APPENDIX III

COMMENTS AND RESPONSES

Table of Telephone and E-Mail Comments

10/01 e-mail	Roland Sheppard, retired painter
	Mr. Sheppard retired as a painter and San Francisco Building Trades Council Business Representative upon diagnosis of cancer. Co-authored SB370 to amend workers' compensation law to include a presumption of cancer for painters (not adopted). Has lobbied for reduction in toxic elements in paint.
10/02 phone	Robert Wendoll, Dunn-Edwards Corp.
	Sanding sealers is an SCM category not found in the rule. Recommends a 550 g/l VOC limit consistent with EPA standards, reduced to 350 g/l in 2003 as per the SCM. Floor Coatings, include Quick dry and Industrial Maintenance coatings, recommends 400 g/l (EPA std) until 2003. Magnesite Cement coatings, acrylic lacquer formulations, include quick dry sealers, sold by small, local mfgs, recommend 600 g/l (EPA) until 2003. Pretreatment Wash primers, includes quick drys, recommend 780 g/l (EPA) until 2003. Wood preservatives, below ground, recommends 550 g/l (EPA) until 2003, clear, semitransparent and opaque, current limit 350 g/l.
	[Sanding sealers incorporated into draft] Pretreatment Wash primers are used on metal surfaces for short term corrosion protection prior to application of another primer. This application has been considered Industrial Maintenance in the past. From SCM, some other district limits at 420 g/l. Magnesite cement, see comment from Ron Adams, below. 450 g/l OK. Floor coatings intial VOC limit made consistent with Quick dry enamels, Below ground wood preservatives limit consistent with Nat'l rule stds, 550 g/l. VOC limits consistent with Nat'l rule stds given delay for phase in until April 1, 2002.
10/09 phone	Ron Adams, Hill Brothers Chemical Co.
	Magnesite cement is sold currently at 450 g/l. Remaining products are waterproofing concrete sealers at 400 g/l. Does not think there are competitors for mag. cem. sales in the Bay Area.
10/10 phone	Ned Kisner, Triangle Coatings
	Called to discuss local manufacturers of floor coatings, below ground wood preservatives. Floor coatings can be considered tile-like glaze coatings (exempt VOC), and were sold as such for commercial establishments. The IM floor coatings are mostly epoxies, some low-VOC; tile like glaze coatings are urethanes. (He) is not familiar with below ground wood preservative producers.

	Discussed antennae coatings. Pretreatment wash primers primarily for aluminum structures for repaints. Very little sold under architectural rule.
10/10 phone	Tim Simpson, Simpson Coatings
	Called to discuss floor coatings. Does not believe that floor coatings are above 250 g/l. Some are IM, which will remain at 420 g/l until 2004. Has a concern with acetone based lacquers. 550 g/l limit requires acetone, flash point is low so that any spark in a kitchen or office building would create a fire hazard.
10/11 phone	Madelyn Harding, the Sherwin Williams Company
	Imposition of limits for the following categories will create problems: below ground wood preservatives, quick dry primers, et al, dry fog coatings. There may be problems with multi-colored coatings and metallic coatings, she will get back to me on sales in Bay Area. Payment of exceedance fee under national rule allows limits in excess of national stds. There will be problems when averaging ends in 2005.
	Below ground wood preservatives, dry fog and quick dry primers phase in period until April, 2002 incorporated into draft.
10/11 phone	Lee , Sandia National Laboratories
	Concern with planning for use and contracting for coatings.
	Sell through provisions address her concerns.
10/12 phone	Jacqueline Kepke, CH2M Hill; Jay Witherspoon, E Bay MUD; representing Bay Area Air Toxics Group / POTW's
	Discussed South Coast provisions for Essential Public Service Coatings and the differences between that and the SCM/Bay Area proposal. Also discussed technology review being conducted by southern Calif. POTW's and technology review to be done by ARB.
	POTW's are subject to more stingent limits in the South Coast rule, but they go into effect in 2006, as opposed to Industrial Maintenance coatings in the Bay Area proposal which become effective 2004. Jointly committed to review southern CA (SCAP) POTW data scheduled to conclude in 2003.
10/17 e-mail	Madelyn Harding, the Sherwin Williams Company
	Confirmation and follow up on previous conversation. Dry fog coatings, metallic pigmented, quick dry primers, et al, below ground wood preservatives, and rust preventative coatings all sold not in compliance with proposed limits, request compliance time. Fire retardant/resitive and multi color coatings are in compliance.
	Incorporated into draft as phase in effective April, 2002.

10/19 e-mail	Bob Chamberlin, Chevron Refinery
	Knows of only one supplier of coating for high temp at 420 g/l. Requests 550 g/l for high temp acrylics and 500 g/l for high temp silicones.
	According to the CARB survey, 54 different products out of 204 currently comply with proposed standard, 52% of market share. Higher limit not needed. Sent names of companies who responded to CARB survey in high temp category, including low and high VOC coating producers. Letter contains names of 18 companies.
11/05 phone	Owen Sullivan, United Coatings
	Concerned about impact of regulation on high VOC primer for concrete. Did not track state SCM process.
	United's primer is industrial maintenance coating, not specialty primer as Mr. Sullivan asserts. Requested more information from tech spec. sheets on this coating system. He will be able to use emissions averaging until expiration date.
11/05 e-mail	Jim Sell, National Paint and Coatings Asssociation (representing coating manufacturers)
	Written comments about technical feasibility of rule (46 pages), consisting of 1) Position paper re: July, 2001 annual SCAQMD status report concerning implementation of South Coast Rule 1113 (10/18/01); 2)comments addressed to Sacramento Metropolitan AQMD (5/18/01); 3) comments addressed to SMAQMD (4/20/02); 4) comments addressed to the CARB re: SCM (6/21/00); 5) comments submitted by Duane De Young of Rustoleum Corp. to CARB re: SCM (6/19/00); 6) comments submitted to the Notheastern Ozone Transport Commission (8/21/00); 7) comments submitted re: CARB Draft EIR (8/21/00); 8) comments submitted to the Northeastern OTC (12/11/00)
	Comments addressed following this table.

National Paint and Coatings Association (NPCA) comment letter to Sacramento Metropolitan AQMD dated May 18, 2001

1. At the outset, we reiterate our position—stated in documents filed with your District and CARB during its development of the SCM—that many of the limits in the SCM are not technologically feasible because they will not provide acceptable performance for all the uses for which the coatings are intended. We included a list of coatings and corresponding VOC limits that we believe are required for the coatings to perform adequately in our June 21, 2000 presentation to CARB. We submitted this information to SMAMQD during this rulemaking, and do so again.

   Response: See responses to Comments #15 to 98.

2. In some cases, the use of "compliant" coatings will require the application of more material and diminish the durability of the coating, meaning that more VOC emissions will occur from compliant coatings than from coatings that will be prohibited.

   Response: The comment regarding increased VOC emissions addressed in the Comments and Responses Section of the Final EIR.

3. In other instances, we do not believe that CARB has established a sufficient factual record for its conclusions. In any event, the District is obligated under California law to independently review the factual basis for the proposed rule. It is clear from reading the Staff Report and the environmental impact statement that the District has not done this.

   Response: This comment is directed at SMAQMD. NPCA has not, as yet, raised this issue with respect to the District rulemaking procedure. NPCA may have been satisfied with the Sacramento District's process and CEQA documents, there have been no legal challenges filed regarding SMAQMD's amendments to Rule 442.

4. As an alternative, and in light of the recent inspection of the ongoing NTS exposure tests, we suggest that the District should delay the rulemaking. A delay would allow the District to directly address these issues, as well as more time in which to more fully evaluate the results of the NTS exposure tests involving some of the coatings compliant with the proposed limits, and to allow for the undertaking of additional and more professional tests.

   Response: The CARB has committed to consider technological feasibility based on testing results. District staff will closely track the test results and CARB staff analysis of them. The Sacramento District adopted amendments to their architectural coating rule on May 24, 2001. The six months since that time, and District workshop and comment process, have not produced any additional data

which justifies a delay in rulemaking. The issue of additional testing is addressed in the response to comment #11..

5. We spent a lot of time at the meeting last week discussing the importance of the technical assessments and their possible impact on the implementation of some of the future limits (particularly for the industrial maintenance coating limit of 250 g/l limit). We also discussed the many shortcomings of the ongoing NTS study, including the use of draw down bars for all applications, incorrect scoring of the paint to determine corrosion resistance, and improper storage of the panels. We noted that a technical director running such an operation in a paint manufacturing or professional testing facility would not have accepted or relied upon the tests because of their poor design and execution. Consequently, we were pleased to hear that the staff plans to include a statement in the Board resolution adopting these revisions that the (Sacramento) District staff will make any appropriate changes to the rule as identified during the technology assessments being conducted by CARB, SCAQMD, and public utility groups.

   However we must also point out that the planned technology assessments are limited, and do not address all of the coatings categories for which lower limits have been proposed in the SCM Rule 442. These include floor coatings for wooden porches and semi-transparent stains for interior wood surfaces. Therefore, at a minimum, we urge the (Sacramento) District Staff to make a commitment to the Board and industry to continue an open dialogue with industry on the technical feasibility of the limits for those other major categories that have been identified by industry as being potentially problematic and are not included in the currently planned technology assessments.

   Response: District staff will participate in the district-CARB advisory group for architectural coatings, as has been the case since the group was formed in 1998. District staff is willing to continue a dialogue with industry representatives about coating technology, but notes that many floor coatings have been sold as non-flats, because there currently exists no category for floor coatings in Rule 3. As was commented on during the workshop, some floor coatings have been sold as quick dry enamels. Staff have amended the intial proposal to set a floor coating VOC limit of 400 g/l instead of 250 g/l, consistent with the existing quick dry enamel VOC limit.

6. Additionally, we raised at our meeting the point that the CARB analysis did not examine the technological feasibility of some coatings that would be unchanged in Rule 442 by the SCM but which nonetheless are at VOC limits which prevent the manufacture of effective coatings. The case of varnish was cited here, as an example. The current limit of 350 g/l currently recognized in Rule 442 would be unchanged by the adoption of the SCM limits, but the 350 g/l limit does not permit the manufacture of effective varnish coatings. Manufacturers compensate for the limit by selling such coatings in exempted small containers. These coatings as well as others like it—coatings with limits that have been mandated

for some time but which had never been the subject of a thorough technological assessment—should be examined in future technology assessments. These could consist of comparing exempt materials sold in the small containers with the compliant materials.

Response: This comment is surprising. The varnish VOC limit, 350 g/l, has been in effect in the Bay Area since 1987, and is not proposed to be lowered. The feasibility of this limit was not mentioned during the development of the SCM. Staff find it doubtful that flooring in residences throughout California have been coated with varnish from quart containers for 14 years to circumvent the VOC limit. Additionally, in spite of the influx of population from other states where archtectural VOC regulations are not in effect, staff have not received complaints about poor quality varnish as a result of Rule 3 limits.

7. CARB and the (Sacramento) District both indicate that the averaging provision is being included in the rule to provide regulatory flexibility for industry. They apparently also take the position that the limits are technologically feasible and that the sole purpose of averaging is to allow industry more "flexibility" in meeting what CARB and the (Sacramento) District consider to be technologically technologically feasible limits. As was mentioned in the meeting, it is our position that many of the limits are not technologically technologically feasible and that as a result, averaging is absolutely essentially in order to allow the continued use of the higher VOC coatings that perform adequately. A comprehensive averaging program is not merely a convenience for industry; rather it is essential in order for manufacturers, distributors, and retailers to continue to provide an adequate line of AIM products to the citizens of California, and to minimize the negative impacts of the proposed rule for those manufacturers who can utilize averaging.

   All during the development of the revised AIM rule in the SCAQMD in 1999 and the CARB AIM SCM last year, NPCA stressed the need for inclusion of a flexible averaging provision. NPCA and its members have worked closely with the SCAQMD and CARB on the development of an extensive "Implementation Guidance Document" for the Rule 1113, which includes an averaging compliance option. We believe that this kind of alternative compliance option is vital if industry is going to be able to continue to provide AIM products with adequate performance characteristics to the end users.

   We oppose the sunset clause to the averaging provision, because we know that averaging will be needed in order to allow for the continued sales of coatings with adequate performance characteristics. We simply do not see technology being available now or in the foreseeable future that will permit us to develop coatings at the specified VOC limits that will perform as well for all applications. Averaging will allow us to continue to sell coatings with VOC levels that are necessary to achieve adequate coating performance.

Response: The need for an averaging provision and the problems associated with the problems associated with it are detailed in Comments and Responses in the body of the staff report and in the Final EIR under the discussion of alternatives. Staff agree with CARB and the Sacramento staff that the limits are technologically feasible without averaging, however, remain willing to work with industry to create an emissions averaging program that does not compromise the emission reductions in the rule.

8. As we pointed out at our meeting, the key element in getting long-term durability in most exterior coatings applications is the use of a solventborne primer that can provide good adhesion to the substrate. This is a primer that can penetrate the substrate and block moisture infiltration which is the cause of most premature paint failures on wood and other porous substrates.

   At the meeting we shared with you the recently available results of the NTS exterior exposure tests which support this conclusion. In addition, porous substrates such as new and weathered wood, hardboard surfaces, and green concrete that is contaminated with form oils or other release agents, especially need to be primed with a solventborne primer that can overcome these special surface problems. (See in this connection the attached digital photos from Textured Coatings of America, showing a failed paint job using a latex primer on concrete.)

   We recommend that the definition of "Specialty Primer Coatings" category be modified to address the special problems associated with efflorescence, tilt up form oils and release agents found on green concrete, siloxane and silocanate materials, and wood and hardboard surfaces. All of these surfaces are well known to present special problems to the coating manufacturer and applicator.

   The are a number of coating category limits that we believe need to undergo further review and study, including the limits for: interior semi-transparent stains; interior wood sealers; and floor coatings for wood substrates.

   As mentioned above we believe additional technology assessments should be undertaken to further evaluate viability of the low VOC products that are being touted as replacements for currently used products.

   In closing we urge the (Sacramento) District to reconsider its proposal and at a minimum to include the amendments we have suggested. The (Sacramento) District should establish a continuing effort to test the performance characteristics of the mandated lower VOC coatings, and should be prepared to revise limits based on the tests. Additionally, to ensure that customers have access to effective coatings for certain uses which require higher VOC products, the (Sacramento) District should adopt the averaging provision without a sunset clause. Finally, we believe that sufficient information has been introduced, including the recent results of the exposure tests conducted by the SCAQMD, to give the (Sacramento) District pause about the adoption of limits based on the SCAQMD

rule. A delay until the test results are more thoroughly evaluated and additional, and more professionally conducted tests can be performed, seems like a reasonable decision.

