

California Environmental Protection Agency

 **Air Resources Board**

Final Statement of Reasons for Rulemaking
Including Summary of Comments and Agency Responses

**PUBLIC HEARING TO CONSIDER ADOPTION OF THE
AMENDMENTS TO THE CONTROL MEASURE FOR
PERCHLOROETHYLENE DRY CLEANING OPERATIONS AND
ADOPTION OF REQUIREMENTS FOR MANUFACTURERS
AND DISTRIBUTORS OF PERCHLOROETHYLENE**

Public Hearing Date: January 25, 2007
Agenda Item No.: 07-1-05

TABLE OF CONTENTS

<u>Contents</u>	<u>Page</u>
I. GENERAL	1
A. Description of Board Action.....	2
B. Modifications to the Original Proposal.....	2
C. Fiscal Impacts to State and Local Agencies	3
D. Consideration of Alternatives	4
II. SUMMARY OF COMMENTS AND AGENCY RESPONSES	4
A. Summary of Comments Received During the 45-Day Public Comment Period and Board Hearing	4
Penalty Provisions.....	12
Definitions	12
Reporting Requirements	12
Annual/Weekly Leak Checks & Repairs.....	13
Enhanced Ventilation Requirement.....	16
Phase Out Period.....	17
Alternatives to ATCM	18
VOC Impacts.....	20
Health Risks from Perc Exposure	21
Siting Criteria.....	24
Economic Impacts.....	25
Financial Assistance	29
Care Label Issues	30
Legal Issues	31
Requirements for Perc Distributors and Manufacturers	34
Alternative Technologies to Perc	36
Opposition to Perc Phase Out.....	39
Support	41
AB 998 Legislation	42
Miscellaneous Issues	43
B. Summary of Comments Received During the 15-Day Public Comment Period	47
GreenEarth Solvent.....	47
Opposition to Perc Phase Out.....	47

State of California
Environmental Protection Agency
AIR RESOURCES BOARD

Final Statement of Reasons for Rulemaking,
Including Summary of Comments and Agency Responses

**PUBLIC HEARING TO CONSIDER ADOPTION OF THE
AMENDMENTS TO THE CONTROL MEASURE FOR
PERCHLOROETHYLENE DRY CLEANING OPERATIONS AND
ADOPTION OF REQUIREMENTS FOR MANUFACTURERS AND
DISTRIBUTORS OF PERCHLOROETHYLENE**

Public Hearing Date: January 25, 2007
Agenda Item No.: 07-1-05

I. GENERAL

In this rulemaking, the Air Resources Board (ARB or Board) is adopting amendments to the Airborne Toxic Control Measure for Perchloroethylene (Perc) Dry Cleaning Operations (Dry Cleaning ATCM), title 17, California Code of Regulations (CCR), section 93109 (hereafter section 93109) and adopting new sections 93109.1 and 93109.2, title 17, CCR (hereafter sections 93109.1 and 93109.2). In summary, the amended Dry Cleaning ATCM:

- Prohibits new Perc dry cleaning machines after January 1, 2008;
- Removes from service converted Perc machines and Perc dry cleaning machines in co-residential buildings by July 1, 2010;
- Removes from service all Perc machines that are 15 years old, beginning July 1, 2010;
- Removes all Perc dry cleaning machines by January 1, 2023;
- Expands good operating practices and recordkeeping and reporting requirements; and
- Adds recordkeeping and reporting requirements for Perc manufacturers and distributors who sell to California dry cleaners.

This rulemaking was initiated by the December 8, 2006 publication of a notice for the January 25, 2007 public hearing to consider adopting the proposed amended Dry Cleaning ATCM and the requirements for manufacturers and distributors of Perc. The *Staff Report: Initial Statement of Reasons for the Proposed Amendments to the Control Measure for Perchloroethylene Dry Cleaning Operations* (Staff Report or ISOR) was also made available for public review and comment starting December 8, 2006. The Staff Report, which is incorporated by reference herein, describes the rationale for the proposal. The text of the proposed sections 93109, 93109.1 and 93109.2 was

included as an Appendix to the Staff Report. These documents were also posted on ARB's website for the rulemaking at <http://www.arb.ca.gov/regact/perc06/perc06.htm>. This Final Statement of Reasons (FSOR) provides an update of the Staff Report by describing the Board's action during the public hearing on January 25, 2007 and identifying and explaining the modifications that were made to the original proposal. The FSOR also summarizes the written and oral comments received during the 45-day comment period preceding the public hearing, at the hearing itself, and during the supplemental 15-day comment period for the proposed modifications, and contains ARB's responses to these comments.

A. Description of Board Action

On January 25, 2007, ARB conducted a public hearing to consider adoption of the amendments to the Dry Cleaning ATCM. At the hearing, the Board considered and unanimously adopted Resolution 07-5, which initiated steps towards final adoption of the amendments to section 93109 and the adoption of new sections 93109.1 and 93109.2, with specified modifications. In approving the proposed amendments, the Board directed the Executive Officer to incorporate ARB staff's (staff's) suggested modifications along with such other conforming modifications as might be appropriate, and to make such modifications available for a supplemental comment period of at least 15 days.

B. Modifications to the Original Proposal

Modifications to the original proposal were made to address comments received during the 45-day public comment period. These modifications were explained in detail in the Notice of Public Availability of Modified Text and Supporting Documents and Information (Notice) released for a public comment period that began on March 20, 2007 and ended on April 4, 2007. The Notice and the attachments thereto are incorporated herein by reference.

1. Cross References to Violation Provisions Deleted

As approved by the Board, the staff deleted the violation provisions in their entirety from sections 93109, 93109.1 and 93109.2. The Dry Cleaning ATCM adopted in 1993 does not contain a specific provision related to enforcement. Commenters raised a concern that the inclusion of the proposed violation provisions might be read as limiting enforcement options available to ARB or the local air districts (districts). The deletion of the provisions will not limit the enforceability of the regulations under State law.

2. Reference Document

In accordance with Government Code section 11347.1, staff added to the rulemaking record the following document as a reference that supports the rulemaking:

Staff Report: Initial Statement of Reasons for the Proposed Amendments to the Control Measure for Perchloroethylene Dry Cleaning Operations, California Air Resources Board, April 7, 2006.

C. Fiscal Impacts to State and Local Agencies

Pursuant to Government Code sections 11346.5(a)(5) and 11346.5(a)(6), the Executive Officer has determined that the regulatory action will not impose a mandate on school districts and will create costs or savings, as explained below, to two state agencies and to the districts. The Executive Officer has further determined that these costs or savings are not reimbursable by the state pursuant to part 7 (commencing with section 17500), division 4, title 2 of the Government Code. Furthermore, the regulatory action will not affect federal funding to the State.

State Correctional Facilities

The Department of Corrections operates 12 Perc dry cleaning machines at correctional facilities in California. The 12 Perc machines will need to be replaced according to the schedule specified by the amended Dry Cleaning ATCM. In addition, a spare set of gaskets and a spare lint filter will need to be maintained for each operating Perc machine. The Department of Corrections may incur a capital cost for purchasing a spare set of gaskets and a spare lint filter while they are still operating their Perc machines and for replacing their Perc machines. Alternatively, the Department of Corrections can also comply with the amended Dry Cleaning ATCM by replacing the Perc machines with an alternative dry cleaning technology that is lower in capital cost.

In summary, the fiscal cost impact to the Department of Corrections during the first 3 years ranges from \$169,500 to \$522,000, and the total cost to comply with the amended Dry Cleaning ATCM over its lifetime ranges from \$268,000 to \$892,000. The lower ends of the cost ranges represent the costs attributable to the amendments and the additional funding needed if adequate funding were allocated for Perc machine replacements. The upper ends of the cost ranges represent the total budgetary requirement to replace the Perc machines with hydrocarbon machines, which represents the majority market share for alternative technologies.

State Air Resources Board

The ARB will see a loss of revenue from fees collected under the Assembly Bill 2588, Air Toxics “Hot Spots” Information and Assessment Act (“Hot Spots” program), Health and Safety Code (H&SC) section 44300, et seq., due to the amendments. It is estimated that ARB will see a loss of \$22,000 during the first 3 years and a loss of \$355,000 during full implementation by 2023. Although the current alternatives are not identified in the “Hot Spots” program, this fee may be offset if alternatives are required to report under the “Hot Spots” program. All implementation costs from this rulemaking action would be absorbed within the existing ARB budget.

Local Air Districts

As the Perc facilities discontinue the use of Perc equipment, the districts will realize cost savings due to decreases in the number of hours the districts will have to spend on inspections and other oversight associated with Perc facilities. However, because of the discontinued use of Perc machines in the dry cleaning facilities due to the amendments, the districts will lose fees that are being collected from the Perc facilities for the “Hot Spots” program. Accounting for the loss of the “Hot Spots” program fee due to discontinued use of Perc machines, there will be a net cost savings for the districts that range from \$30,000 to \$70,000 during the first 3 years of the regulation, and a savings that range from \$1,769,000 to \$3,301,000 over the life time of the regulation.

D. Consideration of Alternatives

Alternatives to this regulatory action were considered in the Staff Report, in accordance with Government Code section 11346.2. For the reasons set forth in the Staff Report, the staff’s presentation at the hearing, and this FSOR, the Board has determined that no reasonable alternative considered by the agency, or that has otherwise been identified and brought to the attention of the agency, would be more effective in carrying out the purpose for which the regulatory action was proposed or would be as effective and less burdensome to affected private persons than the action taken by the Board.

II. SUMMARY OF COMMENTS AND AGENCY RESPONSES

The Board received written and oral comments during the formal 45-day public comment period that began on December 8, 2006 with the publication of the hearing notice and ended with the closing of the record at the January 25, 2006 public hearing. The Board also received two written comments during the supplemental 15-day public comment period for this regulatory action that began on March 20, 2007 and ended on April 4, 2007. The summary of comments and agency responses for the 45-day public comment period is shown below in subsection A. The summary of the comments and agency responses for the 15-day public comment period is shown in subsection B.

A. Summary of Comments Received During the 45-day Public Comment Period and Board Hearing

A list of commenters is set forth below, identifying the date and form of all comments that were timely submitted. Following the list is a summary of each objection or recommendation made regarding the proposed action, together with an explanation of how the proposed action has been changed to accommodate the objection or recommendation, or the reasons for making no change.

List of Commenters

<u>Abbreviation</u>	<u>Commenter</u>
ALA	Bonnie Holmes Gen American Lung Association Oral Testimony: January 25, 2007
AVAQMD	Alan J. De Salvio Antelope Valley Air Quality Management District Written Testimony: January 24, 2007
BAAQMD	Jack P. Broadbent Bay Area Air Quality Management District Written Testimony: January 24, 2007 Oral Testimony: January 25, 2007
BC	Edwin Krantz Broadway Cleaners Written Testimony: January 24, 2007 Oral Testimony: January 25, 2007
BRC	Robert Smerling Brentwood Royal Cleaners Written Testimony: January 25, 2007 Oral Testimony: January 25, 2007
CAPCOA	Larry R. Allen, President California Air Pollution Control Officer's Assoc. Written Testimony: January 17, 2007
CCA-1	Sandra Giarde California Cleaners Association Written Testimony: January 22, 2007 Oral Testimony: January 25, 2007
CCA-2	Bob Blackburn California Cleaners Association Oral Testimony: January 25, 2007
CCAir-1	Tim Carmichael Coalition for Clean Air Oral Testimony: January 25, 2007

List of Commenters (cont.)

<u>Abbreviation</u>	<u>Commenter</u>
CCAir-2	Luis Cabrales Coalition for Clean Air Oral Testimony: January 25, 2007
CCAir-3	Sarah Sharpe Coalition for Clean Air Oral Testimony: January 25, 2007
CCC	Lynnette Watterson, Owner Crystal Cleaning Center Written Testimony: January 20, 2007 Oral Testimony: January 25, 2007
CEERT	Jose Carmona Center for Energy Efficiency & Renewable Technologies Oral Testimony: January 25, 2007
Cianfrini	Carol Cianfrini Written Testimony: January 18, 2007
CM	Jame N. Camilleri Camilleri Mechanical Oral Testimony: January 25, 2007
CSDLA	Paul Martyn County Sanitation Districts of Los Angeles Written Testimony: January 24, 2007
DePippo	Tom DePippo Oral Testimony: January 25, 2007
Enviros	Coalition for Clean Air California Communities Against Toxics Los Angeles Alliance for New Economy American Lung Association of California Natural Resources Defense Council Worksafe Coalition for a Safe Environment Southern California Watershed Alliance Center for Public Environmental Oversight Steven and Michelle Kirsch Foundation

List of Commenters (cont.)

