results are averaged by VOC content, not by products with similar performance characteristics, which does not allow for a reasoned analysis of comparable products. In order to conclude that the proposed VOC levels would not result in increase thickness, and potentially increased emissions, it is incumbent upon SCAQMD to present data showing that information.

E. Thinning Discussion Ducks the Key Issue -- Whether There Will Be Increased Thinning When the Proposed Lower VOC Limits Become Effective

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Completed Draft SEA pages 4-8 to 4-11 (Illegal Thinning)

"Thinning should not be a problem because compliant coatings are available that may be applied without thinning. Even if some thinning occurs, thinning would likely be done with water or exempt solvents. Finally, current practice indicates that coating applicators do not engage in widespread thinning, and even when thinning occurs, the coatings VOC content limits are not exceeded. As a result, claims of thinning resulting in significant adverse air quality impacts are unfounded."

Comment: Staff's conclusions regarding thinning do not constitute an adequate discussion of this issue. Current thinning practice of contractors which now can use coatings with higher VOC levels not requiring additional thinning to be effectively used -- 420 grams per liter in the case of industrial maintenance coatings-- is not relevant to predicting what will occur when the level is dropped to 250 grams per liter and 100 grams per liter and application becomes difficult without additional thinning. The assumption that compliant coatings that require no thinning at the proposed VOC limits will be available assumes away the issue entirely -- it does not address it. The same is true of the statement that if thinning occurs it will likely involve only water or exempt solvents. Exempt solvents are not uniformly suited for all the coatings at issue here.

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F. Rejection of No Additional Priming Argument

Completed Draft SEA pages 4-11 to 4-12 (More Priming)

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cont. *"Information from the coating product data sheets indicated that low-VOC coatings do not require substantially different surface preparation than conventional coatings. According to the product data sheets, conventional and low-VOC coatings required similar measures for the preparation of the surface (i.e., apply to clean, dry surfaces), and application of the coatings (i.e. brush, roller or spray). Both low-VOC coatings and conventional coatings for both architectural and industrial maintenance applications have demonstrated the ability to adhere to a variety of surfaces."*
- Comment:** Staff's "analysis" of the performance characteristics of compliant products was based almost entirely, if not exclusively, on manufacturer's claims from product information sheets and with no reference to the real-life performance characteristics of the coatings and their specific end uses. As was noted in point D above, to make valid comparisons, high and low VOC coatings formulated for particular end user requirements must be compared with each other. It is clear that this was not done by staff.
- 5-19 Additionally, there was no response to the industry assertion that water-borne sealers do not penetrate and seal porous substances like wood as well as traditional solvent-borne sealers.
- G. More Conclusions Based on Product Data Sheets**
- 5-20 **Comment:** As with paragraph A, above, staff's "analysis" of the performance characteristics of compliant products in the following cases was based almost entirely, if not exclusively, on manufacturer's claims from product information sheets and with no reference to the real-life performance characteristics of the coatings and their specific end uses.
- Completed Draft SEA pages 4-12 to 4-13
- (More Topcoats) "According to the product data sheets for the sampled coatings, water-borne coatings have proven durability qualities."*
- Completed Draft SEA pages 4-13 to 4-14
- (More Touch-Ups and Repair Work) "based on the durability characteristics information contained in the product data sheets, low-VOC coatings and conventional coatings have comparable durability characteristics."*
- 5-21 Completed Draft SEA pages 4-14 to 4-16
- (More Frequent Recoating) "Coatings manufacturers' own data sheets show that the low-VOC coatings for both architectural and industrial maintenance applications are durable and long lasting."*

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cont. **Comment:** Here SCAQMD also relied upon data from the Eastern Michigan study which "emphasizes the superior durability of acrylic coatings" over alkyd coatings. Yet, there is nothing but speculation to support the implied conclusion that acrylic coatings will be available for all of the applications covered by the current proposed rule amendments.

Completed Draft SEA pages 4-16 to 4-17

5-22 *(Substitution) "based on staff research of resin manufacturers' and coatings formulators' product data sheets, there are, generally, a substantial number of low-VOC coatings that are currently available, that have performance characteristics comparable to conventional coatings Second, PAR 1113 prohibits the application of certain coatings in specified settings. . . . Third, the type of performance (e.g., durability) desired in some settings would prohibit the use of certain coatings. For example, in an IM setting a coating with a life of 10 years or more is typically desired due to the harshness of the environment. Therefore, it is unlikely that a rust preventative coating with a typical life of five years would be used in place of an IM coating. Fourth, PAR 1113 requires that when a coating can be used in more than one coating category the lower limit of the two categories is applicable. . . . Lastly, SCAQMD enforcement records reveal that there is greater than 99 percent compliance rate with Rule 1113. Thus, it is highly unlikely that coating applicators will violate Rule 1113 by substituting higher-VOC coatings for lower-VOC coatings.*

Comment: Second point - 1113 does not prevent all coatings from being used by contractors outside of their compliance category.

5-23 **Third point –** if a product is not available that would last 10 years, why would the contractor not use a product that will work, if only for 5 years, and only give a warranty for that long? The alternative is a product that won't work at all if no compliant product is available. This analysis is a non-sequitur.

5-24 **Fourth point -** theoretically, any coating "could" be used in another category if there is no restriction on the contractor. Section 1113(c)(3) only applies if a dual-use representation is made "anywhere on the container . . . on any sticker or label affixed thereto, or in any sales or advertising literature." It does not apply to contractor substitution.

5-25 **Fifth point -** compliance with today's limits is a poor predictor of compliance with the future limits, and an inadequate analysis under CEQA. The Los Angeles Superior Court in 1990 rejected SCAQMD's conclusion that thinning would not occur because it was "illegal" as an inadequate analysis under CEQA.

H. Water Demand Impact Analysis Inadequate

Completed Draft SEA pages 4-27

(Water Demand Impacts) "The SCAQMD staff will conduct a technical assessment one year prior to each of the rule limit requirements to determine where the technology is at that time and what, if any, environmental issues are associated with the manufacture and use of such reformulated products."

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This statement is made in the section regarding Water Demand Impacts. It is unclear whether staff proposes to review all environmental impacts associated with the future rule limits, or just water demand impacts. Furthermore, it is unclear whether staff is committing SCAQMD to a formal environmental assessment such as the current process. NPCA strongly urges that SCAQMD commit to a rigorous environmental assessment at the time of technology assessments undertaken under Rule 1113.

I. Water Quality Impact Analysis Inadequate

Completed Draft SEA pages 4-28

(Water Quality Impacts) "A research report released in March of 1977 demonstrated that latex (nonflat technology) paint is, in fact, not a hazardous waste product."

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The NPCA agrees with this conclusion. Unfortunately there are authorities in the California hazardous waste program that do not share this view and this practical fact and its impact should be analyzed by the staff.

J. Acetone Flammability Analysis Inadequate

Completed Draft SEA pages 4-33 to 4-36

(Public Services Impacts—Fire Departments) Acetone Flammability.

Staff's discussion of the flammability aspects of acetone flammability issues is a repeat of the discussion advanced in the FSEA for the November 1996 amendment to the lacquer VOC limits. The same lack of analysis required by CEQA applies to these proposed amendments.

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The opinions received from the fire department authorities, and upon which SCAQMD exclusively relied, were only abstract statements as to the relative risks of fire hazards presented by acetone and other solvents. Significantly, SCAQMD omitted discussion of the effect of vapor pressure. None of the information from the fire authorities addressed the issue of acetone's significantly higher vapor pressure, and the fact that there would be significantly higher concentrations of acetone in the air, and able to ignite, than other solvents used in the same amount. SCAQMD recognized that acetone had a higher

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evaporation rate than other solvents. Yet, it simply failed to acknowledge this higher evaporation rate in addressing the hazard impacts from the substitution of acetone for other solvents. SCAQMD completely failed to respond to comments about the fire hazards posed by acetone-containing lacquers as actually used on the job site, and that failure violates CEQA.

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The DSEA relies upon the opinion of Captain Lee of the Los Angeles County Fire Department. In a letter of June 12, Captain Lee noted that "acetone presents the highest degree of fire hazard of the four solvents, but is not significantly more hazardous than the others." His analysis was expressly based on the Uniform Fire Code (UFC), which treats all of the solvents as "Class I Flammable Liquids." Similar information was given on a June 3, 1996, site visit to a Los Angeles County Fire Station. 20 AR 5545. At a May 30, 1996, meeting with the Diamond Bar Fire Department, Captain Horton said that his agency would handle all products with flashpoint below 65 degrees the same. 20 AR 5578. The Costa Mesa Fire Department also said that they would handle all Class I substances the same. 20 AR 5579. The Orange County Fire Authority also said that, based on the UFC classifications, acetone would not pose any greater danger. 20 AR 5581.

All of the opinions from the fire authorities are based on the UFC, which designates acetone and the solvents it replaces as Class I substances. The UFC's classifications are derived from the NFPA 704 Standard for Identification of the Fire Hazards for Materials. "As originally conceived, the purpose of the standard is to safeguard the lives of those individuals who may be concerned with fires occurring in an industrial plant or storage location where the fire hazards of materials may not be readily apparent." *Id.* The standard is addressed to "the health, flammability, reactivity, and related hazards that may be presented by short-term, acute exposure to a material during handling under conditions of fire, spill, or similar emergencies." *Id.* (emphasis added). "This standard provides a simple, readily recognized, easily understood system of markings that provides a general idea of the hazards of a material and the severity of these hazards as they relate to handling, fire prevention, exposure, and control." *Id.* "This system is intended to provide basic information to fire fighting, emergency, and other personnel, enabling them to more easily decide whether to evacuate the area or to commence emergency control procedures. It is also intended to provide them with information to assist in selecting fire fighting tactics and emergency procedures." *Id.* (emphasis added).

It is clear from the description of the NFPA Standard classifications contained in the UFC that they simply have nothing to do with the potential hazards from the use of coatings in the field. Nothing in the administrative record for the 1996 amendments demonstrates why it was reasonable for SCAQMD to rely upon this classification system to address the question of hazards posed by the field use of lacquers. As the industry comments pointed out, acetone has a very low

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flashpoint (flashpoint being defined as “the minimum temperature at which a liquid gives off vapors in sufficient concentration to form an ignitable mixture with air . . .”). Its vapor pressure, i.e., how readily it will evaporate from an applied coating, is much greater than the solvents SCAQMD intends it to replace. It has a greater flammable range than any of these other solvents. The opinions of the fire authorities, based exclusively on the UFC classifications, do not address the relative fire hazard of acetone, compared to other solvents, in lacquers being used by painters in the field. These opinions were not direct evidence of no significant fire hazard from the use of acetone, and are a totally impermissible basis from which SCAQMD could reach an inference that was consistent with its prejudgment of the issue.

K. Solid/Hazardous Waste Impacts Analysis Inadequate

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Completed Draft SEA pages 4-40

(Solid/Hazardous Waste Impacts) “even if some compliant coatings are landfilled due to freeze-thaw, shelf life, or pot life problems, the total amount of solid waste material deposited in district landfills will not create a significant solid waste impact.”

First, it is interesting to note that total disposal is estimated at between 28-52 tons per day; the estimated air emissions reductions are only 20 tons per day. If the emissions reductions are significant, why are the disposal increases not?

Second, see paragraph I above regarding latex waste disposal.

L. Hazard Impacts Analysis Inadequate

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Completed Draft SEA pages 4-42 to 4-43

See discussion above regarding acetone flammability.

See discussion above regarding water quality impacts.

M. Chapter 5 (Alternatives)

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As is noted in our summary recommendations above, staff should utilize the coatings categories specified in the national AIM rule, and develop VOC limits based on rational distinctions between coatings categories. This alternative should be analyzed for its potential environmental effects, so that the Board may make a reasoned decision as to the feasibility of the project and the proposed alternatives in light of all information currently available.

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We agree with the District’s findings that reactivity-based alternative may not be a feasible alternative at this time. But we believe current research that is

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cont. underway may provide data that will allow the District and the California Air Resources Board (CARB) to implement a reactivity-based alternative compliance policy in the future. This is one of the reasons why we are urging the District to expand the Technology Assessment Provision [Paragraph (f)] of the rule to consider "any new scientific knowledge concerning the environmental fate and availability of VOC compounds used in architectural coatings, including any new atmospheric chamber studies and modeling techniques."

5-34 The District also should support research into environmental fate and atmospheric availability of the VOC species that are utilized in architectural coatings. There have been some interesting developments lately in this area under a Design for the Environment (DFE) program of the US Environmental Protection Agency. The developments strongly suggest that a significant amount of VOCs associated with residential coatings may be trapped in their substrate and not emitted. This research also may prove to be useful in determining the true degree to which VOCs contained in AIM coatings contribute to the VOC emissions that must be reduced in the SCAQMD basin to meet air quality standards.

5-35 We also request that staff consider an alternative in lieu of the proposed 2005 VOC limits that would establish an industry increments of progress program. Under such a program industry would demonstrate to the District its progress in developing lower VOC AIM coatings across the full spectrum of AIM coatings to achieve the needed VOC emissions reductions. Such an approach would be far more realistic and practical than the arbitrary selection of low VOC limits for individual coatings categories that are not within the reasonably foreseeable coatings technology.

III. Proposed Amended Rule 1113 - Response to Specific Proposed Amendments:

Addition of a definition for "Floor Coatings" [Paragraph (b)(16)]:

The definition should be revised to read as follows:

FLOOR COATINGS are *opaque coatings that are formulated for application to flooring, including but not limited to decks, porches, gymnasiums for purposes of abrasion resistance.*

Addition of a definition for "High Temperature Industrial Maintenance Coatings" [Paragraph (b)(20)]:

The NPCA supports the addition of the new definition for "high temperature maintenance coatings" as it appears in the Proposed Amended Rule in

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cont. Appendix A of the Completed Draft SEA and the proposed VOC limit of 550 g/l. This change recognizes the true realities concerning the current state of formulation technology for these unique coatings products.

Revision of the definition of "Industrial Maintenance Primers and Topcoats [Paragraph (b)(21)]:

5-38 The NPCA supports the use of the definition as proposed in the Draft Staff Report (page 102) of the February 25 1999 version of the proposed rule with one important modification -- that a separate category be established for "Industrial Maintenance Primers, Sealers and Undercoaters". This is a clarification of our position that was stated in our comments on the Draft Staff Report that were submitted on April 15, 1999.

The current definition for Industrial Maintenance Coatings should be replaced with the following definitions:

INDUSTRIAL MAINTENANCE COATINGS are intermediate coatings and topcoats formulated for and applied to substrates that are exposed to one or more of the following extreme environmental conditions in industrial, commercial, or institutional facilities:

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

5-39 (B) acute or chronic exposure to corrosive, caustic or acidic agents, or to 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.

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.

INDUSTRIAL MAINTENANCE PRIMERS, SEALERS, AND UNDERCOATERS are primers, sealers and undercoaters that are an integral part of an industrial maintenance coatings system formulated for

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and applied to substrates that are exposed to one or more of the following extreme environmental conditions in industrial, commercial, or institutional facilities:

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

(B) acute or chronic exposure to corrosive, caustic or acidic agents, or to 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.

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Addition of a definition for "Non-Flat Coatings" [Paragraph (b)]:

The NPCA supports the addition of the new category and definition for "non-flat" coatings. The NPCA (as stated in previous comments submitted on January 5, 1999, March 2, 1999 and April 15, 1999) recommends that at a minimum at least one subcategory for "High Gloss Non-Flat Coatings" be added to the proposed Table of Standards.

We also would like to point out that the "non-flat coatings" category is not a "specialty" category of AIM coatings but one that makes up over 25% of the AIM coatings sales at both the national and California levels.

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Addition of the definition of "Rust Preventative Coating" [Paragraph (b)(36)]:

As stated in our comments of April 15, 1999, the definition for "rust preventative coatings" should be revised to read as follows:

RUST PREVENTATIVE COATINGS are coatings formulated for use in preventing the corrosion of metal surfaces in residential, institutional, and commercial situations.

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Revision of the definition for of Waterproofing Sealers [Paragraph (b)(49) and addition of the of a definition for Waterproofing Concrete/Masonry Sealers [Paragraph (b)(51)]:

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cont. As stated in our comments of April 15, 1999, we support the splitting of the "Waterproofing Sealers" category into two categories: "Waterproofing Concrete/Masonry Sealers" and "Waterproofing Wood Sealers" as long as the definition for the "Waterproofing Wood Sealers" is 1) modified to reflect the national definition and 2) has a VOC limit that reflects the current state of the technology for this category of coatings that provide protection with a single coating application. The definition of "Waterproofing Concrete/Masonry Sealers" is acceptable as currently written.