Response: These comments were submitted without the accompanying photos and was not involved in the meeting referenced. In the SCM, CARB staff reviewed the information and responded to the request for specialty primers for efflorescence, tilt-up concrete form oils and release agents. They found that form oils and release agents were formulated to weather away and proper surface preparation for concrete dictates removing any remaining residue by blasting or washing the surface before application of primer or topcoat. As previously stated, test results from the various ongoing coating performance studies will be the subject of review by the CARB staff as they have committed to at the June 22, 2000 CARB hearing. District staff will be closely monitoring these studies and responding to any conclusions that CARB staff make.

National Paint and Coatings Association comment letter to Sacramento Metropolitan AQMD dated April 20, 2001

9. As you know from reviewing the record both in the SCAQMD's development of similar revisions for Rule 1113 and the California Air Resources Board's development of the Suggested Control Measure on which the district directly relies for its proposed revisions and underlying rationale, the NPCA has strongly opposed many revisions on the basis of technological infeasibility. We continue to do so, and request that you review with care the attached submissions both in answer to the environmental impact review and the staff report both of which rely so heavily upon the findings of the SCAQMD and CARB.

Response: See responses to Comments #15 to 98.

10. You will note that one of our attachments is the final submission that we made to CARB when it adopted the SCM on June 21, 2000. In that submission we have suggested several alternative limits.

Response: See responses to Comments #15 to 25.

11. We also draw your attention to the on-going field tests that were initiated in the SCAQMD at our request. Exposure panels are just now being examined and any decision on your part should at least await these findings.

Response: SCAQMD and other stakeholders, including CARB, are conducting technology assessments for each coating category with a lower proposed future limit (2003 and 2004) prior to the effective dates in order to monitor the industry's progress in complying with the proposed limits. If CARB determines that industry has not made sufficient progress, CARB may consider making appropriate changes to the SCM. As one element of these technology assessments, CARB staff will consider the Essential Public Services Agencies test

programs, the Southern California Alliance of Publicly Owned Treatment Works test program, and the National Technical Systems test program. In addition, CARB staff will be working with SCAQMD staff to identify any potential problems industry is having in meeting the SCAQMD limits, which are effective July 1, 2002, six months earlier than the SCM's first effective date. SMAQMD (and BAAQMD) staff will monitor and review CARB's technology assessment and SCAQMD's work to assess the industry's progress in complying with the standards and make any appropriate changes to the rule as needed.

12. We have never taken the position that low VOC coatings are infeasible for all purposes or that only high VOC coatings meet necessary performance requirements. Our coatings manufacturers make both low VOC and higher VOC coatings, and each are good for the purposes recommended. But the simple fact is that waterborne coating for light industrial maintenance coatings is not as good as solvent borne coating in all environments and for all substrates. In this connection you should read the statement of Duane DeYoung of Rust-oleum, a company which makes both solvent borne and water borne industrial maintenance coatings.

    Response: See response to Comments #24 through 31.

13. Once again, we ask that you review carefully the findings of CARB rather than simply repeat them. In this connection it may be especially worthwhile to look at the findings of the NTS study that was relied upon by CARB. You will note that there are instances in which the low VOC coatings under performed the higher VOC coatings, and yet the conclusion was made that the coatings were "similar." (See our attached submission to the Northeast Ozone Transport Commission on this issue.)

    Response: Staff has independently looked at the analyses performed by both CARB and SCAQMD. In addition, see response to Comments #34 through 43. (In addition, it is worth noting that Rule 3 has incorporated the provision to provide a limited amount of higher VOC industrial maintenance coating, indicative of analysis of Bay Area conditions.)

14. In conclusion, we reiterate the strong objections we registered with CARB to its environmental impact report and staff report both which staff has adopted as its own without any apparent independent examination. We hope that you will reconsider and at the very least include the limits that we suggested at the June 21, 2000 CARB hearing which adopted the SCM.

    Response: (Sacramento) staff (and Bay Area staff) have independently looked at the analyses performed by both CARB and SCAQMD. In addition, see response to Comment #43. (The comment discounts the time spent during the SCM development by staff of CARB and California districts discussing technology issues and the experience of the participants in the 10 years since the development of the previous SCM.)

National Paint and Coatings Association comment letter to CARB regarding the SCM for Architectural, dated June 21, 2000.

15. The NPCA requests that CARB postpone consideration of the proposed SCM by six months in order to allow additional time for the industry and CARB Staff to work out additional details and differences concerning the proposed SCM. (See Attachment A for a list of discussion items.) We acknowledge the effort that Staff have expended in gathering and attempting to analyze a great deal of information in a short period of time concerning a very complex subject. NPCA and its members have helped to facilitate the Staff 's gathering of information concerning the ability of the industry to formulate, and end users to use, coatings with lower VOC emissions. But this is a very complex area, in which a single coating category, as for example industrial maintenance coatings, can include literally thousands of different coatings to meet the differing application environments, substrates, and exposures addressed by this broad coating category. In light of the complex nature of this subject and the potential impact of the SCM as the model regulation used in California air districts, we believe additional review and discussions are required.

Response: At its June 22, 2000, hearing, CARB did not grant the commenter's request for a postponement, and approved the SCM. As explained in the response to Comment #4b-1 in Appendix I of the Final EIR, CARB staff conducted ample fact-finding and took into consideration all comments, including those of the NPCA.

Based on 1996 sales data, the complying marketshare for industrial maintenance coatings is 28 percent. Appendix E of the Final EIR shows that there are a wide variety of industrial maintenance coatings recommended for numerous applications that already comply with the 250 g/l limit. Reformulation options for industrial maintenance coatings are discussed in Chapter VI of CARB's Staff Report. Two public service agencies that actively test and certify industrial maintenance coatings (California Departments of Transportation and Water Resources) have expressed support for the SCM, and are confident that acceptable complying coatings will be available by January 1, 2004. In addition, the proposed rule reflects a number of specialty categories with higher limits, which were broken out of the industrial maintenance category (i.e., antenna coatings, antifouling coatings, flow coatings, and temperature-indicator safety coatings). Therefore, industrial maintenance coatings for a wide variety of applications, substrates, and exposures are and will be available when the 250 g/l limit goes into effect. In addition, see the response to Comment #11.

16. It is important to note that the Final Environmental Impact Report (EIR), a document of approximately 1,100 pages was made available for review on June 12, giving industry only nine days in which to review the document and respond

by 12:00 noon, June 21. Staff has noted that many of the issues were identified in the earlier Draft EIR. However, the Final EIR contains the Staff 's final response to industry's comments and concerns on the proposed SCM and the Draft EIR. The Staff's responses do not adequately address the complex technical and economic issues raised by industry's comments and have raised additional issues as well.

Response: CARB released the Draft EIR in February 2000. The Final EIR contained relatively few changes, which were highlighted by strikeout and underline text. Later versions of the SCM included an averaging provision and other changes to provide more flexibility. Following the release of the Draft EIR, CARB maintained continual dialog with the industry on all the changes in the SCM. California Environmental Quality Act (CEQA) guidelines do not require that the Final EIR be issued prior to a public hearing, and it does not require a public comment period. Thus, CARB went beyond the legal requirements by issuing the Final EIR before the hearing.

The (Sacramento) District released the draft rule, draft staff report and the draft EIR on February 2, 2001. A total of 750 notices for the public workshop were mailed, including all the major coating manufacturers as well as other interested parties. A public workshop was held on March 5, 2001 with a comment deadline of March 19, 2001. This public workshop was held a full eight months after CARB adopted the SCM. Until NCPA's comment letter was received on April 23, 2001, no comments had been received regarding the Industrial Maintenance coating category except regarding Anti-graffiti Coatings and Industrial Maintenance Coatings for the wastewater industry and water delivery systems. Responses to those comments can be found as part of the responses to the SCAP comment letter dated March 7, 2001, the Textured Coatings of America comment letter dated March 9, 2001 and the Metropolitan Water District of Southern California comment letter dated March 19, 2001. (The BAAQMD also has conducted a public process consisting of availability of a draft EIR with a 45 day comment period, notice of public workshop dated September 28 and notice of public hearing dated October 22.)

17. There are crucial matters at issue here. To take one example, the proposed SCM would entirely eliminate alkyd systems for industrial maintenance coatings by 2004. The alkyd systems are the work horse coatings for light industrial maintenance requirements. The Staff responds that it believes that because the industry is working on lower VOC alkyd systems, they will be available by 2004. It provides no evidence for its belief other than its assertion that lower VOC alkyd systems are being worked on by coatings manufacturers. It does not evaluate the costs associated with the possibility that alkyds will be eliminated, and that other more expensive and more difficult to use systems will be used instead. The failure to fully evaluate all of the potential costs associated with the SCM is a

basic flaw of both the Staff Report and the Final EIR. California public works agencies have also expressed concerns about the SCM limit of 250 gram per liter and the need for testing and evaluation before the limit becomes effective. See comments of Los Angeles Water District on SCM in the Final EIR.

Response: The commenter's concerns about the loss of alkyds for light industrial maintenance requirements is discussed at length in the responses to Comments #26 and #32.

The costs for reformulation of coatings were evaluated in Chapter VIII of CARB's Staff Report. As detailed in Appendix I of the Staff Report, a comparison was made between raw material costs of a complying acrylic and a noncomplying alkyd industrial maintenance formulation. The alkyd coating was more expensive than the acrylic coating. CARB's retail shelf survey showed that industrial maintenance coatings had a wide range of prices, from $34 to $100+ per gallon. Further, the NTS study showed that durability is similar for complying and non-complying coatings. Information from product information sheets indicates that surface preparation is virtually the same for complying industrial maintenance coatings as for alkyd coatings (for an example, see the responses to Comments #27 and 28). As a result, we do not believe that, in general, complying industrial maintenance systems are more expensive and difficult to use than alkyd coatings.

The commenter's reference to concerns of essential public service agencies such as the Metropolitan Water District of Southern California, in its July 7, 1999, letter (see letter #17 in Appendix C of CARB's Final EIR) is somewhat misleading. The letter in question was in response to an earlier draft of the SCM, in which industrial maintenance coatings were to comply with 250 g/l by July 1, 2002, and 100 g/l by July 1, 2006. In the SCM approved by CARB, the final limit of 100 g/l was dropped, and the effective date for compliance with the 250 g/l limit was extended to January 1, 2004. These changes were made in consultation with a number of public service agencies (California Department of Transportation (Caltrans), California Department of Water Resources (DWR), Los Angeles Department of Water and Power, and Metropolitan Water District of Southern California). These agencies are currently conducting laboratory and field performance testing of protective coatings used in public infrastructure. The Southern California Association of Publicly Owned Treatment Works is also conducting performance testing. In April 2000, several of the public service agencies expressed support for the compliance date extension for industrial maintenance coatings, and requested a review of their performance tests prior to the implementation date. Both CARB and the SCAQMD will perform technology assessments prior to the effective date of the limit to ensure that no unexpected problems or delays have occurred during reformulation, where needed, and are closely monitoring the public service agency testing. In addition, see response to Comment #11.

Prior to the June 22 hearing, CARB received letters of support from Caltrans and DWR. Both agencies expressed confidence that the industrial maintenance VOC limit could be met by the compliance date. It should be noted that these two agencies had expressed the same concerns as Metropolitan Water District in their comments during June and July 1999. No change to rule and staff report is necessary.

18. We attach and endorse the statement provided by Duane DeYoung, Vice President of R&D for Rustoleum, in response to Staff's response to his earlier comments on the Draft EIR concerning industrial maintenance coatings. (See Attachment B.) Rustoleum makes both solvent borne and water borne industrial maintenance coatings, and is well qualified to discuss the benefits and limitations of both.

Response: Mr. DeYoung's issues are addressed in the responses to Comments #26 through #33.

19. NPCA represents a the full spectrum of AIM coatings manufacturers in the United States, including companies specializing in the development and manufacture of low VOC coatings. NPCA does not take the position that only high VOC coatings technology is available presently or in the reasonably foreseeable future. NPCA knows that low VOC product technology may be successfully used currently to meet the performance requirements of many application and exposure environments of a general class of coatings. However, there first must be a thorough evaluation of this technology before it can be mandated as being feasible for <u>all or even most</u> of the application, performance, and exposure requirements of the general class of coatings to which it belongs. There is no substitute for a thorough evaluation of existing and reasonably foreseeable coatings technologies in setting future VOC limits.

Response: See the response to Comment #4b-2 in Appendix I of CARB's Final EIR. We agree that low VOC technology needs to be thoroughly evaluated before being used in general classes of coatings. Although this commenter asserts that the coatings limits may not be feasible for all uses, they have not submitted specific information indicating which uses could be affected. In a meeting with the commenter, they indicated a concern with the coating of park benches, light poles and tank linings. Based on the information staff has reviewed, coatings are available for all uses.

We disagree that the rule mandates particular technologies since a number of reformulation approaches are available to be used at the discretion of individual manufacturers. Likewise, manufacturers are responsible for testing new formulations for the various application and exposure environments for which the coating is intended.

In evaluating technology, CARB and the districts look at the recommended uses for various coatings by manufacturers. Performance tests such as the NTS study

are an independent evaluation of the coatings' most important compositional and performance characteristics, using complying and non-complying products that are already available. As explained in the response to Comment #17, CARB and districts also closely monitor performance testing by end-users of architectural coatings such as public service agencies. Finally, see response to Comment #11. If the commenter has additional performance testing results that would assist CARB and the districts in making these judgments about new technologies, we would include this information in our technology assessments.

20. ARB has relied upon product data literature (which can be imprecise), flawed or incomplete studies, trade journal articles, and potential starting formulas of resin suppliers. These are not sufficient for setting the VOC limits specified in the proposed SCM. As for starting formulas, resin manufacturers (and our membership includes most of them) do not claim that a starting formula guarantees that coatings based on it will be successful in all the potential applications of the formula. Only actual development of a specific coating for particular purposes and field-testing will determine whether the starting formula works for a particular coating use.

    Response: See the response to Comments #4b-14, #4b-15 and #4b-18 in Appendix I of CARB's Final EIR for the reasons CARB used product data sheets, information from resin and coating manufacturers, and trade journals. CARB has used all of the information that was available, as explained in detail in Chapter VI of CARB's Staff Report, for every category. Performance testing data were used whenever available. (Sacramento) District staff has also relied on this same information. The (Sacramento) District (and Bay Area District staff) would consider any additional field testing results the commenter wishes to submit. In addition, for the eleven categories for which we are proposing lower limits than the current limits, complying marketshares range from 13 to 74 percent, according to the 1998 architectural coatings survey.