<u>Abbreviation</u>	<u>Commenter</u>
	People for Parks Earth Day L.A. Action Now Physicians for Social Responsibility-L.A. William C. Velasquez Institute Mujeres de la Tierra California Environmental Rights Alliance Planning and Conservation League Clean Power Campaign Center for Energy Efficiency & Renewable Technologies National Disease Clusters Alliance Environment California Breast Cancer Action Breast Cancer Fund Moms-Making Our Milk Safe Center for Environmental Health Padres Unidos de Maywood Clean Water Action Communities for a Better Environment Community Water Center Residents of Pico Rivera for Environmental Justice Fresno Metro Ministry Medical Advocates for Healthy Air El Comite Para el Bienestar de Earlimart Written Testimony: January 10, 2007
GC	Jack Alquist Guild Cleaners Written Testimony: January 25, 2007 Oral Testimony: January 25, 2007
HC	Gordon Shaw Hangers Cleaners Written Testimony: January 25, 2007 Oral Testimony: January 25, 2007
Horst	John C. Horst Margaret Cleaners Written Testimony: January 25, 2007 Oral Testimony: January 25, 2007

List of Commenters (cont.)

<u>Abbreviation</u>	<u>Commenter</u>
HSIA	Stephen P. Risotto Halogenated Solvents Industry Alliance, Inc. Written Testimony: January 18, 2007 Oral Testimony: January 25, 2007
IFI-1	Jon Meijer International Fabricare Institute Written Testimony: January 23, 2007 Oral Testimony: January 25, 2007
IFI-2	Barry Gershenson International Fabricare Institute Oral Testimony: January 25, 2007
Jussicha	Daniel Jussicha Oral Testimony: January 25, 2007
KDANC-1	Lawrence S. Lim Korean Dry Cleaners Association of Northern CA Written Testimony: January 18, 2007 Oral Testimony: January 25, 2007
KDANC-2	Geoffrey Yost Attorney Representing KDANC Written Testimony: January 23, 2007
KDANC-3	Doug Shinn Korean Dry Cleaners Association of Northern CA Oral Testimony: January 25, 2007
KDANC-4	James Lee Korean Dry Cleaners Association of Northern CA Oral Testimony: January 25, 2007
KDLA	Paul Choe Korean Dry Cleaners & Laundry Association Oral Testimony: January 25, 2007
Kim	Hans Kim Oral Testimony: January 25, 2007

List of Commenters (cont.)

<u>Abbreviation</u>	<u>Commenter</u>
KST	Kenney Slatten Kenny Slatten Training Written Testimony: January 2, 2007
Lighthall	David Lighthall, Ph.D Written Testimony: January 10, 2007 Oral Testimony: January 25, 2007
MC	William Casassa, Owner Marin Cleaners Written Testimony: December 27, 2006
MDAQMD	Alan J. De Salvio Mojave Desert Air Quality Management District Written Testimony: January 24, 2007
METS	Zion Orpaz Megs Enviro Tech Solutions Oral Testimony: January 25, 2007
Mohammad	Tariq M. Mohammad Oral Testimony: January 25, 2007
NBC	Sung Park Natures Best Cleaners Oral Testimony: January 25, 2007
NC	Janis Sadler Norge Cleaners Written Testimony: January 19, 2007
OBC	Barry Bosshard, Owner Off Broadway Cleaners Written Testimony: January 23, 2007
OC	Peter Sinsheimer Occidental College Written Testimony: January 23, 2007 Written Testimony: January 25, 2007 Oral Testimony: January 25, 2007

List of Commenters (cont.)

<u>Abbreviation</u>	<u>Commenter</u>
Oh	Oh, Jae Bons Oral Testimony: January 25, 2007
Park	John Park Oral Testimony: January 25, 2007
PC	Peter Jung, Owner Plaza Cleaners Written Testimony: December 26, 2006 Oral Testimony: January 25, 2007
Private Citizens 1 (Form Letters)	Elizabeth Cabrales Written Testimony: January 4, to January 17, 2007 (155 duplicates)
Private Citizens 2 (Form Letters)	Jennifer Saklar Written Testimony: January 25, 2007 (33 duplicates)
Pruyn	Harry Pruyn Oral Testimony: January 25, 2007
Rothstein	Dr. Marshall Rothstein Written Testimony: January 18, 2007
RWC	Tom Migliori, Owner Rite Way Cleaners Written Testimony: December 26, 2006
SDAPCD	Thomas Weeks San Diego Air Pollution Control District Written Testimony: January 24, 2007
SC	Bill Magavern Sierra Club Written Testimony: January 24, 2007
SCAQMD-1	Barry R. Wallerstein South Coast Air Quality Management District Written Testimony: January 23, 2007

List of Commenters (cont.)

<u>Abbreviation</u>	<u>Commenter</u>
SCAQMD-2	Jill Whynot South Coast Air Quality Management District Written Testimony: January 25, 2007 Oral Testimony: January 25, 2007
SEIU	Annelle Grajeda Service Employees International Union (SEIU) Written Testimony: January 22, 2007
SR	James Lyons Sierra Research Written Testimony: January 25, 2007 Oral Testimony: January 25, 2007
Swanson	Steve Swanson Swansons Cleaners Oral Testimony: January 25, 2007
TC	Nily Stoler Talyn Cleaners Oral Testimony: January 25, 2007
TCATA	David H. Cotter Textile Care Allied Trades Association Written Testimony: January 24, 2007 Oral Testimony: January 25, 2007
Turpin	Claude Turpin Written Testimony: January 23, 2007
VC	Larry Wrinkle Village Cleaners Written Testimony: January 23, 2007
Yi	David Yi Oral Testimony: January 25, 2007

Penalty Provisions

1. Comment: The District recommends that the penalty provisions be removed in their entirety from the proposed ATCM. These provisions of the Health and Safety Code are complex and lengthy, and an attempt to summarize the potential penalties may give the public misleading information, and in the worst case might create arguments by a defendant that the ATCM has the effect of precluding application of some penalties. In addition, if penalties are mentioned at all, the possibility of criminal penalties must be included, since the statutes give authority to criminal prosecutors that the ATCM must not interfere with. The failure to mention the possibility of criminal penalties might preclude criminal enforcement. It also seems inappropriate to state a potential penalty maximum that is lower than the worst-case maximum, even with the precautionary “including but not limited to” language. (SDAPCD)

Response: ARB agrees with this comment. Since the deletion of the provisions will not limit the enforceability of the regulations under state law, staff deleted the penalty provisions from the original proposal. This modification was made available to the public from March 20, 2007 to April 4, 2007 for a 15-day comment period prior to final adoption. Two comments were received in response to the 15-day notice, which did not relate to the changes. A summary of the 15-day comments, together with ARB’s responses, can be found in subsection B of the FSOR.

Definitions

2. Comment: Relocated facility should be defined in the Glossary. (KST)

Response: Staff defined a relocated facility in the regulation under definitions (section 93109(d)). The Staff Report/ISOR also mentions the definition in Chapter II, page II-4, subsection 5.

Reporting Requirements

3. Comment: The annual report required to be done by the dry cleaners is not being done by most of the dry cleaners. I have yet to inspect/work with one that does it and the local air districts are not enforcing it. This is the most accurate method of checking machine efficiency. (KST)
4. Comment: The District objects to the annual reporting requirements as unnecessarily burdensome for the facilities and the air districts and for providing no corresponding air-quality benefit or enhancement of ongoing compliance. Moreover, this significant burden seems unjustified by the purpose stated in the ISOR – to support oversight of AB 998 implementation. The District recommends deleting entirely the annual reporting requirements of the ATCM.

At most, reports should be required only once and updated, only as determined necessary, through AB 2588. (SDAPCD)

Response to Comment Nos. 3 and 4: The amended regulation retained the requirement in the Dry Cleaning ATCM for the owner or operator of each Perc facility to prepare an annual report and to furnish this report to the local air district. The content of the report was modified based on evaluation results. The annual report is modified to include: 1) a copy of the record of completion of the environmental training program for each trained operator, 2) total pounds of materials cleaned, 3) the gallons of solvent purchased in the reporting period, and 4) the make, model, serial number, and date of manufacture of the dry cleaning machine.

Amendments to the content of the report included deletion of the requirement to report mileage and the addition of the requirement to report the make, model, serial number, and date of manufacture of the dry cleaning machine. The requirement for reporting mileage has been deleted because it was found that some districts and dry cleaners do not use mileage to estimate machine efficiency. If needed, local districts and dry cleaners can calculate mileage from the pounds of material cleaned and the gallons of solvent purchased that are reported. This change eases the dry cleaners' reporting burden and the districts' administrative burden. The make, model, serial number, and date of manufacture of the dry cleaning machine can be obtained from the identification plates on the machine and are necessary to ensure compliance of the amended regulation.

Overall, the reporting requirement is necessary to provide the districts with the tool to determine the compliance dates for the machines, ensure compliance for the removal of machines that are 15 years old, evaluate the overall system performance of a particular facility and to ensure that the dry cleaners are complying with the trained operator requirements. Staff believes that the amended reporting requirements will not be burdensome for the cleaners or the districts. To reduce districts' administrative burden, the amended regulation has an added provision to allow districts to exempt a source from the reporting requirements if the district maintains equivalent information.

Annual/Weekly Leak Checks and Repairs

5. Comment: On page II-2 of the ISOR, subsection B, changes to existing Dry Cleaning ATCM, there should be specific language about applicability to dry stores because they do not have a dry cleaning machine on-site. There should also be specific language on spare gaskets. There are five frequently used openings on a dry cleaning machine and those should be mentioned. (KST)

Response: Page II-2, subsection B summarizes the changes to the existing Dry Cleaning ATCM. As stated in subsection B, only facilities with Perc equipment

will be impacted by the proposed amendments. In addition, ARB agrees, and test results have shown, that there are five components of Perc dry cleaning machines that are most likely to leak. These components correspond to the frequently used openings on a dry cleaning machine. Spare gaskets for these components are required and are detailed in the ISOR. Specifically, in Chapter II of the ISOR, page II-5, subsection C(6)(b), it states that a facility is required to keep on-site a spare set of gaskets for the loading door, still, lint trap, button trap, and water separator.

6. Comment: In Chapter II of the ISOR, page II-5, subsection 6(c), Leak Check Requirements, I believe the Aeroqual digital Perc sensor should be a requirement to replace the halogenated hydrocarbon leak detector. It is better and gives a digital ppm. Relating to Chapter III, page III-12, last paragraph, I am using the digital Aeroqual leak detector in all my ATCM classes and urging drycleaners to purchase them. The halogenated hydrocarbon leak detectors are inaccurate and this places the drycleaner and inspector on the same level for accurate and fair leak detection. They are only \$300 and worth every penny. It is NOT an economic burden for drycleaners. (KST)

7. Comment: The District recommends that the annual leak check requirement be deleted from the proposed ATCM. The current ATCM allows facilities to use a halogenated hydrocarbon detector which provides a qualitative but not a quantitative reading. Most facilities own one of these detectors and when used properly, these detectors do an effective job of identifying the location of a Perc vapor leak. This new requirement will require facilities to either buy a new piece of equipment, hire someone to perform the check, or rely on the District to perform the check. Facilities do not have this type of equipment, there are no contractors to perform this leak check, and the District owns a limited number of these detectors. If a District inspection is delayed and does not occur within a calendar year, the facility is in a position of violating the ATCM. Therefore, this is beyond the reasonable control of the business and eliminates this as a compliance option. (SDAPCD)

Response to Comment Nos. 6 and 7: Vapor and liquid leaks contribute to Perc emissions to the atmosphere and, therefore, increase potential health risks. Performing routine leak inspections and immediately repairing the leak while the Perc machines are in operation reduce the amount of Perc losses through leaks that may go undetected. In addition, the required Perc ban of the amended regulation prevents long term Perc emissions and will reduce Perc emission from dry cleaning to virtually zero. As Perc machines reach 15 years of age, they will be removed from service and replaced with non-Perc alternative technologies to which the annual leak check requirement does not apply. With the removal of Perc machines from service, the operators and the local air districts will no longer need to perform the annual leak check, which, in turn, will lessen and eventually eliminate the requirement's applicability.

