California Environmental Protection Agency Air Resources Board



PROPOSED AMENDMENTS TO THE CALIFORNIA CONSUMER PRODUCTS REGULATION AND THE AEROSOL COATINGS REGULATION

Release Date: September 29, 2006

State of California AIR RESOURCES BOARD

INITIAL STATEMENT OF REASONS FOR PROPOSED RULEMAKING

Public Hearing to Consider

PROPOSED AMENDMENTS TO THE CALIFORNIA CONSUMER PRODUCTS REGULATION AND THE AEROSOL COATINGS REGULATION

To be considered by the Air Resources Board on November 16-17, 2006, at:

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State of California AIR RESOURCES BOARD

PROPOSED AMENDMENTS TO THE CALIFORNIA CONSUMER PRODUCTS REGULATION AND THE AEROSOL COATINGS REGULATION

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Initial Statement of Reasons for Proposed Amendments to the California Consumer Products Regulation and the Aerosol Coatings Regulation

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State of California AIR RESOURCES BOARD

Proposed Amendments to the California Consumer Products Regulation and the Aerosol Coatings Regulation

Executive Summary

EXECUTIVE SUMMARY

A. INTRODUCTION

This Executive Summary, together with Appendix A, the Technical Support Document (TSD), represents the Initial Statement of Reasons for Proposed Rulemaking required by the California Administrative Procedures Act. In these reports, the Air Resources Board (ARB/Board) staff presents the proposed amendments (the "2006 Amendments") to the California Regulation for Reducing Volatile Organic Compound (VOC) Emissions from Consumer Products (the "Consumer Products Regulation"), and amendments to the Regulation for Reducing the Ozone Formed from Aerosol Coating Product Emissions (the "Aerosol Coatings Regulation"). Appendix B contains the proposed amendments for each regulation.

The proposed 2006 Amendments are designed to meet three objectives: (1) the ARB's statutory requirement to achieve the maximum feasible reductions from consumer products; (2) the 2003 State and Federal State Implementation Plan for Ozone (SIP) commitments for Consumer Products; and (3) fulfill certain requirements of a lawsuit settlement agreement with environmental groups regarding ARB's progress under the SIP (U.S. District Court, Central District of CA, Case No. CV-97-6916 JSL (SHx)). Additional proposed amendments are tentatively planned for Board consideration in March 2007 (the "2007 Amendments"). This rulemaking will consider related proposals that have been deferred at the request of interested stakeholders to allow more time for review of technical issues.

The proposed 2006 Amendments will set 18 new VOC limits affecting 15 product categories achieving 10.6 tons per day (tpd) VOC emission reduction statewide by 2008 and 11.5 tpd by 2010, equivalent to a 4.9 tpd emission reduction in the South Coast Air Basin by 2010.

Other proposed amendments will clarify the definitions of the multi-function product categories of "Multi-purpose Solvent" and "Paint Thinner," and clarify overlapping requirements in the Consumer Products Regulation and in the Aerosol Coatings Regulation, applicable to Rubber and Vinyl Protectants, Fabric Protectants, Vinyl/Fabric/Leather/Polycarbonate Coatings, cosmetic products, and other products used on the human body. Other amendments will prohibit the use of chlorinated toxic compounds in certain categories; adjust the VOC limit for Nail Polish Removers; and exempt certain electronic cleaners from a soon-to-be-effective VOC limit.

In this Executive Summary, we provide a discussion of the staff's proposed amendments to the Consumer Products Regulation and the Aerosol Coatings Regulation, and explain the rationale for the proposed changes. A more detailed discussion in Chapter V of the Technical Support Document (Appendix A) is intended to satisfy the requirements of Government Code section 11346.2(a)(1), which requires that a "plain English" summary of the regulations be made available to the public.

B. HISTORY AND BACKGROUND

1. Consumer Products Emissions

A consumer product is defined as a chemically formulated product used by household and institutional consumers. Consumer products include, but are not limited to: detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products such as antiperspirants and hairsprays; home, lawn and garden products; disinfectants; sanitizers; automotive specialty products; and aerosol paints. Emissions from other paint products, such as furniture or architectural coatings, are not part of ARB's consumer products program because local air pollution control and air quality management districts (local air districts) regulate these products.

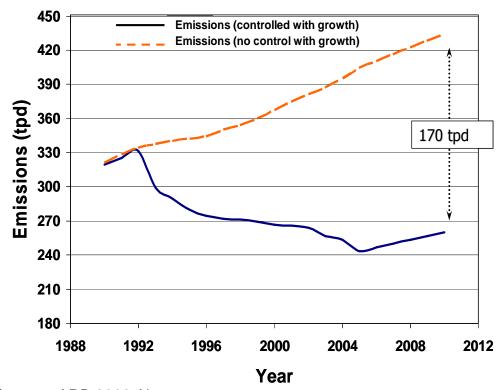
Consumer products are a significant source of reactive organic gas (ROG) emissions in California and contribute to the formation of both ozone and particulate matter pollution. Although each consumer product may seem to be a small source of emissions, the cumulative use of these products by over 37 million Californians results in significant emissions. Consumer products accounted for approximately 260 tpd of ROG emissions in the year 2005, which comprised about eleven percent of the total anthropogenic ROG emissions statewide. Even though significant reductions from control measures adopted by ARB are factored in, growth is projected to cause consumer products emissions to be 270 tpd or about 12 percent of the ROG emissions by 2010. Further reductions in ROG emissions from consumer products and other ROG sources are needed if ozone standards are to be achieved.

The Board has adopted five consumer product regulations over the last fifteen years. As a result of these measures, statewide emissions from consumer products were reduced by over 170 tpd VOC (40 percent reduction) in 2010. The Consumer Products Regulations use the term volatile organic compound (VOC), consistent with California State Law, as opposed to ROG, consistent to federal law, but they are roughly equivalent (ARB, 2006a; ARB, 2006b)¹. Without additional controls, population growth is expected to reverse the downward trend of emissions from Consumer Products beginning in 2008 achieved by the standards taking effect in 2006. See Figure 1 below.

Together with significant reductions from stationary industrial facilities, mobile sources, and other area-wide sources, such as architectural coatings and petroleum marketing, the reductions in the consumer products element of the SIP are an essential part of California's effort to attain air quality standards. As demonstrated by Table 1 and Table 2 below, emissions from Consumer Products, in 2020, will be the largest source of VOC emissions in the South Coast Air Basin, and the third largest source in the San Joaquin Valley Air Basin, and comprise 24.5 percent and 8.8 percent of the VOC emissions respectively.

¹ The term VOC is used throughout this report.