21. We disagree with staff's projection of costs. They will be much higher because reformulation costs are lower than the actual cost, and the assumption that lower VOC coatings will be substantially the same in application and performance properties as those currently available in unregulated areas is flawed. Staff has assumed one-time reformulations, when in reality continuous reformulations are needed because of the trial and error of the process, and the extreme nature of the mandated technologies will increase reformulations. This also assumes that raw materials are in sufficient supply; for example, recently a major supplier of an exempt solvent announced it was ceasing operations. The possible exemption of T-BAC (tertiary butyl acetate) may help in meeting some of the proposed SCM limits, but there is no way of projecting which coatings will be able to use it effectively, or what its price and supply will be. The increased costs of using more difficult-to-apply coatings such as acrylics in replacement of alkyds in industrial maintenance are not recognized, because the need for more surface

preparation makes acrylics insubstantial. These matters have not been adequately addressed in the Staff Report and Final EIR, and each district will have to address. This is more than industry simply disagreeing with staff concerning legitimate inferences being drawn from conflicting information.

Response: As explained in the response to Comment #4b-32(b) in Appendix I of CARB's Final EIR, CARB used industry cost survey information to estimate costs. Survey respondents were specifically requested to include R & D costs, which would reflect multiple reformulations due to the trial-and-error nature of product development. CARB assumed that every non-complying product would have to be reformulated, which may overestimate the cost impacts. CARB also assumed that, when estimating the costs to manufacturers, none of the cost would be passed on to the consumer. Further, cost estimates do not reflect cost savings from averaging or the fact that manufacturers must comply with SCAQMD limits in 2002. Thus, we believe that the cost estimates are conservative. In addition, the District looked at the costs to manufacturers analysis performed by SCAQMD. In comparing CARB and SCAQMD cost analysis, the total annual costs were in agreement.

The commenter is apparently referring to the major domestic manufacturer (OxyChem) of parachlorobenzotrifluoride (PCBTF, trade name Oxsol® 100), who is no longer making this exempt solvent. Our information is that PCBTF is readily available from foreign sources at a price and quality competitive with the domestic supplier's price. Further, we understand that the sale of the Oxychem plant is in escrow, that the new owners plan to continue to make Oxsol® 100, and that a large inventory of Oxsol® 100 remains available.

Although the EPA has not yet exempted *tert*-butyl acetate (TBAC), many manufacturers have been trying it in various types of formulations to evaluate whether it is a viable alternative in their coatings. However, the California Environmental Protection Agency has concerns about exempting t-butyl acetate because of a possible carcinogenic metabolite and insufficient data on multi-media impacts. The (Sacramento) District has not committed to exempting TBAC, should the U.S. EPA exempt it. The cost analysis was not based on the availability of TBAC for reformulation. (In addition, the Stratospheric Ozone Policy, adopted by the Bay Area Board of Directors, dictates that consideration be given to exempt compounds based on their potential toxic and ozone depleting effects.)

The assertion that extra surface preparation is required for use of acrylic coatings is discussed in the responses to Comments #17 and #27. Based on that information, the cost analysis assumed that there would be no additional surface preparation when using complying coatings.

22. NPCA disagrees that it is necessary or helpful for the entire state to depart in such a radical manner from the national AIM rule without a thorough evaluation of the

technological feasibility of the coatings that would be mandated. We request that the Board instruct Staff to establish a program for assessing the technological and economic feasibility of the mandated limits of the SCM, and any future limits, and to take into account the widely differing climatic conditions that prevail in California. The EIR is deficient in the CEQA requirement to evaluate impacts on a region-by-region basis.

Response: CARB has directed (in Resolution 00-23 dated June 22, 2000) that CARB staff "(1) monitor the progress of manufacturers in meeting the VOC limits of the SCM; (2) conduct technology assessments prior to the effective dates for each of the eleven proposed VOC standards that are lower than the predominant district standards currently in effect; and (3) propose any future modifications to the SCM that may be appropriate." This means that if information received in the future demonstrates the need to modify a particular VOC limit, appropriate changes will be made to the SCM, and districts will be notified of these changes. As is discussed in Comment #11, the (Sacramento) District (and Bay Area District staff) will be monitoring the industry's progress in complying with the standards and will make any appropriate changes to the rule as needed.

CARB evaluated regional differences, including those associated with climate and weather conditions. As discussed in the response to Comment #15-1 in Appendix I of CARB's Final EIR, CARB has already demonstrated this, by allowing limited use of the 340 g/l limit by petition for industrial maintenance coatings in areas of persistent low temperatures, high humidity, and fog. CARB has also allowed higher VOC limits for bituminous roof coatings and bituminous roof primers to allow for the use of solvent-based products in cooler areas of the State. CARB also considered how VOC and NO_x conditions typical of various areas of the State may impact the effectiveness of ozone reduction strategies.

The Sacramento area is characterized by hot, dry summers and temperatures generally above freezing with some foggy and rainy conditions in the winter. Foggy conditions are generally restricted to the morning hours. Painters throughout California (and the U.S) choose their windows of opportunity for not-too-cold, as well as not-too-hot conditions. (The Bay Area, for the most part, is similar climatically to most of the rest of California. The exception, in cooler, more foggy or humid coastal areas, has been given a special provision for a limited amount of higher VOC industrial maintenance coating.)

The major weather-related rule provision in the SCM is the petition process that allows use of 340 g/l industrial maintenance coatings in areas of persistent fog, cold temperatures, and high humidity. This petition process is not included in the District's proposed rule because the petition provision is restricted to the North Central Coast, San Francisco Bay Area, and North Coast Air Basins (from Point Sur north to the Oregon border). In these areas there are few continuous 72-hour periods with less than 75 percent relative humidity, temperatures greater than 45

^{o}F, and temperatures greater than 5 ^{o}F above the dew point temperature (which is associated with the development of fog). Caltrans specifications for bridge painting prohibit application of paint under these adverse weather conditions.

The EIR evaluated climatic conditions in the Sacramento area, and we do not believe the SMAQMD falls under these adverse conditions. Based on weather data from the National Oceanic and Atmospheric Administration, average relative humidity in the Sacramento area might be problematic only during the months of December and January, in contrast to the North Coast with an average of 80 percent plus relative humidity year-round. A similar pattern is observed for average temperatures, and for the difference between the average temperature and the average dew point temperature. Therefore, the petition process is not included in Rule 442. (This provision is included in the proposed amendments to Rule 3).

23. NPCA frankly recognizes that in some cases Staff have moved from consideration of more restrictive limits to less restrictive limits during our discussions with them. This has improved what otherwise would have been a much more impracticable rule. But we would have to tell end users of our products in California that even with these changes, the SCM would not specify the most cost-effective and productive coatings that could be offered by the industry, and that the mandated limits will not bring net environmental benefits.

Response: We disagree with these statements, as documented throughout the (CARB, Sacramento, and District) Staff Report. CARB documented both the technical merits of the VOC limits, as well as their cost-effectiveness. CARB documented the environmental benefits through a discussion of the industry issues (Chapter IV of CARB's Final EIR) and the project alternatives (Chapter V of CARB's Final EIR). (Sacramento) District staff have performed targeted socioeconomic and environmental analyses and found that the proposed limits are cost-effective and technologically feasible. (The Bay Area District socioeconomic analysis, produced by an outside contractor, is attached as Appendix II).

24. NPCA hopes that ARB staff will make additional changes that we have suggested to make the SCM less impractical: (a) implementation of averaging provisions; (b) tank lining and pipe coatings at 340 g/l; (c) interior semi-transparent stains at 350g/l; (d) interior wood sealer at 350 g/l; and (e) amendment of the Specialty Primer Coatings category to include addressing the special problems associated with efflorescence, tilt up forms oils and release agents, siloxane and silocanate materials, and wood and hardboard substrates.

Response: (a) The proposed rule and the SCM includes an averaging provision. The District will work with CARB to develop implementation guidelines for averaging. These guidelines will be based on the "Implementation Guidance Document" for Rule 1113 released in November 2000 by the SCAQMD for flat coatings. The SCAQMD document was developed over many months with active

participation of stakeholders in industry and regulatory agencies. CARB in conjunction with the districts are currently working on a guidance documents to address the remaining averaging categories.

(b) The commenter has supplied no justification for the request for a 340 g/l limit for tank lining and pipe coatings. This comment was addressed in the response to Comment #9b-17 in Appendix I of CARB's Final EIR. Based on 1996 sales data in the ARB survey, the industrial maintenance category already has 28 percent complying marketshare. CARB has identified complying tank lining and pipe coatings from Advanced Polymer, Coatings Resource Corp, and Sigma Coatings. The 2004 effective date for the limit would allow time for other coating manufacturers to develop complying coatings, and for end-users to resolve their concerns regarding specifying these coatings. In addition, the averaging provision may allow a coating manufacturer to continue to sell current high-VOC tank lining and pipe coatings, provided sufficient low-VOC coatings are sold in accordance with the averaging provision requirements. As explained in the response to Comment #17, Caltrans and DWR support the SCM and are confident that they can comply with the limits by 2004. No change to the rule and staff report is necessary.

(c) The commenter has provided no justification for this request for a 350 g/l limit for interior semi-transparent stains. This issue was discussed in the responses to Comments #4b-24, #9b-15 and #9b-16 in Appendix I of CARB's Final EIR. Based on 1996 sales data in the CARB survey, stains have a 53 percent complying marketshare. The survey also shows that 86 percent of semi-transparent stains are sold in quart containers, which are exempt from the VOC limit. The new alkyd/acrylic hybrid polymers, alkyd-modified acrylics, and modified acrylic/water dispersible drying oil formulations maintain acceptable open time and associated lapping performance. Raw materials manufacturers have developed VOC-free wet edge enhancers that can be used to reduce the potential for lapping problems. Advances in pigment technology have substantially reduced the size of pigment particles, which results in better penetration. The area to be covered and environmental conditions should be considered when determining which application technique should be used to maintain a wet edge and avoid lapping problems. Water-based pre-stain and wood conditioners can also be used to help minimize blotching. Microfoam entrapment appears to be related to the application and/or sanding of the subsequent topcoats, or that the topcoat is applied incorrectly, possibly too quickly. Proper application of appropriate topcoats should result in a smooth final finish. No change to the rule and staff report is necessary.

(d) The commenter has provided no justification for this request for a 350 g/l limit for interior wood sealers. This issue was addressed in the response to Comment #9b-11 in Appendix I of CARB's Final EIR. A review of product data sheets indicates that several low-VOC products would be suitable for use as an interior

wood sealer, e.g., Sherwin-Williams PrepRite ProBlock Interior/Exterior Primer Sealer and Wm. Zinsser Peel Stop Clear Bond Coat. Many of the primer, sealer, undercoaters are dual-use products, that is, they are for use on both exterior and interior surfaces, and are intended for multiple substrates (wood, sheet rock, masonry, etc.). Further, the term "sealer" is often used interchangeably with the terms "primer" and "undercoater." Creation of a product category for sealers to be used only on interior wood would necessitate re-labeling by manufacturers and create a more narrow market for their product. Compliance is technologically feasible through water-borne products. There are complying latex sealers suitable for use on interior wood substrates. Also, prior to the June 22, 2000, hearing, CARB modified the sanding sealer definition to address this issue. Sanding sealers are now defined, in part, as clear or semi-transparent wood coatings that can be applied to bare wood to seal the wood, and to allow for abrasion of the surface. Many sealers may thus fall under the definition of sanding sealers with a VOC limit of 350 g/l, which addresses the commenter's concern. No change to rule and staff report is necessary.

(e) The commenter has provided no justification for this request to amend the specialty primer, sealer, and undercoater category to address the special problems associated with efflorescence, tilt up form oils and release agents, siloxane and silocanate materials, and wood and hardboard substrates. Based on 1996 sales data in the ARB survey, the primer, sealer, and undercoater category has 74 percent complying marketshare. Product data sheet review indicated that low-VOC primers (e.g., Sherwin Williams) are available for use on substrates with efflorescence. Therefore, proper surface preparation resolves problems with efflorescence, form oils, and siloxane materials.

The issue of hardboard was addressed in the response to Comment #9b-10 in Appendix I of CARB's Final EIR where the commenter referenced problems with wax bleed unless primed with a solvent borne product. Complying primers recommended for hardboard are made by Sherwin Williams, Pittsburgh Paints, Kelly-Moore, Dunn-Edwards, ICI, Zehrung, and Evr-Gard Coatings. Further, the American Hardboard Association recommends the use of latex primers on exterior hardboard, and many manufacturers make coatings that comply with the primer, sealer, undercoater limit.

25. NPCA will continue to work with ARB and district staffs in the development of the SCM, by providing them with our best judgments about the technological and economic feasibility of the coatings technology. But ultimately, the issue of whether Californians will continue to have access to cost effective, productive coatings rests with CARB and the districts. Our goal is to ensure that we provide decision-makers with our best technical information and judgement. And if CARB and the districts decide to reject our information and recommendations, then our members will attempt to minimize the negative impacts of the rule on their customers.

Response: The assistance of NPCA and its member companies is appreciated. However, CARB and the districts must make their final judgments based on all the information available.

Comment letter to CARB from Duane De Young, Vice President R&D, Rust-Oleum Corporation, dated June 19, 2000

26. In its responses to my comments (March 31, 2000) in the Final Program EIR, CARB chose to ignore or dismiss many of the cogent points that I was attempting to make about the Industrial Maintenance category, and its upcoming limit of 250 g/L in 2004. It is apparent that CARB intends to dismiss, rather than respond, to any argument that solvent borne alkyds (whether at 340 g/l or 400 g/l VOC) deserve to be kept as an irreplaceable coating for light and moderate duty IM uses.

Response: We disagree that CARB has ignored or dismissed concerns that solvent borne alkyds will no longer be available for light and moderate industrial maintenance uses. As explained in the responses to Comment #10-2 in Appendix I of CARB's Final Program EIR, the SCM includes a rust preventative category that is specifically intended to allow limited use of alkyd coatings under less-severe environmental conditions. The rust-preventative coatings are for use by light and moderate industrial maintenance users. Rust Preventative Coatings can be used except for the construction and maintenance of facilities used in the manufacturing of goods and commodities; transportation infrastructure, including highways, bridges, airports and railroads; facilities used in mining activities, including petroleum extraction; and utilities infrastructure, including power generation and distribution, and water treatment and distribution systems. CARB also extended the effective date of the 250 g/l limit for industrial maintenance coatings to January 1, 2004. CARB and the District will perform technology assessments prior to that date. Finally, water reducible alkyd systems have been introduced and manufacturers are continuing to work on alkyd systems that would comply with the proposed limit (see response to Comment #32).

27. Surface preparation will be more critical for acrylic latex enamels than alkyds. Your response #10-2 in the Final Program EIR simply states that proper surface prep is required for both types of coatings to achieve optimum performance. That totally evades the point that MORE and MORE CRITICAL preparation of substrate is required for latex in order to assure proper adhesion and substrate protection.

Response: The directions for use are essentially the same for complying and non-complying products. As an example, CARB looked at a number of Rustoleum industrial maintenance primers for mild to moderate environments:

Primer	Resin System	VOC (g/l)

1	Alkyd (modified)	420
2	Alkyd (modified)	385
3	High Solids Alkyd (modified)	340
4	High Solids Alkyd (modified)	340
5	Acrylic (water-based)	250
6	Acrylic (water-based)	250

Rustoleum states that the acrylics are designed for use whenever a traditional solvent-based enamel/primer can be used, and that the acrylics offer excellent corrosion resistance on rusted steel and clean steel. The stated surface preparation is similar for all three: (a) remove dirt, oil, grease, salt, and chemical deposits; (b) wash surfaces, rinse and dry; and (c) scrape and wire brush to remove loose rust, scale, and deteriorating coatings.