ARB's evaluation of suitability and cost of Perc leak detectors concluded that certain Aeroqual leak detectors are suitable for leak checks and may be less costly compared to other types of detectors that give quantitative results. However, some other models and technologies evaluated can also give quantitative results and are suitable for leak checks. More detailed information of the staff's evaluation of leak detectors may be found in Chapter IV (pages 19 to 21) and Chapter VII (page 7) of the *California Dry Cleaning Industry Technical Assessment Report, February 2006 (Technical Assessment Report)*. It is important to note that the assessment is limited and not meant to be inclusive of all brands and types currently available.

Suitable leak detectors giving quantitative results are better in determining whether a vapor leak requires repair than those that do not. However, as stated in comment No. 7, when used properly, halogenated hydrocarbon leak detectors that are owned and used by most dry cleaners in California are useful and can detect low levels of vapor leaks. In addition, because the amended regulation requires the facilities to have a spare set of gaskets on site, it is anticipated that more facilities would be able and willing to repair vapor leaks more quickly than before. Therefore, the amended regulation did not require each dry cleaning facility to replace its halogenated hydrocarbon leak detectors, but rather, the regulation has an annual leak check requirement that requires the operator/owner of a dry cleaning facility to have its dry cleaning system inspected at least once per calendar year using a quantitative detector.

ARB's facility survey results also showed that facilities do not normally have the leak detector needed for this annual leak check. Therefore, it is anticipated that the facility owner or operator would have several options to comply with this requirement. Facility owners or operators may choose to pool their resources in purchasing a leak detector, with several other facility owners or operators, borrow a qualified leak detector from another facility, from an association, or from the local air district, or arrange for an annual district inspection of their facility. In light of the options that are available to the dry cleaners, staff does not anticipate the annual leak check requirement to be a financial hardship.

8. Comment: The District believes that the cost estimates given in the Appendix E of the ISOR for performing the annual leak check is a gross underestimation of the true costs that a facility will incur. In addition to purchasing a quantitative leak detector, there will be a cost for periodic calibration of the device. No cost for this calibration has been included in the ISOR. Based on District experience, the cost of a new detector is approximately \$5,000, with annual calibration and maintenance costs of a few hundred dollars. Given that many facilities will be required to replace their machines by 2010, it makes little sense financially to require a business to purchase a piece of equipment that will be unneeded in just over three years. Between now and the date a facility will need to replace their machine, they should be allowed to continue conducting a weekly check

using a halogenated hydrocarbon detector, just as they have done for the last dozen years. (SDAPCD)

Response: The cost estimates given in Appendix E of the ISOR are valid and are based on staff's evaluation of the cost and suitability of leak detectors, the availability of leak detector for loan from the Korean Dry Cleaners Association of Northern California (KDANC), and the willingness of some local air districts to help dry cleaners to comply with the enhanced leak check requirement. The range of list prices of the suitable quantitative leak detectors was from \$580 to \$2,995 (page 7, Chapter VII, *Technical Assessment Report*). Based on comment No. 6, the actual cost for the leak detectors may well be below the list prices with the range of actual cost starting at around \$300. The cost estimates in Appendix E are valid estimates and considered all foreseeable compliance options for dry cleaners.

Options available to a dry cleaner include: individual and group purchase of a quantitative leak detector, borrowing of a quantitative leak detector from another dry cleaner or an association, or arranging for a district inspection. Because dry cleaners are small businesses with small profit margin, the number of dry cleaners that would choose to purchase the higher priced leak detectors that require frequent calibrations is small. Therefore, the estimate of costs accounts for the labor cost needed for the enhanced leak check, and the cost for a group purchase of the lowest priced quantitative leak detector, which do not require annual calibration and assume that there will be a new purchase every five years.

Enhanced Ventilation Requirement

9. Comment: Relating to page III-8, first paragraph in the ISOR, adequate airflow for enhanced ventilation systems should meet the federal OSHA standard of replacing the air once every 3-5 minutes. Few dry cleaners have good airflow which is an OSHA concern but for the air district, a concern because this air is going outside if not inside. (KST)

Response: The proposed amendments do not contain requirements for enhanced ventilation. However, an enhanced ventilation system should have adequate air flow and should maintain a capture velocity greater than 100 feet per minute as advised by federal OSHA for reducing worker exposure to Perc in dry cleaning.

10. Comment: We believe a Full Vapor Barrier Room should be mandatory for all remaining Perc operations until the phase out. It is an inexpensive and logical way to contain Perc vapors. (KST, AVAQMD, MDAQMD)

Response: Full vapor barrier room, partial vapor barrier room, and local ventilation system are the three types of enhanced ventilation systems that are

currently used at California dry cleaning facilities. These ventilation systems have proven to be effective in capturing and dispersing Perc vapors and, therefore, can reduce the associated potential health risk. Of the three types of enhanced ventilation systems mentioned, a full vapor barrier room is the most effective and also the most costly. However, the amended regulation will gradually prohibit the use of Perc in dry cleaning machines which would virtually eliminate Perc emissions and its associated health risk from dry cleaning operations. Therefore, an enhanced ventilation requirement would not be cost effective and was not proposed by ARB. Under the provisions of H&SC section 39666(d) giving regulatory authority to local air districts to control TACs, a local air district may, however, require a full vapor barrier room.

Phase Out Period

11. Comment: Adopt regulatory alternative number three. Approve a 10-year phase out of Perc, instead of its 15-year phase out in the current proposal. (*Enviros, Private Citizens 1, Private Citizens 2, Lighthall, SEIU, SC, ALA, CCAir-1, CCAir-2, CCAir-3*)
12. Comment: I would like to see the phase out at 12 years instead of 15 years. Dry cleaning machines are not in good shape after 12 years. (*KST*)
13. Comment: Extend the phase out period. Machines over 15 years are still running well and are meeting regulation. (*BC, KDANC-3, Yi, Pruyyn*)
14. Comment: Phase out should be based on performance, not a fixed number of years. (*CCA-2, KDANC-3, Yi*)

Response to Comment Nos. 11 through 14: Several reasons support ARB's adoption of a 15-year phase out of existing Perc dry cleaning machines. The 15-year useful life for a Perc dry cleaning machine was determined from discussions with workgroup members comprised of industry and environmental group representatives. This determination is supported by ARB facility survey results which showed that following the 1993 adoption of the initial Dry Cleaning ATCM, over 50 percent of the primary control machines in California were over 10 years old in 2003. In addition, as approved, the 15-year phase out allows most of the dry cleaners to maximize their use of the existing machines while fostering a gradual transition to alternative technologies.

Although an accelerated transition would provide additional risk reductions, there are several reasons why staff has not recommended this approach. The costs to cleaners and the statewide implementation cost due to the loss of useful machine life would increase substantially. This analysis was first presented in the ISOR and then updated to include the impact to South Coast dry cleaners at the January 25, 2007 Board meeting. As presented at the Board meeting, the statewide implementation cost would increase by 160 percent, from \$41 million

to \$108 million if there were a loss of 5 years of useful life by all Perc machines. In addition, the rapid phase out of Perc machines would likely lead to a number of additional issues, including the availability of Perc alternative machines, and subsequent product support and training. These issues may have a negative impact on the successful introduction of replacement technologies.

On the other hand, a lengthening of the phase out period beyond the useful life of 15 years would lessen the economic burden on the dry cleaning facility owners by allowing more time for the facilities to replace their existing machines. However, the delay in Perc reduction would increase the adverse health impact associated with the amended regulation, independent of machine performance, machine type, process volume, or maintenance practices.

For the above reasons, the Board approved ARB staff's proposal and did not lengthen or shorten the phase out period.

Alternatives to ATCM

15. Comment: The ARB staff proposal presented to the Board at the May 25, 2006 Public Hearing (May proposal) has not been reanalyzed in light of the new data presented in the ISOR nor is it included as an alternative to the current staff proposal. (SR, HSIA)
16. Comment: The Mojave Desert Air Quality Management District and the Antelope Valley Air Quality Management District support further controls to strengthen the May proposal. There should be a requirement for all Perc dry cleaning machines to be equipped with a secondary control device by December 31, 2010, that all existing Perc machines to be moved to areas zoned for industrial use by December 31, 2015, that all new facilities and/or machines, installed after December 31, 2007 should be located in an area zoned for industrial use, and that all Perc machines be located in vapor barrier rooms. (AVAQMD, MDAQMD)

Response to Comment Nos. 15 and 16: As a result of an evaluation of the effectiveness of the Dry Cleaning ATCM performed from 2003 to 2005, staff proposed amendments to the Dry Cleaning ATCM based on the Best Available Control Technology (BACT) for Perc dry cleaning operations (May Proposal). The May Proposal was detailed in a staff report released April 7, 2006 and considered at the Board's May 25, 2006 public hearing. After hearing the public comments and considering this proposal, the Board voted unanimously not to proceed with the rulemaking and directed staff to return to the Board at a future date with a proposal that would phase out the use of Perc in dry cleaning operations.

Since the Board directed ARB staff to eliminate the use of Perc in dry cleaning operations, the May Proposal was not reanalyzed or reconsidered as an

alternative. The new information presented in the ISOR does not change the resulting health and emissions impacts shown for the proposed amendments.

17. Comment: We would like to propose a regulatory alternative, for consideration, that would mitigate the economic impacts on low revenue dry cleaning operations. This regulatory alternative would apply only to those dry cleaning operations that can document 2006 annual revenues of less than the industry average of \$250,000. The primary differences between the proposed regulatory alternative and the staff proposal are: 1) the alternative would provide regulatory certainty that all non-Perc machines would be used to comply with the ATCM; and 2) the alternative would increase the phase out period for newer, lower emitting Perc machines operated by low-revenue dry cleaners, allowing them the continued use of Perc equipment until January 1, 2020, or until the equipment reaches 15 years of age, whichever occurs later. (SR)

Response: Although this proposed alternative may mitigate the economic impacts of the low revenue dry cleaning operations, it was not adopted by ARB because of its potential adverse health impacts. According to our survey results, about 40 percent of the dry cleaning facilities gross less than \$100,000. Furthermore, based on our survey results and available public financial information, the California dry cleaning industry's average gross income was determined to be \$250,000. To estimate the impact of the proposed alternative, we assumed 50 percent of the Perc dry cleaner would gross less than \$250,000, and further assumed that 50 percent of these dry cleaners have a secondary control machine (the newer, less emissive machines). As a result, an estimated 25 percent of the Perc dry cleaners would be allowed to operate their equipment until January 1, 2020 with most operating for some time beyond 15 years. This alternative will result in greater Perc emissions and, therefore, greater potential adverse health risk during years 2010 to 2020 compared to the proposed amendments. In addition, equipment that is used beyond its useful life is likely to be less effective, more emissive, and, therefore, pose greater potential adverse health risks to the public.

18. Comment: Instead of amending the Dry Cleaning ATCM, allow each individual district to adopt its own dry cleaning rule. (CCA-1, Turpin)

Response: H&SC section 39665 requires ARB, with the participation of the districts, and in consultation with affected sources and the interested public, to prepare a report on the need and appropriate degree of regulation for each substance which has been identified by the Board as a TAC. If ARB determines that a control measure is warranted, the Board shall adopt ATCMs to reduce exposures to TACs. For TACs which have no threshold exposure level below which no significant adverse health effects are anticipated, the ATCM shall be designed to reduce emissions to their lowest level in consideration of cost and risk. The amended Dry Cleaning rule has followed the requirements of the law, particularly H&SC section 39650(k), which provides:

That a statewide program to control toxic air contaminants is necessary and desirable in order to provide technical and scientific assistance to the districts, to achieve the earliest practicable control of toxic air contaminants, to promote the development and use of advanced control technologies and alternative processes and materials, to identify the toxic air contaminants of concern and determine the priorities of their control, and to minimize inconsistencies in protecting the public health in various areas of the state. [Heath and Safety Code section 39650(k).]

In light of the above requirement, it is critical for the state to maintain consistency in the air toxics program throughout the state to protect the public health for all people. The local air districts have the option of enforcing the ATCM or adopt and enforce equally effective or more stringent ATCMs as authorized by H&SC section 39666(d).

19. Comment: It should be prohibited to sell used Perc. It is degrading to the machinery. (KST)

Response: The Board did not find it necessary to prohibit the sale of recycled Perc for a number of reasons. Based on conversations with the Perc distributors, the usage of used or recycled Perc constitutes a small portion of the total usage in Perc machines. In addition, there are no test data on the impact of recycled Perc on Perc machines and the amended Dry Cleaning ATCM also bans the use of Perc machines once they reach 15 years of age or at least by January 1, 2023. However, we have included a provision to the amended Dry Cleaning ATCM which requires Perc distributors to report their annual gallons of Perc and recycled Perc sold to California dry cleaners. This was implemented to track the amount of Perc and recycled Perc used in California to supplement the enforcement requirements of the Nontoxic Dry Cleaning Incentive Program (Assembly Bill 998, H&SC section 41998).