Figure 1
Consumer Products Emissions and Reductions 1990-2010



Source: ARB 2006 Almanac

Table 1
Top Ten Emitting Categories in the South Coast Air Basin in 2010 and 2020

2010 Ranking	2020 Ranking	Source Category	2010 VOC (tpd)	2010 % of Total	2020 VOC (tpd)	2020 % of Total
2	1	Consumer Products	112.0	19.8%	120.7	24.5%
1	2	Light Duty Passenger Cars	159.8	28.2%	86.8	17.6%
4	3	Coatings (Paints and Thinners - non architectural)	33.3	5.9%	38.0	7.7%
3	4	Off-Road Equipment (Lawn and Garden)	34.2	6.0%	31.1	6.3%
5	5	Architectural Coatings (Paints and Thinners)	25.5	4.5%	28.5	5.8%
7	6	Petroleum Marketing (Gasoline Evaporative Losses)	21.7	3.8%	23.2	4.7%
9	7	Degreasing	15.5	2.7%	17.5	3.6%
8	8	Heavy Duty Gas Trucks	19.3	3.4%	13.5	2.8%
6	9	Recreational Boats	21.8	3.8%	13.0	2.7%
12	10	Chemical (Process and Storage Losses)	10.0	1.8%	11.7	2.4%
10	11	Gas Cans	10.2	1.8%	10.8	2.2%
-	-	Other Sources	103.5	18.3%	97.4	19.7%
-	-	Total	566.8	100%	492.2	100%

Source: ARB 2006 Almanac

Table 2
Top Ten Emitting Categories in the San Joaquin Valley Air Basin in 2010 and 2020

2010 Ranking	2020 Ranking	Source Category	2010 VOC (tpd)	2010 % of Total	2020 VOC (tpd)	2020 % of Total
3	1	Livestock Waste (Dairy Cattle)	45.0	11.5%	59.8	15.7%
1	2	Prescribed Burning	48.1	12.4%	47.1	12.3%
4	3	Consumer Products	27.8	7.2%	33.4	8.8%
5	4	Oil and Gas Production (Evaporative Losses)	26.7	6.9%	23.8	6.2%
2	5	Light Duty Passenger Cars	45.0	11.6%	23.4	6.1%
6	6	Pesticides	22.6	5.8%	21.8	5.7%
7	7	Coatings (Paints and Thinners – Non Architectural)	13.8	3.5%	17.4	4.6%
9	8	Petroleum Marketing (Gasoline Evaporative Losses)	11.5	3.0%	13.2	3.5%
8	9	Food and Agriculture (Crop Processing and Wineries)	12.0	3.1%	13.1	3.4%
10	10	Architectural Coatings (Paints and Thinners)	9.8	2.5%	10.8	2.8%
-	-	Other Sources	127.1	32.5%	117.8	30.9%
-	-	Total	389.4	100%	381.6	100%

Source: ARB 2006 Almanac

2. Existing Consumer Product Regulations

In 1988, the Legislature enacted the California Clean Air Act (CCAA or "the Act"). The CCAA specified that attainment of the California State ambient air quality standard is necessary to promote and protect public health, particularly of children, older people, and those with respiratory diseases. The Legislature also directed that these standards be attained by the earliest practicable date. The State ambient air quality standards are more stringent than the federal standards.

The CCAA added section 41712 to the California Health and Safety Code (HSC). This section gave ARB the authority to adopt regulations to achieve the maximum feasible reduction in volatile organic compounds emitted by consumer products. As part of the regulatory adoption process, the ARB must determine that adequate data exist for the adopting regulations. The ARB must also find that the regulations are necessary, technologically and commercially feasible, and do not eliminate a product form. In enacting section 41712, the Legislature gave the ARB clear new authority to control emissions from consumer products, an area that had previously been subject to very few air pollution control regulations.

To date, the Board has adopted the following regulations to fulfill the requirements of the California Clean Air Act as it pertains to consumer products:

- Antiperspirants and Deodorants Regulation
- Consumer Products Regulation
- Aerosol Coatings Regulation
- Alternative Control Plan
- Hairspray Credit Program Regulation

The Antiperspirants and Deodorants Regulation set emission standards and other requirements for only antiperspirants and deodorants. The Consumer Products Regulation set VOC limits and other requirements for 112 categories of household and institutional products such as detergents, cleaning compounds, polishes, floor finishes, cosmetics, personal care products, home, lawn and garden products, disinfectants, sanitizers and automotive specialty products. The Aerosol Coatings Regulation establishes set emissions standards and other requirements for 36 categories of pressurized coatings products including but not limited to spray paints. The Alternative Control Plan provides an alternative method to comply with the VOC standards for consumer products and aerosol coating products set forth in the Consumer Products Regulation and the Aerosol Coatings Regulation. The Hairspray Credit Program Regulation set forth a voluntary program that provided rewards and incentives for early and over compliance with the second-tier 55 percent VOC standard for Hairsprays.

Details pertaining to each of the above listed regulations can be found in Appendix E of the Technical Support Document for this rulemaking.

3. California's SIP and Consumer Products

On October 23, 2003, the ARB adopted *the Proposed 2003 State and Federal Strategy for the California State Implementation Plan* (2003 Statewide Strategy) (ARB, 2003). This action reaffirmed the ARB's commitment to achieve the health-based air quality standards through specific near-term actions and the development of additional longer-term strategies. The 2003 Statewide Strategy identifies the Board's near-term regulatory agenda to reduce ozone and particulate matter by establishing enforceable targets under which new measures are developed and adopted for each year from 2003 to 2008. Nineteen specific measures were included under this plan for Board consideration. In addition to meeting federal requirements, this Statewide Strategy ensures continued progress towards California's own health-based air quality standards.

The South Coast Air Quality Management District adopted the 2003 Air Quality Management Plan on August 1, 2003. The ARB approved the local SIP element and the State and federal strategy on October 23, 2003, and on January 9, 2004, the ARB submitted to the United States Environmental Protection Agency (U.S. EPA) both the Statewide Strategy and the 2003 South Coast SIP as revisions to the California SIP. Thus, the elements of 2003 Statewide Strategy became part of the California SIP submittal package. Further, the emissions benefits of the statewide measures identified would then be realized not only in the South Coast Air Basin, but statewide. The 2003 SIP updates all elements of the approved 1994 SIP and includes additional consumer products measures. The San Joaquin Valley Unified Air Pollution Control District adopted the 2004 State Implementation Plan for Ozone in the San Joaquin Valley on October 8, 2004. The ARB approved the 2004 San Joaquin Valley SIP on October 28, 2004, and submitted it to the U.S. EPA for federal approval on November 15, 2004, as a revision to the California SIP.