VOC Limits and Deadline Dates

5-43 We are not including any recommendations on specific VOC limits in our comments to the District. We will continue to reserve commenting on specific VOC limits until after industry has had an opportunity to review the NTS study data and any other data that the District is relying on to determine the new VOC limits, including speciation data from the CARB inventory.

As to the proposed effective dates of January 1, 2002 and January 1, 2005, we believe that the earliest date for the first round of revisions should be no earlier than five years from the date of adoption.

5-44 Additionally this should be done only after the expanded Technical Assessment (which we proposed in our comment of April 15, 1999) has been completed and the results reviewed with industry at least a year before limits are established. That it requires a minimum of five years to develop and introduce a new coatings technology is well supported by ample testimony from coating manufacturers, raw material suppliers and coatings applicators.

5-45 As noted earlier in our discussion of Alternatives, for the second round of reductions, we believe that the VOC limits should not be set individual coatings category. As an alternative, a performance oriented hard target for overall emissions reductions for all AIM coatings could be set. An expanded technology assessment that would consider technology advances for all categories of AIM products would be undertaken. This could include increments of progress reports from industry. While this option has not been openly discussed by all the regulated parties, it clearly offers a more practical and realistic approach than the arbitrary establishment of VOC that are not within reasonably foreseeable technology developments.

Labels for "Industrial Maintenance Coatings" [Paragraph (d)(5)]:

5-46 The required label statement for "Industrial Maintenance coatings" should be revised to include all four of the options that are allowed in the national AIM

5-46
cont.

regulation (40CFR Part 59.405 (b) Container labeling requirements) not limited to just the one statement from in the proposed revision of Rule 1113.

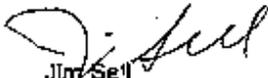
5-47

Spray Application of two component polyurethane Industrial Maintenance Coatings (Paragraph (d)(8)):

We endorse the recommendation made by the PDCA in its comments of April 1, 1999 and urge the District to remove this provision.



Robert J. Nelson
Director of Environmental Affairs



Jim Sell
Senior Counsel

COMMENT LETTER #5
National Paint & Coatings Association
April 21, 1999

- 5-1 The commentator is referred to response to comment #2-1.
- 5-2 Since the initiation of the NTS study, staff has conducted its own technology assessment, which concludes that low-VOC coatings are available. Results from the NTS study are consistent with staff's assessment. The commentator is also referred to responses to comments #1-1 and #2-1.
- 5-3 In addition to the laboratory testing, the NTS study will continue with additional testing, including accelerated actual exposure, real time actual exposure, and actual application characteristics. Staff never intended to delay rulemaking to await results from the field studies that could take up to several years of results. Staff plans to utilize the on-going filed testing results for future technology assessments.
- 5-4 The commentator is referred to responses to comments #1-1 and #2-1.
- 5-5 The SCAQMD believes all the proposed limits are feasible, and has further extended the time for development of compliant coatings. The commentator is referred to responses to comments #1-1 and #2-1.
- 5-6 The SCAQMD's experience with rule development indicates that the proposed timing of the technical assessments provides adequate time to revise the rule if necessary.
- 5-7 As noted in response to comment #2-1, availability refers not only to coatings complying with future VOC content limits, but also includes coating characteristics such as coverage area, corrosion resistance, etc. The NTS study also shows that some low- and zero-VOC coatings have performance characteristics comparable to, and in some cases superior to, conventional high VOC coatings. Both the staff survey and the NTS study evaluated industrial maintenance coatings. In response to industry, staff has proposed subcategories of coatings under industrial maintenance. Since staff has identified future compliant coatings and their performance characteristics as part of the current Rule 1113 amendment process and has responded to industry concerns, there is no reason to believe that a similar process will not occur as part of future technology assessments for Rule 1113. For additional information, the commentator is referred to the response to comment #2-1.
- 5-8 The issue raised by the commentator, i.e., relaxation of rule requirements contained in an approved State Implementation Plan (SIP), is referred to as a SIP gap because it creates a gap in terms of emission reductions anticipated in the SIP and the actual emissions that can feasibly be attained. This issue has arisen in the past so the SCAQMD has established a working relationship with the U.S. EPA to resolve SIP gap issues. For example, in the most recent Rule 1113 amendment, EPA committed to expeditiously resolving any issues regarding a SIP gap.

- 5-9 The initial results of the CARB inventory has been made available since March 1999. In addition, the NTS study was designed and run at the outset with industry oversight. The results so far are consistent with staff's own assessment. The commentator is also referred to response to comment #2-1.
- 5-10 The commentator is referred to response to comment #5-3.
- 5-11 The commentator asserts that all though a coating may perform adequately for some applications it may not perform as well in other applications. The commentator advocates that the SCAQMD thoroughly evaluate all affected coatings for all or even most applications before moving forward with PAR 1113. The SCAQMD has thoroughly analyzed the performance of coating categories affected by PAR 1113. The SCAQMD has found through its investigation that there are commercially available compliant coatings that meet the interim and final VOC content limits of PAR 1113 (see Table 3-1 in Chapter 3 of the Final SEA). According to the product data sheets analyzed by the SCAQMD, many of these compliant coatings perform comparable to conventional coatings in a variety of applications (see Appendix D and summary tables in Chapter 4 of the Final SEA). Furthermore, the results from the NTS study shows that some coatings complying with the interim and final limits perform as well as conventional high-VOC coatings, while some compliant final coatings have application shortcomings compared to conventional high-VOC coatings.

However, the SCAQMD acknowledges the fact that additional time for research and development may be needed to develop low-VOC compliant products that exhibit more enhanced performance characteristics. Therefore, the PAR 1113 contains an extended compliance schedule to ensure adequate time for research and development needs. In the context of the interim VOC content limits, PAR 1113 would allow an additional three years for coating formulators to develop coatings to meet the desired end users' performance requirements. This is consistent with the information provided by coating formulators and resin manufacturers that it typically takes three to five years to meet end users' performance requirements once resin technology is available. Based on SCAQMD research and investigation, resin technology currently exists to meet the interim compliance limits (as illustrated by the 1998 CARB Survey and summarized in Table 3-1 of this SEA).

In the context of the final VOC content limits, PAR 1113 would allow an additional seven years for coating formulators to develop coatings to meet the desired end users' performance requirements. This is consistent with the information provided by coating formulators and resin manufacturers that it typically takes five to seven years to develop resin technology that will meet end users' performance requirements. Although SCAQMD investigation indicates that resin technology currently exists that can meet the final VOC content limits, the SCAQMD acknowledges that some additional research and development is required before the technology can meet all of end users' requirements.

The SCAQMD will conduct and complete one-year prior to the interim and final VOC content limits going into effect a technology assessment. The technology assessment will further confirm the availability and feasibility of compliant coatings. Since the language regarding technology assessments is included in PAR 1113, the SCAQMD will be required to revise the VOC limits or extend the compliance dates depending on the results of the technology assessment. This continuing evaluation requirement assures that future limits will always be based on the current state of coating technology.

- 5-12 Staff has analyzed the national AIM rule’s categories and definitions, as well as the VOC limits. Staff believes that additional categories in the Table of Standards with the default 250 g/l limit will add to confusion, instead of simplifying the rule. For example, the national AIM rule has separate categories for interior and exterior nonflats, but has the same VOC limit. This does not add any simplicity to the rule, just redundancy. The current Rule 1113 – Architectural Coatings currently contains an exemption for coatings sold in containers having a capacity of one quart or less (Rule 1113(g)(1)(A)). Staff has created two new coating categories: floor coatings and rust preventative coatings. However, the current and future proposed VOC limits are different than those found in the national AIM rule. Staff has adopted the national AIM rule definitions and provisions for some categories, where appropriate.
- 5-13 The commentator is referred to response to comment #2-1.
- 5-14 Staff of course will also reassess VOC limits if necessary. The commentator is also referred to response to comment #2-1.
- 5-15 The commentator is referred to responses to comments #4-11 and #5-11.
- 5-16 The commentator is referred to response to comment #2-1.
- 5-17 The commentator contends that current thinning practices of contractors which can now use higher-VOC coatings is not relevant to future thinning practices associated with the use of low-VOC compliant coatings. The commentator also states that using this approach constitutes an inadequate analysis and assumes away the issue. The SCAQMD strongly disagrees with the commentator’s assertions for several reasons. First, the analysis of current thinning practices disputes industry’s contention made in 1990 that illegal thinning occurred on a widespread basis. Current thinning practices suggest that applications follow manufacturers recommended practice regarding thinning and do not thin in excess of rule limits. Thus, if excessive thinning practices do not currently exist coupled with the commercial availability of compliant coatings to meet future limits, then excessive thinning is not likely to occur in the future. The SCAQMD has found this later scenario to be applicable for PAR 1113.

Second, the SCAQMD's field investigations of actual painting sites in the South Coast Basin and CARB's investigation of other areas in California that have VOC limits for coatings indicate that thinning of coatings exists but rarely beyond the actual compliance limits. Even in cases where thinning does occur, it is rarer still for paints to be thinned to levels that would exceed applicable VOC content limits. The result of the SCAQMD's investigations is that widespread thinning does not occur often; when it does occur, it is unlikely to occur at a level that would lead to a substantial emissions increase when compared with emissions from higher VOC coatings. Further, manufacturers that recommend thinning of their coatings give specific directions on their paint can labels as to the amount of thinner that can be added without exceeding the Rule 1113 VOC content limit.

Third, throughout the development of PAR 1113 and during the 1996 rule making effort for Rule 1113 the SCAQMD requested that industry provide any thinning studies that they may have conducted to support their contentions about excessive thinning practices. To date, the SCAQMD has received no countervailing thinning studies from industry to indicate that thinning is occurring to a greater extent than the above data would indicate.

Fourth, the SCAQMD has conducted an exhaustive and comprehensive analysis of currently available low VOC coatings as well as conventional coatings. This analysis evaluated hundreds of coatings from approximately 40 manufacturers and considered the following coating characteristics: VOC content, percent solids by volume, coverage, adhesion, durability, pot life, shelf life, gloss, and drying time (see tables in Appendix D and Chapter 4 of the Final SEA). The industry's product data sheets provide the most accurate information that is based on qualitative and quantitative information (e.g., laboratory testing, actual product usage data, and field testing data). This analysis showed that low-VOC compliant coatings are commercially available with comparable performance characteristics that can meet the interim and final VOC content limits.

The SCAQMD product data sheet analysis has since been corroborated by the NTS study specifically in the context of the interim VOC content limits. The results of the NTS study indicate, however, that some of the coatings compliant with the final VOC content limits may have some application issues. As a result, the SCAQMD has given coating formulators seven years to reformulate their coatings to correct any coating application issues. This time period is consistent with input received from resin manufacturers and coating formulators that it takes five to seven years to reformulate coatings to make it commercially available based on emerging resin technology. PAR 1113 contains a technology assessment provision whereby approximately one year prior to the interim and final compliance dates staff will perform a technology assessment of the availability of compliant coatings. If compliant coatings are unavailable by the completion of the technology assessment to meet the final limit, the SCAQMD will report back to the Governing Board as to the appropriateness of maintaining or delaying the existing VOC content limits.

Lastly, the Draft and Final SEA fully complies with CEQA as it contains an extensive discussion of the potential for thinning as it could relate to air quality impacts as required by the 1990 court order. Accordingly, the SCAQMD has concluded based on its thorough analysis of this issue that significant air quality impacts will not result from thinning practices associated with the implementation of PAR 1113.

The commentator is referred to response to comment #2-1 regarding the SCAQMD's review of resin manufacturer's and coating formulator's product data sheets and the results from the NTS study.

5-18 The commentator is referred to response to comment #2-1.

5-19 The SCAQMD has reviewed numerous product data sheets for primers, sealers, and undercoaters that have good adhesion to a variety of substrates. These include adhesion over weathered alkyds. These products have specific surface preparation requirements that must be followed to achieve optimal performance. Further, the NTS study has shown that the zero-VOC coatings actually have better dry adhesion than their higher-VOC counterparts.

The SCAQMD, however, has raised the interim and final limits, as well extended the compliance dates for primers, sealers, and undercoaters based on comments provided by industry. The initial proposal required an interim limit of 100 g/l and a final limit of 50 g/l. However, these have been raised to 200 g/l and 100 g/l, effective July 1, 2002 and July 1, 2006, respectively. Furthermore, a manufacturer can use the flexibility of the Averaging Provision to maintain their lines of noncompliant coatings, by offsetting with supercompliant coatings. Finally, in response to comments received regarding concrete protective coatings, the SCAQMD has created a new category called Waterproofing Concrete/Masonry Sealers, which was a direct results of concerns for waterproofing concrete substrates, especially vertical surfaces. This new category includes both pigmented and clear concrete waterproofing sealers.

5-20 The commentator is referred to response to comment #2-1.

5-21 Acrylic coatings are currently available for a variety of categories, including stains, PSUs, nonflats, waterproofing wood sealers, floor, and IM coatings.

5-22 The commentator asserts that PAR 1113 does not prevent contractors from using coatings outside their compliance category. The SCAQMD assumes that the commentator is alleging that the rule language of PAR 1113 does not specifically prevent substitution. The SCAQMD disagrees with commentator because PAR 1113 does contain language that discourages substitution. First, it should be noted that PAR 1113 applies not only to contractors but anyone who supplies, sells, offers

for sale, applies, solicits the application of, or manufactures for use architectural coatings in the district. Second, the definition language contained in PAR 1113 limits the use of certain coatings to specific applications. Third, PAR 1113(c)(3) requires that when coatings can be used in more than one coating category the lower VOC content limit is applicable. Lastly, clarifying language has been added to PAR 1113 to restrict coatings to their intended uses. For example, it will be a violation of PAR 1113 to apply a roof coating on any substrate it was not intended for. These provisions when viewed independently or cumulatively provide the user of architectural coatings subject to PAR 1113 with a strong indication that unless PAR 1113 specifically allows it, substitution of low-VOC compliant coatings with higher-VOC coatings is prohibited.

Furthermore, the rule language of Rule 1113 coupled with the fact that compliant coatings are commercially available has been effective in providing a strong deterrent against substitution. SCAQMD enforcement records reveal that there has been a better than 99 percent compliance rate with Rule 1113. This enforcement trend is expected to continue with the adoption of PAR 1113 since further clarification has been added to the rule language to make it clearer that substitution is not allowed and compliant coatings are commercially available for use to meet the interim and final compliance VOC content limits.

- 5-23 The commentator asserts that the SCAQMD’s substitution analysis does not make sense since a contractor is likely to substitute a less durable coating if it performs adequately and give a shorter warranty. The SCAQMD strongly disagrees with the commentator’s contention. The SCAQMD in analyzing the potential for substitution investigated whether it was likely that a rust preventative coating with a typical durability of five years would be substituted for an IM coating with a typical durability of ten years or greater. The SCAQMD concluded that based on end user durability requirements, a rust preventative coating would not be used since its performance is much less than an IM coating. Furthermore, significant substitution from all affected coating categories is not likely to occur because uses for various replacement coatings are different and have different performance characteristics. For example, the proposed substitutes have limited specific uses and some of the proposed substitutes would be cost prohibitive.

This is just one of the rationales for the SCAQMD’s conclusion that substitution of low-VOC compliant coatings by high-VOC non-compliant coatings will not occur. By focusing on this one rationale the commentator misconstrues the SCAQMD’s complete analysis of this issue.

To further respond to the commentator’s assertion that substitution would occur, the SCAQMD has evaluated as a “worst-case” four substitution scenarios, including the commentator’s (i.e., a rust preventative coating would be substituted for an IM coating). The substitution scenarios evaluated include: a two-coat nonflat system replaced by a four- or five-coat IM system; a two-coat nonflat system replaced by a three-coat rust preventative coating system; a two-coat nonflat system replaced by a

two-oat PSU system; and a four or five coat IM system replaced by a three coat rust preventative coating system.

To analyze these four scenarios, the SCAQMD first established a current, interim limit, and final limit emission baseline per coating system. The baseline VOC calculations take into consideration the average coverage based on the product data sheets researched by the SCAQMD, VOC content, and the durability of the system (see the tables in Appendix D and Table 4-2 in Chapter 4) to arrive at an annual VOC emission rate for the coating system. The current, interim limit, and final limit, annual VOC emission rate for the four substitution scenarios is presented in Tables F-2 through F-4.