The only additional instructions for Acrylic #5 includes: (a) scuff sanding for old coatings that are hard or glossy (which can occur as part of (c) above, or which suggests the coating may not need to be replaced, except for a change in color), and (b) cleaning of any mold or mildew with bleach or chlorinated cleansing powder (which is usually confined to spot treatments, rather than the entire surface). When compared to the common surface preparation requirements, we do not believe these additional recommendations for acrylic coatings constitute "more and more critical" substrate preparation. There were no additional preparation requirements for Acrylic #6.

28. Temperature/humidity windows for proper acrylic latex application are narrower than for alkyds. This fact was totally ignored in your response #10-2 of the Final EIR, yet can easily be demonstrated

Response: The same products mentioned in the response to Comment #19 have the following recommendations regarding temperature and humidity:

Primer	Resin System	Temperature range, ^{o}F	Max Relative Humidity
1	Alkyd (modified)	32-100	Not mentioned
2	Alkyd (modified)	32-100	Not mentioned
3	High Solids Alkyd (modified)	32-100	Not mentioned
4	High Solids Alkyd (modified)	32-100	Not mentioned
5	Acrylic (water-based)	50-100	85%
6	Acrylic (water-based)	35-100	Not mentioned

Again, as in the response to Comment #27, Acrylic #5 is the only coating having temperature and humidity requirements different from the other five. In California, these climatic restrictions are important only in the North Coast, where the year-round average temperature is in the 50s and average relative humidity is between 80 and 90 percent. For other areas of California, including the (Sacramento) District, there are adequate temperature and humidity windows in which to apply coatings throughout the year. The SCM includes a petition process to allow limited use of 340 g/l coatings in the North Coast from Point Sur north to the Oregon border. This petition process is not included in Rule 442, however, because the (Sacramento) District is not within the specified geographic boundaries, and does not have the climatic conditions as described for the North Coast. Fog in the Sacramento area is generally limited too late fall and early winter, and usually burns off by noon. (This provision is included in the proposed amendments to Rule 3).

29. In several instances (10-1, 10-3) CARB advances the position that "industrial workers" have adequate skills to apply high performance coatings. This is simply untrue. Industrial workers in the myriad of industries that use IM coatings are NOT trained professional coatings applicators. CARB itself refutes this statement in your response #10-15 to this same letter, when it says "The coating (referenced) is a two-component coating, so we believe that only workers trained to use industrial-grade spray and other equipment would use this coating." I have observed many times in my career the problems produced by non-professional applicators using complex industrial maintenance products.

Response: Coatings in the rust preventative category are available for lower-skilled workers to use in light to moderate duty industrial applications. With respect to harsh industrial environments, we expect industrial facilities that use industrial maintenance coatings to hire workers and contractors appropriate for the job requirements. This is currently the case, as many industrial facilities now apply multi-component coatings with trained workers.

30. The NTS study has not adequately or scientifically compared long term protection/durability performance. You admit in multiple instances (#10-5, #10-6) that "we do not have completed test results," and "the field evaluation stage is still ongoing," but you still do not consider the danger of proceeding on the basis of assumption without proof as you mandate the 250 VOC limit. Your comments are peppered with "we believe," "our current understanding is," and "in the future there MAY be" ... a coating. Please respond as to how you can perpetuate assumptions without factual support. I suggest that as you "continue to track" and "to consider results" not yet in, that you delay the IM decision. Your response to comment letter #16 (Essential Public Service Agencies) agrees with their serious misgivings about the performance and availability of adequate low performance coatings. Rather than depend on a 2003 technology assessment to VALIDATE your 250 g/l IM limit, why not depend on that ongoing technology assessment to SET a scientifically supportable limit?

Response: The commenter is referred to the responses to Comments #4b-7 and #4b-8 in Appendix I of CARB's Final EIR.

As discussed elsewhere, the industrial maintenance limit of 250 g/l does not go into effect until 2004. Since 28 percent of the market for industrial maintenance coatings is already using compliant coatings (based on 1996 sales data), it is reasonable to conclude that the technology exists to bring the remaining 72% into compliance with the new limit by 2004.

In setting the 250 g/L standard, CARB relied on information from a variety of sources, including test data and the wide range of commercially available products that comply with the proposed VOC limit. Before marketing, coating manufacturers rely on real-time exposure testing similar to the NTS study. Therefore, currently complying coatings have presumably undergone this field testing, and an effective date of 2004 should allow for other manufacturers to do likewise. Laboratory test results are summarized in product data sheets to demonstrate performance to users. However, we do not see an emphasis on, or even reference to, field testing in information provided by coating manufacturers. In addition, manufacturers have declined to share the results of any field testing with us. Consequently, we must rely on our own testing and that of end users, such as public service agencies. In addition, see response to Comment #11.

Based on the totality of the evidence, we do not believe it is necessary to delay implementation of the 250 g/l limit until all the field test data are completed. No change to the rule and staff report is necessary.

31. The support record is technically flawed. You acknowledge that their ARE flaws in your public record of supporting documents in that you discovered certain products to be "no longer available", and that supplier starting point formulations are NOT to be considered proof of product claims. Now please respond as to how

CARB can be so sure of its positions given the flawed (partially) record, and the lack of exterior performance testing data?

Response: The changes to CARB's support record were very minor. The overall conclusions remain the same.

32. I must disagree with your wishful thinking that 250 g/l alkyds are soon to be available. You offer no proof, just statements such as "manufacturers are making efforts to develop low VOC alkyds," and "in the future there may be low VOC alkyd coatings that are suitable." Even if this were to come true, the costs would be prohibitive in terms of dollars AND application trade-offsets.

Response: Sherwin-Williams is now marketing a 140 g/l water-based alkyd coating. The product data sheet provides the following information:

AQUACLAD™
Water-based alkyd
Gloss topcoat
Acrylic-modified alkyd resin
One-component
HAPs free
140 g/l
All purpose maintenance enamel
For prepared steel, concrete, galvanized, aluminum, masonry
Suitable for use in USDA inspected facilities
May be used with acrylic (110 g/l), alkyd (405 g/l), or epoxy (186 g/l) primer for steel
May be used direct-to-steel. However, best results with primer.
Typical surface preparation
Temperature range 50^{o}F to 120^{o}F
Relative humidity 85% maximum
3 year shelf life
Water cleanup
"Outstanding exterior performance properties"

There is no reason to believe that this product is cost-prohibitive or that there are application trade-offs. As discussed in the response to Comment #19, even the commenter's own products with a variety of resin systems have similar application properties. Again, alkyds are available for light and moderate duty industrial applications through the rust preventative category.

33. I urge you to respond to my comments in a constructive manner, and not just proceed in your rush to validate your pre-selected positions.

Response: We believe that the commenter's issues have been completely and fairly addressed. No change to the rule and staff report is necessary.

Comment letter to Rob Sliwinski, New York State Department of Environmental Conservation, August 21, 2000.

34. NPCA is providing information about our reservations about the Staff Report underlying the SCM. There is much in the document that reflects exercise of judgment in the face of an array of information and data which does not lend itself to scientifically certain answers nor refutations. The main thrust of the document is to make judgments about likely future coatings technology developments taking into account current information and development plans of the industry. We do not agree with many of the conclusions reflected in the Staff Report about the likely outcomes of future technology developments or the commercial feasibility of anticipated developments. We want to share our thoughts about the implications of adopting the same or similar limits for the northeastern United States.

Response: (Sacramento and Bay Area) District staff believes that all of the VOC limits are technologically feasible and cost effective by the implementation dates of the proposed rule. CARB has documented that the overall performance of the reformulated products will be similar to the performance of their higher VOC counterparts. The District has reviewed this documentation and information provided by SCAQMD and concurs with CARB's conclusions.

CARB assumed that some manufacturers will have to reformulate to meet the new limits but does not believe that there will be significant trade-offs in ease of application, performance, durability, and aesthetic qualities of the low-VOC products. This conclusion is supported by the usage recommendations prepared by the manufacturers. Moreover, as discussed elsewhere, many categories already have a high percentage of complying marketshare, as shown by the CARB's 1998 architectural coatings survey.

We do not believe the proposed limits are technology-forcing. There are currently complying marketshares, or currently available replacement coatings, for all of the categories with proposed lower limits. The commenter's statement regarding CARB's judgments regarding future coatings technology is addressed in the responses to more specific concerns in Comments #36 and #45 below.

42. The OTC should examine the requirements of the SCM to determine if it suits the northeastern United States. For example, the SCM contains a provision relating to the industrial maintenance coatings category which is crucial for the protection of the infrastructure in the Northeast. The SCM calls for a general VOC limit of 250 g/l for this category by 2004. However, for areas "located within the North Central Coast, San Francisco Bay Area, or North Coast Air Basins" a higher limit is specified, due to inclement weather conditions (high humidity, persistent fog, and cold temperatures) of these areas. These are weather conditions common to most of the northeastern and mid-Atlantic states. The practicality of drawing

distinctions on the basis of weather in the areas making up the jurisdiction of the OTC would be very difficult, if not impossible.

Response: The OTC approved a model rule prepared by the State and Territorial Air Pollution Program Administrators (STAPPA) and Association of Local Air Pollution Control Officials (ALAPCO), which is based on the 340 g/l limit in the SCM for the North Central, San Francisco Bay Area, and North Coast Air Basins. In the context of this comment made to the SMAQMD, we do not believe that climate is a valid concern since the climate and weather patterns of the Sacramento area were evaluated in CARB's Final EIR and in the District's own targeted environmental analysis. See the response to Comment #22 for a discussion of typical weather in the Sacramento area. (Also see discussion in the Bay Area EIR for analysis of Bay Area weather conditions).

36. Predicting future technology and commercial feasibility is not an exact science, and an agency attempting to do this should be given some latitude. In the Staff Report, the feasibility of low-VOC flat coatings is summarized: "The high marketshares that already comply with the proposed limit demonstrate widespread use of existing low-VOC technology for formulating flat coatings." Regarding the 2.6 percent complying marketshare for high gloss coatings, the Report states: "The marketshare of complying products is just one element we considered in our evaluation of the feasibility of the proposed VOC limit. We also evaluated product information from manufacturers, laboratory performance tests, and information on available resin technology." The decision to grant a higher VOC limit was for enforceability, and not technological feasibility reasons. The process involved here is not an exact science and there can be a variety of factors that have to be taken into account in making a decision. Staff is given a certain latitude in picking which aspects of its factual record it chooses to emphasize for one conclusion and not for another. Thus, we believe your group should evaluate the evidence to determine independently whether you weigh the incomplete information the same way as CARB staff did and can arrive at the same conclusions based on it.

Response: We agree with the commenter that determining technological feasibility is not an exact science; judgment is involved and the OTC has the discretion to make its own judgments based on the evidence. In the context of the SMAQMD, however, we agree with CARB's decisions on technology as appropriate for this District. (Bay Area District staff agree).

In this example, the commenter has missed the main point for the reason the high-gloss nonflats were given a higher limit than low- and medium-gloss nonflats. On page 102 of CARB's Staff Report, CARB staff explains that there is overlap between high-gloss nonflats and quick-dry enamels in terms of gloss and dry time requirements. Companies could re-label products that meet the gloss and dry time requirements for quick-dry enamels to get the 250 g/l quick-dry enamel limit, rather than reformulate them to meet the 150 g/l nonflat limit. This re-labeling

creates enforcement concerns for districts with fewer resources. CARB decided that the possibility of relabeling was more of a concern than a small loss of emission reductions, and created a breakout category for high-gloss nonflats at a higher limit than other nonflats. However, CARB did identify several premium quality high-gloss nonflat coatings that meet the 150 g/l limit, so one could not argue that technology is not available.

As to the larger point that CARB staff selectively chose certain aspects of the factual record to emphasize for one conclusion and not the other, we would not agree. There is a process of sifting through information, which is part of the process of making the best judgment possible. CARB and the SMAQMD staff performed independent evaluations of technological feasibility, and came to the same conclusions. Another check on the process involves public scrutiny of those judgements. In several cases during the development of the SCM, where convincing arguments accompanied by data were made by industry, limits were raised. This was the case with the high-gloss nonflats. In other cases, the industry's data were insufficient to justify modifying the limits.

37. The SCAQMD adopted the limits that were subsequently adopted by CARB in the SCM. In adopting the limits, the SCAQMD Board directed staff to evaluate the future limits to determine their feasibility and report to the Board periodically and before the limits are to become effective. The CARB Board gave the CARB staff a similar instruction when it adopted the SCM, but the SCM itself makes no mention of this. The Staff Report states that "staff believes all of the VOC limits proposed in the SCM are technologically and commercially feasible by the effective dates of the SCM." (Emphasis added.) But it also says that despite the fact that staff " believes that all of the proposed limits are technologically and commercially feasible, ARB staff will conduct technology reviews of the proposed limits that are lower than current limits, prior to their implementation."

Response: The commenter is referred to the response to Comment #4b-9 of Appendix I of CARB's Final EIR. The commenter is referred to the response to Comment #14 for language requiring technology assessments in the Resolution adopted by CARB. CARB staff did not believe it was appropriate to put language regarding the technology assessments into the SCM, because this language would then be carried over to district rules. The Board clearly intended that the ARB direct the technology assessments, and it would not be appropriate for district rules to contain language committing the ARB to conduct technology assessments. See response to Comment #11.

The need to conduct technology assessments in no way changes CARB's conclusion that the limits are currently technologically feasible. CARB and the districts routinely perform technology assessments for many of our regulations, as a check that no unexpected problems or delays have occurred during reformulation, in the cases where reformulation is necessary.

38. The Staff Report states: "Our survey results demonstrate that for nearly all the coating categories, products are currently available that comply with the proposed limits. For the 11 categories for which we are proposing lower limits than the predominant limits in existing district rules, the complying marketshares range from 13 to 74 percent…. The complying marketshares vary widely with each coating category because the proposed limits were developed after considering a variety of factors unique to each category. These factors include the availability of reformulation options that may not be used in current products, the variety of product types in a given coating category, patents that may restrict some reformulation options, and economic issues." Again this language in the Report suggests that there are good reasons for independent technological assessments, despite the staff's belief that the proposed limits are feasible.

Response: Each coating category in the SCM and proposed rule is unique. There are distinct issues that need to be addressed in every category, and some factors might be unique to a single category. There is simply not a uniform list of factors that can be checked off for each category.