Two specific measures (with the first completed and the second in progress) and one longer term, less specific measure from the Statewide Strategy and the 2003 South Coast SIP, are intended to reduce emissions from consumer products:

• Measure CONS-1: Set New Consumer Products Limits for 2006. In the 2003 Statewide Strategy, ARB committed to present a measure to the Board by 2004 (2004 Amendments). The measure would achieve VOC emission reductions from consumer products of at least 2.3 tons per day (tpd) in the South Coast Air Basin in 2010. Statewide, this measure would achieve 5.3 tpd in emission reductions by 2010. The ARB has fulfilled this commitment. On June 26, 2004, the Board adopted a CONS-1 measure (the "2004 Amendments"), which will achieve 3.0 tpd in VOC emission reductions in the South Coast Air Basin by 2010, and achieve 6.9 tpd in VOC emission reductions statewide by 2010. The adopted CONS-1 measure became legally effective on June 20, 2005, with implementation of the CONS-1 VOC limits beginning on December 31, 2006 (ARB, 2004).

Measure CONS-2: Set New Consumer Products Limits for 2008-2010. The
ARB also committed to present new consumer product category limits to the Board
between 2006 and 2008 that would achieve VOC emission reductions from
consumer products of between 8.5 tpd and 15 tpd in the South Coast Air Basin in
2010. Statewide, this measure would achieve 20-35 tpd in emission reductions by
2010.

The current proposal is intended to partially fulfill ARB's commitment for CONS-2 and will achieve 4.9 tpd in VOC emission reductions in the South Coast Air Basin by 2010, and 11.5 tpd in VOC emission reductions statewide by 2010. We are developing a subsequent proposal for presentation to the Board in March 2007 (the "2007 Amendments"), to consider related proposals that have been deferred at the request of interested stakeholders to allow more time for review of technical issues.

The remainder of the CONS-2 commitment is expected to be fulfilled with further rulemakings, beginning in 2007 with preparation of the 2006 sales year survey package (2006 Survey) for distribution to industry. Rule adoption is scheduled for 2008, with rule implementation in 2010.

Further Reductions from Consumer Products. In addition, it is expected that
further emission reductions will be needed from all source categories, including
consumer products, to meet the long-term emission reduction targets included in the
South Coast SIP. As such, there is an ongoing commitment to pursue additional
technologically and commercially feasible reductions in consumer product
emissions.

On April 15, 2004, U.S. EPA designated 15 areas of California nonattainment for the new eight-hour ozone standard effective June 15, 2004. Many, but not all of these areas, were nonattainment for the federal one-hour standard. New nonattainment areas include a number of rural Sierra foothill counties and additional parts of the Sacramento Valley. The one-hour standard was revoked on June 15, 2005, one year after the effective date of the designation, and SIPs showing how each area will meet the eight-hour standard are due by 2007. In order to maintain progress towards clean air, the federal Clean Air Act requires that all emission reduction commitments and specific measures identified in the 2003 Statewide Strategy must be fulfilled, even though the 2003 SIP has not been "approved" by U.S. EPA. In addition, since the eight-hour standard is more health-protective than the federal one-hour standard, ARB expects that California will need to reduce emissions beyond the existing one-hour SIP targets.

4. SIP Lawsuit and Settlement

In 1997, three environmental groups (Communities for a Better Environment, the Coalition for Clean Air, and the Natural Resources Defense Council) filed a complaint in

² On September 21, 2006 U.S. EPA announced a more stringent 24-hour PM standard. Final designations for the new standard are scheduled to be promulgated in 2009 (U.S. EPA, 2006).

the United States District Court for the Central District of California. The lawsuit was filed against the ARB, the South Coast Air Quality Management District, and the U.S. EPA related to California's progress in achieving the 1994 SIP commitments. The ARB reached a settlement agreement with these groups in January 1999 which was amended in December 1999 and June 2003 (U.S. District Court, Central District of CA, Case No. CV-97-6916 JSL (SHx)). Although the 2003 SIP revision is intended to replace the State's original commitments under the 1994 SIP for the South Coast, the settlement agreement will remain in place until the ARB fulfills its obligations under the agreement.

The agreement included a list of measures to be considered by the ARB and a schedule. The agreement listed a measure applicable to consumer products, for which the ARB staff committed to propose to the Board by June 30, 2004, for a 2 tpd VOC emission reduction in the South Coast Air Basin, if feasible, for implementation in 2006. The ARB adoption of the CONS-1 measure (the 2004 Amendments) fulfilled (and actually exceeded) this commitment, with a VOC reduction of 2.8 tpd in the South Coast Air Basin in 2006, thereby partially fulfilling the remaining VOC reduction commitment in the lawsuit settlement agreement. The agreement listed a second measure applicable to consumer products, for which ARB staff committed to a 4 to 8 tpd VOC emission reduction in the South Coast Air Basin, if feasible, for implementation in 2008. The proposals for CONS-2 (the current 2006 Amendments, and the 2007 Amendments), along with the adopted CONS-1 measure (the 2004 Amendments), are intended to fulfill all ARB commitments in the agreement pertaining to consumer products.

C. SUMMARY OF PROPOSED AMENDMENTS

1. Why are we proposing amendments to the Consumer Products Regulation and the Aerosol Coatings Regulation?

We are proposing amendments to partially meet our SIP commitment for 2006-2008, termed "CONS-2," and to fulfill certain conditions of a SIP lawsuit settlement agreement. In addition, these reductions are necessary to demonstrate continued progress in achieving state and federal ambient air quality standards. These three commitments are discussed in Subsection B of this Executive Summary. Specifically, the 2006 Amendments will partially fulfill CONS-2, achieving at least 11.5 tpd VOC emission reduction statewide by 2010, and it will achieve a 4.9 tpd emission reduction in the South Coast Air Basin by 2010. The 2006 Amendments and associated VOC emission reductions will also fulfill all commitments pertaining to consumer products in the SIP lawsuit settlement agreement.

2. What product categories are covered under the proposed 2006 Amendments?

The proposed 2006 Amendments will set new VOC limits for 15 consumer product categories. As shown in Table 3 below, these include 3 new categories, including subcategories, for which new product category definitions and VOC limits are proposed.

Table 3 Product Categories Covered by Proposed 2006 Amendments

New Categories with VOC Limits for Regulation

Disinfectant Sanitizer

Temporary Hair Color

Previously Regulated Category with More Restrictive Limit

Automotive Windshield Washer Fluid (Type A)

Bathroom and Tile Cleaner

Brake Cleaner (formerly Automotive Brake Cleaner)

Carburetor or Fuel-Injection Air Intake Cleaner

Construction, Panel and Floor Covering Adhesive

Engine Degreaser

Floor Polish or Wax (for resilient flooring material)

Floor Polish or Wax (for nonresilient flooring material)

Furniture Maintenance Product

General Purpose Cleaner

General Purpose Degreaser

Laundry Starch/Sizing/Fabric Finish Product (formerly Laundry Starch Products)

Oven Cleaner

Previously Defined or Regulated Categories With Clarifications or Additional Requirements

Electronic Cleaner

Fabric Protectant

Multi-Purpose Solvent

Nail Polish Remover

Paint Thinner

Rubber/Vinyl Protectant

3. What are the proposed VOC limits for the 15 categories?

The proposed VOC limits are shown in Table 4. The table also shows the reductions that would be achieved by each proposed limit. In addition, the table lists those proposed actions that will cause very small emissions increases from two categories. These small increases will be mitigated by the nearly 12 tpd VOC reductions resulting from the new proposed VOC limits.