TABLE F-2
COMPARISON OF SUBSTITUTE COATING SYSTEMS (CURRENT)

Coating System	TYPICAL COMPONENTS	Current VOC Content Limit (g/l)	Average Coverage (ft ² /gal)	Emissions per Component (g VOC/ft ²)	Total System VOC (g VOC/ft ²)	Durability (yrs)	Annual Total System VOC Emission Rate (g VOC/ft ²)/yr
IM – 5 Coats	1 Primer	420	380	4.18	22	10	2.2
	2 Mid/2 Top		350	18.16			
IM – 4 Coats	2 Primer	420	380	8.36	17	5	3.4
	2 Top		350	9.08			
RP – 3 Coats	1 Primer	400	460	3.14	10	5	2.0
	2 Top		440	6.57			
NF – 2 Coats	1 Primer	350	400	3.31	6	5	1.2
	1 Top	250	400	2.36			
PSU – 2 Coats	2 Primer	350	400	6.63	7	2	3.5

TABLE F-3
COMPARISON OF SUBSTITUTE COATING SYSTEMS (INTERIM -2002)

Coating System	TYPICAL COMPONENTS	Interim VOC Content Limit (g/l)	Average Coverage (ft ² /gal)	Emissions per Component (g VOC/ft ²)	Total System VOC (g VOC/ft ²)	Durability (yrs)	Annual Total System VOC Emission Rate (g VOC/ft ²)/yr
IM – 5 Coats	1 Primer	250	300	2.15	12	10	1.2
	2 Mid/2 Top		275	9.4			
IM – 4 Coats	2 Primer	250	300	4.30	9	5	1.8
	2 Top		275	4.70			

RP – 3 Coats	1 Primer	400	460	2.72	8	5	1.6
	2 Top		440	5.69			
NF – 2 Coats	1 Primer	200	350	1.77	2	5	0.4
	1 Top	150	360	0.67			
PSU – 2 Coats	2 Primer	200	350	3.54	4	2	2.0

**TABLE F-4
COMPARISON OF SUBSTITUTE COATING SYSTEMS (FINAL - 2006)**

Coating System	TYPICAL COMPONENTS	Final VOC Content Limit (g/l)	Average Coverage (ft ² /gal)	Emissions per Component (g VOC/ft ²)	Total System VOC (g VOC/ft ²)	Durability (yrs)	Annual Total System VOC Emission Rate (g VOC/ft ²)/yr
IM – 5 Coats	1 Primer	100	330	0.54	3	10	0.3
	2 Mid/2 Top		320	2.20			
IM – 4 Coats	2 Primer	100	330	1.08	2	5	0.4
	2 Top		320	1.10			
RP – 3 Coats	1 Primer	100	300	0.74	2	10	0.2
	2 Top		300	1.48			
NF – 2 Coats	1 Primer	100	370	0.40	1	5	0.2
	1 Top	50	400	0.18			
PSU – 2 Coats	2 Primer	100	370	0.79	1	2	0.5

IM = Industrial Maintenance

RP = Rust Preventive

NF = Nonflat

PSU = Primers, Sealers, and Undercoaters

The interim VOC limit change that could potentially result from the four substitution scenarios is presented in Table F-5.

TABLE F-5
VOC CHANGE ASSOCIATED WITH EACH
SUBSTITUTION SCENARIO (INTERIM)

Interim Coating System	Annual Total System VOC Emission Rate (g VOC/ft ²)/yr	Substitute Coating System	Annual Total System VOC Emission Rate (g VOC/ft ²)/yr	VOC Change (g VOC/ft ²)/yr
NF-2 (150 g/l)	0.4	IM-5 (250 g/l)	1.2	+0.8
NF-2 (150 g/l)	0.4	IM-4 (250 g/l)	1.8	+1.4
NF-2 (150 g/l)	0.4	RP-3 (400 g/l)	1.6	+1.2
NF-2 (150 g/l)	0.4	PSU – 2 (100 g/l)	2.0	+1.6
IM-5 (250 g/l)	1.2	RP-3 (350 g/l)	1.6	+0.4
IM-4 (250 g/l)	1.8	RP-3 (350 g/l)	1.6	-0.2

The final limit VOC change that could potentially result from three of the four substitution scenarios is presented in Table F-6. It should be noted that the SCAQMD did not analyze the IM system being replaced by a rust preventative coating system scenario since both of these coatings will have the same final VOC content limit.

TABLE F-6
VOC CHANGE ASSOCIATED WITH EACH
SUBSTITUTION SCENARIO (FINAL)

Final Coating System	Annual Total System VOC Emission Rate (g VOC/ft ²)/yr	Substitute Coating System	Annual Total System VOC Emission Rate (g VOC/ft ²)/yr	VOC Change (g VOC/ft ²)/yr
NF-2 (50 g/l)	0.2	IM-5 (100 g/l)	0.3	+0.1
NF-2 (50 g/l)	0.2	IM-4 (100 g/l)	0.4	+0.2
NF-2 (50 g/l)	0.2	RP-3 (100 g/l)	0.2	=
NF-2 (50 g/l)	0.2	PSU – 2 (100 g/l)	0.5	+0.3

IM = Industrial Maintenance

RP = Rust Preventive

NF = Nonflat

PSU = Primers, Sealers, and Undercoaters

As shown in Tables F-5 and F-6, if the four substitution scenarios were to occur, although unlikely due to rule prohibitions or performance desirability, there could be an increase in VOC emissions for some systems on an area covered per year basis. However, even if substitution were to occur, PAR 1113 would still achieve overall VOC emission reductions. As presented in Table F-7, the SCAQMD analyzed several variations of the four substitution scenarios discussed above to determine the net effect if substitution were to occur. As a starting point for the first three scenarios, the SCAQMD assumed that 10 percent of the nonflat (NF) coating usage in the interim and final years would be replaced by higher-VOC IM, rust preventative (RP), or primers, sealers, and undercoaters (PSU). The SCAQMD also analyzed a single substitution scenario where 10 percent of the IM coating usage in the interim and final years would be replaced by higher-VOC rust preventative coatings. For these single substitution scenarios, 10 percent substitution of nonflat and IM coatings represents an extremely conservative assumption considering that Rule 1113 has a greater than 99 percent compliance history.

Additionally, as a “worst-case” the SCAQMD analyzed two scenarios where a combination of higher-VOC coatings may be substituted for lower-VOC coatings. In one of the combination scenarios, the SCAQMD assumed that 30 percent of the nonflat coating usage in the interim and final years would be replaced by higher-VOC IM (10 percent), rust preventative (10 percent), and PSU coatings (10 percent). In the other combination scenario, the SCAQMD assumed that both the 30 percent nonflat and 10 percent IM substitution scenarios would occur at the same time. The results of the SCAQMD’s substitution analysis and the net effect to PAR 1113 overall VOC emission reductions are presented in Table F-7.

TABLE F-7
NET EFFECT OF POTENTIAL SUBSTITUTION

Substitution Scenarios	Interim Limit VOC Increase (tons/day)	Final Limit VOC Increase (tons/day)	Remaining VOC Reductions (tons/day)	Loss of VOC Reductions (tons/day)
10% of NF replaced by IM	1.26	0.33	19.47	2.33
10% of NF replaced by RP	3.36	0.47	17.22	4.58
10% of NF replaced by PSU	0.47	0.24	20.35	1.45
30% of NF replaced by IM/RP/PSU	7.32	1.69	10.56	11.24
10% of IM replaced by RP	0.43	0.04	20.78	1.02
30% NF and 10% IM	7.75	1.73	9.54	12.26

IM = Industrial Maintenance
RP = Rust Preventive
NF = Nonflat
PSU = Primers, Sealers, and Undercoaters

As shown in table F-7, even if substitution were to occur, PAR 1113 would still achieve overall VOC emission reductions.

As part of the environmental impacts analysis for PAR 1113, the SCAQMD conducted an exhaustive and comprehensive analysis of currently available low VOC coatings that forms the primary basis for PAR 1113. This analysis evaluated hundreds of coatings from approximately 13 manufacturers and considered the following coating characteristics: VOC content, percent solids by volume, coverage, adhesion, *durability*, pot life, shelf life, gloss, and drying time (see the tables in Appendix D and the related summary tables in Chapter 4 of the Final SEA). The analysis of resin manufacturers and coating formulators product data sheets provides the most accurate information available to the SCAQMD, which is based on qualitative and quantitative information (e.g., laboratory testing, actual product usage data, and field testing data). The available information from product data sheets indicates that for industrial maintenance floor coatings, low-VOC coatings tended to have a higher solids content, with a slightly, but not substantially lower average coverage area than conventional coatings. For most other coating categories affected by PAR 1113, the solids content and area of coverage for low-VOC coatings was, on average, comparable to conventional coatings although some categories (e.g., quick-dry primers, sealers, and undercoaters and stains) had slightly less coverage than conventional coatings in these categories.

The SCAQMD product data sheet analysis has since been corroborated by the NTS study specifically in the context of the interim VOC content limits. For the final VOC content limits the preliminary results of the NTS study indicate that the compliant coatings may have some application problems. As a result, the SCAQMD has given coating formulators seven years to reformulate their coatings to correct coating application problems. Furthermore, PAR 1113 contains a technology assessment provision whereby approximately one year prior to the interim and final compliance dates staff will perform a technology assessment of the availability of compliant coatings. If compliant coatings are unavailable by the completion of the technology assessment to meet the final limit, the SCAQMD will report back to the Governing Board as to the appropriateness of maintaining the existing VOC content limits.

Regarding the SCAQMD's review of resin manufacturer's and coating formulator's product data sheets and the preliminary results from the NTS study the commentator is referred to response to comment #2-1.

- 5-24 First and foremost, the SCAQMD's research and investigation reveals that compliant coatings are commercially available for use to meet the interim and final compliance VOC content limits. Therefore, it is not likely that substitution will occur. Second, clarifying language has been added to PAR 1113 that will make it clear that coatings should only be used for their intended purposes. This should further alleviate the potential for substitution. Lastly, even if there is some limited substitution due to

the implementation of PAR 1113, overall emission reductions will still be achieved. The commentator is referred to responses to comments #5-22 and #5-23.

5-25 Current substitution practices serves as an indication of whether substitution is a widely accepted practice that will likely continue in the future. More importantly, the SCAQMD has determined that substitution is unlikely to occur since compliant coatings will be available. Again, the SCAQMD has conducted an extensive analysis of currently available low VOC coatings as well as conventional coatings. This analysis evaluated hundreds of coatings. Based on this analysis, PAR 1113 is not expected to result in the substitution of low-VOC compliant coatings with higher-VOC coatings. Even if there is some limited substitution due to the implementation of PAR 1113, overall emission reductions will still be achieved. Therefore, adverse air quality impacts are not expected to result due to substitution associated with the implementation of PAR 1113. The commentator is referred to responses to comments #5-22, #5-23, and #5-24.

5-26 The commentator indicates that it is unclear whether the SCAQMD will review all environmental or just water impacts associated with future limits at the time the technology assessment is undertaken. The commentator advocates that a rigorous environmental assessment be undertaken during the technology assessment. The SCAQMD will conduct and complete one-year prior to the interim and final VOC content limits going into effect a technology assessment. The technology assessment will further confirm the availability and feasibility of compliant coatings. Since the language regarding technology assessments is included in PAR 1113, the SCAQMD intends to revise the VOC limits or extend the compliance dates depending on the results of the technology assessment. This continuing evaluation requirement assures that future limits will always be based on the current state of coating technology. Any revision of Rule 1113 will require another assessment of the environmental impacts, if any, of the proposed changes.

5-27 The commentator cites a portion of the Draft SEA on page 4-28 which states “A research report release in March 1997 demonstrated that latex (nonflat technology) paint is, in fact, not a hazardous waste product.” The commentator states that it agrees with this conclusion. However, the commentator then points out that authorities in California do not share this view and therefore this should be analyzed.

The SCAQMD appreciates the commentator’s concurrence on this issue. The SCAQMD believes that this information is still accurate concerning EPA’s view that latex paint based on current coating technology is not a hazardous waste.

Indeed, due to federal regulation of hazardous air pollutants, coating formulators have replaced many of the more hazardous solvents (e.g., EGBE) with less hazardous

solvents (e.g., texanol) in latex paint formulations. Therefore, today's latex-based paint formulations are expected to contain even less hazardous compounds.

The commentator's blanket assertion that California authorities would consider all latex paint a hazardous waste is not necessarily correct. Therefore, clarification on this issue is appropriate. It should be noted that the SCAQMD believes its understanding of how latex paint would be treated under federal law is accurate as presented in the Draft and Final SEA.

In the context of California law, discussions with the Department of Toxic Substances Control (DTSC) reveals that the DTSC would not consider latex paint as a hazardous waste in its virgin (e.g., pure) form. Furthermore, specifically relevant to PAR 1113, DTSC recommends cleaning equipment (e.g., brushes, rollers, and spray guns) used to apply latex paint with water in sinks or other facilities that flows directly to a wastewater treatment facility. Thus, wastewater generated from the cleaning of painting equipment applying latex paint may be properly disposed of into the sewer system.

However, the DTSC indicates that when coating formulators add various ingredients (e.g., pigments, binders, biocides, etc.) to virgin latex paint it becomes a hazardous waste. In this form, latex paint cannot be disposed of into sewers, unless it is a constituent of wastewater generated from equipment cleaning activities, or storm drains. The DTSC's position on this issue, for the most part, is based on a 1995 study conducted by California Polytechnic State University (Cal Poly). The Cal Poly study collected waste latex samples over a three-year period from Household Hazardous Waste (HHW) programs throughout California. The results of the study indicated that 94 percent of the samples tested failed the California's toxicity criteria and were classified as hazardous waste.

However, the validity of the 1995 Cal Poly study in the context of PAR 1113 is somewhat questionable. The study analyzed samples collected from HHW programs throughout California. According to DTSC information, a lot of the paint collected by HHW programs is on the average 10 years old and contains more hazardous constituents than today's paints. Due to federal regulation of hazardous air pollutants, coating formulators have replaced many of the more hazardous solvents (e.g., EGBE) with less hazardous solvents (e.g., texanol) in latex paint formulations. Therefore, today's latex-based paint formulations are not expected to contain the amount and type of hazardous compounds as coating formulations from 10 years ago.

Furthermore, the Cal Poly study did not analyze samples from equipment cleaning practices associated with the use of latex paint. The vast majority of water quality impacts potentially associated with PAR 1113 will be generated from equipment cleaning, where waste water will be disposed of properly down the sewer system.

Therefore current latex-based paint is disposed of improperly, there remains a valid question whether it would be truly considered a hazardous waste.

However, assuming that latex paint based on current technology is hazardous waste, this does not change the SCAQMD's overall conclusion that significant adverse water quality impacts are not anticipated from PAR 1113. As explained above, disposal practices are not expected to change with the implementation of PAR 1113. In other words, PAR 1113 will not cause an increase in the amount of coating currently disposed properly or improperly in sewer systems, storm drains, groundwater, or landfills. The SCAQMD's 1996 survey bears this out. Furthermore, non-hazardous solvents in low-VOC compliant coatings are replacing hazardous solvents in conventional coatings. Lastly, public outreach programs initiated by the commentator, the SCAQMD, the California Integrated Waste Management Board, and others will further reduce the improper disposal of coatings by paint contractors and the public.

- 5-28 The commentator asserts that the SCAQMD's analysis of the potential public services impacts associated with the use of reformulated acetone-based compliant coatings is inadequate because it relies on information obtained from interviews with local fire departments and not an actual analysis of acetone's volatility as compared to other solvents. The SCAQMD disagrees with the commentator's assertion for several reasons.

First, in the context of PAR 1113, it should be noted that the use of acetone in the reformulation of complaint coatings is relatively small. Acetone reformulation was considered to be the "worst-case" for the purposes of public services and hazards impacts associated with the implementation of PAR 1113. Thus, the SCAQMD's environmental impact analysis tends to overestimate the public services and hazards impacts from PAR 1113.

Second, the SCAQMD did not solely rely on information from local fire departments in analyzing the impacts associated with the use of reformulated acetone-based coatings. The SCAQMD conducted its on independent review of the flashpoint, vapor pressure, and flammable range, (e.g., the span between the lower explosive limit (LEL) and the upper explosive limit (UEL)) of acetone, currently used solvents, and replacement solvents (see Table 4-7 in Final SEA). This analysis revealed that acetone in comparison with currently used solvents has comparable volatility and flammability characteristics. Based on this analysis coupled with the information received from local fire departments, the SCAQMD concluded that PAR 1113 would not create significant adverse public services or hazards impacts.