VOC Impacts

20. Comment: Adopt regulatory alternative which will not only phase out Perc but new VOC-containing systems. (*Enviros, CCAir-1, CCAir-2, CCAir-3, Mohammad, Private Citizens 1, Private Citizens 2, Lighthall, SEIU, OC*)
21. Comment: Additional use of hydrocarbon solvents will contribute to smog formation and needs to be addressed. (*HSIA*)
22. Comment: From the American Lung Association's perspective, we're very concerned about the tremendous challenges in meeting our state and federal ozone standards and the serious health effects of ozone pollution. So it does cause us concern to allow a technology that is going to be increasing ozone

precursors when we're still so far from meeting our state and federal attainment goal. (ALA)

23. Comment: The most disturbing line in your proposal is under “Description of Alternatives” on page 3. I quote “Since one common solvent that could be used in place of Perc causes the release of smog-forming emissions, the Board could also prohibit the use of machines that emit smog-forming emissions as a mitigating action associated with restricting the use of Perc.” Well, you just knocked out petroleum as an alternative and wiped out about 95% of our selections in new dry cleaning machines. It makes no sense to force this industry out of one solvent and put it into another that you will be forced to remove immediately. You will force a political rebellion for the folly of bankrupting an industry. (MC)

Response to Comment Nos. 20 through 23: Hydrocarbon solvents are volatile organic compounds (VOCs); however, they are well accepted by the dry cleaning industry. The group of high flash point hydrocarbon solvents is the most common alternative to Perc dry cleaning with significant market penetration. Prohibiting new hydrocarbon machines would double the statewide implementation cost from \$41 million to \$82 million as presented in the ISOR and updated at the January 25, 2007 Board meeting. In addition, it would likely lead to potential issues relative to the availability of Perc alternative machines, product support, and training for the alternative technologies. These issues may limit the chances of successful operation of the replacement technologies.

The estimated hydrocarbon emissions increase is 1.2 tons per day statewide if all Perc facilities convert to using the hydrocarbon technology. If local air districts determine it necessary for their attainment strategies, they can mitigate the increase in hydrocarbon emissions with reductions from other hydrocarbon sources that they regulate.

Health Risks from Perc Exposure

24. Comment: Much of the information on potential cancer risk included in the staff report provides a misleading picture of the potential risks presented by typical Perc dry cleaners in the state. The staff report presents risks only for the 90th percentile of Perc usage and emissions and presents potential risk based on average emissions. Risks are calculated at the point of maximum impact (20 meters). According to ARB survey data, a residential distance of 20 meters is relevant to only about 20% of existing cleaners. It is only in the final summary table of potential risks that the staff report provides risk for average emissions and at various receptor distances. (HSIA)

Response: The staff report contains a range of generic dry cleaner scenarios that present the potential health impacts under various meteorological conditions and at various distances from a dry cleaning facility. The inputs used for the

generic modeling scenarios are based on site visits, dry cleaner survey responses, and input from the local air districts and industry representatives. We feel the range of results presented in the staff report provides a fair representation of the range of potential health impacts across the dry cleaning industry.

25. Comment: As shown in Figure III-8, monitored levels of Perc in California's atmosphere have declined dramatically since 1989 and there has been a commensurate decrease in the health threat posed by the use of Perc in dry cleaning and other operations. However, ARB staff still contends, based on the data shown in Table ES-4 of the ISOR, that the risk due to exposure to Perc from dry-cleaning operations is unacceptable. In addition, the use of "high-end" rather than average Perc emission rates and the use of 80th percentile breathing rate rather than average breathing rate overstate the risk associated with Perc exposure. (SR)

Response: Figure III-8 shows the statewide annual average of the monitored values for Perc. As mentioned in Chapter III of the ISOR, ambient levels of Perc have declined steadily since 1988. Also mentioned in the Executive Summary of the ISOR, Perc emissions from dry cleaning machines have also decreased. However, as shown in Table ES-4 of the ISOR, the estimated potential cancer risk of the latest Perc technology (secondary control machine) at 20 meters is 40 chances per million or higher because they are calculated to emit 61 gallons or more per year. The use of the "high end" emission rate (90 percent) and 80th percentile breathing rate provides a scenario that, although higher than the average, represents a realistic scenario which might occur near a higher emitting dry cleaner. The Board believes this near source cancer risk level is of concern and therefore, the Board phased out Perc use in dry cleaning operations because less toxic alternatives exist.

26. Comment: HSIA feels that CalEPA's URF overstates the potential cancer risk presented by Perc dry cleaning emissions due to CalEPA's characterization of human metabolism of Perc. (HSIA)

Response: CalEPA's unit risk factor (URF) for Perc went through an exhaustive public and scientific review process as outlined under H&SC sections 39660-39662 for the identification of TACs in 1991. As required by the law, the Office of Environmental Health Hazard Assessment (OEHHA) used the best available scientific data from international and national health agencies and scientific literature to calculate a cancer URF for exposures to Perc. And, as required by section 39661, the Scientific Review Panel on Toxic Air Contaminants reviewed the scientific procedures and methods used to support the data, the data itself, and conclusions and assessments on which the report was based, and on June 10, 1991, the Panel approved the report and recommended that Perc be identified as a TAC. Subsequently, on

October 10, 1991, the Board unanimously approved the regulation listing Perc as a TAC.

In addition, OEHHA staff has reviewed the most recent study done by Lynge and co-workers on dry cleaning workers in Nordic Countries. OEHHA does not believe the results of this study contradict the results seen in earlier epidemiology studies, and therefore, would not change the original conclusions of the Board. (See response to comments 29-31.)

27. Comment: Modeled results using Anaheim met data are sharply higher than the results for the other met sets, probably because the non-default NOCALMS [no calm hours processing] option was used. NOCALMS is recommended by SCAQMD for routine air permit modeling and defeats EPA's method of compensating for the presence of zero hourly wind speed in the calculation of long-term averages. (SR)

Response: The staff report contains a range of generic dry cleaner scenarios that were modeled using meteorological data from four locations in California. The four locations were Anaheim, Fresno, Oakland (port), and San Diego (Miramar). All air dispersion modeling runs, including those using the Anaheim meteorological data, were performed using the U.S. EPA regulatory default "CALMS" or "calm hours processing" setting.

28. Comment: The ISOR does not justify the need for the proposed implementation schedule for the Perc-ATCM in light of the exposure data relative to other, longer implementation schedules in general or for low-revenue dry-cleaners in particular. Further, the ISOR does not analyze the risk from allowing continued use of Perc at low revenue dry-cleaners under the proposed regulatory alternative. (SR)

Response: Because the comment was received after the ISOR was published, staff have subsequently reviewed the "low-revenue dry-cleaners alternative" and determined that the alternative's increased adverse health and environmental impacts outweighed the potential economic impacts and did not recommend the alternative to the Board. In addition, the risk analysis performed for dry cleaners that was presented in the ISOR would still apply to the low-revenue dry cleaner scenario because it is based on Perc usage, types of Perc release scenarios, various meteorological data, and standard exposure assumptions that follow the methodology outlined in the *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, August 2003*.

29. Comment: In the last twenty years there have been several five and ten year studies on the medical hazards of Perc. Of all those studies none have ever shown any conclusive evidence that Perc causes cancer in humans. In fact, recently there have been extensive long term studies in Europe that conclude that Perc does not increase the risk of cancer. (RWC)

30. Comment: A recent epidemiological study strongly suggests Perc exposure is not associated with increased cancer incidences in dry cleaning workers. (HSIA BC)
31. Comment: During more than 30 years of debate about the health risks posed by Perc exposure, dry cleaners and their family members have repeatedly asserted that they have not experienced the health consequences predicted to occur as a result of using this product. There needs to be a full examination of available science. We would like to see the Lynge study related to occupational exposure of Perc in Nordic countries examined by OEHHA. We feel that any decision made regarding continued use of Perc in California should be made after examining and considering all of the available scientific research at hand. (CCA-1, TCATA, BC, Turpin, NC, CCC)

Response to Comment Nos. 29 through 31: Five and ten year studies are not usually adequate to determine human carcinogenicity due to the latency period needed to develop cancer. The Board listed Perc as a Toxic Air Contaminant in 1991 after an intensive and extended review of the available scientific research. In 1995, after its own review of the available scientific research, the International Agency for Research on Cancer (IARC) upgraded the chemical to group 2A, probably carcinogenic in humans. OEHHA staff have read and considered the paper by Lynge and co-workers published in February 2006 in *Environmental Health Perspectives*. The authors studied dry cleaning workers in Nordic countries. Exposure measurements were problematic since no direct measurements of Perc were done to the workers. The authors did not find an elevated risk of esophageal cancer but they did find an elevated risk of bladder cancer among Nordic dry-cleaning workers. Bladder cancer was also found in one of the human cohort studies in the U.S. The authors note that differences between exposure concentrations in the U.S. and those in the Nordic countries could account for different responses. This study is not a “negative study” and does not contradict the results seen in earlier epidemiological studies. Therefore, OEHHA believes that this information would not change the original conclusions of the Board.

32. Comment: We have been in the dry cleaning industry using Perc for a long time. We have not had, nor do we know of, other cleaners having adverse health problems due to Perc use. (CCC, Horst, BC, CCA-2, IFI-2, KDANC-4, Cianfrini)
33. Comment: The Korean Dry Cleaners Association of Northern California conducted a survey in 2002 to assess illnesses associated with Perc use. None was reported. (KDANC-4)

Response to Comment Nos. 32 and 33: The results of a health survey are insufficient to refute the collection of studies that were used to identify Perc as a TAC and potential carcinogen. In 1991, the Air Resources Board formally

identified Perc as a Toxic Air Contaminant after an intensive and extended review of the available scientific research under H&SC section 41650 et seq., including public comment, responses to public comment, and review and acceptance by the state's Scientific Review Panel on Toxic Air Contaminants. This process included a review of all the available data on the health effects of Perc. During this process, OEHHA concluded that Perc is a potential human carcinogen with no identifiable threshold. In addition to cancer effects, there are short-term (acute) and long-term (chronic) non-cancer health effects associated with exposure to Perc. Acute toxic effects resulting from short term exposure to high levels of Perc may include headaches, dizziness, rapid heartbeat, and irritation or burns on the skin, eyes, or respiratory tract. Chronic exposure to lower Perc concentration levels may result in dizziness, diminished cognitive ability, and damage to the liver and kidney. Workers have shown signs of liver toxicity following chronic exposure to Perc, as well as kidney dysfunction and neurological effects. Effects on the liver, kidney, and central nervous systems from chronic inhalation exposure to Perc have been reported in animal studies.

Siting Criteria

34. **Comment:** Expedite the removal of Perc machines that are located in close proximity to a sensitive receptor. Require all Perc dry cleaners within 300 feet of residential buildings, schools, medical facilities and other sensitive areas to be phased out by 2010. (*Private Citizens 1, Private Citizens 2, Lighthall, SEIU, SC, Enviro, CCAir-2, CCAir-3*)

Response: Our evaluation showed that this action would impact most of the dry cleaning facilities and will essentially ban Perc in dry cleaning by 2010. ARB's dry cleaning facilities survey data showed that about 64 percent of the existing Perc machines are within 300 feet of a residence and that about 98 percent of the Perc facilities are located next to businesses that likely have sensitive receptors on site. It is calculated that this scenario would more than triple the state implementation cost.

The staff has already determined that most of the more emissive Perc machines will be removed from service by 2010. As a result, near source risk will be lowered because of the continued use of secondary control machines, the increased use of enhanced ventilation, and a complete phase out of Perc by January 1, 2023, as discussed at the Board hearing. In addition, site specific near source risks can be addressed by the local air districts using the "Hot Spots" program on a case-by-case basis.

Economic Impacts

35. **Comment:** Your legislation is going to be costly to the consumer and they will not be able to get the quality of service they demand. (*RWC*)

36. Comment: If these changes are adopted as submitted, it will force dry cleaners out of business. (VC, CCA-2, Pruy, KDANC-2)

Response to Comment Nos. 35 and 36: The economic impacts of the amendments were assessed and discussed in Chapter VII of the ISOR. The calculated impacts, without accounting for potential emerging technologies that are less costly and the dry cleaners' ability to pass the compliance costs to their customers, showed that amendments will have a significant adverse impact on the profitability of the typical Perc dry cleaner.