Survey data were collected for all categories for which lower limits were proposed. The survey was the most consistent evidence for the categories, but even so, survey data were not collected for a few categories. The task of CARB and district staff is to investigate the appropriate issues for each category, to search out all the evidence possible, and to make a judgement based on the evidence. It is important to emphasize that we do not believe the proposed limits are technology-forcing. There are currently complying marketshares, or currently available replacement coatings, for all of the categories with proposed lower limits. Through the public process, where persuasive evidence was presented to the contrary, CARB staff adjusted proposed limits. The future technology assessments will be the final check on the reformulation efforts, in the cases where reformulation is necessary.

We would agree with the OTC if the OTC decided to evaluate the technology assessment in view of local conditions and based on products available in the Northeast states. However, we believe the SMAQMD (and Bay Area) can rely on CARB's technology assessment since CARB's analysis was a statewide evaluation.

39. The Staff Report states that reformulated products perform similar to existing products. "This conclusion is based on: (1) the current availability of complying products in the marketplace; (2) ARB staff's analyses of each product category, as detailed in Chapter VI; and (3) the results of performance studies conducted by independent laboratories (the "National Technical Systems (NTS) Study" and the "Harlan Associates Study"). The NTS study showed that when compared to conventional coatings, currently compliant, low-VOC coatings available today have similar application and performance characteristics, including blocking resistance, mar resistance, adhesion, abrasion resistance, and corrosion protection.

The raw data from the Harlan Associates study was published in 1995. Although somewhat dated, the information generally supports the results of the NTS study." As you will see in our attached April 7 submission to the staff concerning its draft version of the Report, we believe that there are serious questions concerning the confidence one can have in the conclusion's reached by the staff based on the information it relied upon.

Response: The responses to the April 7, 2000 letter to ARB were addressed as Comment Letter #4b in Appendix I of CARB's Final EIR. As stated in the responses to Comments #4b-6, #4b-10, and #4b-11 in Appendix I of CARB's Final EIR, CARB relied on all performance information available to them. Both the Harlan and NTS studies were performed by independent contractors, with input from industry. SCAQMD, CARB, and (Sacramento) District staff independently assessed the results of the NTS study. Both the Harlan and NTS studies utilized accepted experimental design, and the same standard test methods used by manufacturers were performed. Interpreting individual test results is not difficult, but making generalized statements summarizing a number of test results is inherently difficult because most coatings do well in some characteristics and less well in other characteristics. A group of manufacturers would also have difficulty agreeing on a summary of performance testing results because each manufacturer has individual ideas regarding acceptable and unacceptable performance. At some point in interpreting these studies, qualitative summary statements must be made. For this reason, results of performance studies are only one piece of evidence that staff used in making decisions about technological feasibility of each coating category.

Both the SCAQMD and CARB have repeatedly asked manufacturers for supplemental performance data, and considered all of the information submitted. The limited performance data that were received from manufacturers or trade organizations did result in less stringent limits for some categories in the SCM. District Staff is proposing to adopt the VOC limits established in the SCM.

40. The staff reviewed the NTS study's results and concluded that "The NTS study showed that when compared to conventional coatings, currently compliant, low-VOC coatings available today have similar application and performance characteristics…." An examination of the of information concerning the NTS results for "industrial maintenance primers" shows why OTC staff should look behind the assertions of the CARB Staff Report. In Appendix E of the Staff Report, eleven performance characteristics are evaluated for Industrial Maintenance Primers. Of these eleven, four demonstrated that low VOC coatings exhibited lower performance characteristics compared to high VOC coatings. Despite this, the assessment states, "Overall, low VOC coatings exhibited similar performance compared to high VOC coatings." As an initial matter, it is difficult to justify a conclusion that one product is substantially similar to another when it

fails to meet over thirty-six percent of the performance characteristics of the other product.

Response: The qualitative statements summarizing the performance of low VOC (complying) coatings versus high VOC (noncomplying) coatings in Appendix E is based largely on, for each test, a regression analysis. A statistical tool, regression analysis, was used to create graphical trend lines that make the relationship between data points more apparent. So, for example, where numerical test results for low and high VOC coatings generate a trend line that is basically horizontal, the qualitative statement was made that "low VOC coatings exhibited similar performance compared to high VOC coatings." This merely establishes a trend with the given data points or test results. The performance of an individual low VOC coating versus an individual high VOC coating on a particular test is still available; for this detail, one would have to look at the raw data tables or data points on the graph. The reason that a graphical interpretation of the NTS results was used is that there are no known benchmarks for the numerical results of each test that members of the industry would agree are a dividing line between "good/pass" and "bad/fail." The importance of each test on the coating to be used for a particular application is determined by the paint manufacturer or user. In Appendix E, the qualitative statement for overall performance is based on taking all tests into account. If no overall trend favoring either lower-VOC or higher-VOC coatings was observed, the statement was made that "overall, low VOC coatings exhibited similar performance compared to high VOC coatings."

In the example with the industrial maintenance primers, the commenter is incorrectly making a quantitative summary based on qualitative statements summarizing individual test results. It is not correct to say that one product "fails to meet over thirty-six percent of the performance characteristics of the other product," just because on 4 of 11 tests (36 percent), low VOC coatings exhibited lower performance characteristics compared to high VOC coatings. In fact, for each test some low VOC coatings performed well, while others performed poorly, and some high VOC coatings performed well, while others performed poorly. The paint manufacturer or user determines which characteristics are most important for each application. In fact, when looking at the data points, as opposed to the trend lines, it is very clear that low-VOC and high-VOC products performed very similarly.

41. More importantly, the characteristics for which the low VOC coating exhibited lower performance are crucially important in terms of the long-term performance of the coating. The four characteristics for which the low VOC coating showed lower performance were important initial application performance characteristics:

> Dry To Touch -- If it takes a coating longer to dry to touch, it is subject premature failures from overnight dew or rain at any time.

Dry to Hard -- Only when the primer is finally hard is it ready for the subsequent coating.

Contrast Ratio - Hiding Power involves the issue of how much coating must be applied to cover and protect the surface. This result implies that more of the lower VOC coating will have to be applied to achieve the same coverage as the higher VOC coating.

Taber Abrasion resistance, as it name implies has a lot to do with how long the coating will hold up to abrasion, contact from wind, hail, dirt, etc.

A common sense understanding shows that these are among the most important initial application characteristics of a coating based on coating performance. Following the way similar points were handled by the Staff Report, the Report would say, "We base our conclusions on a number of factors, the NTS Study is only one factor. For example, coatings manufacturers are currently working to solve these problems with the lower VOC products." If you knew about the four areas of subpar performance, would you nonetheless purchase the lower VOC coating for your home or agency on the assurance that, despite these shortcomings, "overall" the coating is "similar to coatings" that do not have the shortcomings? Or would you enter a binding contract to purchase the coating on the assurance that the manufacturer would have all of the lower performance problems solved by that time? You should look behind the conclusions of the Staff Report and information relied on to reach them.

Response: As mentioned in the response to Comment #40, when looking at the data points, as opposed to the trend lines, it is very clear that low-VOC and high-VOC products performed very similarly. In addition, it is incorrect to say that some performance characteristics are more important than others; all the tests are important to some customers, or they would not have been chosen by the technical advisory committee (also known as the "TAC") that agreed on the test design. The TAC was primarily composed of paint manufacturers.

There are no perfect coatings that will perform according to the expectations of all people, for all applications, for all coating characteristics, for all environmental conditions, for all cost ranges. That is because people do not agree on what is acceptable performance for every coating characteristic, and they don't agree on which characteristics are the most important for a job. For example, dry time could be the most important characteristic for someone applying a coating to electrical equipment that required that the power be shut off while the coating dried. But to the same user, perhaps ultraviolet (UV) resistance would be less important because the painted equipment is located inside a building. Another customer would say that hiding and abrasion resistance is much more important than dry time because they are painting outdoor handrails on a remodeling project that is closed to the public. Paints are chosen based on what they will be used for, and for each job there are acceptable trade-offs among the large number of coating characteristics.

The purpose of the NTS performance study is to compare the relative performance between currently available low VOC coatings and high VOC coatings. We do not take the position that manufacturers necessarily have to "fix" characteristics that scored lower for a particular test. Even the high VOC coatings had trade-offs on certain tests. We do not believe that low VOC coatings have to have perfect scores for every tested characteristic (if there was even a benchmark to define what is a perfect score).

42. The long term durability performance characteristics such as loss of gloss, color retention, chalking, blistering, etc., have not yet been evaluated under the NTS study and await future evaluations.

Response: See the response to Comment #4b-8 in Appendix I of CARB's Final EIR. The long-term NTS testing is currently ongoing, and the CARB and the District is monitoring its progress. CARB is also monitoring performance testing by public service agencies. In addition, manufacturers perform long-term testing on their own products before marketing them. The long-term test results will be one piece of the evidence that CARB and the District will evaluate in conducting technology assessments prior to the implementation of the VOC limits. No change to the rule and staff report is necessary.

43. We also have submitted for your review some suggestions on where we believe that VOC limits might be lowered below the national limits.

Response: In the Industry Alternative Proposal for VOC limits, the commenter proposes predominantly National Rule limits. By our count, only nine of the limits in this proposal are lower than the National Rule limits, and the compliance date is two years longer than that proposed by the District (except for 1 year for industrial maintenance coatings). The commenter's previous objections to exclusion of the National Rule categories are addressed in the response to Comment #4b-28 in Appendix I of CARB's Final EIR. The commenter has offered no explanation or documentation for why these National Rule categories and limits are appropriate for California. The commenter has pointed out no specific areas where there would be "trade-offs" in coating quality, other than to say that these limits represent a "consensus view of industry experts" on technology in the foreseeable future.

As reported in Chapter VI (Section C) of CARB's Staff Report, CARB evaluated all of the National Rule categories before deciding whether to include them in the SCM. Some of the coatings are not used in California, or appropriately fit in other categories. We can see no justification for relaxing more stringent limits that have been in effect in California for at least ten years.

Comment letter to CARB regarding the draft EIR from the National Paint and Coatings Association dated June 21, 2000

This comment letter has been fully responded to in CARB's Final EIR, Appendix I, Letter 4b. The responses to this comment letter have been reviewed by (Sacramento and Bay Area) District Staff and we agree with the conclusions reached. The (Sacramento) District has elaborated on the responses where additional information is available.

44. NPCA recognizes the obligations of the industry to contribute coatings technology improvements, and the industry has lowered VOC content without regulatory prodding. NPCA's role is to contribute its best estimates of technological feasibility and the consequences and costs of certain technologies, and to that end has consistently urged its members to cooperate with ARB in surveys and in individual meetings to discuss technology issues. The commenter is disappointed in the process utilized to adopt the SCM and in the lack of adequate fact finding. The SCM will stand as a presumptively valid decision about cost effective, commercially viable, and technologically productive coatings for the California districts. NPCA represents the full spectrum of coatings manufacturers, including low VOC coatings manufacturers.

    Response: See response to comment #4-b-1 in Appendix I, Letter 4b, in CARB's Final EIR. No change to the rule and staff report.

45. NPCA does not contend that only high VOC coatings technology is presently or foreseeably available. Rather, NPCA believes that low VOC technology can be used to meet the performance requirements of one particular application and exposure environment of a general class of coatings. However, a thorough evaluation of this technology must occur before it can be mandated for all or most of the application, performance, and exposure requirements of that general class of coatings. The commenter does not believe a thorough, open minded, and objective evaluation of existing and reasonably foreseeable coatings technology has occurred in conjunction with setting future VOC limits. Some NPCA members most concerned about the proposed limits are those that manufacturer and emphasize sales of their low VOC coatings because of their profitability.

    Response: See response to comment #4b-2 in Appendix I, Letter 4b, in CARB's Final EIR. In addition to the response in CARB's final Program EIR, an averaging provision has been added that sunsets January 2005 to give manufacturers additional flexibility in complying with the rule.

46. The SCM is a "suggestion" from a reviewing authority that ultimately has the authority to disapprove district plans. As a practical matter, districts do not deviate significantly from SCMs, even though they have reservations about their conclusions. The Program EIR needs to be as accurate as possible so that districts can rely on it without further consideration.

    Response: See response to comment #4b-3 in Appendix I, Letter 4b, in CARB's Final EIR. The (Sacramento) District is proposing to adopt the SCM as written except for the changes noted in Appendix A of the Staff Report. (Sacramento) Staff has independently looked at the information contained in CARB's Staff

Report and Final EIR and the SCAQMD rule development documents and has no reservations about adopting the SCM standards. (Bay Area staff agree. The amendments to Rule 3 also contain a provision designed for Bay Area coastal weather conditions as previously discussed.)

47. It is for these reasons that we remain deeply concerned about what we consider to be fundamentally flawed conclusions about the technological and economic feasibility of many of the VOC limits that are the basis of the analysis of the EIR. If the staff is in error about the technological feasibility of the limits that it has specified in the SCM, then the environmental impacts assessed in the EIR are equally flawed.

Response: See response to comment #4b-1 and #4b-2 in Appendix I, Letter 4b, in CARB's Final EIR. For the same reasons that are stated, we do not agree with the characterization regarding the conclusions reached in these areas.

48. Because the SCM is only guidance, it does not need to comport with the requirements for a rulemaking. This has the potential for a classic "Catch-22." If the technology is not consensus technology, the public never has a realistic opportunity to fully air its concerns; the SCM is conducted without the requirements of legally sufficient fact findings, and the districts are not required to reconsider the findings except as their discretion dictates. This raises concerns about the potential for denial of due process and interference with interstate commerce, as the resulting regulation may impose disproportionate burdens on out-of-state manufacturers.

Response: See response to comment #4b-5 in Appendix I, Letter 4b, in CARB's Final EIR. In adopting the amendments to Rule 442 (or Rule 3), the District is required to make findings of necessity, authority, clarity, consistency, nonduplication, and reference as defined in CHSC Section 40727. The District is also required to perform an assessment of the socioeconomic impacts of the amendment. The District board must also actively consider the socioeconomic impact of the regulation and make a good faith effort to minimize adverse socioeconomic impacts.

41. The staff has relied on: results of laboratory tests from NTS and Harlan studies; what is characterized as "extensive" review of compliant coatings product data sheets; results from the 1998 ARB architectural coatings survey that shows a large percentage of coatings already meet the proposed limits; and information on "foreseeable coatings technologies" obtained from resin suppliers, manufacturers' data sheets, and promotional magazine articles.

Response: See response to comment #4b-1 in Appendix I, Letter 4b, in CARB's Final EIR for a listing of the information sources used in the technology assessment. The (Sacramento) District also used the same information sources in developing the amendments to Rule 442 as is discussed starting on page III-4 in

the (Sacramento) Final EIR. (Bay Area District staff have also relied on CARB information sources for the proposed amendments to Rule 3).

50. The EIR's treatment of available test data manifests fundamental misconceptions about the effective use of such information by industry. Coatings manufacturers extensively test new coatings before introducing them to the market. These tests include two and three year field exposure tests because it is only under such real world conditions that new coatings' performance characteristics can be assured.