4. What are the emission reduction benefits from the proposed 2006 Amendments?

The statewide VOC emissions reductions from 2008 implementation of the proposed limits for 13 of the 15 categories is estimated to be about 10.6 tpd by 2008. In the South Coast, the reductions will be about 4.5 tpd. These reductions meet our SIP lawsuit settlement commitment of 4 to 8 tpd in the South Coast Air Basin by 2008. By 2010, the total expected statewide emission reductions will be about 11.5 tpd, and in the South Coast, about 4.9 tpd.

5. Are any of the categories proposed for new VOC limits "Health Benefit Products"?

Yes, the Disinfectant and Sanitizer categories contain Health Benefit Products. As required by the California Health and Safety Code, staff consulted with public health experts, including representatives from the Centers For Disease Control (CDC), the Food and Drug Administration (FDA), and the California Department of Health Services (DHS). As shown in Table 4 below, we are proposing a 70 percent and 1 percent limit for aerosol and non-aerosol Disinfectant and Sanitizer, respectively. Staff is continuing to work with DHS staff to ensure that the proposed limits do not adversely impact the efficacy of Disinfectants and Sanitizers. Representatives from CDC, DHS, and FDA indicated that it was not appropriate to regulate hand sanitizers. Therefore, we removed the proposed VOC limit for hand sanitizers from consideration in this and the proposed 2007 Rulemaking.

6. What other amendments to the Consumer Products and Aerosol Coatings Regulations are being proposed?

Other amendments will clarify the definitions of the multi-function product categories of Multi-Purpose Solvent and Paint Thinner, and clarify overlapping requirements in the Consumer Products Regulation and in the Aerosol Coating Products Regulation, applicable to the Rubber and Vinyl Protectants, Fabric Protectants, Vinyl/Fabric/Leather/Polycarbonate Coatings, cosmetic products, and other products used on the human body. Other amendments will prohibit the use of chlorinated toxic compounds in certain categories; adjust the VOC limit for Nail Polish Removers; and exempt certain electronic cleaners from a soon-to-be-effective VOC limit.

Table 4
Proposed VOC Limits and Reductions Achieved

Product Category	Product Form	Proposed VOC Limit (wt %)	VOC Emission Reductions (tpd) ¹
Automotive Windshield Washer Fluid (Type A)	all	25	0.31
Bathroom and Tile Cleaner	non-aerosol	1	0.13
Brake Cleaner	all	10	3.70
Carburetor or Fuel-Injection Air Intake Cleaner	all	10	2.00
Construction, Panel and Floor Covering Adhesive	non-aerosol	7	0.41
Disinfectant	aerosol	70	0.66
Disinfectant	non-aerosol	1	0.49
Engine Degreaser	aerosol	10	0.62
Floor Polish or Wax (for resilient flooring material) ²	all	1	0.43
Floor Polish or Wax (for nonresilient flooring material) ²	all	1	0.05
Furniture Maintenance Product	non-aerosol	3	0.06
General Purpose Cleaner	aerosol	8	0.05
General Purpose Degreaser	aerosol	10	0.70
Laundry Starch/Sizing/Fabric Finish Product	all	4.5	0.06
Oven Cleaner	non-aerosol	1	0.09
Sanitizer	aerosol	70	0.46
Sanitizer	non-aerosol	1	0.33
Temporary Hair Color ²	aerosol	55	0.13
SUBTOTAL REDUCTIONS (TPD)			
Based on 2003 Survey Year			10.68
Calculated for ABOVE CATEGORIES			
Electronic Cleaner	all	(new exclusion; no change to limit)	-0.13 ³ (to be mitigated)
Fabric Protectant	all	(no change)	
Multi-Purpose Solvent	all	none	
Nail Polish Remover	all	1 (previously 0)	-0.04 ³ (to be mitigated)
Paint Thinner	all	none	
Rubber/Vinyl Protectant	all	(no change)	
TOTAL REDUCTIONS (tpd)			
Based on 2003 Survey Year			10.51
Calculated for ALL CATEGORIES			
TOTAL REDUCTIONS (tpd) 2008 ²			10.55
TOTAL REDUCTIONS (tpd) 2010 ²			11.46

^{1.} Survey emissions adjusted for market coverage as discussed in Technical Support Document, Chapter IV.

^{2.} Effective date 12-31-2010 for two categories (for three subcategories). [Effective date 12-31-2008 for all other categories]

^{3.} Negative values indicate an emissions increase.

Other Proposed Amendments

a. Multi-Function Products

To address confusion and inequity in categorizing multi-function products, we are proposing modifications to the current definitions of "Multi-Purpose Solvent" and "Paint Thinner." Many products with multiple contaminant removal claims or with no claim on the product label have been classified as either "Multi-Purpose Solvent" or "Paint Thinner." This situation has created an unfair market advantage for the multi-function products over the single-claim products that are regulated by specific VOC limits. The proposal would require that products with multiple claims be subject to the VOC limits applicable to each of the claims. The net result of this action is that the most restrictive VOC limit would apply to the product. For the March 2007 Amendments, staff will evaluate setting an emissions standards for Multi-Purpose Solvents.

b. Consumer Products Regulation/Aerosol Coatings Regulation Overlap

To address confusion and inequity with certain aerosol products, we are proposing modifications to the current definitions of "Rubber and Vinyl Protectant" and "Fabric Protectant" in the Consumer Products Regulation, and modifications to "Exemptions" in the Aerosol Coatings Regulation. The overlap products are proposed to be regulated solely within the Consumer Products Regulation or the Aerosol Coatings Regulation. To accomplish this, products that meet either the proposed "Rubber/Vinyl Protectant" definition or the proposed "Fabric Protectant" definition in the Consumer Products Regulation would be regulated as such, and would be explicitly excluded from the "Aerosol Coatings Regulation." In addition, to clarify that cosmetics and other products used on the human body are also regulated solely within the Consumer Products Regulation, those products would also be explicitly excluded from the "Aerosol Coatings Regulation."