Accordingly, the amended Dry Cleaning ATCM phases in implementation of its requirements, providing a two and one half year planning period between the anticipated adoption date and the first date that most Perc machines are required to be removed from service. In addition, with the exception of co-residential facilities, all facilities are able to operate their Perc equipment for the full useful life of the equipment (up to 15 years).

37. Comment: The ISOR fails to adequately address the economic impacts of the staff proposal on low revenue dry cleaning operations. The economic analysis presented in the ISOR is based on what is referred to as a "typical dry cleaner" with gross sales of "about \$250,000 per year". While no figure showing the distribution of revenues from dry-cleaners is presented in the ISOR, the fact that 40 percent of facilities have less than \$100,000 in sales per year indicates that the distribution is not normal and the average is obviously skewed by a small percentage of dry-cleaners with high annual sales revenues. While the current staff proposal would achieve the phase-out of Perc, staff has not performed any meaningful analysis of ways to reduce the cost impacts, such as special regulatory provisions for low revenue dry-cleaners nor has the staff identified any meaningful financial incentives to offset compliance costs. Until such time that significant incentives are available, the proposed regulations and any regulation that requires the accelerated retirement of Perc machines will not be economically feasible for low revenue dry-cleaners, such as those with annual sales revenues of less than the industry average of \$250,000. (SR)

Response: The economic impact of the amended Dry Cleaning ATCM was assessed and presented in Chapter VII of the Staff Report. As stated in Chapter VII, the statewide cost impact was calculated based on the average cost per facility. In addition, the cost impact and profitability of an individual dry cleaner was estimated. The profitability estimate varies depending on the facility's gross income, existing machine type, and the alternative technology that is chosen.

Because it is not possible to assess the potential economic impact to each individual dry cleaner, the potential economic impact addressed in the Staff Report is for the "typical" dry cleaner with an average gross revenue of \$250,000 per year. The estimated annual gross amount of \$250,000 is based on survey

results and public information on California dry cleaners' income. This approach gives reasonable statewide estimates and provides a useful indication of the potential impact to a dry cleaner.

Under the approach taken, the economic impact on dry cleaners grossing less than \$250,000 a year may be more severely impacted compared to the typical dry cleaner. However, due to the wide range in cost of the alternative technologies, it is anticipated that these dry cleaners would not choose the most expensive technologies. The California State Legislature enacted Assembly Bill (AB) 998 (The Non-Toxic Dry Cleaning Incentive Program) which established a grant program for dry cleaners who opt to switch to wet cleaning or carbon dioxide (CO₂) cleaning technologies. Qualified dry cleaners can apply to receive the \$10,000 grants. As indicated in the Staff Report, to the extent that dry cleaners cannot pass on their cost to their customers, they may experience significant adverse economic impacts. In weighing these adverse economic impacts against the health benefits to be achieved by removing Perc, a toxic air contaminant with no known safe exposure level, the Board determined the health benefits are paramount.

38. Comment: The ISOR fails to evaluate the economic impacts of all four of the identified regulatory alternatives. The ISOR lists four regulatory alternatives which are:

- (1) Total phase out of Perc and new VOC-containing systems;
- (2) Increase the phase out period;
- (3) Decrease the phase out period;
- (4) Total phase out of Perc and require add-on secondary control for primary control machines.

Despite the fact that four alternatives are identified and the ISOR states that alternative 2 "would lessen the economic burden on the dry cleaning facility owners" the economic impacts of this alternative were never computed or compared to the staff proposal or alternatives 1 and 4. That this is in fact the case can clearly be seen on pages VII-24 to VII-26 of the ISOR. Further the ISOR provides no explanation as to why the cost-effectiveness of the alternative increasing the phase out period was not evaluated. (SR)

Response: In the ISOR Executive Summary and in the ISOR itself, ARB identified four regulatory alternatives as stated in the comment. These alternatives were discussed together with the reasons for not recommending the alternatives. Alternative 2 was not recommended even though it would lessen the economic burden on dry cleaning facility owners because of the adverse public health impacts associated with delaying the reduction of Perc. Therefore, the economic impact was not evaluated.

Because the regulatory cost of the proposed amendments was estimated to be over \$10 million in 2010, the H&SC section 57005 requires a comparison of the estimated regulation cost of the proposed amendments to two other equally

effective alternatives. This cost comparison, together with an assessment of cost effectiveness is detailed in Chapter VII of the Staff Report and was then updated at the Board hearing to include cost impacts on Perc dry cleaners located in the South Coast Air Quality Management District (AQMD). The statewide implementation cost estimates to the alternatives discussed in Chapter VII ranged from \$82 million to \$108 million (also see responses to comments 11 to 14 and responses to comments 20 to 23). The alternative 2 that was discussed in the Executive Summary was not considered in the alternative cost comparison because it is not an equally effective alternative in reducing exposures to Perc.

39. Comment: The ISOR fails to consider the economic impacts of any regulatory alternatives for existing low revenue dry cleaners that could mitigate adverse economic impacts. The ISOR fails to analyze either emission or economic impacts of our proposed regulatory alternative [Comment No. 17] for low-revenue dry-cleaners which we believe can be defined as those with annual sales revenues of less than \$250,000 average identified in the ISOR. Therefore, the staff has no basis upon which to reject the alternative proposed for such businesses in these comments. At a minimum, the staff needs to be directed by the Board to review the proposed regulatory alternative for low-revenue dry-cleaners with revenues of less than \$250,000 in combination with its proposal for larger dry-cleaning operations and demonstrate that the public health benefits of the original staff proposal, if any, outweigh the economic benefits of the alternative to small dry cleaners. (SR)

Response: The Staff Report identified and evaluated alternatives that are equally or more effective in reducing Perc exposure and, therefore, Perc's potential adverse health impacts on the public. As stated in the response to comment number 37, the staff assessed the effects of each alternative to a typical dry cleaner. Again, the cost impact to an individual dry cleaner will vary and the ability to pass the cost to customers will reduce overall costs. In regards to the commenter's proposed regulatory alternative, please see response to comment No. 17 for the associated health impacts and the reasons for not modifying the proposed amendments. The Board fully reviewed the proposed regulatory alternatives and decided to approve the amendments without further modifications apart from the staff's recommended 15-day changes.

40. Comment: The proposed regulation provides no certainty that dry cleaners switching to non-Perc technologies will be able to recover their investment before additional burdens are imposed on them by new ARB regulations. The ISOR indicates that the Board may also act to ban hydrocarbon and other alternative systems. A ban on hydrocarbon systems is inappropriate and renders compliance with the proposed ATCM for Perc infeasible for technical and economic reasons. At present, the proposed regulations do not include any safeguards to ensure that dry-cleaners switching to hydrocarbon systems will be allowed to operate them long enough to recover their investment costs. (SR)

Response: Because the Board is concerned about the dry cleaners' ability to recover their investment when they switch to all non-Perc technologies, the Board specifically addressed the possibility of future controls for hydrocarbon emissions from hydrocarbon solvent dry cleaning technologies. At the conclusion of the hearing on January 25, 2007, the Board adopted Resolution 07-5, in which it approved the adoption of the originally proposed regulation with the modifications staff identified at the hearing and further directed staff to fully consider the useful life of dry cleaning equipment in any future rulemakings for this source category. Therefore, if ARB should find that restricting or banning hydrocarbon technology is warranted in the future, staff will consider the full useful life of the equipment in its rulemaking process. Currently, ARB staff is not considering a measure related to hydrocarbon dry cleaning technologies as part of the efforts to reduce ozone formation in the California State Implementation Plan (SIP).

41. Comment: I truly believe that the proposed ATCM as currently written will have devastating economic impacts on mom-and-pop stores at this time. It will also cause landowners to have a negative perception of dry cleaners and not renew their leases. (KDANC-4, KDANC-1)
42. Comment: I have \$31.2 million reasons plus, at least another \$15 million (almost all insurance funded) in settlement, attorneys and consultants for ground and ground-water pollution, to not have Perc plus the 20 years of my life it took to resolve. (GC)

Response to Comment Nos. 41 and 42: Removing Perc machines from service will lessen the chances of ground and ground-water contaminations that are mentioned in this comment. Even though the amended Dry Cleaning ATCM will impose costs on Perc dry cleaners as they comply with the regulation, it will also eliminate some potential long term costs associated with contamination remediation.

The Board is fully aware of the potential economic impacts of the proposed amendments and recognizes, as estimated in the Staff Report, that the amended Dry Cleaning ATCM is anticipated to have significant adverse economic impacts on marginal operating dry cleaners that use Perc. However, the marginal dry cleaners can take advantage of the preparation time that is afforded by the amendments to study and evaluate the advantages and disadvantages of the alternative technologies and the costs involved, as well as to save or investigate for other sources of funding. In addition, these cleaners may take advantage of the AB 998 grants that are available. Utilizing this program as well as others offered by the local air districts and/or other local utility companies may lessen the economic impact to dry cleaning business. The Board, however, decided that the health benefits to the public outweigh the potential negative economic impacts on existing Perc dry cleaning businesses.

Financial Assistance

43. Comment: Is there financial assistance for dry cleaners that would like to replace their Perc dry cleaning systems? AB 998 grant monies only provide assistance to facilities which opt to replace their current Perc dry cleaning system with non-toxic and non-smog forming systems. Without a serious commitment from ARB, many of these cleaners do not have the resources to move to an alternative process and will go out of business. (*IFI-1*)
44. Comment: If the members of the California Air Resources Board are still committed to phasing out Perc then it is critical that the cleaners for California receive some form of financial assistance. (*CCA-1, IFI-1*)
45. Comment: We would like to request financial assistance if the Board chose to ban Perc. (*KDANC-1, SR, Park*)
46. Comment: ARB staff has not identified any meaningful ways to minimize the compliance costs or financial assistance programs. (*SR*)

Response to Comment Nos. 43 through 46: As mentioned in the Staff Report, the California State Legislature enacted AB 998, which established the Non-Toxic Dry Cleaning Incentive Program. The Non-Toxic Dry Cleaning Incentive Program is composed of a grant program and a demonstration program. Currently, sources of State funding for dry cleaners include participation in the AB 998 grant and demonstration programs. The grant program provides financial assistance (\$10,000) to California dry cleaners who replace their existing Perc dry cleaning systems with non-toxic and non-smog forming systems such as water-based (i.e., professional wet cleaning, Green Jet[®], and cold water cleaning) and carbon dioxide (CO₂) cleaning systems. The demonstration program showcases these non-toxic and non-smog forming technologies statewide and provides an opportunity to educate dry cleaners on the benefits, costs, and effectiveness of these alternatives. Depending on the scope of the approved projects, dry cleaners participating in the projects may receive monetary or technical assistance.

Recently, ARB approved two demonstration projects which will be showcasing the non-toxic and non-smog forming technologies, from 2007 to 2008, in 23 dry cleaning facilities in California, including facilities in Los Angeles, San Diego, San Francisco, Sacramento, San Joaquin, and other locations throughout the State. AB 998 grant applications and approvals are made on a continuous basis starting in 2007. ARB anticipates being able to fund approximately 20 grants per year. However, the funds available will significantly decrease beginning in 2010 due to the phase out of Perc. Information on the AB 998 grant or demonstration program, and the application for the AB 998 grant program, are available at ARB's website at: <http://www.arb.ca.gov/toxics/dryclean/ab998.htm>.

Local air districts, as well as utility companies may have grants available for dry cleaners to switch from Perc to an alternative. For example, in April 2007, the South Coast AQMD approved additional funding for a dry cleaning grant program to encourage the use of professional wet cleaning and carbon dioxide systems and is currently accepting applications. More information on the South Coast AQMD's grant program is available from Mr. Gregory Ushijima at (909) 396-3301 or from the district's website at: <http://www.aqmd.gov/business/drycleaninggrantsnew.htm>. In addition to their local air districts, dry cleaners may contact their local utility companies to determine grant availability and applicability. In the past, some of the utility companies and public utilities have provided grants to Perc dry cleaners when the cleaners switch to wet cleaning processes because of the potential energy savings of such a switch.