Response: See response to Comment #30.

51. Any decisions about technological and economic feasibility of the limits proposed in the SCM for the six categories being evaluated in the NTS study should be postponed until the final results of the study are complete. Proceeding with SCM adoption of limits for these six categories will require local air districts to evaluate the technology limits for these coatings before accepting them as feasible.

Response: See response to Comment #11.

52. The ARB has rejected industries' request to formally commit to a technical assessment of the SCM limits prior to their becoming effective. The statements made by the ARB (see Draft Program EIR C 7-8) indicate that the conclusions of the staff about the feasibility of the limits proposed in the SCM are suspect and will require further analysis.

Response: See response to comment #4b-9 in Appendix I, Letter 4b, in CARB's Final EIR.

53. The NTS laboratory results that are available are suspect in their own right as has been explained to staff in a letter from Christine Stanley, Vice President of Technology, of Ameron, and in NPCA's letter to Jim Nyarady on this subject.

Response: See response to comment #4b-10 in Appendix I, Letter 4b, in CARB's Final EIR.

54. The Harlan study is an incomplete report, providing only raw data, and the evaluation of these data was left to ARB staff. Information on individual coatings such as use and application of the coatings was not included in the report. The report was not peer reviewed. Blind samples were used, making verification of the results impossible. Different contractors were used and many of the tests were subjective. No mention of QA/QC procedures was indicated.

Response: See response to comment #4b-11 in Appendix I, Letter 4b, in CARB's Final EIR.

55. The EIR's comparisons of low VOC coatings in Table IV-2 are based on relatively insignificant properties (*i.e.*, range of VOC, average VOC content, average solids by volume, average coverage, average dry time, average pot life,

average shelf life) of coatings that do not say anything about performance and durability, or suitability of a coating for a particular job.

Response: See response to comment #4b-12 in Appendix I, Letter 4b, in CARB's Final EIR.

56. A true comparison of a coating's characteristics must consider performance, application latitude, surface latitude, cost effectiveness, and waste. These issues must be addressed when evaluating whether a coating can be substituted for another, an especially complex task with industrial maintenance coatings.

Response: See response to comment #4b-13 in Appendix I, Letter 4b, in CARB's Final EIR.

57. It is obvious that the ARB did not consider the factors mentioned in Comment #4b-13 of the Final Program EIR in its review of product data sheets, but coatings formulators, specifiers, and applicators would consider these factors crucial in determining suitability of a coating for a particular application. Districts should undertake an evaluation of these factors.

Response: See response to comment #4b-14 in Appendix I, Letter 4b, in CARB's Final EIR. The District has reviewed the work done by CARB and SCAQMD and believes that the factors have been thoroughly considered. No change to the rule and staff report is necessary.

58. Too much reliance has been placed on product data sheets for staff's conclusions. Product data sheets often require review by a coatings expert to be fully comprehended. The ARB's conclusion that low-VOC coatings do not require substantially more surface preparation than conventional coatings is completely at variance with industry knowledge, and training and education by industry associations. Two-component high performance coatings require more attention to proper surface preparation than conventional coatings. While conventional coatings also require adequate surface preparation, it concerns the commenter that ARB staff equates the degree of surface preparation required by the two types of instructions that are associated with radically different coatings. The commenter is concerned that staff does not fully comprehend the greatly differing consequences with using these two different coatings systems.

Response: See response to comment #4b-15 in Appendix I, Letter 4b, in CARB's Final EIR.

59. Staff's conclusion based on product data sheets that pot life problems are not expected with multi-component coatings is at variance with the real world experience of industry. Individual product data sheets may minimize the problems or state that they are not substantial if instructions for use are closely followed. Pot life is a significant and complex issue affecting the cost of application.

Response: See response to comment #4b-16 in Appendix I, Letter 4b, in CARB's Final EIR.

60. The coatings industry cautions the ARB about using of the 1998 Architectural Coatings Survey data. The commenter indicates that the current existence of low VOC product technology may be successfully used to meet the performance requirements of one particular application and exposure environment of a general class of coatings. However, there must be a thorough evaluation of this technology before it can be mandated as being feasible for all or even most of the application, performance, and exposure requirements of the general class of coatings to which it belongs.

Response: See response to comment #4b-17 in Appendix I, Letter 4b, in CARB's Final EIR.

61. Caution should be exercised in relying on information from resin and coating manufacturers and on articles published in non peer-reviewed trade journals. These materials are meant to be a starting point for coating formulators, and should not be assumed to represent adequate, cost-effective coatings.

Response: See response to comment #4b-18 in Appendix I, Letter 4b, in CARB's Final EIR.

62. Many of the coating products listed in Appendix E do not belong in the coating category listed. For example, over 30 percent of the products listed as lacquers are in reality polyurethane varnishes.

Response: See response to comment #4b-19 in Appendix I, Letter 4b, in CARB's Final EIR.

63. ARB is proposing to expand the SCM definition of floor coatings to cover floors exposed to extreme environmental conditions which historically have been covered by the industrial maintenance category.

Response: The definition of industrial maintenance coatings in the proposed rule does not exclude floor coatings.

64. The data sheets that ARB is relying on to make a decision concerning the VOC limit for floor coatings cover a wide variety of product type and coatings technologies. Several of the specific coatings listed as floor coatings do not belong to the floor coatings category.

Response: See response to comment #4b-21 in Appendix I, Letter 4b, in CARB's Final EIR.

65. It should be obvious from the wide variety of products currently being sold as floor coatings, that no single product or technology is able to satisfy all of the varying application conditions and performance requirements covered by this category. To rely on high end two component or polyurethane technologies, as

the basis for the proposed limit does not reflect the true market place needs for floor coatings in all situations such as industrial, institutional, commercial and residential. A recommended revised definition for floor coatings is provided.

Response: See response to comment #4b-22 in Appendix I, Letter 4b, in CARB's Final EIR.

66. The definition for "industrial maintenance coatings" should be revised to remove the phrase "excluding floor coatings but."

Response: The definition of industrial maintenance coatings in the proposed rule does not exclude floor coatings.

67. The commenter is particularly concerned with the proposed VOC limits for non-flat coatings; primers, sealers, and undercoaters; stains; industrial maintenance coatings; and lacquers. The commenter has facilitated information exchange between coatings experts and ARB staff regarding the technological and economic feasibility of the proposed VOC limits. The commenter urges ARB to consider the information and comments provided, and to rely on the consensus judgement of the coatings experts in establishing VOC limits for the SCM.

Response: See response to comment #4b-24 in Appendix I, Letter 4b, in CARB's Final EIR.

68. Staff has reconsidered its initial decision to exclude the "concrete protective coatings" category recognized by the national AIM rule and now plans to incorporate this category with a 400 g/l limit into the SCM. We endorse the inclusion of this category.

Response: See response to comment #4b-25 in Appendix I, Letter 4b, in CARB's Final EIR.

69. Inland Coatings provided information to ARB staff requesting that a "thermoplastic rubber coatings and mastics" category be added to the regulation. Discussions with staff about the exchange of information between Inland Coatings and staff indicate that there may have been some miscommunication. Staff stated that the company failed to provide sufficient information to demonstrate that its thermoplastic rubber products are more durable, and result in less emissions over time than comparable bituminous roof products or latex roof products. It is our understanding that the company has attempted to respond to these points and is prepared to provide more information on this matter. With respect to durability, it is generally accepted information within the industry that coatings like Inland's dramatically outlast bituminous coatings, which are of limited durability. Inland Coatings can demonstrate single application, no repair histories for its coatings extending over several years. The same is true of its claims about adhering to single ply membranes, with one of the major manufacturers of single ply membrane coatings recommending Inland Coatings for repair of its product. Finally, concerning the fact that the company's product

is not used in California, this has occurred only because the company has refused requests for distributors to carry its product for unregulated areas in California because of concern that the product would inadvertently be sold in regulated areas.

Response: See response to comment #4b-26 in Appendix I, Letter 4b, in CARB's Final EIR.

70. The proposed SCM would require the use of nuclear coatings that would be astronomically more expensive than existing systems and this added expense is grossly disproportionate to the minuscule amounts of VOC emissions that result from the small usage of the existing coatings systems.

Response: There are no operating nuclear power plants within the SMAQMD. The two nuclear power plants operating within California can comply with the proposed rule. (The Bay Area District does not have nuclear power plants of the sort comtemplated by this comment. However, there are small laboratory scale nuclear reactors. In the proposed amendments, coating of radiation environments in nuclear power plants is subject to the industrial maintenance coating category. The CARB survey found coatings for this environment, that met the requirements of the American Society for Testing Methods tests for nuclear environments, available at 250 g/l VOC, the proposed limit.)

71. (a) The ARB staff should reconsider its decision to exclude the coatings categories in the U.S. EPA's architectural coatings rule that are not in the SCM. We do not believe that the staff have had an opportunity to receive or fully review all of the information that would be necessary in order to make a sound decision on these coatings. The process to date has focused on the larger coatings categories. Many of the niche coating categories excluded from the SCM are produced by small businesses that need more time to respond.

(b) ARB staff should recognize that coatings are developed for certain purposes. In this highly competitive industry, if a lower VOC product can cost effectively serve the same coatings requirements of a high VOC product, it is selected over the higher VOC products. The U.S. EPA recognized this and created separate categories for certain low volume niche coatings that previously fell under the general category of industrial maintenance, but needed a higher VOC content than the lowered VOC level for industrial maintenance.

(c) The EIR is very cursory in its discussion of the excluded national categories, often stating little more than assumptions that are based upon the general coatings category of industrial maintenance coatings. Data concerning these coatings may not have been reported under the category. For example, with respect to chalkboard resurfacing coatings, the EIR reflects that only a very small portion of the coatings reported in the CARB AIM survey were identified as chalkboard resurfacing coatings. It is likely that some of the volume used in California was reported as general industrial maintenance coatings.

(d) ARB staff should consider the possibility that information developed later in the rulemaking will demonstrate that indeed a higher VOC limit is required for the national categories excluded from the proposed SCM, or for other excluded categories. We plan to provide additional information on these coatings, as it becomes available to us.

Response: See response to comment #4b-28 in Appendix I, Letter 4b, in CARB's Final EIR.

72. We are concerned that the ARB has not chosen to include an averaging compliance option in the proposed SCM or at least retain the placeholder statement on averaging that appeared in the December 1, 1999 draft of the SCM. The industry agrees that differences exist between industry, SCAQMD, and CARB on how to design a workable averaging program. The ARB has chosen not to move forward with trying to resolve these difficulties. Instead the ARB appears to have placed a lower priority on averaging by indicating that the existence or absence of an averaging program does not affect the ARB's analysis of the technical feasibility of the VOC limits in the SCM or the ARB environmental analysis for the SCM. Industry disagrees and feels averaging will be required to make some of the requirements feasible. Without an averaging provision the proposed SCM is more restrictive than the SCAQMD's current Rule 1113.

Response: The proposed rule and the SCM include an averaging provision. No change to the rule and staff report is necessary.

73. Alternative B, extending all of the effective dates for the VOC content limits to January 1, 2004, was considered infeasible because any delay in achieving emission reductions is not technically or economically justified. The commenter disagrees with this conclusion in light of industry's comments on the technical merits of the SCM development.

Response: See response to comment #4b-30 in Appendix I, Letter 4b, in CARB's Final EIR. The proposed rules does include an averaging provision. No change to the rule and staff report is necessary.

74. (a) There are fundamental problems with the use of model formulas to estimate potential material costs. The approach carries the inherent assumption that only one coating technology (resin technology) will be used to meet the lower VOC limits. Said another way, the approach implies that one technology will meet all the requirements of a category. This is unlikely and therefore the approach will not accurately estimate associated reformulation costs.

(b) The model formulas are simplistic. Generally, one cannot simply substitute a low VOC resin for a high VOC resin without changing other important components of the coating. To obtain anything close to approximating a realistic estimate using this approach would require the use of real world formulas.

Response: See response to comment #4b-31 in Appendix I, Letter 4b, in CARB's Final EIR.

75. (a) A more straightforward and more accurate way of estimating and comparing raw material costs of high and [low] VOC coatings would be to compare only the cost of the high VOC resin to the low VOC resin on a weight or volume solids basis. By doing this, one would at least get an idea of the magnitude of the cost difference,
e.g., 1.5 times or 2 times more costly. To get a better cost comparison beyond this, one would need actual VOC formulas for the current high VOC product and the low VOC replacement.

(b) It is also important to note that raw material costs are only one factor in calculating the total cost of reformulating coatings. Additional costs include packaging costs, direct R&D labor, *etc.*

Response: See response to comment #4b-32 in Appendix I, Letter 4b, in CARB's Final EIR.

76. The commenters intend to continue to work with ARB staff to provide their best judgment and technical information about the technological and economic feasibility of the coatings technology decisions CARB is contemplating. Ultimately, the issue of whether Californians will continue to have cost effective, productive coatings rests with the CARB and the districts.

Response: The (Sacramento and Bay Area) District welcomes constructive input from the NPCA and its member companies. The (Sacramento and Bay Area) District and CARB take seriously their responsibility for assuring that Californians have cost effective, productive architectural coatings available.

Comment letter to Rob Sliwinski, New York Department of Environmental Conservation, from the National Paint and Coatings Association, dated December 11, 2000

77. A recent article in *Modern Paint and Coatings* written by a product manager from Rohm & Haas, an international supplier of paint raw materials and a company that has taken an aggressive path in the development of waterborne technology, provides a frank assessment of the performance trade-offs that occur with low VOC waterborne technology as compared to higher VOC technology. This is an example of why there have been difficulties in developing a consensus concerning lower VOC coatings within our industry.

Response: Although the article was not attached, we believe the commenter is referring to "Technological Challenge: Formulating Low-Solvent Latex Paints" by J. "Rusty" Johnson, in the October 2000 issue of *Modern Paint and Coatings*. This article is concerned with the technological challenge of developing "solvent-

free" latex paints without the use of a coalescent solvent (i.e., zero-VOC paints). None of the proposed limits require zero-VOC technology.

78. A fair overall evaluation of the practical future for lower VOC AIM coatings is that, except for special applications in heavy duty industrial maintenance, the lion share of the lower VOC coatings gains will have to come from some type of waterborne coatings technology. Moving to waterborne technology in this manner, which is essentially what the SCM does except for special case industrial maintenance coatings, rust preventative coatings, and certain specialty primers, carries with it the potential acceptance of a very large number of trade-offs of the type discussed in the Rohm and Haas article. I say potential because the considered limits would not be effective immediately. Consequently, the on-going R&D efforts of the industry (which began after World War II, long before there was a Clean Air Act) and have moved residential AIM coatings to being 80% waterborne, will continue. These efforts may make some of the trade-offs "diminish," but the author does not say they will disappear. This is an extremely important point. What it implies is that all of the positive features that are associated with solvent borne coatings will not be equaled by the water borne coatings. These include higher solids cross linking that leaves a hard impermeable coat; less sensitivity to temperature and humidity conditions in application and curing; freeze/thaw stability which allows the coating to experience freezing weather without altering the coatings properties; good scrub resistance, etc.