We are also clarifying that the current "Rubber and Vinyl Protectant" category, to be changed to "Rubber/Vinyl Protectant," includes products used for any combination of the substrates: rubber or vinyl.

c. Electronic Cleaners

In the 2004 Amendments to Consumer Products Regulations, the Board approved a VOC limit of 75 percent by weight for "Electronic Cleaners." At the time the limit was approved, the staff determined that the limit was commercially and technologically feasible. As is routinely done before limits become effective, staff consults with stakeholders to ensure that the limits are technologically feasible. In 2005, several manufacturers indicated that they were encountering problems reformulating certain "Electronic Cleaners" to meet the 75 percent limit. These niche products are those that are used in manufacturing settings where products must be non-flammable, electrically non-conductive, have high dielectric strength, and have a high degree of solvency (Kauri-butanol, or Kb values of 45-55). The Kb value is a measure of a compound's ability as a solvent. These attributes would be needed for

heavy duty cleaning of electronic components on a manufacturing line. Industry representatives also indicated that low-toxicity was important in this segment of the market.

Therefore, staff is proposing to exempt products from the definition, and the 75 percent VOC limit. The label for these certain electronic cleaner products must clearly display the statement: "not for retail sale" and must be sold exclusively to establishments which manufacture or construct goods or commodities. This proposal should ensure that the full range of electronic cleaning products continue to be available to the California market. However, staff will continue to evaluate the need for the exemption as additional technology becomes available. Staff has also determined that approximately 31 of the 106 "Electronic Cleaners" reported in the 2003 Survey would meet the proposed exemption. This reduces the emission reductions claimed from the category in the 2004 Amendments by 0.13 tpd. This small shortfall will be offset by the emission reductions achieved through this rulemaking.

d. Use of Toxic Air Contaminants

We are proposing to prohibit the use of methylene chloride, perchloroethylene and trichloroethylene in Construction, Panel, and Floor Covering Adhesive, Oven Cleaner, General Purpose Cleaner, and Bathroom and Tile Cleaner. The 2003 Survey found a construction, panel and floor covering adhesive product containing methylene chloride; it is our understanding the product has been discontinued. In addition, an oven and grill cleaning product, closely related to, but not included in the oven cleaner category, was found to also contain methylene chloride. It is also possible that chlorinated solvents could be included in reformulated General Purpose Cleaners and Bathroom and Tile Cleaners.

Under the California Environmental Quality Act, ARB is required to identify and mitigate any possible adverse environmental impacts of regulatory actions. We believe that it is unlikely, but possible, that manufacturers may, in response to new VOC limits, choose to reformulate with chlorinated solvents in the categories noted above. Therefore, because there are many products that comply with the proposed limits, none of which contain chlorinated solvents, we believe it appropriate to prohibit the use of these three solvents.

e. Nail Polish Remover

We are proposing to adjust the current zero percent VOC limit for "Nail Polish Removers" to 1 percent VOC. This change is necessary to address the technical reformulation issues identified for compliance with the zero percent VOC limit. The issues include the fact that VOCs are created by chemical reactions that occur in the product container even after the inclusion of high grade ingredients (which contain low levels of VOC contaminants) and reaction inhibitors in the formulation. This proposal will create a shortfall of approximately 0.04 tpd VOC, which will be mitigated by the

reductions resulting from the adoption of new VOC limits. The VOC emission reductions presented in this Executive Summary have been adjusted to account for the necessary action.

f. Other Minor Changes

Several other minor changes are being proposed that would not substantially affect parties subject to the Regulations, but serve to simplify, clarify, or better organize the Regulations.

7. Will the proposed amendments address the pending petition for the exemption of *tertiary*-Butyl acetate from the VOC definition?

No, staff is not proposing to exempt *tertiary* butyl acetate (TBAC) from the definition of VOC contained in section 94508(a) at this time. The exemption could provide an air quality benefit by reducing ground level ozone concentrations when TBAC is used as a replacement for other higher reactive VOC solvents. However, we have identified possible significant adverse environmental impacts that would result from the exemption, namely an increase in cancer risk. Once inhaled, TBAC metabolizes to form *tertiary* butyl alcohol, a potential carcinogen. Because of this possible impact, staff will continue to evaluate exposure scenarios for typical use patterns in various product categories. Staff will consider whether an exemption of TBAC form the definition of VOC and/or a limitation or prohibition of its use in consumer products is appropriate in the 2007 Amendments.

8. Who would be affected by these proposed amendments?

The proposed 2006 Amendments would apply to anyone who sells, supplies, offers for sale, or manufactures consumer products for use in California that are subject to the proposed amendments. The primary impact would be on manufacturers and marketers of consumer products. These businesses will have to reformulate some of their products. There may also be an impact on distributors and retailers, who must ensure that they are selling or supplying complying products. In addition, since some products will have to be reformulated, suppliers of chemicals, propellants, containers, valves, and other components may be impacted, depending on whether there is an increased or decreased demand for their products. Finally, consumers may have to pay more for some consumer products, or may have to make some adjustments to their use of reformulated products.

9. Will the provisions in the existing Consumer Products Regulation apply to the product categories covered in this rulemaking?

The existing provisions in the Consumer Products Regulation (such as the low vapor pressure VOC exemption, innovative products provision, and variance provision) will apply to the categories proposed for regulation.

10. Will the Alternative Control Plan (ACP) be available to the proposed product categories?

Yes. The ACP will allow manufacturers to submit plans to "average" the emissions from any combination of consumer products subject to the VOC limits in section 94509 of the Consumer Products Regulation, including the proposed new product categories. However, manufacturers cannot submit plans which include both consumer products subject to section 94511 "Innovative Products Provision," or aerosol coating products (aerosol paints) subject to section 94522.

D. REGULATORY DEVELOPMENT PROCESS AND EVALUATION OF ALTERNATIVES

1. How did ARB staff develop the Proposed 2006 Amendments?

In 2004, a subcommittee of the Consumer Products Working Group, the Consumer Products Regulation Workgroup (CPRWG), was formed to serve as a forum for communication during the 2003 Consumer and Commercial Products Survey (2003 Survey) and 2006 Amendments development process. Participation was open to any member of the public.

ARB staff began to develop the 2006 Amendments with the 2003 Survey, a comprehensive survey of select categories of consumer products. Numerous meetings were held with the CPRWG while developing the 2003 Survey.

This survey collected sales and formulation information on approximately 250 different consumer product categories and provided ARB staff with technical information used to develop the proposed 2006 Amendments. Four public meetings of the CPRWG and one Public Workshop were conducted from January 2006 through September 2006 while developing the 2006 Amendments. A chronology of the meetings and public workshop held is shown in Table 5.

To solicit additional information and comments, staff held or participated in numerous individual meetings, and teleconferences with industry representatives. Staff also analyzed survey data, performed shelf surveys, and researched technical literature, patents, and trade journals during the development of the proposed amendments.