Third, potential adverse impacts to fire departments can occur two ways: (1) more frequent responses; and (2) more frequent inspections. To determine whether PAR 1113 would significantly increase or alter fire department's level of service (i.e., increased responses to fires, explosions, or inspections), the SCAQMD sought their input. Feedback received from these authorities indicates

that, based upon their extensive professional experience as a result of years of regulating the use and storage of flammable materials, the use of acetone will pose no greater risks than the use of existing solvents such as: MEK, toluene, butyl acetate, etc., even though acetone is slightly more flammable. Thus, the commentator underestimates the importance of the input from fire departments in determining public services impacts from PAR 1113. Furthermore, the SCAQMD expects that anyone handling acetone-based coatings or any other flammable liquids will strictly adhere to the storing, dispensing, and handling requirements of these materials to lessen the danger of fire and explosion.

Accordingly, the SCAQMD does not anticipate that PAR 1113 will not result in significant adverse public service impacts (e.g., fire departments). The commentator is also referred to response to comment #2-4.

- 5-29 The commentator indicates that the opinions of the fire authorities, based exclusively on the UFC classifications, do not address the relative fire hazard of acetone, compared to other solvents, in *lacquers* being used by painters in the field. Furthermore, the commentator alleges that these opinions were not direct evidence of no significant fire hazards impacts from the use of acetone, and are a totally impermissible basis from which SCAQMD could reach an inference that was consistent with its prejudgment of the issue.

The SCAQMD assumes for the purposes of this comment that the commentator when referring to lacquers actually means the coating categories affected by PAR 1113. Lacquers were addressed in the 1996 amendments and are not involved with this rule-making effort. In any event, the SCAQMD adamantly disagrees with the commentator's assertions for several compelling reasons. First, the SCAQMD did not solely rely on information from local fire departments in analyzing the impacts associated with the use of reformulated acetone-based coatings. The SCAQMD conducted its own independent review of the flashpoint, vapor pressure, and flammable range, (e.g., the span between the lower explosive limit (LEL) and the upper explosive limit (UEL)) of acetone, currently used solvents, and replacement solvents (see Table 4-7 in Final SEA). This analysis revealed that acetone in comparison with currently used solvents has comparable volatility and flammability characteristics. Thus, it is a mischaracterization on the commentator's part to assert that the SCAQMD's does not address the relative fire hazard of acetone, compared to other solvents.

Second, the information received from fire authorities is highly relevant because it provides an understanding of how they would handle an accidental release or explosion associated with the use of acetone both during transport and in the field. Feedback received from these authorities indicates that, based upon their extensive professional experience as a result of years of regulating the use and storage of flammable materials, the use of acetone will pose no greater risks than the use of existing solvents such as: MEK, toluene, butyl acetate, etc., even though acetone is slightly more flammable. Furthermore, since PAR 1113 does not increase the probability that a transport accident will occur and the fire authorities would handle this type of incident the same compared with coatings formulated with conventional solvents as with acetone-based coatings, the hazard

impacts are not considered to be significant. Thus, the commentator under estimates the importance of the input from fire departments in determining hazards impacts from PAR 1113.

Third, it should be noted that the use of acetone in the reformulation of complaint coatings is relatively small. Sealers and floor coatings are the only affected coating categories where some amount of acetone reformulation is expected to occur. These categories constitute a very small group of coatings compared to the total coating categories impacted by PAR 1113. Acetone reformulation was considered to be the “worst-case” for the purposes of public services and hazards impacts associated with the implementation of PAR 1113. Thus, the SCAQMD’s environmental impact analysis tends to overestimate the public services and hazards impacts from PAR 1113.

Finally, the SCAQMD also analyzed the probability of increased accidents and their consequences associated with acetone reformulation. The SCAQMD found that many coatings are already formulated with acetone and, therefore, are already being transported in the district. Additionally, many conventional coatings are formulated with other solvents that are considered as flammable as acetone (e.g., t-butyl acetate, toluene, xylene, MEK, isopropanol, butyl acetate, and isobutyl alcohol). Based upon SCAQMD review of coating product information sheets, future compliant low VOC coatings are expected to be formulated with less or non-flammable materials such as texanol, propylene glycol, etc. Consequently, it is anticipated that future compliant coatings will follow the existing trend of moving away from hazardous coating formulations to less or non-hazardous formulations.

- 5-30 The commentator questions why 28 – 52 tons per day of solid waste impacts associated with PAR 1113 are not considered significant considering the fact that PAR 1113 will reduce VOC emissions by 20 tons per day. The commentator’s comparison of solid waste impacts to VOC emissions reductions is analogous to comparing apples to oranges (e.g., not a like comparison). The commentator is trying to insinuate that because solid waste impacts should be significant because they are in the numerical range as PAR 1113’s *significant air quality benefits*. This comparison misconstrues the SCAQMD’s solid waste impact analysis.

Thresholds of significance are different for various environmental media. The SCAQMD has developed different significance thresholds for air, water, solid/hazardous waste, transportation, etc. To determine if a project has significant solid waste impacts, the SCAQMD totals all solid waste generated from a project on a daily basis and then compares this total to the total permitted landfill capacity in the district. In the context of PAR 1113, the “worst-case” daily solid waste that could potentially be generated was estimated to be 28 tons in 2002 (interim year), 38 tons in 2006 (final year), and 52 tons in 2010. When comparing these totals to the total permitted landfill capacity in the district, which are 0.03 percent in 2002, 0.04 percent in 2006, and 0.05 percent in 2010, the potential impacts were deemed not significant. The commentator is also referred to responses to comments #4-17 and #4-18.

The commentator also asserts that since California authorities consider latex paint a hazardous waste this impact should be analyzed in the context of solid waste. The SCAQMD has analyzed the hazardous waste impacts associated with PAR 1113 and concluded that significant impacts are not expected to occur. The district has sufficient disposal capacity to handle any hazardous waste generated from PAR 1113.

However, specifically in the context of the disposal of latex paints, significant adverse hazardous waste impacts are not expected for several reasons. First, the solid waste analysis compensates for the potential disposal of latex paint. The solid waste impacts analysis represents a “worst-case” because it assumes that five and one percent (total six percent) of all affected coatings as well as ten percent of all IM and floor coatings could potentially be landfilled. Since this analysis overestimates the solid waste impacts associated with PAR 1113 because it is highly unlikely that this amount of coatings would all be disposed of on the same day, latex paint would fall within the range of this analysis.

Second, as a result of federal regulations, coating formulators have replaced many of the more hazardous solvents (e.g., EGBE) with less hazardous solvents (e.g., texanol). Therefore, latex paint based on current or future coating technology may not truly be a hazardous waste. It should be noted that latex paint that is dried out naturally may be disposed of properly into landfills and is not considered a hazardous waste per se.

Third, assuming that latex paint based on current technology is hazardous waste this does not change the SCAQMD’s overall conclusion that significant adverse hazardous waste impacts are not anticipated from PAR 1113. Disposal practices are not expected to change with the implementation of PAR 1113. In other words, PAR 1113 will not cause an increase in the amount of coatings currently disposed of properly or improperly in landfills. Additionally, the SCAQMD’s 1996 survey bears this out, public outreach programs initiated by the commentator, the SCAQMD, the California Integrated Waste Management Board, and others will further reduce the improper disposal of coatings by paint contractors and the public.

5-31 The commentator is referred to responses to comments #5-27, #5-28, #5-29, and #5-30.

5-32 The issue of whether or not to consider an alternative similar to the national AIM coating rule was addressed in response to comment #4-5 in Appendix C of the Draft SEA for PAR 1113. For example, staff analyzed the national AIM rule’s categories and definitions, as well as the VOC limits and concluded that this rule would require adding additional coating categories to the Rule 1113 Table of Standards with the default VOC content limit of 250 g/l limit. Adding additional coating categories with the default VOC content limit would only make the rule more confusing, instead of simplifying the rule. For example, the national AIM rule has separate categories for interior and exterior nonflats, which have the same VOC limit. This does not add any simplicity to the rule, just redundancy. The current Rule 1113 – Architectural Coatings currently contains an exemption for coatings sold in containers having a capacity of one quart or less (Rule 1113(g)(1)(A)). To address

industry comments regarding adding additional coating categories, staff has created several new coating categories. However, the current and future proposed VOC limits are different than those found in the national AIM rule, which would not generate VOC emission reductions to the same level as PAR 1113. Staff has, however, adopted the national AIM rule definitions and provisions for some categories, where appropriate.

5-33 The SCAQMD acknowledges and concurs with the commentator that a reactivity-based alternative is not feasible at this time. With regard to a reactivity-based rule, the science regarding VOC reactivities is currently not well developed, the SCAQMD acknowledges that when the science becomes reasonably well developed a reactivity-based regulatory approach may provide an alternative or additional means to assist in making progress towards attaining and maintaining the state and national ambient air quality standards for ozone. To address potential future advances in knowledge about reactivity, the SCAQMD has added language to PAR 1113 provision (f)(3) which will address the commentator's concern. See also responses to comments #3-4 and #4-1.

5-34 Fate and availability studies are currently under evaluation by the California Air Resources Board. The SCAQMD will provide assistance as needed and appropriate. The results of these and other relevant studies will be considered during future SCAQMD rulemaking. As of today, the science is not adequate to support rulemaking based on these claims.

5-35 An increments of progress alternative appears to be similar to a performance-based approach. The concept for a performance-based rule provision or project alternative was originally raised by members of the Industry Working Group (see "Industry Working Group Meetings" discussion in Chapter 2). Rather than establish lower VOC content requirements for specified categories of coatings, this alternative would establish emission standards based on emissions per area covered or coating durability.

This alternative was rejected as infeasible because the Industry Working Group could not reach consensus on how to establish performance standards as this depends on the type of application or coating technology. For example, alkyd-based coating formulations currently have a life cycle of five to seven years, while urethane-based coating formulations may have a life cycle of approximately 20 years. Agreement could not be reached concerning the appropriate standard for each type of coating technology. As a result, this alternative has been dropped from further consideration. However, an average provision has been expanded to include additional AIM coatings.

5-36 The definition of floor coatings has been changed as requested.

5-37 Thank you for your comment.

5-38 The SCAQMD has found a variety of products that meet the proposed rule limits for the category in question. Therefore, staff does not support a separate category for industrial maintenance primers, sealers, and undercoaters.

- 5-39 The commentator is referred to response to comment #5-38.
- 5-40 Your comment is noted.
- 5-41 The rust preventative definition has been revised as suggested.
- 5-42 A new definition for waterproofing concrete/masonry sealers (PAR 1113 §(b)(53) has been added to the proposed amendments as suggested.
- 5-43 The interim compliance date has been extended to July 1, 2002, and the final compliance date has been extended to July 1, 2006. Based on the number of AIM coatings that are currently available that meet the both the 2002 and 2006 compliance dates, and the fact that performance characteristics for many of the future compliant coatings (especially coatings that comply with the interim VOC content limits) are equivalent, or in some cases superior to conventional high VOC coatings, both compliance dates would appear to allow sufficient time to reformulated coatings using existing resin technologies or develop new formulations.
- Staff has considered the comments provided by end-users, coating manufacturers, and resin suppliers pertaining to testing and commercialization of technology. In response, the final proposal allows for an additional 18 months for the implementation of the final VOC limit. This revision results in a total of seven years for necessary laboratory and field testing. The commentator is also referred to response to comment #2-1.
- 5-44 Compliance deadlines are a necessary component of the proposed amendments to provide incentives for the coatings industry to perform the necessary research and development of compliant coatings. Without compliance dates there would be little incentive to develop compliant coatings and any technology assessment performed would likely result in a more limited range of compliant products than would otherwise be the case. The commentator is referred to response to comment #5-43.
- 5-45 For consideration of a performance-based approach the commentator is referred to the response to comment #5-35.
- 5-46 The SCAQMD has modified the proposed amendments and removed the labeling requirement for industrial maintenance coatings in order to avoid duplication of the National AIM rule. However, the staff asserts that labeling of rust-preventative coatings will mitigate any potential misuse of those coatings, and enhance the enforceability.
- 5-47 In response to comments, as well as additional information collected to mitigate the concerns to the general public pertaining to use of two-component polyurethane coatings, the AQMD has removed this provision from the proposed rule. For a more detailed explanation, the commentator is referred to the response to comment #1-2.

COMMENT LETTER #6

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Re: Draft SEA for Proposed Rule 1113 Amendments

Dear Mr. Stroud:

We are legal counsel for EL RAP, a leading California paint industry trade association, as well as for 18 paint manufacturers, three painting contractors, and seven retail paint dealers. We write to comment upon the Draft Subsequent Environmental Assessment, dated March 19, 1999, relating to the amendments to SCAQMD's Rule 1113 staff proposes for adoption at the May board meeting.

The proposed amendments would depart from prior practice and impose extremely low limits in 2003, and even more draconian limits in 2005, on various architectural coatings, including non-flats, industrial maintenance (high performance) coatings, quick-dry enamels, and primers, sealers, and undercoaters. These amendments would ban approximately 99% of all such coatings now bought, sold, and used in SCAQMD, and force manufacturers to make, dealers to sell, and contractors and do-it-yourselfers to use, those special-purpose coatings that they now freely choose to make, sell, and use only in exceptional cases (low-odor, graffiti abatement, apartment re-paint). These truly unprecedented proposals, if adopted, would radically transform the coatings industry and market in SCAQMD.

Notwithstanding the extreme nature of your proposals, the Draft SEA blithely concludes (at 1-1) that "the proposed

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Mr. Darren W. Stroud
 April 21, 1999
 Page 2

6-2 amendments will not generate any significant adverse environmental impacts." This conclusion is not only incorrect, but also incredible. That is because the Draft SEA totally fails to address the massive adverse environmental impacts a ban of 99% of any product line – certainly these product lines – is bound to entail.

6-3 Certain such impacts will arise even if, as SCAQMD conveniently assumes, the special-purpose paints so few people now elect to use will somehow prove to become perfect substitutes for those paints virtually all users now freely choose. Surely the remote possibility that this rosy scenario will occur is eclipsed by two much more likely scenarios. Initially, we are likely to encounter a market in which many users, although disgruntled, will attempt to use the remaining low-organic compound substitutes. But later, after wide-spread product failures, we will find ourselves in a situation in which users have become so dissatisfied that they altogether stop using paints to coat substrates or switch to non-paint substitute products to protect substrates. In each of these two likely scenarios, severe adverse environmental impacts arise.

6-4 The adverse environmental impacts ignored in the Draft SEA include (1) aesthetic impacts, (2) health and safety impacts, (3) increased reactivity impacts, (4) increased volatility impacts, (5) increased emission impacts, and (6) impacts resulting from the increased manufacture and installation of non-paint substitutes.

6-5 We regret that the staff did not give the public a 45-day comment period, as promised during the December 9, 1998 public consultation meeting. The truncated 30-day period has proved prejudicial to our clients. Accordingly, we reserve the right to submit additional comments in the next 15 days and to receive written responses thereto.

I. PRODUCTS ON THE MARKET TODAY

6-6 The non-flat product category subject to further proposed regulation is very broad and includes various sub-categories. Approximately 1,000,000 gallons of high-gloss non-flats are sold in the SCAQMD each year. Roughly 250,000 gallons thereof are solvent-borne and made with alkyd resins. About 750,000 gallons of high-gloss non-flats are water-borne and use acrylic resins.

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Mr. Darren W. Stroud
 April 21, 1999
 Page 3

Special purpose (low-organic compound) non-flats do not successfully achieve a high gloss.

Approximately 7,000,000 gallons of semi-gloss non-flat coatings are sold in the SCAQMD each year. Substantially all of these are water-borne. Roughly 3,450,000 such gallons are made with acrylic resins and used for interior or exterior applications. About 3,450,000 gallons are made with latex or vinyl resins and used primarily for interior applications. Only approximately 100,000 gallons of semi-gloss non-flats are made each year with low-organic compounds, and they are used only for apartment re-paint, low-odor, or graffiti abatement situations.

6-6
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Approximately 2,000,000 gallons of satin or eggshell non-flats are sold in SCAQMD each year. Virtually all these coatings are water-borne. About 450,000 such gallons are made with acrylic resins and used on both interior and exterior surfaces. About 1,450,000 gallons are made with traditional latex or vinyl resins and used primarily for interior applications. Only about 100,000 gallons of satin or eggshell non-flats contain low-organic compound technology and are used for apartment, low-odor, and graffiti purposes.

Approximately 2,000,000 gallons of industrial maintenance coatings are sold in SCAQMD each year. Approximately 860,000 gallons of quick dry primers, sealers and undercoaters are sold in SCAQMD each year. Approximately 2,800,000 gallons of primers, sealers, and undercoaters are sold in SCAQMD each year. Approximately 400,000 gallons of quick dry enamels are sold in SCAQMD each year.

II. 2002 BANS

The proposed 2002 non-flat limit of 150 g/L, to be effective at the start of 2002, would effectively outlaw substantially all high-gloss non-flats in the SCAQMD, whether solvent-borne or water-borne, interior or exterior.