Care Label Issues

47. Comment: Currently, the FTC does not recognize alternative cleaning methods. Cleaners who fail to follow care label instructions when cleaning garments have been held liable for damage. Although, the FTC does not require cleaners to follow the care instruction on the label, it certainly suggests that they do. This issue of liability is serious and it is quite clear that the liability will be borne by the cleaner. (CCA-1, IFI-1)

Response: We understand that under the Federal Trade Commission's (FTC) Care Labeling Rule, manufacturers must tag their clothing with at least one safe cleaning method. Under the FTC rule, dry cleaning is defined by the rule as a commercial process by which soil is removed from products or specimens in a machine which uses any common organic solvent such as petroleum, Perc, and fluorocarbon.

Our current understanding is that there are few label liability cases and the majority of alternative cleaning systems are not experiencing these labeling problems. We believe that there are many advantages for the using alternative dry cleaning technologies. Therefore, dry cleaners would be prudent to study and evaluate the benefits and disadvantages of each alternative dry cleaning technologies before committing to one that works best for their facility and customers. For many cleaners, it may also be prudent, once a technology has been chosen, to obtain training on that technology. Sources of information on the alternative technologies include the Staff Report, the AB 998 website, alternative machine manufacturers and distributors, dry cleaning associations, as well as other dry cleaning organizations.

Legal Issues

48. Comment: Government Code section 11346.5(a)(13) requires that the Board determine that no reasonable alternative considered by the agency or brought to its attention would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action. We submit that this determination has not been made, and allowing use of more efficient, cleaner machines for a longer period of time than contemplated by the proposed ATCM would be more effective and far less burdensome on small Korean dry cleaners. (KDANC-1, KDANC-2)

Response: The Board has fully complied with both Government Code section 11346.5 and H&SC section 57005. Allowing the use of Perc dry cleaning machines that are more efficient and, therefore, less emissive (cleaner), for a longer period of time than allowed under the Board's amendments would be less burdensome economically on some dry cleaners. This alternative proposal was discussed as alternative 2 in the Staff Report on pages ES-11 and ES-12. However, the alternative proposal results in a trade-off between economic benefits, on one hand, and health and environmental benefits, on the other hand, by causing a delay in eliminating the adverse health and environmental effects of Perc use in dry cleaning machines. This trade-off was considered and was determined to be unacceptable both environmentally and legally. In weighing the adverse economic impacts against the health and environmental benefits to be achieved by removing Perc, a toxic air contaminant with no known safe exposure level, the Board determined the health and environmental benefits to be paramount. See also the responses to comment numbers 38 and 39.

49. Comment: The Board does not seem to consider or explain the reasons for rejecting any proposed alternatives that would specifically lessen the adverse economic impact on small dry cleaners in particular. See, Cal. Gov. Code § 11346.9(a)(5). (KDANC-2)

Response: ARB's Staff Report discusses and explains in the Executive Summary, pages ES-11 and ES-12, and in Chapter II, pages II-8 to II-10, the alternatives the Board considered in addition to ARB staff's proposal. Also, for the summary of, and the Board's response to, the alternatives commenters proposed to the amended Dry Cleaning ATCM, please see responses to comments 15 through 19.

50. Comment: Under H&SC § 39665(b)(4) one factor that the Board must consider in adopting an ATCM is recent technological improvements or other actions which emitting sources have implemented or taken in the recent past to reduce emissions. Similarly, when considering what is BACT, or the need for a "more effective control method," the Board must consider whether "an alternative level of emission reduction is adequate or necessary to prevent an endangerment of

public health.” Cal. Health & Safety Code § 39666 (c). The safe and efficient technology developed in the latest generations of Perc dry cleaning machines does not seem to have been considered by the Board. KDANC submits that the perceived need to reduce Perc emissions could be achieved simply by replacing older generation machines with the latest and best Perc machines currently available on the market. (KDANC-2)

Response: During the evaluation of the effectiveness of the Dry Cleaning ATCM, an assessment of the available technologies for Perc dry cleaning was made. This assessment is detailed in Chapters II and III of the Technical Assessment Report as well as Chapter III of the ISOR. Although the latest technology for Perc dry cleaning is less emissive compared to the earlier technologies, the Board determined at the May 2006 Hearing that the phase out of Perc machines is necessary to further protect public health and to eliminate the adverse potential health risks and environmental impacts due to Perc use in dry cleaning machines.

51. Comment: Since the proposed ATCM amendments represent a “major regulation” staff have reviewed regulatory alternatives to the proposed amendments, as required by HSC section 57005, they have failed to consider an alternative that is “less costly” than the proposal. (HSIA)

Response: H&SC section 57005 provides:

. . . [B]efore adopting any major regulation, [the board] shall evaluate the alternatives to the requirements of the proposed regulation that are submitted to the board . . . pursuant to paragraph (7) of subdivision (a) of Section 11346.5 of the Government Code and consider whether there is a less costly alternative or combination of alternatives which would be equally as effective in achieving increments of environmental protection in a manner that ensures full compliance with statutory mandates within the same amount of time as the proposed regulatory requirements. [Health and Safety Code section 57005(a).]

Because the regulatory amendments represent a major regulation as defined in H&SC section 57005(b) and as described in Chapter VII of the ISOR, the Board has considered alternatives that are “equally as effective in achieving increments of environmental protection in a manner that ensures full compliance with statutory mandates within the same amount of time as the proposed regulatory requirements.” In this instance, however, all equally effective alternatives are more costly than ARB’s proposal.

52. Comment: Under H&SC section 39665(b)(6) the Board must consider the “availability, suitability, and relative efficacy of substitute compounds of a less hazardous nature.” As you know hydrocarbon-based “VOC” machines are the most popular replacement for Perc machines. While there are other alternatives,

as a practical matter, the proposed ATCM would result in a significant increase in the number of VOC machines installed throughout the state. The Board does not appear to consider the hazards presented by these machines; nor is there any guarantee that having switched to VOC machines, small dry cleaners will not be facing another ban in the near future. (KDANC-2)

Response: The health and environmental impacts for Perc and the alternative dry cleaning technologies were considered and detailed in the ISOR, Chapters IV, V, and VIII. ARB agrees with the commenter that many dry cleaners may choose hydrocarbon-based machines as the replacement for Perc machines. VOCs do contribute to the formation of ozone. In its resolution of January 25, 2007, the Board took into consideration the potential impacts of a potential VOC increase of about 0.7 tons per day outside of the South Coast Air Basin. In regards to potential future regulations on dry cleaning and recognizing their potential economic impacts, the Board instructed ARB staff in its resolution to consider the full useful life of dry cleaning equipment in any future rulemakings. In addition, if local districts determine it necessary for their attainment strategies, they can mitigate the increase in hydrocarbon emissions with reductions from other hydrocarbon sources that they regulate.

53. Comment: KDANC has requested that the Board continue the January 25 hearing until such time as the numerous members of the Association can be contacted and informed of the proposed ATCM and its potentially devastating impact on their businesses. California Gov't Code section 11346.8(b) authorizes postponement of a public hearing. KDANC members are small businesses with limited electronic communications and overwhelming workloads. Word of the proposed ATCM changes traveled by word of mouth, such as at monthly association meetings. Owners have to plan long in advance to arrange store coverage to allow them to travel to attend a public meeting. KDANC is extremely concerned that the majority of its members is not even aware of the coming changes, let alone have the ability to submit comments or attend the meeting. This puts [in] question whether the KDANC members' rights to due process are being disregarded, thus tainting the legitimacy of the hearing process itself. (KDANC-2)

Response: Recognizing the nature of the dry cleaning business, ARB's process for rulemaking development for the Dry Cleaning ATCM amendments accorded adequate time for facility owners to plan and comment on the rulemaking. The Board's direction to phase out Perc use in dry cleaning machines was given to ARB staff and the public at the May 25, 2006 Board hearing. In June 2006, an advisory notifying the public of the January 2007 Board hearing was posted to the ARB Dry Cleaning website and sent to the list serve mailing list. ARB staff also held several meetings with the dry cleaning industry including a meeting in San Francisco with KDANC. ARB started discussion of the regulatory concepts and rulemaking schedule with an industry workgroup in July 2006 which included KDANC. The concepts and rulemaking schedule were also discussed during a

public workshop in September 2006. We accepted written and oral comments on the proposed action. In addition, the 45-day hearing notice was sent to all dry cleaning facilities in California in both English and Korean. The public had 45 days to comment and arrange to appear and testify at the Board hearing in January 2007. Based on above actions in developing the rulemaking, ARB has complied with the provisions of the Administrative Procedure Act, Government Code section 11340 et seq., and specifically with Government Code sections 11346.45 and 11346.5, to accord the public due process in the rulemaking promulgation.

Requirements for Perc Distributors and Manufacturers

54. Comment: HSIA opposes the proposed recordkeeping and reporting requirements for Perc manufacturers. The proposed requirements are unnecessary and inappropriate. Since all of the Perc used in dry cleaning in the state is sold through distribution, the information to be retained by, and collected from, solvent manufacturers will be exactly the same as that collected from distributors. (*HSIA*)

55. Comment: TCATA is opposed to new reporting and recordkeeping requirements imposed on distributors and manufacturers of Perc. These requirements appear to be a well-intentioned attempt to have manufacturers and distributors assist in the enforcement of tax collection provisions established under AB 998 to fund the Non-Toxic Dry Cleaning Incentive Program. The information required by this new rule calls for the disclosure of proprietary business information that companies should not be required to disclose, particularly to agencies that cannot ensure its confidentiality. (*TCATA*)

Response to Comment Nos. 54 and 55: The California State Legislature enacted AB 998, effective January 1, 2004, to establish grant and demonstration programs for non-polluting alternatives to Perc dry cleaning. Funds for the AB 998 programs are generated by assessing a fee on the distributors who sell Perc to California dry cleaners. Fee collection from distributors has been a concern for the funding of the grant and demonstration programs. ARB staff believes that a few Perc distributors may not be reporting their sales or submitting the fees to ARB upon the receipt of invoices. This assessment is based on the estimate of Perc sales from ARB staff surveys conducted in 2003 and 2006. With no manufacturers of Perc located in California, collection of fees has focused on distributors since the majority of manufacturers sell to distributors and not to individual dry cleaners. To this point, enforcement has been based on voluntary reporting by distributors.

Because of the issues with AB 998 fee collection, ARB added regulatory requirements for Perc distributors and manufacturers to improve implementation of the AB 998 programs. The information required from the Perc manufacturers differs from what is required from the Perc distributors. Perc manufacturers are

required to keep monthly sales records of Perc sold for use in dry cleaning in California. Manufacturers are also required to initially report to ARB the contact information for all their distributors and then additionally report to ARB if there are any changes to the initially reported contact information. The manufacturers' recordkeeping and reporting requirements have been adopted to help ensure that ARB has a mechanism to assess the amount of Perc sold to California dry cleaners and has the contact information for all Perc distributors that purchase Perc from the manufacturers for use in dry cleaning in California.

Perc distributors are required to keep records of purchase and sales of Perc and recycled Perc sold to California dry cleaners, contact information for dry cleaners that they have sold Perc or recycled Perc to, and contact information of their Perc distributors as applicable. They are also required to initially report to ARB their contact information and, as applicable, the contact information for all their distributors who sell Perc and recycle Perc in California; and, later, if their reported information changes, they are to report that to ARB. Additionally, Perc distributors are to annually report the gallons of Perc and recycled Perc sold to California dry cleaners.

In summary, the requirements for Perc manufacturers are different from those from Perc distributors and both are needed. These added requirements are necessary to provide a mechanism for collecting fees and to provide information to ARB on the effectiveness of the fee collection program. The Board recognized these requirements as necessary and approved the regulations at the January Board hearing.

If Perc manufacturers or distributors believe that the information they provide ARB in compliance with the requirements of the regulations is confidential business information, they may indicate this when the information is submitted to ARB and ARB will hold the information in confidence to the extent permitted by state law and regulations, notably the California Public Records Act (Government Code section 6250 et seq.) and ARB's regulations at title 17, California Code of Regulations, section 91000 et seq.