Table 5
Chronology of Public Meetings and Workshop

Date	Meeting	Location
January 19, 2006	1 st Workgroup Meeting for the CPRWG	Sacramento, CA with teleconference available
March 27, 2006	2 nd Workgroup Meeting for the CPRWG	Sacramento, CA with teleconference available
June 1, 2006	3 rd Workgroup Meeting for the CPRWG	Sacramento, CA with teleconference available
July 25, 2006	4 th Workgroup Meeting for the CPRWG	Sacramento, CA with teleconference available
September 14, 2006	1 st Public Workshop	Sacramento, CA with teleconference available

2. Who has actively participated in the process?

Consumer product manufacturers, chemical producers, and marketers, and their trade associations, have been the most active in the process. The trade associations include the following:

- Adhesives and Sealants Council
- American Beauty Association
- American Chemistry Council
- Automotive Aftermarket Industry Association
- Automotive Specialty Products Association
- California Fire Chief Association
- California Grocers Association
- California League of Food Processors
- Consumer Specialty Products Association
- Cosmetic, Toiletry, and Fragrance Association
- Fire District Association of California
- Fragrance Materials Association
- International Sanitary Supply Association
- Motor & Equipment Manufacturers Association
- National Aerosol Association
- National Paint and Coatings Association
- Soap and Detergent Association
- Western Aerosol Information Bureau

In addition, representatives from local air districts and agencies, including the South Coast Air Quality Management District and U.S. EPA, as well as many other individual consumer product manufacturers were involved in the process.

ARB staff maintains a mailing list of over 4,000 companies and interested parties, including environmental organizations, which received information throughout the development of the proposed amendments. In addition, we have established an electronic list serve to allow subscribers to receive pertinent information with over 1,300 subscribers.

3. How did ARB staff evaluate alternatives and choose the product categories proposed for regulation?

ARB staff began the selection process by reviewing all the consumer product categories included in the 2003 Survey, including both unregulated categories and previously regulated categories. Staff then eliminated from consideration:
(1) categories where very little or no potential for emission reductions existed,
(2) categories where adequate data were not obtained for pursuing emission reductions, and (3) categories where the technical justification for setting new VOC limits could not be completed in the required timeframe. Fifteen of the remaining categories are proposed for regulation at this time, with over 30 other categories deferred to the 2007 rulemaking.

At the second, third, and fourth public workgroup meetings, staff presented regulatory proposals for discussion. After each workgroup meeting, staff modified the proposals, as appropriate, based on the comments and technical information received from industry and staff investigations. During this process, several categories were postponed for consideration for the reasons given above. As mentioned previously, the current proposal would affect 15 categories, including 3 new categories, for which new product category definitions and VOC limits are proposed.

4. How were the proposed VOC limits in the proposed 2006 Amendments established?

The proposed VOC limits are the product of extensive research and analysis of data by staff and interaction with the affected consumer products industry, as discussed in the response to question number three. Although the proposed limits were based on factors unique to each individual category, the following general guiding principles were applied:

- technological and commercial feasibility assuring that reformulation technologies will be available by the effective date for each proposed limit and that the basic consumer market demand can be met on that date;
- emission reductions achieved assuring that our overall proposal will achieve the maximum feasible reduction as required by State law;
- preservation of product forms assuring that each existing product form (e.g. liquid, semi-solid, solid, aerosol) is able to reformulate to meet the proposed VOC limit; and,

 minimize potential for use of Toxic Air Contaminants - assuring that the proposed limit can be met with formulations that do not rely on the increased use of Toxic Air Contaminants.

E. COMPLIANCE WITH THE PROPOSED 2006 AMENDMENTS

1. How will manufacturers comply with the proposed 2006 Amendments?

Manufacturers of non-complying products will need to reformulate their products to meet the applicable VOC limits. Manufacturers have the flexibility to choose any formulation that meets the applicable VOC limits and the reformulation options vary with each product category (see Chapter VI of the Technical Support Document). In general, VOC solvents or propellants will need to be replaced, or partially replaced, with non-VOC ingredients. This may require switching to a water-based formulation, using acetone or another exempt solvent, increasing product solids, or formulating with a non-VOC propellant. Manufacturers may also need to change the valve, container, delivery system, or the other components of the consumer product depending on the individual formulation. ARB staff has proposed VOC limits that can be met without the increased use of Toxic Air Contaminants.

2. Are there alternative compliance options to the proposed VOC limits?

Yes. Manufacturers can comply with the proposed amendments through the use of the Innovative Products Provision (IPP), or the Alternative Control Plan (ACP). The IPP allows manufacturers of "innovative products" to comply with the Consumer Products Regulation if they demonstrate through clear and convincing evidence that their product will result in less VOC emissions than a complying product that meets the applicable VOC limit. The innovative product may result in less emissions due to some characteristic of the product formulation, design, delivery system, or other factors.

The ACP allows manufacturers to average the emissions from products above and below the applicable VOC limits, as long as the overall emissions are less than or equal to the emissions that would have occurred had all the products complied with the VOC limits. Manufacturers must submit an application which includes the VOC content of the products in the plan, a method of verifying the sales of each product in the plan, and other information necessary to track overall emissions.

3. Are the VOC limits for the proposed amendments technologically and commercially feasible?

As explained in detail in Chapters III and VI of the Technical Support Document, all the VOC limits proposed are technologically and commercially feasible. The proposed limits were targeted towards the lowest VOC content technology within a

product category which would adequately perform the intended function. In doing this, we ensured that the various product forms within each category would be preserved, and the proposed limits could be met without the use of Toxic Air Contaminants. ARB staff will track manufacturers' progress in meeting the proposed VOC limits, as we have done in past regulatory efforts for consumer products. If manufacturers encounter unanticipated but insurmountable difficulties, we will consider proposing amendments to the Consumer Products Regulations to address them.

As shown in Table 6, our survey results demonstrate that products are available that comply with the proposed limits for most of the product categories. The complying market shares listed in Table 6 vary widely with each category (as in previous regulations) 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 category, patents that may restrict some reformulation options, and economic issues.

To allow time for reformulation in all categories, the VOC limits become effective on December 31, 2008 (and on December 31, 2010 for two categories). In addition, staff will also perform a technical assessment of manufacturers' progress in meeting the proposed VOC limits.

F. ECONOMIC IMPACTS

1. Will the proposed amendments be cost-effective?

Cost-effectiveness is one measure of a regulation's efficiency in reducing a given amount of pollutant (often reported in "dollars spent per pound of pollutant reduced"). The determination of cost-effectiveness is well-established and often used to compare a proposed regulation's cost-efficiency with those of other regulations. To determine the cost-effectiveness of the proposed regulations, we relied on specific formulation data from the 2003 Survey, industry journals/literature such as the Chemical Market Reporter for ingredient unit prices, discussions with industry representatives, and the cost analyses conducted for the existing ARB consumer products program. Based on our analyses, we estimate the cost-effectiveness of the proposed VOC limits is about \$2.35 per pound of VOC reduced. This estimated cost-effectiveness value is consistent with existing ARB regulations and control measures. For example, the cost-effectiveness of the 2004 Consumer Products Regulation Amendments was \$2.40. For the 1997 Hairspray Regulation and the 1995 Aerosol Coating Products Regulation the costeffectiveness was about \$2.25 and \$3.00 per pound of VOC reduced, respectively. Further, the cost-effectiveness of the recent Inboard Marine and Transit Bus Measures were each determined to be approximately \$2.00 per pound of ozone precursor reduced.