6-7

The 150 g/L limit would also ban nearly half of all semi-gloss non-flats, including substantially all made with acrylic resins and most such products used for exterior applications.

The 150 g/L limit would further outlaw about a quarter of all eggshell and satin non-flats, again including substantially all acrylics and most exteriors.

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Mr. Darren W. Stroud
 April 21, 1999
 Page 4

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The 250 g/L limit on industrial maintenance coatings would ban approximately 70% of the volume of coatings sold in SCAQMD. The 200 g/L limit on primers sealers and undercoaters would ban approximately one-third of the volume of those coatings sold in SCAQMD. The 200 g/L limit on quick dry primers, sealers and undercoaters would ban approximately 60% of the volume of those coatings sold in SCAQMD.

The 150 g/L limit on quick dry enamels would ban all such coatings sold in SCAQMD.

III. SIGNIFICANT ENVIRONMENTAL EFFECTS OF 2002 BANS

6-8

To the extent the Draft SEA does purport to assess any environmental impacts, it does so in omnibus fashion, without reference to limit or coating. Such collective assessments are proper only if and when the known similarities of members of a class are present throughout the class. *Dithiocarbamate Task Force v. EPA*, 98 F.3d 1394, 1399, 1405 (D.C. Cir. 1996). Accordingly, the Draft SEA must assess the effect of the 2002 limit, itself, on each affected coating. This type of limit-specific and category-specific analysis must be carried out for all impacts. In particular, it must be carried out for the following five impacts which are either completely omitted, or essentially ignored, in the Draft SEA.

A. AESTHETIC IMPACTS

6-9

CEQA provides that it is the policy of California to take all actions necessary to provide its people with "enjoyment of aesthetic, . . . scenic, and historic environmental qualities." Pub. Res. Code § 21001(b). The environment must be pleasing to the senses and intellect of man, and regulations must provide a decent home and satisfying living environment for every Californian. *Id.* at §§ 21000(b), (g); 21001(d). Under the CEQA Guidelines, a project is deemed to have a significant effect on the environment if it will have a "substantial, demonstrable negative aesthetic effect." 14 Cal. Code Regs., App. G(b).

In *Quail Botanical Gardens Foundation, Inc. v. City of Encinitas*, 29 Cal.App.4th 1597, 1603-07 (1994) the court set aside the certification of a negative declaration based upon the city's failure to analyze the aesthetic impacts (impaired ocean views) of the project (a residential subdivision). The court found substantial evidence supporting a fair argument of the

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Mr. Darren W. Stroud
 April 21, 1999
 Page 5

possibility of such impact. It ruled that Appendix G(b) of the Guidelines established "a rebuttable presumption" that aesthetic impacts are significant. *Id.* at 1604. The court found it "self-evident" that the project would have negative effects on "beauty." *Id.* at 1604, 1606. Any assertions to the contrary by the city were not adequate to support a decision to dispense with environmental analysis of the aesthetic impacts. *Id.* at 1607.

EPA has recently analyzed the protective and aesthetic properties of paint, including those at risk here. These are the two basic functions of paint – both of which enhance the environment. In the last two decades the hundreds of thousands of men and women who make, sell, and apply paint for a living and the hundreds of millions who apply it to their own houses have accomplished perhaps as much as any group in America to protect our environment. The substitution limits being proposed would have severe adverse impacts. The EPA criteria document correctly concludes that paint occupies the highest position on the aesthetic benefit scale. The EPA criteria document also correctly notes that paint occupies the highest position on the functional benefit scale. In numerous other respects, as well, the threatened coatings provide important health and safety benefits: (a) they inhibit formation of mold, fungi, and mildew on interior surfaces and they promote the removal of such organisms and the disinfecting of such surfaces; (b) they are used to color code process piping for safe maintenance and repair; (c) they help resist corrosion of bridges, balconies, and various other metal structures which support human activity. Substitution limits severely impair these protective and aesthetic functions of paint.

Here, SCAQMD's environmental checklist stated that "no significant impacts adversely affecting existing visual resources such as scenic views or vistas, etc. are anticipated to occur." The Draft SEA repeats (at 4-63) this same conclusion and, responding to comments, goes on to invoke the rosy scenario:

"... [T]he rule contains a compliance schedule sufficient for coating formulators to produce acceptable quality low-VOC products. . . . The current compliance schedule should ensure that formulators have sufficient time to reformulate products that exhibit the desired performance characteristics."

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Mr. Darren W. Stroud
 April 21, 1999
 Page 6

6-9
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Substantial expert and lay testimony has been, and will be, presented – and, indeed, it is self-evident – that outlawing substantially all high-gloss non-flats, exterior non-flats, and interior acrylic semi-gloss, satin, and eggshell non-flats will have significant adverse aesthetic impacts.

Substantial expert testimony has been, and will be, presented that formulators will not be able to reformulate, test, and market high-gloss, exterior, or interior acrylic non-flats and industrial maintenance coatings by January 1, 2002. This is so for two reasons. First, when proven resin technology exists manufacturers still require three to five years to develop products with the new resins. Second, resin technology does not currently exist, nor can its existence reasonably be predicted, to provide the required performance characteristics in the coatings subject to the proposed amendments. At the December 9, 1998 public workshop a representative of one of the world's leading resin manufacturers said the following about the current and reasonably foreseeable coatings technology:

"Over those years, many advancements have been made, and as a result, water based polymers now provide excellent performance for a number of coatings applications. For example, in the architectural coatings area, these polymers have enabled coatings manufacturers to significantly reduce the level of VOCs in their products aimed at several coating segments.

It's our opinion, however, there are a number of application areas which require a high level of coatings performance. A number of these would be primers and corrosion resistant coatings, high performance semi-gloss paints, and high performance or even average performance high-gloss latex enamels.

Current state of technology water-based coatings performance is still limited by the current VOCs. Technology still does not offer the viable alternatives needed to meet the aggressive VOC limits in the proposed amendments to Rule 1113 within the time frame specified.

While we continue with research to develop higher performance products at as low a VOC as possible, we cannot predict the results of our research with any

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Mr. Darren W. Stroud
 April 21, 1999
 Page 7

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certainty. We encourage the setting of a more reasonable timeline for the coatings manufacturers and their suppliers to develop the needed technology. We also encourage periodic reassessments of what is technically feasible."

B. HEALTH AND SAFETY IMPACTS

In CEQA the Legislature declared its intent that governmental agencies identify critical thresholds for the "health and safety" of Californians and take necessary actions to prevent such thresholds being reached. Pub. Res. Code § 21000(d).

The Draft SEA contains an extensive discussion about the health impacts from certain constituents of coatings. The Draft SEA is silent, however, regarding the health and safety impacts the replacement coatings themselves will cause due to their vastly inferior performance characteristics.

6-11

At the December 9, 1998 public workshop a representative of the California Department of Transportation stated that industrial maintenance coatings used for steel structures containing 250 g/L VOC had been "pretty successful" and provide "reasonably good" performance but that Cal Trans "have got some real concerns with the availability of good performing coatings that will meet" the proposed amendments. These concerns included the inability of required replacement coatings to adequately protect structural steel bridges. Similarly, a representative of the Metropolitan Water District stated that the amendments would reduce his approved coatings from 100 to 4, and that the remaining coatings would not be suitable for required industrial use. He further stated that failure of the inadequate substitutes "could result in possible harm to the public". Additionally, a representative from PDCA, which represents 250 painting contractors in SCAQMD, stated that failure of unproven replacement coatings can cause structural, equipment and environmental damage.

C. INCREASED REACTIVITY

6-12

SCAQMD has often focused on the relative reactivity of various organic compounds. Old Rule 66 was the classic case. As another example, SCAQMD adopted Rule 1170 to compel fuel dispensing stations to install methanol-compatible underground

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Mr. Darren W. Stroud
 April 21, 1999
 Page 8

storage tanks, because methanol is less reactive than gasoline. In its June 10, 1988 report on proposed architectural coatings emission charges, SCAQMD said this: ". . . [D]ifferent solvents have different degrees of reactivity, which affect the formation of photochemical smog differently. To encourage coating manufacturers to shun solvents with high reactivity, coatings with low reactivity solvents should be charged less . . ."

ARB has confirmed that the majority scientific view supports the use of reactivity scaling in clean air regulation. 47-Z Cal.Reg.Not.Reg. 92 (Nov. 4, 1992). ARB there said: "The concept that different hydrocarbons react at different rates is supported by a large body of theoretical, laboratory and observational data . . ." *Id.* at 1535. ARB undoubtedly had in mind work such as that currently being conducted by Professors Carter and Weiner at U.C. Riverside and Professor Chameides at Georgia Tech.

Section 183(e)(2)(A)(i) of the CAA provides that EPA shall study VOC emissions from products in order to "determine their potential to contribute to ozone." Section 183(e)(2)(B)(iii) provides that in both listing and regulating EPA shall take into consideration those products which emit "highly reactive" VOCs into the air. Section 183(e)(3)(4) provides that EPA shall list products "on a reactivity-adjusted basis."

6-12
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The National Research Council study performed under the CAA states that ". . . VOCs vary widely in the speed with which they react in the troposphere and in the extent to which they promote . . . ozone formation. . . ." *Rethinking The Ozone Problem* at 153.

Finally, the court decisions in California have confirmed the need to examine relative reactivity of reformulated and substitution coatings before regulating. The judgment against Ventura County APCD, for example, invalidated its amendments for its failure to analyze the significant effect on air quality due to "increased reactivity" of the VOCs in the substituted products. The judgment against Bay Area AQMD did the same.

For these reasons, South Coast AQMD cannot ignore the relative reactivities of the mineral spirits in solvent-borne coatings and the glycol compounds in water-borne coatings.

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Mr. Darren W. Stroud
 April 21, 1999
 Page 9

6-13 Organic compounds exhibit wide variations in reactivity with respect to ozone formation. NRC, *Rethinking the Ozone Problem* at 153, 154, 160, 161. The relative reactivities of individual compounds can differ by more than an order of magnitude from one compound to another. Russell et al., "Urban Ozone Control and Atmospheric Reactivity of Organic Gases," *Science* (1995) at 491. Ignoring reactivity may lead to measures that are ineffective or counter-productive. *Id.* at 491, 495. Reactivity-based regulatory systems will reduce more ozone at all cost levels than mass-based systems. McBride et al., "Cost-Benefit and Uncertainty Issues in Using Organic Reactivity to Regulate Urban Ozone", *Environmental Science & Technology* (vol. 31, no. 5 1997) at 241. On one scale, the compounds in solvent-borne coatings, mineral spirits, are roughly half as reactive as those emitted by motor vehicles. Harley et al., "Respeciation of Organic Gas Emissions," *Environ. Sci. Technol.* (1992) 2395 at 2401, Fig. 1. On the other hand, the glycol compounds in water-borne architectural coatings have been described as low-volatility species. *Id.* at 2400. Dr. William P.L. Carter recently concluded that current reactivity scales may be overestimating the ozone impacts of mineral spirits and similar petroleum-based mixtures by a factor of 2 or more. "Investigation of the Atmospheric Ozone Formation Potentials of Selected Mineral Spirits" (July 25, 1997).

These results are not surprising considering the physical properties of typical mineral spirits, which are so-called long chain alkanes of C₈ or greater.

6-14 The Draft SEA contains (at 4-17 to 4-21 and 5-3 to 5-4) purported discussions of the reactivity issue. But it fails to assess the reactivity effects of any 2002 limit on any coating category, as required. In particular, the 2002 limits will outlaw all solvent-borne non-flats, industrial maintenance coatings, and quick-dry enamels. Therefore, makers, sellers, and users will be forced to manufacture, sell, and apply water-borne substitutes. The best scientific evidence extant to date and, based thereon, the widely-held hypotheses of the leading experts, strongly suggests, with a high degree of probability, that the glycol compounds prevalent in the substitute water-borne products are far more reactive than the mineral spirit compounds prevalent in the outlawed solvent-borne products.

The Draft SEA ignores this data. It states (at 4-20) that it is "not . . . prudent" to act on such data because it is

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Mr. Darren W. Stroud
 April 21, 1999
 Page 10

6-14
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not yet complete. However, the Draft SEA does not cite any authority for the proposition that glycol compounds are not significantly more reactive than mineral spirits. The Draft SEA simply assumes the worst of the three possible scenarios. Rather than postponing regulation until it concludes that sufficient data exist to support the most likely hypothesis, or acting according to that hypothesis, SCAQMD persists in regulating according to a theory which has no scientific proponents.

6-15

SCAQMD claims (at 4-20) that it is "speculative" to conclude that there will be increased reactivity. This claim is incorrect and, therefore, does not excuse SCAQMD's failure to analyze this impact. The case of *Alliance of Small Emitters/Metals Industry v. SCAQMD*, 60 Cal.App.4th 55, 65-68 (1997), in which a claim of excuse based on speculation was upheld, is clearly distinguishable. There, as an excuse for failing to analyze certain future environmental impacts, SCAQMD contended that the technologies that would be used to comply with the out-year rules were "unknown" at promulgation time. *Id.* at 65, 66. The court accepted this contention, holding that "any efforts to assess the impact of unknown and unknowable technology would be pure speculation." *Id.* at 67.

Here, by contrast, the special-purpose products which will be used to substitute for the products banned by the 2002 limits are neither "unknown" nor "unknowable." Indeed, they have existed and have been actively marketed – but with extremely limited success – for years. There is no reason why SCAQMD could not have assessed the relative reactivities of the products to be banned and those to be substituted long before now, or waited to regulate on the basis of such an assessment, if it had only wanted to do so. Instead, SCAQMD prefers to regulate prematurely and blind.

"[A]n agency must use its best efforts to find out . . . all that it reasonably can." 14 Cal. Code Regs. § 15144. It is required to conduct a "thorough investigation" of each impact. *Id.* At § 15145. An agency has "an obligation imposed by CEQA to collect information" regarding impacts and it violates that duty when it approves a project where it lacks "necessary information." *Sierra Club v. State Board of Forestry*, 7 C.4th 1215, 1220, 1235-37 (1994).

6-16

Projects are usually operative in future years, and an agency must address the significant effects of future operative

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Mr. Darren W. Stroud
 April 21, 1999
 Page 11

rules. "Drafting an EIR . . . necessarily involves some degree of forecasting . . . [A]n agency must use its best efforts to . . . disclose all that it reasonably can." 14 Cal. Code Regs. at § 15144. In *Laurel Heights Improvement Assn. v. Regents of University of California*, 47 C.3d 376 (1988), the court made clear that, while the extent of the precision of the analysis may be reduced, the fact that the effects of a project will occur in the future does not create an exemption:

" . . . UCSF should have discussed in the EIR at least the general effects of the reasonably foreseeable future uses, . . . the environmental effects of those uses, and the currently anticipated measures for mitigating those effects.

" . . . A detailed environmental analysis of every precise use that may conceivably occur is not necessary at this stage. [Citation] The fact that precision may not be possible, however, does not mean that no analysis is required. [Quoting Guideline Section 15144] With the vast intellectual resources at its disposal, the University can surely make informed judgments as to probable future activities at the Laurel Heights facility.

" . . . We find no authority that exempts an agency from complying with the law, environmental or otherwise, merely because the agency's task may be difficult . . ." *Id.* at 398-99.

" . . . [T]he difficulty of assessing future impacts . . . does not excuse preparation of an EIR; such difficulty only reduces the level of specificity required . . ." *Carmel-By-The-Sea v. Board of Supervisors*, 183 Cal.App.3d 225, 250 (1986); *Antioch v. City Council*, 187 Cal.App.3d 1325, 1336-37 (1986); *Rio Vista Farm Bureau Center v. Solano County*, 5 Cal.App.4th 351, 374 (1992).

An agency's "bare conclusions" do not satisfy CEQA's requirement to create an informational document which will inform public decision-makers and the general public of the environmental effects of projects they propose to approve. *Santiago County Water District v. County of Orange*, 118 Cal.App.3d 818, 831 (1981); *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus*, 27 Cal.App.4th 713, 727 (1994). *Citizens to Preserve the Ojai v. County of Ventura*, 176 Cal.App.3d 421, 429 (1985); CEQA Guidelines § 15088(b)

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6-16
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Mr. Darren W. Stroud
 April 21, 1999
 Page 12

("Conclusory statements unsupported by actual information will not suffice").

6-16
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A study conducted after approval of a project will inevitably have a diminished influence on decision making: *Sundstrom v. County of Mendocino*, 202 Cal.App.3d 296, 307 (1988). CEQA is intended to assure that the environmental consequences of a government decision on whether to approve a project will be considered before, not after, that decision is made. *Stanislaus Natural Heritage Project v. County of Stanislaus*, 48 Cal.App.4th 182, 196 (1996).