Alternative Technologies to Perc

56. **Comment:** There is a way to do the same business without using chemical solvents. I started 100% wet cleaning. With wet cleaning machines we handle the same volume as before when we had a Perc machine. We found wet cleaning requires neither more operating cost nor more man power. Job site is safer because we don't deal with hazardous material any more, which is liked by the employees. Our customers like our new system because it is clean, safe and healthy. I'm very satisfied with this wet cleaning system. (*Jussicha, NBC, PC*)
57. **Comment:** We support the use of wet cleaning. Wet cleaning is a viable technology. (*Mohammad, TC, METS, DePippo, OC, Kim*)

58. Comment: The primary reason that dry cleaners have not embraced wet cleaning as a complete replacement for Perc is simple – wet cleaning is not a 100% replacement. In fact, cleaners who have embraced wet cleaning admit that only 40-60% of the garments that come over the counter can actually be wet cleaned. *(IFI, Turpin, TCATA)*
59. Comment: The staff report reviews several available alternatives to Perc, which are hydrocarbon solvents, volatile methyl siloxane (D₅), CO₂, and water-based cleaning systems. As suggested in the staff report, technical and economic limitations of CO₂ and wet cleaning likely will preclude these processes from widespread use. Staff also suggests that concerns about the potential toxicity of D₅ may keep cleaners from selecting it, despite the fact that it is exempt from control as a VOC. As a result, hydrocarbon solvents are the most likely candidate for cleaners considering an alternative solvent. As emissions of these solvents contribute to the formation of ozone in the lower atmosphere, their widespread use in the dry cleaning industry would be problematic. *(HSIA)*
60. Comment: ARB has not given the dry cleaning industry alternate cleaning methods needed to provide comparable service. *(RWC, BC, Oh)*
61. Comment: The primary concern with the alternative technology discussion is that regulatory agencies may be jumping the gun. The fact that some of the current alternatives have some small penetration in the market should not imply that they are viable options. While we support the development of new alternative processes there are many unresolved questions about the alternative processes that exist today. The most popular choice thus far for dry cleaners has been the hydrocarbon process. However, at what point will ARB make it absolutely clear that this and other solvents will be acceptable beyond the near future or will the dry cleaners have to worry every time the state looks to reduce VOCs? And while IFI's research found that GreenEarth solvent was a viable replacement for Perc, industry still awaits word from OEHHA for their assessment of the solvent. *(IFI, Turpin)*
62. Comment: Information on alternatives developed by ARB and other regulatory agencies is used by dry cleaners to make informed decisions and dry cleaners in the state of California need clear guidance on the acceptability of alternatives by ARB before being forced into choosing an alternative that may or may not be acceptable in the future. The financial burden of switching technologies twice (once from Perc and then from another process later found unacceptable) is too great for small businesses to absorb and remain in business. *(IF1-1, CCA-1, Turpin)*
63. Comment: I support the use of GreenEarth and hybrid wet cleaning. *(GC, Swanson)*

64. Comment: I support the use of Rynex and hybrid wet cleaning. (CCA-2)
65. Comment: I support the use of CO₂. I am certain CO₂ can help many California drycleaners improve the quality of their service. I also know that by using CO₂ I have provided a valuable benefit for my employees, my customers, and my community. I am proud to provide this environmentally friendly option. (Hangers Cleaners)
66. Comment: I support the use of CO₂. (BRC)
67. Comment: Current hydrocarbon solvents have half the maximum incremental reactivity of the earlier hydrocarbon solvents and therefore have half the potential to create atmospheric ozone. (TCATA)
68. Comment: ARB is recommending CO₂ machines. These machines are too expensive and too big for a small business. (Park)
69. Comment: Why is ARB recommending the use of hydrocarbon solvents when they are combustible and cause smog? Why is ARB recommending the use of CO₂ machines given the environmental impact of carbon dioxide? (OBC, NC)
70. Comment: If the Board's final recommendation is to steer Perc out of the industry, then you owe it to all concerned to be straightforward and timely with your conclusions, and provide information on acceptability of alternatives. (MC, CCA-1, IFI-1)

Response to Comment Nos. 56 to 70: The alternatives to Perc dry cleaning were evaluated and are discussed in Executive Summary and Chapter III of the Staff Report. A summary of the discussion is provided here. Currently, about 30 percent of the dry cleaning in California is being done by alternative dry cleaning processes. The most popular alternative in current use is the equipment that uses high flash-point hydrocarbon solvents, with about 20 percent of the dry cleaning in California being processed using these solvents. The hydrocarbon solvents have been used by the dry cleaning industry for a long time, well before Perc was introduced to the industry. The current generation of hydrocarbon solvents (i.e., the high flash point hydrocarbon solvents), introduced in the early 1990's, is safer compared to the older generation of hydrocarbon solvents, such as Stoddard, because of the new generation's higher flash point, which lowers its associated fire hazard, and its chemical composition, which lowers its potential adverse health impact. However, hydrocarbon solvents do contribute to the production of ozone (smog).

Of all the alternatives available, the most environmentally friendly are the water based cleaning systems and the carbon dioxide cleaning systems. These alternatives are being used by some in "mixed shops" and others in dedicated facilities where all of the dry cleaning for these facilities is being successfully

processed by one of these technologies. Because these systems are non-toxic and non-smog forming, they qualify for grants under the AB 998 programs. Most of the alternatives considered are discussed in detail in Chapter III of the Staff Report and a summary of the cleaning performance of the evaluated dry cleaning solvents is shown in Table III-1 (page III-5) of the Staff Report. This table is duplicated here as Table II-1.

The solvents shown in Table II-1 are used in a number of machines, including some emerging technologies. In addition, a number of emerging solvents that are not shown on the table may also be available. Please see Chapter III, section A, of the Staff Report for a more detailed discussion of emerging technologies as identified in 2006. In summary, alternatives to Perc dry cleaning are available and viable. However, there are advantages and disadvantages associated with each technology; therefore, ARB advises dry cleaners to evaluate the needs of their facility and decide accordingly when they switch to an alternative technology.

Table. II-1. Summary of Cleaning Performance of Dry Cleaning Solvents

Solvent	Cleaning Performance
Perc	Aggressive, oil-based stains, most water-based stains, silks, wools, rayons. Not good for delicates.
Stoddard	Less aggressive than Perc for oil-based stains. Can handle delicate garments.
PureDry	Less aggressive than Perc for oil-based stains. Can handle delicate garments.
Shell 140	Less aggressive than Perc for oil-based stains. Can handle delicate garments.
EcoSolv	Less aggressive than Perc for oil-based stains. Can handle delicate garments.
DF-2000	Less aggressive than Perc for oil-based stains. Can handle delicate garments
Green Jet (DWX-44 detergent)	Less aggressive than Perc. More effective in cleaning sugar, salt, perspiration stains. Good for delicates. Not good for heavily soiled garments.
Rynex 3	Aggressive, cleans water-soluble and oil-based stains.
GreenEarth	Less aggressive than Perc for oil-based stains. Good for water-based stains, delicates.
CO ₂	Good for all stains and most fabrics. Very effective in removing oils, greases, sweats.
Wet cleaning	Aggressive, good for both oil and water-based stains. Can handle delicate garments. Requires tensioning equipment and training for successful operation.

Opposition to Perc Phase Out

- 71. Comment: Your proposed legislation will have a negative impact on the consumer and the dry cleaning industry. ARB has failed to scientifically analyze

the problem, come up with a workable solution, and has failed their purpose which is the public and business. I urge you to reconsider your data. It is not too late to be a civil servant and do the "right thing." (RWC)

72. Comment: I would like for you all to reconsider your thoughts on this regulation and consider NOT removing Perc from use. (Cianfrini, KDLA, CM, BC)
73. Comment: A permanent ban on Perc is extreme because there is no perfect substitute as alternatives are studied. (CCC, Horst)
74. Comment: It is my hope and strong recommendation that you do not seal the fate of Perc by banning it completely. We wish to be granted the continued and controlled use of Perc so we may be able to always provide the public with affordable and clean methods of servicing their clothes. (CCC, Horst)
75. Comment: I am writing in opposition to the proposed ATCM. (NC)
76. Comment: Oppose the phase out of Perc. If these changes are adopted as submitted, it will force me out of business. I will be in no position to sell my business to any interested buyer. Therefore, I will lose everything. (VC)
77. Comment: We oppose the Board's decision to dismiss the staff's original proposal to allow continued use of Perc and to require development of the current proposal to impose a statewide phase out to address what is, at most, a localized issue. (HSIA, AVAQMD, MDAQMD, IFI-1)
78. Comment: We oppose the Board's May 2006 decision to seek a complete elimination of Perc use in California, an action that is contrary to the originally ARB staff proposal. In our view, that proposal was developed after seeking input and considering the needs of all stakeholders, a balancing act which the board has so far chosen to dismiss. (TCATA, CCC)
79. Comment: We oppose the revisions to the ATCM in their current form. We feel that a phase-out of Perc is not warranted and is something that, if desired, can be done on a local level by the remaining 34 California air districts that currently allow its use given the state's diverse topography. (CCA-1, Turpin, IFI-1, Cianfrini)
80. Comment: The alternative solvents that you are considering as a replacement for the industry also have their own risks and environmental threats associated with them. I strongly suggest that you reconsider this proposed amended regulation until all the environmental effects of the proposed alternatives have been explored completely with input from all concerned constituencies. (OBC)

Response to Comment Nos. 71 to 80: Staff began evaluating the effectiveness of the Dry Cleaning ATCM in 2003. The evaluation found that although Perc

emissions from dry cleaning operations have been reduced by about 70 percent, more could be done to reduce Perc emissions from the dry cleaning category. As a result of this evaluation, staff proposed amendments to the Dry Cleaning ATCM based on the application of the best available control technology for the Board's consideration as required by H&SC section 39666(c). Staff's initially proposed amendments were presented in a staff report released April 7, 2006 and considered at the Board's May 25, 2006 public hearing. After considering ARB staff's initial proposal and considering the written comments and the public testimony, the Board unanimously voted not to proceed with ARB staff's proposed rulemaking and directed staff to return to the Board with a proposal to phase out Perc from dry cleaning operations in furtherance of the Board's mission to protect public health. Based on the viability of dry cleaning alternatives, the Board felt it necessary and responsible to eliminate the potential health risk due to Perc emissions from dry cleaning machines and related equipment.

Based on the Board's direction, staff updated the rulemaking's evaluation with current market trends in dry cleaning technologies and their costs and the potential environmental, health, and cost impacts for various scenarios for phasing out Perc use in dry cleaning. The cost impact analysis showed that there will be a cost impact on the dry cleaning industry. However, the potential health risks from Perc dry cleaners have not changed and warrant Board action. The proposal presented in the December 2006 Staff Report and at the January 2007 Board hearing was the result of staff's updated evaluation and consideration of public comments receiving during workgroup meetings and a public workshop that took place prior to the release of the Staff Report. ARB staff's assessment of all aspects of this rulemaking and its effects are presented in the ISOR and were taken into consideration by the Board at the January hearing.

Reasons for opposition to the proposed amendments include performance and acceptability of the available alternatives, economic impacts, and questions on whether an amendment to the statewide Dry Cleaning ATCM is necessary. Each of these concerns is discussed in the ISOR and in ARB's responses to comments. As mentioned in the responses to comments about the alternative technologies, the availability and acceptability of the available alternatives are discussed in Chapter III of the Staff Report. In summary, alternatives to Perc dry cleaning are available and viable. However, there are advantages and disadvantages associated with each technology type; therefore, ARB advises dry cleaners to evaluate the needs of their facility and decide accordingly when they switch to an alternative technology.

For concerns regarding economic impacts of the proposed amendments, please see the response to the comments numbered 35 and 36. In summary, it was concluded in Chapter VII of the Staff Report that dry cleaners with marginal profitability may experience significant adverse economic impacts and those

adverse impacts may result in business closures. The Board determined, however, that the beneficial environmental and health impacts to be achieved by the proposed amendments outweigh the potential adverse economic outcomes.

Support

81. Comment: We support ARB staff's Proposed Amendments to the ATCM for Emissions of Perc Associated with Dry Cleaning Operations. (CAPCOA, SCAQMD-1, SCAQMD-2, CSDLA, BAAQMD, ALA, SC)
82. Comment: We support ARB staff's proposal to remove all Perc machines from co-residential locations. (SC)
83. Comment: Phase out Perc. (Rothstein)

Response to Comment Nos. 81 through 83: We acknowledge your support.

AB 998 Legislation

84. Comment: Continue to have the staff support the Dry Cleaning ATCM with the grants and the demonstration sites, so that the cleaners will be educated and they will have the incentives, the help, the knowledge that they need to be successful. (SCAQMD-2)

Response: ARB agrees that the AB 998 grant and demonstration programs are important to provide incentives and educate cleaners on the benefits, costs and effectiveness of the non-toxic and non-smog forming alternatives to Perc dry cleaning. ARB staff will continue to administer the grant and demonstration programs as long as funding allows.