We estimate that the total cost incurred by industry to comply with this regulation is about \$20 million per year. These cost estimates are based on assumptions specific to each category depending on reformulation needs. For some categories it was

assumed that manufacturers would either drop certain products or undergo minor product formulation changes, and for other categories, manufacturers would undergo complete production line overhaul and equipment replacement rather than simple retooling.

Table 6
Summary of Complying Products

Product Category	Product Form	Proposed VOC Limit (wt%)	Number of Complying Products/ Total	Complying Market Share (%)
Automotive Windshield Washer Fluid (Type A)	all	25	12 / 38	17.0
Bathroom and Tile Cleaner	non-aerosol	1	264 / 337	80.9
Brake Cleaner	all	10	21 / 112	5.0
Carburetor or Fuel-Injection Air Intake Cleaner	all	10	2 / 110	3.3
Construction, Panel and Floor Covering Adhesive	non-aerosol	7	42 / 76	46.9
Disinfectant	aerosol	70	24 / 63	6.4
Disinfectant	non-aerosol	1	264 / 337	92.6
Engine Degreaser	aerosol	10	4 / 47	9.0
Floor Polish or Wax (for resilient flooring material)	all	1	150 / 340	66.8
Floor Polish or Wax (for nonresilient flooring material)	all	1	58 / 113	62.5
Furniture Maintenance Product	non-aerosol	3	46 / 76	46.2
General Purpose Cleaner	aerosol	8	40 / 142	11.5
General Purpose Degreaser	aerosol	10	21 / 103	3.1
Laundry Starch/Sizing/Fabric Finish Product	aerosol	4.5	2 / 14	0.6
Laundry Starch/Sizing/Fabric Finish Product	non-aerosol	4.5	34 / 34	100**
Oven Cleaner	non-aerosol	1	50 / 100	25.6
Sanitizer	aerosol	70	0/7	0
Sanitizer	non-aerosol	1	123 / 139	92.5
Temporary Hair Color	aerosol	55	1 / 30	***

Source: 2003 Consumer and Commercial Products Survey (ARB, 2003).

^{**}All non-aerosol products very low VOC; already comply; not affected by rulemaking.

^{***}Omitted to protect confidentiality.

2. Will consumers have to pay more for consumer products subject to the 2006 Amendments?

Consumers may have to pay more for some products subject to the proposed amendments, depending on the extent to which manufacturers are able to pass along their costs to consumers. As explained in Chapter VII of the Technical Support Document, the average increase in cost per unit to the manufacturer is estimated to be about \$0.06. These estimated cost per unit values are consistent with existing ARB regulations and control measures. For example, for the 1989 Antiperspirants and Deodorants Regulation, the 1995 Aerosol Coatings Products Regulation, and the 2004 Consumer Products Regulation Amendments, the increased cost to manufacturers were about \$0.25, \$0.30, and \$0.16 respectively.

3. What are the expected economic impacts of the proposed regulation on businesses?

In our economic impacts analysis, we evaluated the proposed VOC limits for potential impacts on profitability and other aspects of businesses subject to the limits (with particular attention to California businesses), the cost-effectiveness of the limits, and the estimated cost impacts to consumers. To conduct our analysis, we relied on a combination of publicly available financial databases ("Dun and Bradstreet," "Ward's Business Directory of U.S. Manufacturing Industries," etc.), the ARB's 2003 Consumer and Commercial Products Survey, industry journals/literature such as the "Chemical Market Reporter," discussions with industry representatives, and the cost analyses conducted for the existing ARB consumer products program.

Based on our analysis, we expect most manufacturers to be able to absorb the added costs of the proposed regulation without an adverse impact on their profitability. In addition, as explained in more detail below, we found that the proposed amendments are cost-effective relative to similar ARB regulations or measures, and the impacts to consumers are consistent with existing ARB regulations.

We estimated the change in "return-on-owners equity" (ROE) as an indicator of the limits' potential impacts on business profitability. The cost to comply with the proposed regulation, through increased research and development, equipment purchase and other investment costs, is presumed to impact a business' ROE and therefore its profitability. The cost to reformulate non-complying products for a typical company was used to determine total annual reformulation costs. Our analysis indicates the estimated change in ROE can vary from essentially no change to 4.9 percent change. The average change in ROE is about 3.4 percent, relative to the ROE before the proposed amendments would take effect. This estimated change in ROE is well within the change in ROE estimated for ARB's existing consumer products and motor vehicle programs.

Our ROE analysis for the proposed limits may overestimate the impact on business because it assumes that all of the costs of the proposed limits will be absorbed

by manufacturers. In reality, we expect that at least some of the investment costs to comply with the proposed limits will be passed on to consumers. The analysis presumes that some cost mitigation will occur due to "technology-transfer" between product lines and from third-party manufacturers (i.e., contract fillers) who fill essentially equivalent products for a number of competing businesses.

While we expect that most businesses will be able to absorb the costs of the proposed amendments without significant adverse impacts on their profitability, there is the possibility that some individual businesses will be adversely affected by this regulatory action. Therefore, it is possible that the proposed amendments may have a significant adverse impact on some businesses that are not in a market position to invest monies to develop new low VOC products, or to absorb the increased cost resulting from their compliance with the proposed regulation.

Based on our analysis, we do not expect the proposed amendments to have a significant impact on employment, or business creation, elimination, or expansion. We also do not expect the regulation to have a significant impact on the competitiveness of California businesses compared with those outside of California. This is because all companies that sell these products in California would have to meet the proposed requirements, whether located in California or outside of California.

The VOC limits in the proposed amendments will primarily impact consumer product manufacturers and marketers (companies which contract out the manufacturing of their products). However, we recognize that other industries could also be impacted to a lesser amount, which is difficult to quantify. These industries include distributors, retailers, and "upstream" suppliers who supply containers, valves, solvents, propellants, and other chemicals used in consumer products.

Distributors and retailers could be impacted if some manufacturers decide to carry a dual inventory of products (one for California and one for the rest of the nation). However, most manufacturers have indicated that they will not manufacture California and 49-state products because dual-distribution systems are expensive to establish and maintain. Another potential cost to distributors or retailers would be the implementation of procedures to ensure that non-complying products are not sold past the three year "sell-through period." However, based on retail sell-through data obtained during the development of ARB's existing consumer products regulations, we believe the existing three year sell-through period should provide ample time to allow for the sale of non-complying products.