D. INCREASED VOLATILITY

Because of their physical and chemical properties, including low rates of evaporation, the glycol compounds found in water-borne coatings do not disperse widely enough nor remain in the atmosphere long enough to participate in ozone formation to any significant extent. Typically, these compounds may be absorbed by building surfaces, pavement, soil, or vegetation; or they may be subtracted from the air through interaction with water vapor, dust, or other particulate matter.

6-17

A useful surrogate for atmospheric availability is volatility, measured as vapor pressure. Consumer product regulations in several states, including those of the California Air Resources Board, specify a VOC vapor pressure threshold of 0.1 mm Hg @ 20° C. Compounds with vapor pressures at or below that threshold are exempt from regulation. U.S. EPA recently included the same threshold in its national rule for consumer products, noting in a report to Congress (at 5-5) that such "products often contain ingredients which are of extremely low volatility (i.e., some ingredients evaporate at such a low rate that they do not enter the air to any appreciable degree)."

At the limits imposed in 2002 substitution of solvent-borne coatings for water-borne coatings will result in increased volatility. For example, a solvent-borne 350 g/L rust preventative coating can be substituted for a water-borne industrial maintenance coating at 250 g/L.

The Draft SEA asserts (at 4-21, 5-2) that organic compounds in architectural coatings are intended to and do "evaporate" in the air. This general statement is true as to the mineral spirit compounds in solvent-borne coatings. But is it

D:\data\2526 (ELRAP)\2526-04\Cor\Stroud.01

Mr. Darren W. Stroud
 April 21, 1999
 Page 13

6-17
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true as to those glycol compounds in water-borne coatings? That is the issue the Draft SEA is bound, but fails, to address.

E. INCREASED EMISSIONS

6-18

The substitution of higher VOC, and thus better performing, coatings for the inferior products the proposed amendments will require results in increased emissions. For example industrial maintenance coatings at 250 g/L and rust preventative coatings at 350 g/L may be substituted for banned coatings in other categories.

6-19

SCAQMD concludes (at 4-16 to 4-17) that there are five reasons why "widespread substitution will not occur" and that there will be "no significant adverse air quality impacts" therefrom. Each of the five reasons is so obviously false that this example of the rosy scenario cannot stand.

6-20

First, the Draft SEA cites its review of certain selected "product data sheets" (collated at Appendix D and Table 4-2) and, based on that review, concludes that the substitutes have performance characteristics "comparable" to the high-performance categories. However, the District has commissioned National Technical Systems to conduct a side-by-side comparison of zero, low and high-VOC coatings to analyze their application and durability characteristics. This study was designed to develop objective data in contrast to the subjective marketing claims contained in manufacturers' promotional literature. Although numerous staff members have stated that the NTS study is a critical component of the current rule making and potentially provides much of the foundation therefor, the Draft SEA inexplicably states (at C-3-1, C-4-1) that "the proposed amendments do not rely on this study for the development of PAR". Thus, the Draft SEA chooses to rely on anecdotal accounts rather than the empirical results from the NTS study. In addition to improperly ignoring the NTS results, it has come to our attention that staff has unilaterally deleted critical portions of NTS's original scope of work.

6-21

Second, the Draft SEA claims that Rule 1113 "prohibits the application" of the high-performance coatings in certain situations. This is false. The rule would mandate that manufacturers place certain labels on cans. It would mandate certain painting practices. But it does not "prohibit" the "application" of any coating in any circumstance.

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Mr. Darren W. Stroud
 April 21, 1999
 Page 14

6-22 Third, the Draft SEA argues that certain uses of certain high-performance substitute are "unlikely." This does not cover the cases in question.

6-23 Fourth, the Draft SEA notes Rule 1113(c)(3). But this, too, governs how manufacturers make and market products. It has no bearing at all on what products users buy and apply.

6-24 Fifth, the Draft SEA argues that there is now "greater than 99 percent compliance" with Rule 1113. This is true because the rule, as now in effect, allows most high-quality products to be made and sold. But when e.g. high-gloss, exterior, and industrial maintenance products are banned, the situation will be unprecedented. Past compliance rates cannot realistically be expected to apply to the new situation.

IV. 2005 BANS

The 2005 non-flat limit of 50 g/L would effectively outlaw substantially all semi-gloss, satin, and eggshell latex and vinyl non-flats used primarily for interior applications.

6-25 The 100 g/L limit for industrial maintenance coatings will outlaw about 150,000 gallons of water-borne acrylic coatings per year. This will leave only the two-component catalyzed products.

The 100 g/L limit for primers, sealers, and undercoaters will ban roughly 1,000,000 gallons of water-borne products per year.

The 100 g/L limit for quick-dry primers, sealers, and undercoaters will outlaw approximately 35,000 gallons of water-borne products per year.

V. SIGNIFICANT ENVIRONMENTAL EFFECTS OF 2005 BANS

6-26 Again, the Draft SEA fails to analyze the impacts of any one of the 2005 limits as to any one of the coating categories. Instead, it assesses certain impacts, but on an omnibus basis. Furthermore, it omits any analyses of the following impacts:

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Mr. Darren W. Stroud
 April 21, 1999
 Page 15

A. AESTHETIC IMPACTS

6-27 When the 2005 limits go into effect, the market will undergo revolutionary disruption. Consumers will be left with three choices. First, they can try to use low-organic compound non-flats now used for special purposes (graffiti, odor, apartments) for general purposes. Second, they can use two-component catalyzed systems in the industrial maintenance area. Third, they can leave substrates unpainted or use non-paint protective products. The adverse aesthetic impacts of all these scenarios are severe, but have not been analyzed in the Draft SEA.

6-28 Even as to industrial maintenance coatings, many users will not apply two-component systems, nor hire professionals to apply them, because of the complexity and expense thereof.

6-29 The assertion in the Draft SEA (at 4-63) that manufacturers will produce "acceptable quality low-VOC products" and "products that exhibit the desired performance characteristics" by 2005 is wholly unsupported by the record and, therefore, mere wishful thinking. The Draft SEA must analyze the possible – indeed, the highly likely – scenario that users will apply low-sheen interior odor, graffiti, and apartment paints to all kitchens, bathrooms, windows, balconies and railings.

6-30 The wide spread use of these low-quality water-borne products will have substantial adverse aesthetic impacts. Such impacts include decreased durability and hide capacity as well as an inability to produce sheen.

6-31 An alternative scenario will be the failure to apply paints to substrates. All one has to do is go to any impoverished community or residence and judge the aesthetics of unpainted structures.

6-32 A final likely scenario is where property owners switch from paint to other types of substrate protection. Such a switch will detract from a diverse environment.

B. HEALTH & SAFETY

6-33 If all substrates were painted with the low-quality, coatings contemplated by the proposed amendments, the health and safety benefits provided by paints today would be severely degraded. The concerns voiced by representatives of MWD, Cal

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Mr. Darren W. Stroud
 April 21, 1999
 Page 16

6-33 Trans and PDCA discussed above would only be exacerbated by the
 2005 limits.

cont.

If all substrates were left unpainted, all such benefits would be eliminated.

6-34 Alternatively, if all substrates were to be protected by non-paint products, certain health and safety benefits would be impaired.

C. MISCELLANEOUS IMPACTS

6-35 If other surface finishing materials (e.g., stucco, vinyl, aluminum, tile, plastic, paneling, or wall covering) replace paint, society will bear various other ecological burdens associated therewith: Other forms of pollution will increase, and material and energy resources will be needlessly wasted.

For example, wall coverings are applied with adhesives containing organic compounds. Many such materials are manufactured in processes emitting NO_x.

VI. ALTERNATIVES

6-36 The Draft SEA (at 5-1 to 5-5) improperly dismisses as "infeasible" alternative approaches which are, in fact, feasible.

6-37 SCAQMD asserts (at 5-2) that exemptions for low volatility compounds (glycols) "is not appropriate for paints." This makes no sense, as EPA and ARB have exempted products from regulation containing the very same compounds.

6-38 SCAQMD also rejects (at 5-3 to 5-4) reactivity-based controls. This is clearly feasible. Congress mandates that EPA regulate consumer products on a reactivity-adjusted basis. The Draft SEA concedes that ARB "required speciation profiles on all coatings included in the 1998 CARB Survey," and that the "results . . . are still under evaluation." It is feasible - in fact, required - to use those results.

6-39 The Draft SEA also states (at 5-5) that seasonal regulation is "infeasible due to . . . lack of enforceability." SCAQMD proposes to regulate painting practices in Rule 1113(d)(7). If it is feasible to enforce such mandates, it is feasible to enforce seasonal prohibitions.

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Mr. Darren W. Stroud
 April 21, 1999
 Page 17

6-40

The Draft SEA ignores the most obvious alternative of mandating limits which require reformulation, but not substitution, such as those in EPA's regulation. This would have the supplemental benefits of avoiding preemption and promoting federal-state consistency. The failure to include and analyze such alternatives is fatal under CEQA.

Conclusion

6-41

The staff "must specifically respond" to each of the above comments about the serious failures of the Draft SEA. *Dunn-Edwards Corp. v. SCAQMD*, 19 Cal.App.4th 519, 534 (1993). If any such comments are rejected, the responses "must particularly set forth in detail the reasons" therefor. *Id.* The staff is bound under CEQA to provide board members with information on the above missing impacts and alternatives "which enables them to make a decision which intelligently takes account of the environmental consequences." [Citations]" *Id.*

6-42

SCAQMD proposes to ban virtually all glossy enamels and undercoaters made, sold, and used in the basin today. Obviously, any project that revolutionary is going to have massive environmental impacts. As shown above, the Draft SEA fails to think about those impacts, as mandated by CEQA.

Very truly yours,

William M. Smiland/mme
 William M. Smiland

WMS/mme

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Mr. Darren W. Stroud
April 21, 1999
Page 18

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COMMENT LETTER #6

Smiland & Khachigian

April 21, 1999

6-1 The commentator appears to infer that non-compliant coatings will be eliminated as a result of adopting and implementing PAR 1113, but no compliant coatings will become available. Based upon the number of future compliant coatings currently available (see Table F-1 in response to comment #2-1) and the fact that there is substantial time available to develop compliant coatings, especially for the final July 1, 2006 compliance date, it is likely that existing coatings may be reformulated using currently available resin technologies or completely new compliant coatings will be developed.

Further, the SCAQMD will conduct and complete a technology assessment one-year prior to the interim and final VOC content limits becoming effective. The technology assessment will evaluate the availability and feasibility of compliant coatings. Since the language regarding technology assessments is included in PAR 1113, the SCAQMD will be required to conduct this assessment and consider revising the VOC content limits or extend the compliance dates depending on the results of the technology assessment. This continuing evaluation requirement assures that future limits will always be based on the current state of coating technology.

6-2 The commentator states, “[T]he Draft SEA blithely concludes (at 1-1) that ‘the proposed amendments will not generate any significant adverse environmental impacts.’” The statement cited by the commentator is a statement in Chapter 1 that summarizes the conclusions of the extensive analysis contained in Chapter 4 of the Draft SEA. The conclusions of insignificance are based on extensive surveys of currently available low and zero-VOC coatings, as well as extensive analyses of specific issues identified by staff and raised by the public and the affected industry in comments on the NOP/IS prepared for PAR 1113. Consequently, the conclusion that PAR 1113 is not expected to generate significant adverse environmental impacts is based on substantial evidence and is not a blithe conclusion as asserted by the commentator. The commentator is also referred to the environmental analyses in Chapter 4 of the Final SEA for PAR 1113, as well as the analysis of the relative merits of each of the proposed project alternatives contained in Chapter 5.

6-3 The commentator asserts that the SCAQMD’s “rosy scenario” that compliant coatings will be available in the interim and final compliance years is eclipsed by two more likely scenarios: low organic compound substitution and finally non-paint substitutes. The SCAQMD is not clear what the commentator means when it says “low organic compounds.” The SCAQMD assumes for the purposes of this comment the commentator is referring to low-VOC coatings when it says “low organic compounds.” The SCAQMD will proceed on this assumption in answering this comment and subsequent comments using the terminology “low organic compounds.”

In any event, the SCAQMD disagrees with the commentator’s contentions. As part of the environmental impacts analysis for PAR 1113, the SCAQMD conducted an exhaustive and comprehensive analysis of currently available low-VOC compliant coatings as well as conventional

coatings. The SCAQMD’s analysis reviewed hundreds of product data sheets and compared the VOC content, percent solids by volume, coverage, adhesion, durability, pot life, shelf life, gloss, and drying time (see the tables in Appendix D and the related summary tables in Chapter 4 of the Final SEA) of affected coating categories. The SCAQMD has found through its investigation of these product data sheets that there are commercially available compliant coatings that meet the interim and final VOC content limits of PAR 1113. According to the product data sheets analyzed by the SCAQMD, many of these compliant coatings perform comparable to conventional coatings in a variety of applications (see Appendix D and summary tables in Chapter 4 of the Final SEA). Furthermore, the results from the NTS study show that compliant interim (2002) coatings perform overall as well as conventional coatings. While some of the compliant final (2006) compliant coatings have some application shortcomings compared to conventional coatings, PAR 1113 provides an additional seven years to give coating formulators the necessary time to reformulate coatings to meet the final VOC content limits. This additional time is consistent with the information provided by various resin manufactures and coating manufacturers that it takes five to seven years for new product development. Therefore, based on the SCAQMD’s product data sheet analysis coupled with the results from the NTS study, substitution of low-VOC compliant coatings with higher-VOC coatings is not anticipated from the implementation of PAR 1113.

Furthermore, even if there is some limited substitution due to the implementation of PAR 1113, overall emission reductions will still be achieved. The SCAQMD has analyzed four probable substitution scenarios including the substitution of an IM coating by a rust preventative coating. This analysis reveals that even under a “worst-case” where several types of coatings are being substituted with higher-VOC coatings in large numbers PAR 1113 still achieves overall emission reductions. The commentator is referred to Chapter 4 of the Final SEA.

In regards to commentator’s assertion that eventually users will switch to non-paint substitutes due to wide-spread failures associated with the use of low-VOC compliant, as stated above compliant low-VOC coatings are currently commercially available that can meet both the interim and final VOC content limits. Therefore, it is highly speculative that users will abandon paints altogether for non-paint substitutes when compliant performing coatings are available for use. Further, other than the commentator’s assertion, the commentator provides no evidence that this scenario will actually occur.

It should be noted that non-paint substrates (e.g., stucco, siding, concrete, etc.) are currently used in the district. However, their use for the most part has nothing to do with the availability of compliant performing coatings, but more with user preferences (e.g., aesthetics).

- 6-4 The commentator incorrectly asserts that the Draft SEA for PAR 1113 ignores the following environmental impacts: (1) aesthetic impacts; (2) health and safety impacts; (3) increased reactivity impacts; (4) increased volatility impacts; (5) increased emission impacts; and (6) impacts resulting from the increased manufacture and installation of non-paint substitutes.

With regard to aesthetic impacts, response to comment 1-16 in Appendix C of the Draft SEA for PAR 1113 addressed this issue by providing a detailed response explaining why PAR 1113 was not expected to generate significant adverse aesthetic impacts. Aesthetic impacts were also addressed in the “Environmental Impacts Found Not to Be Significant” section in Chapter 4 of the Draft SEA for PAR 1113.

Health and safety impacts were discussed in detail in the “Human Health Impacts” and “Hazard Impacts” sections, respectively, in Chapter 4 of the Draft SEA for PAR 1113. Responses to written comments #1-9, #1-12, and #3-17 in Appendix C of the Draft SEA for PAR 1113 also addressed potential hazard impacts. Safety and human health issues were also addressed in the responses to written comments #1-12 and #5-5, as well as responses to oral comments #6, #7, and #8.

Potential reactivity impacts were specifically addressed in the “More Reactivity” section of Chapter 4 of the Draft SEA for PAR 1113. This topic was also extensively addressed in response to comment #1b-1 in Appendix C of the Draft SEA for PAR 1113. In addition, the reasons for rejecting a reactivity-based alternative were addressed in Chapter 5 of the Draft SEA.

Volatility impacts were addressed in the “Low Vapor Pressure” section of Chapter 4 in the Draft SEA for PAR 1113. This topic was also addressed in response to comment #1c-12 in Appendix C of the Draft SEA.

The industry issue regarding potential increases in VOC emissions from PAR 1113 were addressed in the following sections of Chapter 4: “More Thickness,” “Illegal Thinning,” “More Priming,” “More Topcoats,” “More Touch-ups and Repair Work,” “More Frequent Recoating,” and “Substitution.”

The industry issue regarding substitution was specifically addressed in the “Substitution” section of Chapter 4 of the Draft and Final SEA for PAR 1113.