85. Comment: ARB is still not fully collecting fees on all the Perc used by California dry cleaners; has not initiated a single demonstration program; and has only made 23 grants in a state with almost 5,000 dry cleaners. ARB can do more to support cleaners' transition by fully implementing AB 998. (SC)
86. Comment: We would like the Board to move aggressively to implement AB 998 and remedy the fee collection issues. (ALA, Lighthall)

Response to Comment Nos. 85 and 86: During implementation of the AB 998 program, ARB encountered fee collection issues. ARB staff believes that a few Perc distributors may not have reported their sales or submitted fees to ARB upon the receipt of invoices. This assessment is based on the estimate of Perc sales from ARB staff surveys conducted in 2003 and 2006. With no manufacturers of Perc located in California, collection of fees has focused on distributors since the majority of manufacturers sell to distributors and not to individual dry cleaners. The enforcement has been based on voluntary reporting

by distributors.

To facilitate AB 998 participation and to remedy the fee collection issues, ARB has taken several actions. To facilitate and encourage AB 998 participation, starting in 2007, ARB has accepted and processed AB 998 grants on a continuous basis. In addition, in 2007, ARB approved two demonstration projects that would showcase the non-toxic and non-smog forming technologies throughout California. To remedy the fee collection issues, ARB has continued enforcement action to back collect fees. Also, ARB added requirements for Perc distributors and manufacturers in the rulemaking which will provide better accountability, reliable tracking, and improved enforcement for better fee collection.

87. Comment: Why can't we get grants for Rynex and Green Earth? (*Turpin*)

Response: As mentioned in response to comments 43 to 46, the AB 998 grant program provides financial assistance (\$10,000) to California dry cleaners who replace their existing Perc dry cleaning systems with non-toxic and non-smog forming systems such as water-based (i.e., professional wet cleaning, Green Jet[®], and cold water cleaning) and CO₂ cleaning systems. Because Rynex[™] is smog forming and GreenEarth[®] has potential toxicity issues, cleaners that switch from Perc to one of these technologies are not qualified to obtain AB 998 grants.

Miscellaneous Issues

88. Comment: Page I-4 E: item 2 of the Staff Report. *Hot Spots Program*, I don't believe there is any useful reason from a regulatory point of view to continue this program with the alternative solvents. (*KST*)

Response: The "Hot Spots" program currently only addresses dry cleaners using Perc. It is possible, as warranted, that other solvents may be identified in the future for regulation in the "Hot Spots" program. The decision to add substances to the program will be based on OEHHA's evaluation of a substance's toxicity and exposure potential in California and the provisions of H&SC section 44321.

89. Comment: Prohibit anyone other than air districts from conducting ATCM classes. There are too many instructors and they are in it for the money. Many don't advertise their classes, or have them in legitimate class surroundings and the classes have been disregarded and minimized by too many in the industry. They serve a useful purpose, but should be legitimized again. I feel very strongly about this. (*KST*)

Response: The Dry Cleaning ATCM as amended continues to require each Perc facility to have one or more trained operator present during machine operation. A trained operator is an employee who has successfully completed the initial environmental training course to become a trained operator. Each trained

operator is required to successfully complete the refresher course at least once every three years. The primary objective of the training courses is to certify “operators” pursuant to the requirements of the Dry Cleaning ATCM and to promote understanding on how to comply with the control measure.

ARB certifies individuals or organizations to conduct the training courses. Certification of the trainer and the approval of the training material help to ensure course quality. If there are problems with course quality, ARB has the authority to investigate and, if necessary, revoke the certification of the trainer. Currently, only one of the local districts is able to have a certified instructor on staff. Requiring only air district staff to conduct classes may be helpful with the effectiveness of the Environmental Training Program for Perchloroethylene Dry Cleaning Operations (title 17, California Code of Regulations, section 93110). However, it would require extensive district time and staff resources to implement and, since the use of Perc dry cleaning machines is being phased out, eventually instructors will not be required.

90. Comment: We request, at a minimum, that the Board defer action on the aspects of the proposed regulations targeted by the proposed alternative and direct staff to analyze the proposed alternative as stated in Comment No. 17 and work with the affected industry to adjust and improve the alternative before returning to the Board with a complete regulatory proposal. We request that the Board direct staff to work with the legislature, the affected industry and other interested parties to identify and/or develop economic incentives for the replacement of Perc machines by alternatives of all types including hydrocarbon based systems and once such incentives are in place to return to the Board with a proposal for reconsideration of the need for the extended lead time for low revenue dry cleaning operations. (*Oh, CCA-1, SR, Turpin*)

Response: The Board considered the proposed suggestions to delay the Board Hearing to consider the proposed amendments to the Dry Cleaning ATCM and to relocate the Board hearing. After consideration, the Board decided to meet on the date and location specified in the December 8, 2006 hearing notice. The reasons for the Board’s decision are explained below.

While the Board agrees, and ARB staff’s evaluation confirms, that there are disadvantages and advantages to each of the alternative technologies, alternative technologies exist and are viable. A dry cleaner’s decision to switch to a particular alternative technology will need to depend on the suitability of the technology for the facility and its customers. In addition, financial assistance is available statewide through the AB 998 program and, on a more limited level, through some local programs. It is possible that certain dry cleaners may qualify for more than one financial assistance program, which would help minimize the potential financial impact. Dry cleaners are advised to evaluate the alternative technologies and financial assistance programs that are available and choose what will work for their facility.

The Staff Report estimates that facilities with marginal profit margin may experience significant adverse financial impacts due to the compliance costs of the proposed amendments. Accordingly, the amendments provide dry cleaning facility owners a time period of no less than two and a half years for planning before they are required to remove their Perc machines from service. This lead time is independent of financial status. The Board determined that a further extension of lead time based on facility revenue would be difficult to implement and was not warranted given the public health impacts of the continued use of Perc.

91. Comment: The Northern California Korean Dry Cleaners Association (KDNAC) would like to request that the January 25, 2007 Board Hearing be postponed for 30 days and relocated to San Francisco on behalf of their members. KDNAC believes a delay and location change is essential in order for members to effectively participate in the public hearing process and provide comments on the impacts that will result to their small businesses. (KDNAC-1)

Response: The Board considered the proposed suggestions to delay and relocate the Board Hearing to consider the proposed amendments to the Dry Cleaning ATCM and to relocate that Board Hearing. After consideration, the Board decided to meet on the date and location specified in the December 8, 2006 hearing notice. The reasons for the Board's decision are explained below.

During the rulemaking development and notice processes, ARB staff has consistently informed the industry of the rulemaking status through direct mailings, meetings with workgroups, public workshop meetings, and updates on the Dry Cleaning ATCM Program website. Key documents were translated into Korean and most public working and hearing meetings were conducted with the assistance of a certified Korean interpreter on site. In addition, for those who did not attend the Board Hearing, a web cast allowed the public to follow the January 25, 2007 public hearing via the internet. Through these actions, the dry cleaning industry has had ample opportunity to learn of, and comment on, the amended regulations during their development, during the 45-day notice period, and at the Board Hearing.

Please also see the response to comment number 53.

92. Comment: The County Sanitation Districts of Los Angeles County request that ARB add language to the proposed ATCM that specifically states: "Wastewater from a wastewater treatment unit shall not be discharged to the sewer system." If ARB does not feel that the addition of specific language prohibiting the discharge of wastewater to the sewer system is warranted, then ARB should state, at a minimum, that no wastewater be sewerage unless a dry cleaner obtains specific, written approval from the appropriate sewerage agency. (CSDLA)

Response: ARB's requirements in the current regulations at title 17, California Code of Regulations, section 93110, the Environmental Training Program for Perchloroethylene Dry Cleaning Operations (Environment Training Program), and in the amendments at title 17, California Code of Regulations, section 93109(i)(1) largely address the commenter's concerns. The amended Dry Cleaning ATCM maintains the current regulatory requirement that each Perc facility have trained operators. The Environmental Training Program includes the requirement that trained operators receive instruction on the use of the course manual as a reference tool to determine applicable environmental regulations established by the Department of Toxic Substances Control (DTSC), the Water Resources Control Board and Regional Water Quality Control Boards, and the local sanitation districts, among others. These are the agencies that have authority to establish standards for the disposal of wastewater containing Perc.

Based on information gathered from the Dry Cleaning Facility Survey, ARB has also determined that the current practice of Perc dry cleaning facilities is to use either a wastewater treatment unit to recycle their Perc or to have their wastewater picked up by a registered hazardous waste transporter. In California, all hazardous waste must be managed offsite by a transporter that is registered with DTSC. Because, the amendments will fully eliminate the use of Perc machines and, therefore, Perc contaminated wastewater from wastewater treatment units in Perc facilities by January 2023, the recommended language would not aid in further eliminating the possible discharge of wastewater from wastewater treatment units in Perc facilities.

93. Comment: The opportunity to explore technologies that on one hand reduce our CO₂ emissions but also give us energy efficiency benefits in light of a lot of the work we'll probably be doing on the electricity sector side in terms of managing our carbon footprint. Also, I think as we move forward through AB 32 implementation and other processes, particularly the market mechanisms, that we explore creative revenue recycling mechanisms in light of the new commoditization of carbon and the price that will be incurred particularly in increased costs in light of the electricity sector because of the carbon mandate we will be providing the next couple of years. (CEERT)

Response: ARB understands that the carbon dioxide (CO₂) used by CO₂ based dry cleaning technologies is an industrial by-product from existing industrial operations. Therefore, no net increase in the amount of CO₂ emitted to the ambient air results from its use in dry cleaning. Additionally, the current amount of CO₂ emitted by the dry cleaning industry is a very small fraction of the total amount emitted in California from all sources. For this reason, unless a majority of dry cleaners opt to switch to a CO₂ based dry cleaning technologies, the potential for CO₂ increases from dry cleaning is limited.

Any potential increase in electricity cost due to the implementation of AB 32 (the Global Warming Solutions Act of 2006) has not been factored into the cost estimates for this rulemaking. Implementation of AB 32 is just beginning in 2007 and possible cost scenarios for its implementation cannot be developed at present given the many variables and unknowns associated with its nascent implementation.

94. Comment: Because the South Coast AQMD Rule 1421 phases out Perc dry cleaning machines earlier than the proposed amendments, it should be found equivalent when the amendments are adopted. (SCAQMD-1, SCAQMD-2)

Response: ARB is evaluating whether South Coast Rule AQMD Rule 1421 is equivalent to ARB's amended Dry Cleaning ATCM under the provisions of H&SC section 39666(d). While South Coast AQMD Rule 1421 does phase out Perc dry cleaning machines about 2 years earlier than the amended Dry Cleaning ATCM, there are many differences between ARB's amended Dry Cleaning ATCM and the South Coast AQMD Rule 1421 that require in depth evaluation, which has yet to be completed.

B. Summary of Comments Received During the 15-day Public Comment Period

A list of commenters is set forth below, identifying the date and form of all comments that were timely submitted. Following the list is a summary of each objection or recommendation made regarding the proposed action, together with the reasons for making no change.

List of Commenters

Abbreviation

Commenter

KDCAS

John Park
Korean Dry Cleaners Association of Sacramento
Written Testimony: March 22, 2007

Santana

Jose Santana
Written Testimony: March 30, 2007

GreenEarth Solvent

1. Comment: I am concerned at the exclusion of GreenEarth as an alternative solution for Perc. I have a GreenEarth plant and previously had a Perc plant which I shut down. I believe GreenEarth to be a great alternative for those cleaners who cannot afford carbon dioxide because wetcleaning cannot do 100% of the cleaning. Please adopt GreenEarth as an accepted alternative for Perc. (Santana)

Response: This comment is not related to the 15-day changes. However, ARB notes that the amended Dry Cleaning ATCM has not excluded GreenEarth as an alternative to Perc dry cleaning. The amended Dry Cleaning ATCM does not restrict the use of the GreenEarth solvent.

Opposition to Perc Phase Out

2. Comment: We think that both the draft proposal made by staff and the draft proposal approved by the Board have problems. If these were finalized, you will need to deal with various issues that are sure to arise. Please allow us to continue using Perc machines until 2023. There are a lot of advantages to using Perc and most cleaners prefer using Perc. The currently available alternative dry cleaning machines are too big and too costly. We ask you to order the machine manufacturers to produce smaller machines and refrain from asking exorbitant prices. The machine manufacturers cannot meet the demand and therefore it would be impossible to enforce the phase out of machines by 2023, we suggest that you extend the timelines for the replacement of the machines. (KDCAS)

Response: This comment is not related to the 15 day changes. However, ARB's response to comments 71 to 80 provides the rationale for the adopted action.