Upstream suppliers could be impacted because manufacturers will be purchasing some different solvents, propellants, and other materials for their reformulated products. They may also purchase different containers, valves, or other components for their reformulated products. However, we do not expect these changes to result in a major impact on the affected industries because chemical companies generally supply many different industries, and because many of the upstream suppliers also provide the alternative products which will be used in the reformulated products. In fact, we expect

some upstream suppliers will benefit since the proposed limits are likely to create new or increased demand for materials to be used in compliant formulations.

G. ENVIRONMENTAL IMPACTS

1. What are the expected environmental benefits of reducing VOCs in the 2006 Amendments?

One of the environmental benefits of the 2006 Amendments will be a reduction in the formation of ground level ozone because the proposed VOC limits result in reductions of ozone precursors (VOC) of 10.6 tpd statewide by December 31, 2008, and 11.5 tpd by December 31, 2010, based on the 2003 Survey results. We also expect no adverse impact and most likely a positive impact on secondary organic aerosol formation. VOCs are a source of particulate matter (PM), namely secondary organic aerosols, either through condensation of the VOCs or complex reactions of VOCs with other compounds in the atmosphere. In general, depending on reformulation options chosen, secondary organic aerosols will be reduced.

2. Will Toxic Air Contaminants be reduced?

The proposed VOC limits for Brake Cleaners, Carburetor and Fuel Injection Air Intake Cleaners, Engine Degreasers, General Purpose Degreasers, and Construction, Panel, and Floor Covering Adhesives may reduce emissions of hexanes. For the other categories for which we have proposed VOC limits, we have determined that there are currently no emissions of methylene chloride, perchloroethylene, or trichloroethylene. However, we have determined that it is possible that manufacturers could choose to reformulate with these compounds in Construction, Panel, and Floor Covering Adhesive, Oven Cleaner, Bathroom and Tile Cleaner, and General Purpose Cleaner in response to new VOC limits. Therefore as a mitigation measure, we propose to prohibit their use thus preventing a possible increased use.

3. How would the 2006 Amendments proposal reduce the risk to public health by reducing VOCs?

While we cannot accurately assess potential risk reduction due to reducing VOC and PM emissions, it has long been known that exposure to ground level ozone and PM have adverse impacts on public health. Research has shown that, when inhaled, ozone and PM can cause respiratory problems, aggravate asthma, impair the immune system, and cause increased risk of premature death. Any reduction in PM or ozone precursors, namely VOCs, results in improving health in California.

4. Are there any potential negative environmental impacts?

We examined the potential effect of the proposed regulation on global warming, stratospheric ozone depletion, the use of TACs, and the impacts on water quality and solid waste disposal. Based on our analysis, as detailed in Chapter VIII of the Technical

Support Document, we do not expect any significant adverse environmental impacts to result from the proposed 2006 Amendments. Staff does acknowledge a slight erosion of VOC emissions reductions due to the shortfall from the adjustment for "Nail Polish Remover" and the new exclusion in "Electronic Cleaner." This shortfall will be mitigated by reductions of nearly 12 tpd from the new VOC limits. Based on the analysis presented in Chapter VIII. Environmental Impacts, the proposed action will lead to reductions in emissions of VOC with the potential (depending upon the alternative used) for a small change in the emissions of global warming pollutants. Staff believes that the potential increase in global warming pollutant emissions are tempered by the agency's need to be mindful of health protection via reduction of ozone precursors.

5. How does the proposal relate to ARB's goals on environmental justice?

This proposal is consistent with the ARB's Environmental Justice Policy to reduce health risks in all communities, including low-income and minority communities. Generally, use of consumer products is fairly uniform across the State, tracking with population, and their emissions are spread over the course of a day, rather than concentrated at a particular time of day. For these reasons, we do not believe that people of any given race, culture, or income would be more impacted than any others would. All Californians should benefit equally from the reduction in VOC emissions from the consumer product categories proposed for regulation, as well as from the prohibition on use of chlorinated solvents that are TACs in the categories containing them.

H. FUTURE PLANS

We are currently developing a subsequent proposal for Board consideration in March 2007 (the "2007 Amendments") for other consumer product categories that were deferred. Other proposed changes will be included to clarify and strengthen the Consumer Products Regulation. The subsequent proposal is scheduled to allow more time for interested stakeholders, as they had requested, to evaluate the various ARB staff proposals deferred to 2007.

During 2007, staff will also begin a new regulatory cycle with the preparation of the Consumer and Commercial Products Survey package for the 2006 sales year (2006 Survey) to be distributed to industry. The 2006 Survey will be comprehensive in nature and the data collected will be used as the basis for rulemakings in 2008 for implementation in 2010. These rulemakings, along with the previously adopted CONS-1 and CONS-2 measures, are intended to fulfill the ARB commitment in the 2003 SIP pertaining to consumer products.

In 2007, 15 California areas are required to show how they will meet the federal eight-hour ambient air quality standard for ozone. ARB expects that manufacturers and marketers of consumer products will need to reduce emissions beyond the existing 2003 SIP targets for to meet both the State Ozone Standards and the federal eight-hour standard. We will be developing new control measures for consumer products, to be

included in the 2007 SIP submittal to U.S. EPA. (See Chapter IX of the Technical Support Document, "Future Activities").

For each of these future activities staff will consult with interested parties through the same workgroup process (see Chapter II of the Technical Support Document) used to develop the 2006 Amendments.

I. RECOMMENDATION

We recommend that the Board adopt the proposed 2006 Amendments to the Consumer Products and Aerosol Coatings Regulations.

REFERENCES

- Air Resources Board. <u>Proposed 2003 State and Federal Strategy for the California State Implementation Plan</u>. August 25, 2003. <u>http://www.arb.ca.gov/planning/sip/stfed03/stfed03.htm</u>. (ARB, 2003)
- Air Resources Board. <u>Initial Statement of Reasons for the Proposed</u>
 Amendments to the California Aerosol Coating Products, Antiperspirants and Deodorants, and Consumer Products Regulations, Test Method 310, and Airborne Toxic Control Measure for Para-Dichlorobenzene Solid Air Fresheners and Toilet/Urinal Care Products. May 7, 2004. (ARB, 2004)
- 3. Air Resources Board. <u>Definitions of VOC and ROG Last Revised September</u> 2004. http://www.arb.ca.gov/ei/speciate/ROG_DFN_9_04.pdf. (ARB, 2006a)
- 4. Air Resources Board. Consumer Products Emissions by Category, and
 Speciation Profile Assignment -- 1998 CEIDARS Emission Inventory. 12-05-00
 Draft Table 1. http://www.arb.ca.gov/ei/speciate/CPAERAIMems_web.pdf.
 (ARB, 2006b)
- 5. Air Resources Board. <u>The California Almanac of Emissions and Air Quality 2006 Edition.</u> 2006 (ARB 2006 Almanac)
- 6. United States Environmental Protection Agency. National Ambient Air Quality Standards for Particulate Matter. September 21, 2006. (U.S. EPA, 2006)