- 6-5 While staff may have suggested a 45-day comment period in December 1998, staff subsequently determined that a 30-day review period was adequate given the lack of any significant environmental impacts.
- 6-6 The data provided is noted.
- 6-7 The commentator is referred to the responses to comments #2-1 and #6-1.
- 6-8 The commentator alleges that the Draft SEA’s “omnibus fashion” of analysis does not separately analyze the impacts associated with the interim and final VOC content limits. The commentator states that the SCAQMD must carry out a limit-specific and category-specific analysis for all five environmental topics analyzed by the SCAQMD. The SCAQMD disagrees with the commentator’s assertion that a limit-specific and category-specific analysis is required for each environmental topic in order to adequately analyzed the impacts from PAR 1113. The type and level of analysis that is required is dependent on the environmental topic under review.

For example, in the context of air quality impacts, Tables 4-2 and 4-3 of the Draft and Final SEA reveal that the SCAQMD thoroughly analyzed the limit-specific and category-specific performance characteristics of affected coatings. The results of this analysis revealed that compliant coatings are currently commercially available to meet the interim and final VOC content limits. This analysis served as the basis for analyzing the industry's eight issues (e.g., more thickness, more thinning, more priming, more topcoats, more touch-up and repair, more frequent recoating, more substitution, and more reactivity) as well as the other environmental areas analyzed by the SCAQMD.

For the remaining environmental topics (e.g., water resources, public services, transportation/circulation, solid/hazardous waste, hazards, and human health), a quantitative and/or qualitative limit-specific or category-specific analysis was all that was required to thoroughly analyze the impacts associated with PAR 1113. For quantitative limit-specific impacts analyses, the commentator is referred to Tables 4-5 (water demand), 4-6 (water quality), and 4-8 (solid waste) of the Draft and Final SEA. For quantitative category-specific analyses based on coating technology, the reader is referred to Tables 4-7 (public services and hazards) and 4-8 – 4-12a (human health) of the Draft and Final SEA. For a qualitative analyses based on category-specific analyses based on coating technology, the reader is referred to Water Resources, Public Services, Transportation/Circulation, Solid/Hazardous Waste, Hazards, And Human Health sections of the Draft and Final SEA.

As demonstrated by the thoroughness of these analyses, the SCAQMD has substantially meet its requirements under CEQA in determining the environmental impacts associated with PAR 1113. Accordingly, the SCAQMD concluded that the implementation of PAR 1113 would not result in significant environmental impacts in any environmental topic.

- 6-9 SCAQMD staff does not concur with the commentator's assertion that significant aesthetic impacts will occur. The commentator does not explicitly state in what way significant aesthetic impacts would occur. He implies that they may occur to those "who apply it [paint] to their own houses." First, industrial maintenance coatings are not typically used for residential use or for use in painting the outside of buildings, although some nonflat coatings may be used for a structure's exterior trim. In spite of this, based upon information on currently available compliant products, performance characteristics of existing and reformulated products should be sufficient to meet the weathering impacts on outdoor structures. This is particularly true in light of the fact that the rule contains sufficient time for research and development of AIM coatings in addition to those that are currently available (see also response to comment #3-4).
- 6-10 The SCAQMD recognizes that coating manufacturers that do not have compliant products will need to reformulate their existing coatings. However, numerous manufacturers, including the commentator's company, have numerous compliant coatings that meet the proposed interim and final compliance coatings now. Also, the proposed modified Averaging Provision would provide the coating manufacturers with the flexibility to retain certain lines of noncompliant products, and focus

their research and development efforts on fewer lines of products. The commentator is also referred to responses to comments #1-1 and #2-1. See also Table 3-1 of the Final SEA.

- 6-11 The SCAQMD concurs with the commentator's statement that the Draft SEA contains an exhaustive discussion of the health and safety (e.g., hazards, and human health) impacts from certain constituents of coatings. However, the SCAQMD disagrees with the commentator's assertion that the SCAQMD did not analyze the hazards and human health impacts from replacement coatings. In order to determine the hazards and human health impacts associated with low-VOC complaint replacement coatings, the SCAQMD determined the individual constituents (e.g., solvents) of the coatings and then compared them to conventional solvents. This comparison provided the SCAQMD with an indication of the incremental impacts associated with the use of low-VOC complaint replacement coatings. As shown in the Hazards Impacts and Human Health Impacts sections in Chapter 4 of the Draft and Final SEA, the SCAQMD has found that no significant hazards and human health impacts are associated with low-VOC compliant replacement coatings.

The commentator cites testimony given by CalTrans, MWD, and PDCA at the December 9, 1998 Public Workshop regarding their concerns with the availability of IM coatings that meet the proposed amendments. In particular, the commentator highlights Caltrans' testimony noting that they are currently happy with a 250 g/l IM coating used for steel structures but it is concerned with the availability of IM coatings to meet the final limits. This statement corroborates the SCAQMD's analysis that low-VOC compliant coatings are commercially available to meet the interim VOC content limits (07/01/02). PAR 1113 sets the interim VOC content limit for IM coatings at 250 g/l. In the context of the final VOC content limits, the IM coating limit drops to 100 g/l in 07/01/06. Based on the SCAQMD's product data sheet analysis of hundreds of coatings, low-VOC IM coatings are currently available that can meet the final limit. However, the results of the NTS study indicate that some of these compliant coatings may have some application problems. For this reason, the SCAQMD has given coating formulators seven years to reformulate their coatings. This time period is consistent with input received from resin manufacturers and coating formulators that it takes five to seven years to reformulate coatings to make it commercially available based on emerging resin technology. PAR 1113 contains a technology assessment provision whereby approximately one year prior to the interim and final compliance dates staff will perform a technology assessment of the availability of compliant coatings. If compliant IM coatings are unavailable by the completion of the technology assessment to meet the final limit, the SCAQMD will report back to the Governing Board as to the appropriateness of maintaining or delaying the existing VOC content limits.

- 6-12 With regard to reactivity of solvent-based coatings the commentator is referred to the response to comment #3-4.
- 6-13 With regard to a reactivity based rule, the commentator is referred to the responses to comments #3-4 and #4-1. It should be noted that methanol, relative to Rule 1170, was considered a promising alternative clean fuel, especially for mobile sources, because of its potential as a NOx control

strategy and, therefore, an ozone control strategy, not because it may or may not be less reactive than gasoline.

- 6-14 The commentator indicates that the best scientific evidence strongly suggests that glycol compounds prevalent in compliant water-borne coatings are more reactive than mineral spirits prevalent in solvent-borne coatings. The commentator asserts that the SCAQMD ignores this data. The SCAQMD has not ignored the fact the different solvents have different reactivities. Nor does the SCAQMD dispute the fact that different VOCs have different reactivities. Furthermore, the SCAQMD is not opposed to the use of VOC reactivity control strategy as evidenced by the inclusion of rule language in PAR 1113 to commit the SCAQMD to assess the reactivity of architectural coatings during technology assessments. However, given the state of science in this field and the fact that several studies are currently being undertaken to refine reactivity numbers for architectural coating solvents as well as the future building of an ozone reaction chamber, the SCAQMD agrees with the EPA that it is more prudent to utilize a mass VOC emissions control strategy 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. In fact, Dr. Carter himself has expressed the need for more study to be done to determine the reactivity of various compounds. In furtherance of that effort, he is currently conducting a study for CARB that will further evaluate and refine the atmospheric potential of selected VOCs (e.g., glycol ethers) emitted from consumer products and industrial sources, which includes chemical classes used in architectural. The SCAQMD welcomes any new scientific data that industry can provide to aid the SCAQMD in moving from a mass VOC emissions reduction strategy to a control strategy based on VOC reactivity.

It should be noted that the commentator’s assertion that glycol compounds are prevalent in compliant water-borne coatings is not consistent with the SCAQMD’s findings. Because many glycol compounds are considered hazardous air pollutants, many coating formulators are replacing these compounds with less hazardous compounds. The Censullo report, which is intended to upgrade the species profiles for a number of sources within the general categories of industrial and architectural coating operations, reported that the four most common solvents in the 52 randomly chosen water-borne coatings (flats and non-flats) were: texanol (found in 37/52); propylene glycol (31/52); diethylene glycol butyl ether (23/52); and ethylene glycol (14/52). It appears from this information

that the use of solvents such as texanol in water-borne coating formulations, is prevalent today and should continue into the future with the eventual replacement of more hazardous glycol compounds. Therefore, since the trend appears to be the replacement of glycol compounds in compliant water-borne systems with less hazardous compounds, it is even more prudent to wait until better scientific reactivity data is available.

6-15 The commentator contends that since it is known which compliant coatings will be used to meet the interim limit (2002) there is no reason why the SCAQMD should not analyze the relative reactivities of the compliant coatings compared to conventional coatings. The commentator's contention blurs the real issue associated with the use of a reactivity-based regulatory approach. The SCAQMD agrees with the commentator that it is well known that compliant coatings are commercially available to meet the PAR 1113 VOC content limits. However, based on the SCAQMD's research to date, the science of reactivity analysis has not reached the level of sophistication that it can accurately predict how various VOCs in coatings upon release in the atmosphere contribute to ozone formation through reaction with other compounds. Therefore, it is premature at this time to rely on a reactivity-based approach for PAR 1113. The commentator is referred to responses to comments #3-4 and #6-14.

6-16 The commentator cites CEQA Guidelines §15144 regarding disclosure requirements. The SCAQMD is aware of CEQA requirements for preparing environmental analyses. Further, the SEA for PAR 1113 complies with all relevant CEQA requirements.

The commentator then cites CEQA case law, *Laurel Heights Improvement Assn. v. Regents of University of California*, 47 C.3d 376 (1988), implying that the Draft SEA for PAR 1113 has not analyzed potential adverse environmental impacts and relies on "bare conclusions." The Draft SEA for PAR 1113 does not rely on "bare conclusions," but relies on extensive data surveys and analyses of potential adverse impacts to a number of environmental topics. As noted in response to comment #6-2, the conclusion that PAR 1113 is not expected to generate significant adverse environmental impacts is based on substantial evidence and does not rely on, "A study conducted after approval of a project..." The commentator is also referred to the environmental analyses in Chapter 4 of the Final SEA for PAR 1113.

6-17 The commentator alleges that because glycol compounds have low evaporation rates they do not disperse widely enough nor remain in the atmosphere long enough to contribute significantly to ozone formation. The commentator further alleges that the Draft SEA fails to analyze this issue. The commentator's allegation contradicts its implications in other comments that because glycol compounds as compared to mineral spirits prevalent in conventional coatings have higher reactivities they contribute more to ozone formation. Thus, it is unclear exactly what point the commentator is trying to make.

In any event, 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 and Final 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.

Additionally, 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 a LVP exemption is not appropriate for paints, a low vapor pressure alternative is considered to be infeasible.

- 6-18 The commentator asserts that as a result of PAR 1113 low-VOC compliant coatings will be substituted by higher-VOC coatings resulting in increased emissions. The commentator alleges that 250 g/l IM and 350 g/l rust preventative (RP) coatings will be substituted for low-VOC compliant coatings. As part of the environmental impacts analysis for PAR 1113, the SCAQMD conducted an extensive analysis of currently available low VOC coatings and conventional coatings. This analysis evaluated hundreds of coatings from approximately 40 manufacturers and considered the following coating characteristics: VOC content, percent solids by volume, coverage, adhesion, durability, pot life, shelf life, gloss, and drying time (see the tables in Appendix D and the related summary tables in Chapter 4 of the Final SEA). The SCAQMD's analysis of resin manufacturers and coating formulators product data sheets indicates that overall low-VOC compliant coatings had comparable performance characteristics to conventional coatings. Additionally, the conclusion was further corroborated by the NTS study. The results of the NTS study also indicate, however, that some of the compliant coatings may have some application problems, more so for the final compliance limits. As a result, the SCAQMD has given coating formulators seven years to reformulate their coatings to correct coating application problems. This time period is consistent with input received from resin manufacturers and coating formulators that it takes five to seven years to reformulate coatings to

make it commercially available based on emerging resin technology. PAR 1113 contains a technology assessment provision whereby approximately one year prior to the interim and final compliance dates staff will perform a technology assessment of the availability of compliant coatings. If compliant IM coatings are unavailable by the completion of the technology assessment to meet the final limit, the SCAQMD will report back to the Governing Board as to the appropriateness of maintaining the existing VOC content limits. Accordingly, substitution of low-VOC compliant coatings with higher-VOC coatings is not anticipated from the implementation of PAR 1113.

Furthermore, even if there is some limited substitution due to the implementation of PAR 1113, as alleged by the commentator, overall emission reductions will still be achieved. The SCAQMD has analyzed four probable substitution scenarios including the substitution scenarios suggested by the commentator. This analysis reveals that even under a “worst-case” where several types of coatings are being substituted with higher-VOC coatings in large numbers PAR 1113 still achieves overall emission reductions. The commentator is referred to Chapter 4 of the Final SEA.

- 6-19 The commentator asserts that the SCAQMD’s five reasons why substitution will not occur are obviously false. The strongly disagrees with the commentator’s assertion and refers the commentator to responses to comments #5-22 - #5-25.
- 6-20 Regarding the SCAQMD’s review of resin manufacturer’s and coating formulator’s product data sheets and the preliminary results from the NTS study the commentator is referred to response to comment #2-1. The commentator is also referred to responses to comments #5-22 - #5-25 and #6-18 regarding potential substitution of low-VOC compliant coatings by higher-VOC coatings.
- 6-21 The commentator is referred to responses to comments #5-22, #5-23, and #6-18.
- 6-22 The commentator is referred to responses to comments #5-23 and #6-18.
- 6-23 The commentator is referred to responses to comments #5-24 and #6-18.
- 6-24 The commentator is referred to responses to comments #5-25 and #6-18.
- 6-25 The commentator is referred to responses to comments #2-1 and #6-1.
- 6-26 The commentator is referred to response to comment #6-8.
- 6-27 It is assumed that the commentator is implying that the performance characteristics of compliant low VOC coatings will be inferior to conventional coatings, so substitutions such as those identified by the commentator will need to be used. Staff reviewed coating product data sheets (see the tables in Appendix D and the relevant summary tables in Chapter 4) 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 2002 and 2006 compliance dates (see also response to comment #3-4 regarding availability of low and zero-VOC compliant coatings).

Staff has found both single-component and two-component low- and zero-VOC coatings for a variety of uses. These can be brushed, rolled or sprayed using conventional coating gun technologies. However, staff recognizes that some fast-cure zero-VOC technologies require using plural spray technology. In any event, it is anticipated that even greater numbers of one- and two component AIM coatings will be available by the 2006 compliance date. Even industry has stated that research and development of new coating systems takes only three to five years.

Based on staff research of the product data sheets, there are, generally, a substantial number of low VOC coatings that are currently available, that have performance characteristics comparable to conventional coatings. In addition, there is no indication that non-paint protective products such as brick, siding, and tiles would be substitutes for either interior or exterior flat coatings. Even if they were substituted for painted surfaces, this practice of using non-paint protective products is currently a common practice. See also the air quality analysis in Chapter 4 regarding substitution.

- 6-28 Staff has found numerous single-component and two-component, zero-VOC industrial maintenance coatings, with pot lives of up to three hours (see the tables in Appendix D). These can be brushed, rolled or sprayed using conventional coating gun technologies. However, staff recognizes that some fast-cure zero-VOC technologies require using plural spray technology. However, the increased cost of the application equipment is more than offset by the faster dry time and quicker turnaround time associated with the fast cure coatings. It should be noted that two-component coating systems are already used in certain applications, e.g., industrial maintenance applications, although such equipment requires training to achieve desired coating characteristics. The final compliance date for the 100 g/l VOC limit for industrial maintenance coatings is July 1, 2006, which provides adequate time for contractor training with the increased use of two-component coatings.
- 6-29 The commentator alleges that the SCAQMD's assertion that acceptable low-VOC quality coatings will be available that exhibit desired performance characteristics is wholly unsupported by the record. The SCAQMD has thoroughly analyzed the availability as well as the quality of commercially available coatings that meet the interim and final VOC content limits of PAR 1113. The SCAQMD has comprehensively analyzed hundreds of resin manufacturer's and coating formulator's product data sheets. The SCAQMD's analysis of these product data sheets indicates that overall low-VOC compliant coatings had comparable performance characteristics to conventional coatings for both the interim and final VOC content limits.

Regarding the SCAQMD's review of resin manufacturer's and coating formulator's product data sheets and the results from the NTS study the commentator is referred to response to comment #2-

1. The commentator is also referred to responses to comments #5-22 - #5-25 and #6-18 regarding potential substitution of low-VOC compliant coatings by higher-VOC coatings.