Response: The author of the article quoted by the commenter states that "solvent-free paints represent an evolving technology. With the resources committed to their development, these products will continue to improve, and the performance gap between conventional and low-solvent chemistry will diminish." These statements were made regarding performance trade-offs in zero-VOC paints, a technology that is not required by the proposed limits. However, low VOC technology is being given top priority in resin suppliers' research and development efforts, and the technology will continue to advance.

Stimulated by regulations in the 1960s and 1970s, waterborne coatings have become a dominant force in architectural coatings. But, as hinted by the commenter, consumer demand has also driven the move to waterborne coatings, due to their ease of use, lower odor, less hazardous waste to dispose of in cleanup, and worker safety. These trends will continue, with or without regulations. Zero-VOC paints were introduced within the last ten years, while waterborne latex paints were developed more than 50 years ago. We believe that manufacturers' product development efforts, driven by customer demand, will continue to "diminish" trade-offs of zero-VOC technology. Meanwhile, the proposed rule and the SCM continues to allow solvent borne coatings where waterborne replacements may not meet every need (e.g., high temperature coatings, rust preventative coatings, shellacs, and specialty primers/sealers/undercoaters).

CARB and the districts have a long history of predicting where technology will go in their regulations—in fuels, consumer products, motor vehicle regulations, and coating regulations. This is done through a careful evaluation of current technology, consultations with suppliers of the technology, and public process. The (Sacramento) District and CARB also build in provisions that will reconsider the requirements if the technology advancements do not proceed as visualized.

79. NPCA developed an alternative table of VOC limits that would include limits lower than those specified by the national AIM rule in several major coatings categories. It is in the face of the uncertainty concerning a great number of variables that our experts have been asked to develop a table that would predict where technologically feasible limits will be in the future. We have developed such a table, which is attached. You will note that it differs from the SCM in two key respects. First, it recognizes a larger number of small volume, niche market or specialty coatings categories than are recognized by the SCM. Second, it specifies VOC limits that are higher than the SCM in some cases but lower than the national rule. They strike a middle ground, in other words.

Response: See response to Comment #78.

80. The limits of the SCM as presented in the STAPPA/ALAPCO proposal, carry with them running commentary which refers to the CARB SCM Staff Report, survey data, and certain studies relied upon by CARB to justify the recommended limits. We have serious reservations concerning the conclusions reached by the CARB about this information. I hasten to add that we do not believe that the CARB staff has acted in bad faith in this regard. We simply respectfully disagree with their conclusions. In our comments to CARB in June, we acknowledged "…the effort that Staff has expended in this undertaking. They have gathered and attempted to analyze a great deal of information in a short period of time concerning a very complex subject." Similarly in my August 21 letter to you I stated, "…the process involved here is not an exact science and there can be a variety of factors that have to be taken into account in making a decision [and] Staff is given a certain latitude in picking which aspects of its factual record it chooses to emphasize for one conclusion and not another."

Response: See the responses to Comments #15 and #34.

81. In the Overview of the model rule that is to be presented (to the Ozone Transport Commission) on December 11, there is a statement that indicates that you also will require technical documentation challenging the SCM and the CARB Staff Report supporting it. We believe that an independent evaluation of the underlying data referred to by the CARB SCM Staff Report is required before the SCM is adopted for the states in the northeast Ozone Transport Region.

Response: We would agree with the OTC if the OTC decided to perform an independent evaluation of the technology. We concluded from our review of

CARB's analysis that the (Sacramento) District does not need to do an additional technology study.

82. In our August 21, 2000 correspondence we pointed out that the SCAQMD Board, which initially adopted the limits at issue here, required staff to continue to examine the limits in question to determine if they would indeed be feasible before they became effective. We also noted that the CARB SCM Staff Report stated that despite that the staff " believes that all of the proposed limits are technologically and commercially feasible, ARB staff will conduct technology reviews of the proposed limits that are lower than current limits, prior to their implementation." The limits therefore are open to question.

Response: The commenter is referred to the response to Comment #37.

83. Beyond such specific additional independent review requirements, all the states within the OTC have administrative procedures that they must follow and these require the establishment of a sufficient factual basis to warrant promulgation of a regulation. The STAPPA document or the CARB SCM Staff Report by themselves does not provide this. More importantly, we believe that an examination of the underlying record will show that the judgments made by the CARB SCM Staff Report concerning future technology can be fairly questioned and should be by any agency that is concerned about what is likely to occur as a realistic assessment of future technology and its practical implementation.

Response: The commenter is referred to the responses to Comments #36 and #78, and #4b-2 of Appendix I of CARB's Final EIR. We do not believe the proposed limits are technology forcing. There are complying marketshares, or currently available replacement coatings, for all of the categories with proposed lower limits.

84. Much reference is made to the NTS Study and the Harlan Study by the STAPPA document. We do not see how a technology can be referred to as established by the NTS study, as the STAPPA document indicates, when the most crucial phases of the study, field applications and exposures have yet to be completed. Moreover we have serious reservations about some of the CARB Staff's conclusions based on the laboratory results of the NTS study.

Response: The commenter is referred to the responses to Comments #39 and #42, and Comment #4b-8 in Appendix I of CARB's Final EIR.

85. The NTS study results in the CARB SCM Staff Report itself clearly demonstrated that high VOC coatings performed better than low and zero VOC materials in a number of tests. The tests in which the low VOC coatings under performed the high VOC coatings involve performance characteristics that are not trivial. Despite this, the low- or zero-VOC coatings <u>were virtually always</u> found to be overall "similar" to the high VOC coatings. In a strict sense, the statement of overall "similarity" is not incorrect. In all of these tests where the statement is

made, there were more tests for which the results were found to be "similar" than dissimilar. But in our view this begs the key question -- are the similarities sufficient in key tests to justify a conclusion that the low VOC coatings will be adequate in all respects to replace existing higher VOC coatings. In our judgment we do not believe they are. For example, with respect to industrial maintenance primers, in four out of the twelve tests, high VOC coatings were found to exhibit better performance than low VOC coatings. In only one test did the low VOC coatings exhibit better performance than the high VOC coatings. And in the twelfth test, for film flexibility, a pass/fail test, of the four coatings that failed, three were clearly low VOC coatings, and one was at 320 grams per liter, which is below our recommended limit of 340 for this category. The Staff Report's conclusion was "Overall, the low VOC coatings exhibited similar performance characteristics compared to high VOC coatings." A technically accurate statement, but one which fails to answer the key question: the degree to which VOC limits can be lowered in the future such that none of the necessary performance properties of coatings are diminished.

Response: The commenter is referred to the responses to Comments #40 and #41.

86. We now turn to a discussion of our suggested limits and why we believe that they represent a sound practical evaluation of future technology that will achieve significant VOC emission reductions, precisely because they are realistic. We will provide more details in further discussions with the OTC workgroup but for now a few major points. The limits that are reflected in our Table of Standards include water borne technology limits, but ones that will allow for the achievement or approximation of some of the performance characteristics of solvent borne systems. For example a flat coating at our recommended VOC limit permits the manufacture of coatings that can be used in low temperature conditions. Madelyn Harding of Sherwin Williams provided information to your group on such a coating that is sold by her company. This allows for more painting in the spring and fall when there is no ozone formation.

Response: We believe this comment pertains to the OTC, rather than the (Sacramento, or Bay Area) District. The commenter does not provide information about the Sherwin-Williams flat coating that can be used in the spring and fall. According to CARB's architectural coating surveys, flat coatings in California have had a sales weighted average VOC content of about 100 g/l since at least 1990, when the VOC limit for flat coatings was 250 g/l. This is evidence that low VOC flat coatings work well in California's climate.

87. Our limits include solvent borne technology when they are needed by the application and performance requirements. In this connection we again ask that you critically examine the findings of the CARB SCM Staff Report concerning the NTS results for the non-flat and quick dry coating categories, especially with respect to the scrub resistance and blocking resistance. As we have explained in

the past, among the most crucial reasons for having a nonflat coating are the blocking resistance and scrub resistance features. Blocking resistance keeps doors and windows from sticking shut; scrub resistance allows a wall, such as a kitchen wall, to be cleaned without removing the paint. It is also important to note that with respect to the NTS study tests of nonflat and quick dry systems that were tested for dry film thickness, adhesion, and household chemical resistance (the type of splatters that occur in kitchens, playrooms, etc.,) the CARB SCM Staff Report concluded that the low VOC materials under performed the high VOC coatings in all the tests, except for only one aspect of the chemical resistance test -swelling.

Response: The commenter is referred to the response to Comment #40 for a discussion of how the NTS performance tests were interpreted. CARB's evaluation of the NTS performance results is found on page 86 of CARB's Staff Report. Evaluating the graphs of performance data in Appendix E of CARB's Staff Report is somewhat complicated by the fact that nonflats and quick-dry enamels are displayed together because of the inherent overlap in these coatings, and the performance of nonflats is influenced by the primer.

The low VOC coatings tested that comply with the 150 g/l nonflat limit were primarily zero VOC. In most of the tests, low VOC coatings performed as well or better than high VOC coatings in blocking resistance, but tended to have lower performance in scrub resistance. The low VOC nonflat primer/(midcoat)/topcoat systems, which again were mostly zero VOC, did show poorer performance in adhesion and softening following household chemicals. The commenter's difference of opinion as to the test results underscores a basic problem in interpreting performance test results, that every manufacturer or user has different standards in mind. Again, it is important to note that when looking at the data points, as opposed to the trend lines, it is very clear that low-VOC and high-VOC products performed very similarly.

Considering all of the performance tests on nonflats, CARB has concluded and we concur that there is no trend for poorer performance in low VOC coatings. Also, because so many zero VOC coatings were chosen, when the proposed limit for nonflats is 150 g/l, it is quite possible that coatings with VOC contents closer to the limit would perform even better. This can be noted from the graphs, in which the performance of 250 g/l coatings (which comply with the current limit in the rule) are slightly better than the zero VOC coatings.

88. As to stains and water repellant materials, the basic chemistry of this is quite simple. For stains, in order to get the penetration into the wood needed for the deep, rich look for which transparent and semitransparent stains are used, one needs a solvent carrier. Water simply cannot take the stains deep enough into the grain to achieve the same appearance. As to water repellants, the same basic principle applies - solvent carries the solids deeper into the wood than does water. In fact many of the low VOC water repellant materials are in actually coatings

that sit on the surface of the wood, and thus are worn away over time. A deeply penetrating material lasts much longer and thus reduces overall VOC emissions.

Response: The commenter is referred to the response to Comment #24 for a discussion of new technology for waterborne stains. The NTS study (Appendix E of CARB's Staff Report) showed that low VOC waterproofing sealers for wood performed about the same as high VOC coatings on water repellent efficiency. In addition, solvent borne stains are still sold in quarts, which are exempt. Although the limit for waterproofing sealers has been 400 g/l, waterproofing sealers with VOC contents less than 250 g/l are common in the marketplace. No change to the rule and staff report is necessary.

89. We also strongly believe that there is a need for the specialty coatings that we have identified in our list of standards. Though these are low volume coatings they meet important needs. As a matter of principle we are committed to ensuring that they receive consideration equal to that given to the major coatings categories. These are very low volume and highly specialized coatings. Your major concern about them has been that their definitions might create loopholes through which they could be illegally used outside of their specialized applications. You should take some comfort in this regard from the way the coatings are defined in terms of their unique chemistries and application environments. A good example of this is seen in the "thermoplastic rubber coatings and mastics" category, of which Inland Coatings is the primary manufacturer. I have attached its October 13, 2000 submission to you. As the letter indicates, this coating is such a specialized commercial coating that it is impossible to conceive of it being used as a general residential roof coating or wall paint.

Response: The commenter is referred to the responses to Comments #4b-26 and #4b-28 in Appendix I of CARB's Final EIR.[1]

Comment letter to the South Coast AQMD regarding the July 2001 Annual Status Report on Rule 1113: Architectural Coatings, from National Paint and Coatings Association, dated October 18, 2001

90. The National Paint and Coatings Association has been extensively involved with the development of Rule 1113, including its May 14, 1999 revisions. When the South Coast Air Quality Management District (SCAQMD) Board adopted the amendments, District staff was directed to develop a work plan to implement the amendments. The work plan was to include annual status reports or updates concerning the activities of various implementation workgroups, and status

[1] Responses to comments #9 through #89 provided by staff at Sacramento AQMD, District staff additions in parentheses.

reports concerning technology assessments of the low VOC coatings mandated by the May 14 rule amendments.

We have a few brief comments concerning the conducting of the various workgroups by staff and some of the reported findings.

Out the outset, we note that staff has been diligent in efforts to involve us and others in the various work groups and we hope that the solid working relationship we have established will continue. This is not to say, of course, that we agree with all of the staff's statements, conclusions, or expectations in the report and we discuss these differences below.

With respect to technological feasibility and the technical assessments of available low VOC coatings, as a general statement our chief differences with staff really come down to the degree to which we each extrapolate from the data general conclusions in which we have confidence.

Response: No response necessary.

91. We have said this many times before but it bears repeating here.

A broad category of coating, such as stains or primers, often includes a variety of different coatings technologies and formulations to meet the different performance requirements of the different substrates and application environments. For example, stains include exterior and interior applications; some are opaque while others are semitransparent. The application requirements and performance requirements of these coatings differ, and while a lower VOC waterborne semitransparent stain might be adequate for exterior siding or deck stains, it may not be adequate for interior application because of the need for a better looking finish. In this regard the (South Coast) Staff Report is instructive as to our differences with staff in viewing the same information.

Response: The SCM discusses new stain resin technology that is compatible with water based coatings for interior stains. There currently exist a number of water based stains on the market that comply with the proposed 250 g/l VOC limit. In addition, stains are often low solids, so the low solids VOC limit that does not exclude water is pertinent. A discussion of the low solids "including water" calculation is found in "Proposed Amendments to Regulation 8, Rule 3, Section 8-3-200: Definitions" in the staff report and in Section 4.2.3: Air Quality, Analysis of Potential Environmental Impacts, xi) VOC Definition for Low Solids Coating of the Environmental Impact Report. Staff have discussed application of interior water based stains with contractors. One contractor admitted to having to develop a different technique to get the penetration of the stain desired, but did not state that the product was unworkable or inferior in quality.

92. In discussing stains at page 10 of the report, staff notes that the CARB survey showed that 25.47% of the stains sold in California met the 250 g/l limit adopted for July 2002 and that this constitutes 52.8% of the gallons of stain sold. On that

basis the report states, "(A)gain, these numbers sufficiently support the proposed limit as to the availability and use of such stains." Later, however, the Report states that "there has been some discussion as to the feasibility of such a limit with regards to interior stains" and notes that they will be assessed further.