6-30 The commentator is referred to the responses to comments #6-9 and #6-27.

6-31 With regard to the durability of low and zero-VOC the commentator is referred to the response to comment #6-29. The commentator is referred to the responses to comments #6-9 and #6-27. The fact that an “impoverished community” may or may not have unpainted structures is unrelated to the quality of low VOC coatings, especially since relatively high VOC coatings are currently available, but is instead related more to socioeconomic factors.

6-32 With regard to using non-paint substrates the commentator is referred to the response to comment #6-27.

6-33 The commentator contends that if all substrates were painted with low-quality paint, health and safety (e.g., hazards and human health) benefits offered by paints 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 are currently commercially available to meet the interim and final VOC content limits. Furthermore, the SCAQMD has included extended compliance deadlines to allow coating formulators additional time to correct potential coating application problems associated with the final VOC content limits. 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 commentator is referred to response to comment #2-1 regarding the SCAQMD’s review of resin manufacturer’s and coating formulator’s product data sheets and the results from the NTS study. The commentator is also referred to responses to comments #6-8 and #6-11 regarding hazard and human health impacts from the use of low-VOC compliant coatings.

6-34 The commentator contends that if all substrates were protected with non-paint substrates, health and safety (e.g., hazards and human health) benefits offered by paints would be impaired. Since the commentator does not explain how non-paint substrates would impair the hazard and human health benefits of paint it difficult to understand the commentator’s contention. In any event, this statement is contrary to the SCAQMD’s findings concerning commercially available low-VOC compliant coatings. Regarding the SCAQMD’s review of resin manufacturer’s and coating formulator’s product data sheets and the preliminary results from the NTS, study the commentator is referred to response to comment #2-1. The commentator is also referred to responses to comments #6-8 and #6-11 regarding hazard and human health impacts from the use of low-VOC compliant coatings.

- 6-35 The commentator asserts that use of non-paint protective coatings will generate VOC emissions from adhesive products or NOx emissions from the manufacture of adhesives. First, the SCAQMD disagrees with this assertion because it is anticipated that compliant AIM coatings will be available in the future (see response to comment #3-4).

Even if it were true that the use of adhesives increases as a result of implementing PAR 1113, the SCAQMD strictly regulates the VOC content of adhesives in Rule 1168 – Adhesive Applications. Based upon the requirements in Rule 1168, depending on the adhesive application, use of compliant adhesives would have no effect on VOC emissions or could potentially reduce VOC emissions to a certain extent compared to the existing setting because the VOC content requirements are generally equivalent or less than the VOC content requirements currently required for AIM coatings.

Further, even if the adhesive manufacturing process involved some type of combustion process such as a boiler or heater, NOx emissions associated with adhesive production would not create significant adverse air quality impacts for the following reasons. Any new, modified, or relocated combustion equipment in the district is subject to Regulation XIII –New Source Review. This regulation strictly regulates NOx emissions from combustion equipment by requiring: that emissions comply with the lowest achievable emissions rate; installation of best achievable control technology (BACT), and emissions offsets if emissions are greater than one pound per day. Equipment not subject to Regulation XIII would most likely be subject to Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters, which establishes stringent NOx control requirements.

- 6-36 Consistent with CEQA Guidelines §15126.6(c) the SCAQMD has described the reasons for rejecting a number of alternatives in Chapter 5. This comment does not explain why the commentator assumes that the alternatives rejected as infeasible are feasible.
- 6-37 With regard to rejecting a low volatility-based alternative the commentator is referred to the response to comment #3-4. See also Chapter 5 of the Final SEA for PAR 1113.
- 6-38 With regard to rejecting a reactivity-based alternative the commentator is referred to the response to comment #3-4. See also Chapter 5 of the Final SEA for PAR 1113.
- 6-39 SCAQMD staff has evaluated a seasonal regulation alternative that would allow architectural coatings with VOC content limits higher than those contained in PAR 1113 and rejected it as an infeasible alternative for the following reason. Based on discussions with industry, it has been suggested that this alternative may be infeasible because it may be difficult for coatings distributors to manage architectural coating stocks to ensure that only compliant coatings are sold during the high ozone season. As a result, this alternative is rejected as infeasible. See also the discussion in Chapter 5 of “Alternatives rejected as infeasible.”

In addition to the issues identified by staff, one commentator (see comment letter #3) expressed concerns with a seasonal alternative because of the additional costs to coatings retailers of changing their stocks up to four times per year. Another concern raised by this commentator was the SCAQMD's ability to enforce a seasonal alternative.

6-40 Many low- and zero-VOC coatings are currently available for use, and are manufactured by small and large coating manufacturers. Thus, the SCAQMD has no basis to believe that significant amount of substitution will occur as a result of the proposed amendments. The expected approach for meeting future VOC content limits is through reformulation. Significant substitution is not likely to occur because uses for various replacement coatings are different and have different performance characteristics. For example, the proposed substitutes have limited specific uses, they do not provide the same aesthetic appeal, and some of the proposed substitutes would be cost prohibitive. Even if there is some limited substitution due to the implementation of PAR 1113, emission reductions will still be achieved.

6-41 The SCAQMD is aware of the requirements to respond to comments on the draft CEQA document. This appendix, Appendix F, provides detailed and extensive responses to all comments received on the Draft SEA for PAR 1113. Further, the SCAQMD disagrees with the commentator's assertion that the Draft SEA for PAR 1113 does not include a comprehensive analysis of potential adverse impacts from implementing PAR 1113 (see the responses to comments #6-2 and #6-16). Finally, the Final SEA for PAR 1113, including responses to comments on the Draft SEA (Appendix F), will be provided to all Board members prior to the public hearing for PAR 1113.

6-42 The commentator appears to infer that non-compliant coatings will be eliminated as a result of adopting and implementing PAR 1113, but no compliant coatings will become available. Based upon the number of future compliant coatings currently available (see Table F-1 in response to comment #2-1) and the fact that there is substantial time available to develop compliant coatings, especially for the final July 1, 2006 compliance date, it is likely that existing coatings may be reformulated using currently available resin technologies or completely new compliant coatings will be developed.

Further, the SCAQMD will conduct and complete a technology assessment one-year prior to the interim and final VOC content limits becoming effective. The technology assessment will evaluate the availability and feasibility of compliant coatings. Since the language regarding technology assessments is included in PAR 1113, the SCAQMD will be required to revise the VOC content limits or extend the compliance dates depending on the results of the technology assessment. This continuing evaluation requirement assures that future limits will always be based on the current state of coating technology. Furthermore, if during the technology assessment it is determined that changes are necessary to Rule 1113, the changes will be evaluated to determine CEQA applicability and, if necessary, a CEQA analysis will be prepared.

Based upon the above considerations, as well as the comprehensive analysis of potential adverse impacts of implementing PAR 1113 contained in Chapter 4, no significant adverse impacts were identified.

COMMENT LETTER #7

**SOUTHERN CALIFORNIA ASSOCIATION
OF GOVERNMENTS**

COMMENT LETTER #7
Southern California Association of Governments
April 13, 1999

- 7-1 The SCAQMD acknowledges and agrees with the commentator that PAR 1113 is not a regionally significant project. The SCAG Clearinghouse number is noted and listed on the front cover of the Final SEA.

COMMENT LETTER #7

**SOUTHERN CALIFORNIA ASSOCIATION
OF GOVERNMENTS**

COMMENT LETTER #7
Southern California Association of Governments
April 13, 1999

- 7-1 The SCAQMD acknowledges and agrees with the commentator that PAR 1113 is not a regionally significant project. The SCAG Clearinghouse number is I9900112.

**PUBLIC CONSULTATION MEETING
COMMENTS**

**March 31, 1999 and April 28, 1999
Public Consultation Meetings
(CEQA Comments)**

The following are summaries of environmental impact-related comments received at either the March 31, 1999, or April 28, 1999 Public Consultation Meetings held for PAR 1113.

COMMENT #1: Exemptions need to be given for some categories or applications that do not perform at the lower VOC limits. Some coatings will be eliminated. These coatings protect workers around containment areas that have the possibility of an accidental release or spill.

RESPONSE #1: Please see response to comment #2-1 regarding the availability of future compliant coatings. Staff has also extended the interim compliance date to July 1, 2002, and the final compliance date to July 1, 2006.

The SCAQMD will conduct and complete a technology assessment one-year prior to the interim and final VOC content limits becoming effective. The technology assessment will evaluate the availability and feasibility of compliant coatings. Since the language regarding technology assessments is included in PAR 1113, the SCAQMD will be required to revise the VOC content limits or extend the compliance dates depending on the results of the technology assessment. This continuing evaluation requirement assures that future limits will always be based on the current state of coating technology. Furthermore, if during the technology assessment it is changes are necessary to Rule 1113, the changes will be evaluated to determine CEQA applicability and, if necessary, a CEQA analysis will be prepared.

Additionally, the SCAQMD has added three new categories (i.e., Essential Public Service Coating; Bituminous Roof Coatings; and Recycled Flats and Nonflats) to further define the differences in coating applications and the ability to achieve a certain compliance limit.

COMMENT #2: Conclusions in the Draft SEA are largely derived from marketing information and are not based on the NTS Study. The conclusions should be based on the study.

RESPONSE #2: Please refer to the response to comment #2-1.

COMMENT #3: Paints products are the largest amount of household hazardous waste generated. More of an effort needs to be made to recycle paints.

RESPONSE #3: The fact that paint products constitute a large portion of household hazardous wastes is an existing problem and is not expected to increase substantially as a result of implementing PAR 1113. In certain controlled situations, coatings applied in spray booths for example, excess water-based coatings can often be reused compared to solvent-based coatings that need to be disposed of properly. To the extent that PAR 1113 increases the usage of water-based coatings, disposal impacts could be reduced slightly.

It should also be noted that some jurisdictions that collect paints as part of household hazardous waste programs may mix together compatible and usable coatings for painting out graffiti.

For additional information please refer to the response to comment #5-27.

COMMENT #4: A concern was raised regarding the availability of compliant coatings that are suitable for wastewater treatment facilities.

RESPONSE #4: Staff has analyzed the use of the lower-VOC technologies for a variety of uses. The low- and zero-VOC industrial maintenance coatings are recommended for a variety of industrial uses, including but not limited to refineries, chemical facilities, food processing, pulp and paper manufacturing, bridge, pipeline, and wastewater treatment facilities. Staff can provide information on currently available coatings that could be used for wastewater treatment facilities. Nonetheless, staff has added an Essential Public Services

Coating category with an interim VOC limit of 340 g/l, effective July 1, 2002, which is higher than that of the general IM coating category.

COMMENT #5: Concerned with the cross-media impacts from the disposal of waterborne coatings.

RESPONSE #5: Please refer to the responses to comments #5-27 and #6-8.

COMMENT #6: Multi-component coatings are not appropriate for residential use. Specific NIOSH equipment should be used with 2-component systems. A residential user does not understand this. Homeowners wear dust-preventive masks instead of masks that prevent organic vapors.

RESPONSE #6: It should be noted that two-component coating systems are already used in certain applications, e.g., industrial maintenance applications and such equipment requires training to achieve desired coating characteristics. Industrial maintenance coatings are typically not used by, or available to the residential do-it-yourselfer. In addition, such coating may not be used in residential settings.

COMMENT #7: The ecological burdens of Rule 1113 amendments depend upon the performance of the substitutes.

RESPONSE #7: The SCAQMD comprehensively analyzed potential adverse impacts from adopting and implementing PAR 1113. This analysis, contained in Chapter 4 of the Draft SEA, concluded that PAR 1113 is not anticipated to generate significant adverse environmental impacts. Consequently, no “ecological burdens” are expected as a result of implementing PAR 1113.

COMMENT #8: Concerns were expressed regarding a proposed prohibition on spraying two-component IM coatings containing diisocyanates (Rule 1113 §(d)(8)). The prohibition was proposed due to preliminary data suggesting adverse health effects from exposure to diisocyanates. Many speakers

noted, however, that the chemistry of these systems make it unlikely that diisocyanate compounds would be emitted during the spraying process.

RESPONSE #8: The SCAQMD evaluated this issue by conducting a thorough technical literature search as well as contacting experts in the field. From this further research, the SCAQMD obtained a study conducted by Mobay (now Bayer) that provided monitoring results from the spraying of two a component IM system containing HDI poly-isocyanate during the painting of a bridge and a chemical manufacturing plant. The results from the study are summarized below in Table F-8.

The results of SCAQMD's evaluation is the conclusion that a prohibition on the spraying of two-component IM coatings containing diisocyanates is not necessary. Further, since PAR 1113 restricts the use of IM coatings to IM settings, the public's exposure to these coatings are minimized. Accordingly, the SCAQMD does not expect that the spraying of two-component low VOC IM systems containing diisocyanates will expose the general public to acute significant adverse human health impacts.

TABLE F-8
SHORT-TERM ACUTE EXPOSURE
FROM THE SPRAYING OF A TWO-COMPONENT
IM SYSTEM CONTAINING HDI POLY-ISOCYANATE

Fleming Park Bridge, Neville Island, Pennsylvania		
Spraying Two-Component Polyurethane Intermediate Coat		
Sample Site	Monomeric HDI (ppb)	HDI Poly-isocyanate (mg/m³)
Painter #1	2.4	2.5
Painter #2	1.9	2.2
Painter #3	4.1	5.2
Downwind 50 ft*	0.5	<0.02
Deck	0.6	0.09
Under the Bridge	<0.4	0.02
TLV/STEL	20.0**	1.0***
Spraying Two-Component Polyurethane Top Coat		
Sample Site	Monomeric HDI (ppb)	HDI Poly-isocyanate (mg/m³)
Painter #1	4.6	1.65
Painter #2	4.0	1.81
Mixer/Supervisor	0.7	0.03
Deck	<0.06	<0.03
In Truck	<0.06	<0.03
Under the Bridge 25 ft*	<0.07	<0.03
Under the Bridge 25 ft*	<0.07	<0.07
Under the Bridge 15 ft*	1.6	0.8
Downwind 50 ft*	1.3	0.8
Mixing Area	0.8	0.04
TLV/STEL	20.0**	1.0***

TABLE F-8 (CONCLUDED)
SHORT-TERM ACUTE EXPOSURE
FROM THE SPRAYING OF A TWO COMPONENT
IM SYSTEM CONTAINING HDI POLY-ISOCYANATE

Mobay New Martinsville, WV Plant		
Spraying Two-Component Polyurethane Top Coat on Chemical Storage Tank		
Sample Site	Monomeric HDI (ppb)	HDI Poly-isocyanate (mg/m³)
Painter	0.9	0.14
Painter Helper	<0.2	<0.02
Downwind 25 ft* (North)	<0.2	<0.02
Above Painters	<0.2	<0.02
East 25 ft*	<0.2	<0.02
Downwind 50 ft*	<0.2	<0.02
West 15 ft*	<0.2	<0.02
Upwind 15 ft*	<0.3	<0.03
TLV/STEL	20.0**	1.0***
Spraying Two-Component Polyurethane Top Coat on Waste Treatment Tank		
Sample Site	Monomeric HDI (ppb)	HDI Poly-isocyanate (mg/m³)
Painter	0.9	0.16
Upwind 15 ft*	0.9	<0.04
Downwind 15 ft*	1.4	0.24
Downwind 35 ft*	<0.4	<0.04
STEL	20.0**	1.0***

* Distances are average number of feet from spray gun.

** ACGIH has established a Threshold Level Value as an eight hour Time-Weighted Average (TLV-TWA) for HDI of 5 parts per billion (ppb). Although Permissible Exposure Limits (PELs) have been established for several diisocyanate compounds, federal OSHA has not established one for HDI. Mobay (now Bayer) endorses the ACGIH's Short Term Exposure Limit (STEL) of 20 ppb for HDI. This concentration should not be exceeded not even for brief periods.

*** ACGIH and federal OSHA have not TLV-TWA or a PEL for HDI poly-isocyanates. However, Mobay (now Bayer) recommends a TLV-TWA of 0.5 mg/m³ for HDI poly-isocyanates. Mobay (now Bayer) also recommends a short STEL (averaged over 15 minutes) of 1 mg/m³ for HDI poly-isocyanates.

APPENDIX G

ANNUAL STATUS REPORTS ON RULE 1113 (YEARS 2000, 2001, 2002)

YEAR 2000

Please go to <http://www.aqmd.gov/hb/000730a.html> for
the Annual Status Report (Year 2000)

YEAR 2001

Please go to <http://www.aqmd.gov/hb/010726a.html> for
the Annual Status Report (Year 2001)

YEAR 2002

Please go to <http://www.aqmd.gov/hb/020723a.html> for
the Annual Status Report (Year 2002)