The Report does not indicate that, pending the outcome of the additional assessments, the limit as it applies to interior stains should be held in abeyance. Staff seems to rely heavily on the percentage of "stains" that were at or below the limit to decide the matter, irrespective of recommended substrates, application and performance characteristics, and even when it notes that further assessments are needed for interior stains.

Response: Please see response to comments #16, #22, and #88. District staff will be reviewing ongoing technological assessments conducted by South Coast and CARB. Districts throughout California have had success formulating rules that drive markets for low VOC coatings. To state that future VOC limits should not be promulgated until the outcome of all available testing is to discount the products currently on the market that comply with those future limits and to create a disincentive for companies to put research and development dollars into better low VOC coatings.

93. Industry, on the other hand, views the data similar to the way individuals would if offered a binding contract to purchase interior stains in July 2002 at the 250 limit -- a contract that they would be obligated to honor even if it were demonstrated that the interior stains at the 250 limit were inferior. No individual would sign such a contract. Yet this is precisely what is being suggested here for all of the citizens of the district by way of regulatory mandate.

Response: Please see response to comment #41.

94. In this connection, the Master Painters Institute (MPI) which is referred to and relied upon by the Staff Report, begins its range of VOC content for these materials at less than 350 g/l and goes to 550 g/l. There are only two products out of the thirty listed that rate the "lowest VOC" ranking at less than 350 g/l. And as noted the limit for this coating will be at 250 g/l in July 2002.

Response: There has been a 350 g/l VOC limit for stains in Rule 3 since 1987. Therefore, it makes little sense to compare stains between 350 g/l and 550 g/l with stains at 250 g/l. There are adequate products to compare that meet the VOC limits, according the information compiled by CARB from the 1998 Architectural Coatings Survey.

95. Similarly, with respect to primers, we do not believe that a decision should be made concerning the general availability of stain blocking specialty primers on the basis of the information in the Staff Report. As noted in the Staff Report at page 10, this category has not been specifically studied as a separate category. To fill this void, the Staff Report relies upon the products of various

manufacturers which purport to provide some level of stain blocking on their label. In some cases, the only claim to be a primer.

Before these products – or any for that matter – can serve as a basis for concluding that they represent technology that is sufficient for all stain blocking requirements, and whether they block all the stains with only one coat or require several in some cases, there should be a thorough evaluation of the coatings. In this connection the MPI notes that while waterborne materials are available for addressing tannin bleed through, a major reason for stain blocking primers,

"The difficulty has been to develop primers that will work under all application and exposure conditions. Wet or damp wood, low film build, contact with masonry, lack of back priming, leaky siding laps and humid conditions during painting are all negative factors."

More importantly, the MPI list of presently-approved exterior latex wood primers products specifically states they are "not recommended for use on woods containing extractable staining materials such as cedar or redwood."

Response: South Coast Rule 1113 anticipates a 200 g/l VOC limit for primers effective July 1, 2002, 6 months prior to the limit becoming effective in Rule 3. Rule 1113 also anticipates a further reduction, to 100 g/l in July, 2006. For a response to stain blocking primers, in the staff report for the SCM, in the section on specialty primers, sealers and undercoaters (p 203), the issue of specialty primers is discussed. There is a category separate from primers that includes stain blocking primers, and the VOC limit is 350 g/l. This VOC limit has been in effect in the Bay Area since 1987 for stain blocking primers.

96. As to floor coatings, the Staff Report relies upon the CARB survey which found that 22.1% of the floor coatings surveyed meet the 100 g/l limit. But, again, this begs the question of whether it can be assumed that floor coatings at this limit can be expected to meet *all* of the application and performance requirements for floor coatings. Here again, reference to the MPI list of approved floor coatings raises some serious questions. The only floor coating listed by MPI at less than 101 g/l is a low gloss latex porch and floor enamel which seems from the listing to be confined to applications "for new interior horizontal concrete surfaces not prone to water permeation from below." Apparently this rules out its application to wooden porches or floors. The only other floor coatings listed by MPI are alkyd floor gloss enamels with VOC ranges starting at less than 401 g/l and going to 500 g/l. The MPI states that these coatings "are designed to be a durable, abrasion resistant coating for wood decks, stairs, and steps." (The MPI also has a list for gloss latex porch and floor enamel which has a VOC range of less than 201 g/l and goes to 400 g/l, but it lists no products in this range.)

Response: This comment is directed at the South Coast. Rule 1113 provides for a VOC limit of 100 g/l for floor coatings effective July 1, 2002. The proposed

amendments to Rule 3 dictate a VOC limit of 250 g/l effective January 1, 2003, consistent with the SCM.

97. As the Staff Report states in its conclusion, there is still a great deal of work that has to be done before firm conclusions can be reached on these and other coatings, including the KTA-Tator laboratory technology assessments due in December 2001 and the National Technical Systems field exposure evaluations due in 2002.

The Staff Report also makes reference to "receiving and evaluating the results from a number of field applications being conducted by manufacturers and end users." We hope by this that the Report means that field application tests for the coatings will finally be undertaken. Such tests are critical to evaluating the performance of a coating as it applied in the field under various climactic conditions. The SCAQMD had planned to conduct this important test in addition to laboratory tests and field exposure tests but has not done so to date. We also strongly believe that these tests should be peer reviewed.

Response: As discussed previously, District staff intends to follow technology developments and assessments conducted by the staff of CARB and South Coast and will consider any recommendations made to amend the SCM.

98. We also note that the Staff Report states that with respect to the Essential Public Services coating, the lower VOC materials are being tested in a number of venues and environments and that interpretation of preliminary results "is considered premature at this time." (Staff Report at page 6.) Notwithstanding this, it should be noted that the Metropolitan Water District of Southern California in March 19, 2001 comments to the Sacramento AQMD during its consideration of the CARB SCM, stated, "(P)reliminary results from current tests being conducted at Metropolitan of the lower VOC coatings indicate a *high rate of poor performance."* (Emphasis added)

All of this invites caution, and as a result, we do not share the Staff Report's conclusion that, "(T)he results up to now are promising and confirm the performance of many low-VOC coatings on a variety of substrate and under different environmental conditions." As the Staff knows, we have serious reservations about how the NTS studies have been conducted and the interpretation of their results.

Response: This comment refers to a category found in the South Coast Rule 1113, Essential Public Service Coatings. The category has a VOC limit of 340 g/l effective July 1, 2002 and 100 g/l effective July 1, 2006. In the proposed amendments to Rule 3, these applications would be subject to the industrial maintenance category, with a currently effective VOC limit of 420 g/l and a proposed VOC limit of 250 g/l effective January 1, 2004. A discussion of the testing program referred to is found in the EIR in Section 4.2.3: Air Quality, Analysis of Potential Environmental Impacts. CARB staff is aware of the testing

program and have committed to consider the results. In addition, the Bay Area Air Toxics group, representing publically owned treatment works, have discussed this issue and are aware of the southern California testing. They are currently investigating coatings currently in use and potential future compliant alternatives.

Comment Letter from John Schroeter, East Bay Municipal Utilities District, and Chair, Air Issues and Regulations Committee, Bay Area Clean Water Association, dated Nov. 13, 2001 (via fax)

99. As public agencies entrusted with protecting public health, we must be able to purchase coatings that serve their intended purpose and effectively preserve our infrastructure and allow us to safely serve our communities. To continuously refinish, repair, or re-coat process equipment and pipes would be time consuming and not effective in preventing failures due to corrosion issues seen at wastewater treatment plants.

Response: Please see response to Comments # 11, 15, 17, 30, and 98.

100. The Air Issues and Regulations (AIR) Committee appreciates this opportunity to comment on the proposed revisions to the Bay Area Air Quality Management District (BAAQMD)'s Regulation 8, Rule 3 concerning architectural coatings. The AIR Committee, formerly the Bay Area Air Toxics (BAAT) Group, is a coalition of San Francisco Bay Area publicly owned treatment works (POTWs) dealing with air quality issues. We respectfully submit the following concerns and comments regarding this proposed regulation:

- Our past experiences have shown that coatings with the low VOC levels proposed have failed in typical wastewater treatment plant environments, leading to safety and reliability concerns, as well as sewage overflow potentials.
- We support the idea of providing allowances for higher VOC coatings on a petition basis, but believe that a more effective rule would allow for solutions that work, rather than acknowledging that the stated requirements are infeasible and forcing facilities to file for exemptions, especially since this regulation will impact an entire industry.
- We request that provisions be included for Key Essential Public Services that allow for VOC standards to be revised, based on the results and recommendations of coatings assessments being conducted by the Southern California Alliance of POTWs (SCAP) and the California Air Resources Board (CARB).

Response: In addition to the references regarding Comment # 99, please see responses to Comments #40 and 41. The provision in Rule 3 that allows for a petitioning process for a limited amount of industrial maintenance coating is not an acknowledgement that the requirements are infeasible, rather CARB and District staff best judgment that the VOC limits are feasible for at least 95% of the applications, including many in wastewater treatment facilities. The SCM found numerous applications of technology for corrosive environments for metal and concrete surfaces, such as those in wastewater treatment facilities. Epoxy, urethane and acrylic based resin systems are available with low-VOC formulations and have been in use for some time in a variety of environments.

The provision for Key (Essential) Public Services in the South Coast Rule 1113 has a VOC limit that goes into effect in July, 2002 of 340 g/l and a future limit, effective July, 2006 of 100 g/l. The VOC limit in the proposed amendments to Rule 3 will remain at the current limit of 420 g/l until January, 2004 and has no provisions to become more stringent in the future. The South Coast, and CARB is committed to following the technology assessments currently being conducted by SCAP and others and District staff is committed to following CARB's lead in any proposed revisions in the SCM.

101. The AIR Committee has over 15 member agencies, including large metropolitan facilities such as East Bay Municipal Utility District, the City and County of San Francisco, East Bay Dischargers Association, Central Contra Costa Sanitary District, and the City of San Jose. Together, AIR Committee member agencies treat over ninety percent of the municipal wastewater in the Bay Area and have been active in many BAAQMD rule-making activities. The AIR Committee appreciates BAAQMD's commitment to working with stakeholders regarding the proposed regulatory changes. As mentioned in our previous conversations (conference call 10/12/01 and subsequent e-mails), the proposed changes will have significant cost and compliance ramifications for the AIR Committee membership.

AIR Committee members' experiences have shown that low VOC coatings tend to easily degrade under typical conditions at municipal wastewater treatment plants. Historically, POTWs have faced difficulties with coating performance due to the presence of trace corrosive compounds, in addition to atmospheric weathering. These concerns are also being addressed in a coating assessment study being conducted by SCAP. We are therefore very concerned that the proposed regulations will force POTWs to use coatings that will potentially fade, peel, and otherwise fail, thus endangering the facilities, equipment, and pipes they are applied upon to protect. In the past, these coating failures have occurred very quickly in various environments at wastewater treatment plants. These failures have or could lead to significant human health and safety concerns. Further, failure could cause leakage of raw sewage or chemicals into the environment and San Francisco Bay, and jeopardize human health and the environment.

Response: As stated previously, staff is committed to following the technological assessments done by SCAP and others. Past experience with low VOC coatings is worth considering, but with the caveat that if the coatings experimented with were not based on recent technology advances, the results may have little relationship to currently available coatings. Also, as SCAP is under the South Coast rule, they are evaluating coatings at lower VOC levels than are required in the Bay Area rule. As such, caution must be exercised regarding general statements regarding low-VOC coatings based on this survey.

102. If the BAAQMD is firmly committed to enacting the regulation with the currently specified VOC levels, we support provision 8-3-309, specifying a limited allowance for industrial maintenance coatings. However, we maintain that it would be more prudent and efficient to enact standards that are feasible and safe in the first place than to allow for exemptions from the regulation after the fact, especially considering that this regulation will have industry wide implications. We do plan to take advantage of the opportunity to petition, should the regulation go forward with the currently proposed levels, but we ask that the burden of proof for invoking this petition be reasonable and based on past experience with low VOC coatings at wastewater treatment facilities and current technology assessments.

Response: Please see response to Comment # 101. In addition, staff suggest that, as lower VOC limits are not coming into effect until January, 2004, the statement that, "We plan to petition" is premature. District staff have had years of experience with these types of petitions in the metal parts rule (Regulation 8, Rule 19), aerospace coating rule (Rule 8-29), and metal furniture and appliance rule (Rule 8-14). The petitioning process is much quicker, more cost effective and more flexible than the variance process. Industry representatives from those industries can speak to the success of those processes.

As has been discussed in previous communications, SCAP is conducting a technology assessment to test the performance of low VOC coatings at typical wastewater treatment plants. This work is being performed under the supervision of the South Coast Air Quality Management District (SCAQMD) in response to their Rule 1113 on architectural coatings. The AIR committee has committed to informing BAAQMD staff of conclusions gained through this technology assessment. We thereby request that the BAAQMD provide appropriate provisions to allow relaxation of standards for Key Essential Public Services if the SCAP technology assessments or those done by CARB determine that the VOC limits are infeasible for specific environments, such as wastewater treatment facilities.

Response: Please see response to Comments # 100 and 101.

In summary, the Air Committee respectfully submits our concern that mandated use of coatings with the VOC levels required by the proposed amendments to Regulation 8, Rule 3 may jeopardize our operations and therefore endanger public health. If the rule moves forward with the proposed standards, we support the petitioning process, however we caution that it is risky to rely on an exception provision to implement a rule that cannot work on its own. Further we request that the BAAQMD allow for relaxation of the standards if shown to be necessary by the SCAP and CARB technology assessments.

We would like to thank you for the commitment you have shown in working with us throughout this regulatory development process, and we look forward to working with you toward reasonable and effective implementation of this rule.

Response: In addition to staff commitment to follow the technology assessments as mentioned above, existing provisions in state law allow for relief from regulatory requirements based on technological feasibility where it can be demonstrated through the variance process (California Health and Safety Code §42350 *et. seq.*) including provisions for product variances (CH&SC §42365 *et. seq.*), which mandate reconsideration before the Board of Directors within a certain time frame. The variance process has, in the past, laid a firm technical foundation for rule amendments. Staff do not anticipate variances of this sort based on the extensive data gathering done by CARB staff to support the proposed VOC limits in the SCM. Rule relaxations, as suggested by the commenter, have serious implications for the Bay Area portion of the SIP and, therefore, must be considered carefully, and a sound technical basis must be established. This is not to suggest that staff will not consider any evidence brought forth by SCAP or the members of the Bay Area POTWs, or that the Board has not been amenable to rule relaxations in the past when presented with a sound basis, but that the affected industry should not assume a rule relaxation is in the future. Instead, the assumption should be that the mandate is firm and that they will work to the utmost to implement the use of compliant coatings by the January, 2004 deadline. To that end, staff is willing to continue to work with the members of the Air Committee to ensure continued safety of the wastewater systems and successful implementation of the rule.