

*Report to the California Legislature*

**FINAL REPORT ON THE NON-TOXIC DRY  
CLEANING INCENTIVE PROGRAM (AB 998)**



**Report Submitted By:**

**California Air Resources Board**

**Pursuant to Health and Safety Code § 41999 subd.(e)  
(Assembly Bill 998, Lowenthal, Chapter 821, Statutes of 2003)**

**December 2020**



Gavin Newsom, Governor

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### **DOCUMENT AVAILABILITY**

This report can be viewed at: <http://www.CARB.ca.gov/mandrpts/mandrpts.htm>.

To obtain a hard copy of this report, please contact Dr. David Ernest García at [David.Garcia@arb.ca.gov](mailto:David.Garcia@arb.ca.gov).

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# **Final Report on the Non-Toxic Dry Cleaning Incentive Program (AB 998)**

## **I. OVERVIEW**

Assembly Bill (AB) 998 (Lowenthal, Chapter 821, Statutes of 2003, Health and Safety Code Sections 41998 and 41999), or the Non-Toxic Dry Cleaning Incentive Program (AB 998 Program), was established by the Legislature to provide financial incentives to dry cleaners within the State to transition from dry cleaning systems using perchloroethylene (Perc), an identified toxic air contaminant and potential human carcinogen, to non-toxic and non-smog forming systems. There are two components to the AB 998 Program. The first component provides a \$10,000 grant to dry cleaners who replace a dry cleaning system that utilizes Perc as the dry cleaning solvent with a clean non-toxic and non-smog forming system. The second component is a requirement for the California Air Resources Board (CARB) to establish a demonstration program to showcase these clean systems statewide. The complete text of AB 998 is provided in Appendix A.

The AB 998 Program works well with the dry cleaning rules established by CARB. In January 2007, CARB staff amended the Airborne Toxics Control Measure for Emissions of Perc from Dry Cleaners (Dry Cleaning ATCM) to phase out all Perc dry cleaning machines in California by January 1, 2023, or after each individual machine reached 15 years of age, whichever came first.

Implementation of CARB's Dry Cleaning ATCM has been aided by the AB 998 Program. Since its inception in 2004, the grant program has been highly successful. It has helped move more than 150 California dry cleaners to non-toxic and non-smog forming technologies. Additionally, the demonstration program has conducted over 90 workshops and produced materials designed to help dry cleaners understand new technology options. The number of dry cleaners that have replaced their systems with these technologies is an example for the rest of the nation where these technologies are just beginning to take hold. The AB 998 Program has proven that it is a successful model on which future incentive programs for air toxics from stationary sources can be based.

The purpose of this report is to provide the Legislature the final report on the implementation and success of the AB 998 Program. The report highlights the success of the grant and demonstration programs, the efficiencies of fees collected to fund the programs, and the results achieved by the implementation of the programs.

## **II. BACKGROUND**

Adopted by CARB in 1993, the Dry Cleaning ATCM requires dry cleaning facilities in California to limit their Perc emissions by using the best available control technology and operating practices. In 2003, to encourage dry cleaners to transition from the use

of Perc in their systems to non-toxic and non-smog forming systems, the Legislature established the AB 998 Program.

In 2007, CARB approved amendments to the Dry Cleaning ATCM requiring the phase-out of all existing dry cleaning machines utilizing Perc as the dry cleaning solvent by January 1, 2023. The amendments also established additional requirements for Perc manufacturers and distributors to aid in the implementation of the AB 998 Program by mandating a fee collection component.

Funds for the AB 998 Program are generated by assessing a per gallon fee on distributors who sell Perc to California dry cleaners. Beginning on January 1, 2004, AB 998 required CARB to impose a fee of \$3 per gallon of Perc sold; this fee then increased by \$1 per gallon each year from 2005 through 2013. The current fee is \$12 per gallon of Perc sold, which will remain in effect until all Perc is phased out by 2023. The collected fees are put into the Non-Toxic Dry Cleaning Incentive Trust Fund, where they are used to administer and implement the AB 998 Program. To date, the Program has collected over \$3.6 million.

### **III. AB 988 PROGRAM RESULTS**

CARB has been collecting funds from Perc dry cleaning distributors to implement the AB 998 Program since the Program's inception. The collected fees have been used to fund all parts of the Program. During the course of the Program, CARB has awarded 151 Perc dry cleaning equipment replacement grants, held approximately 100 demonstration workshops, and created various resources designed to help dry cleaners transition to cleaner technologies including brochures, flyers, a vendor list, a guidebook, and a professional demonstrational video.

#### **A. Grant Program**

Per AB 998, a majority of the fees collected are to be used to fund the grant component of the AB 998 Program. Although compliance with the Dry Cleaning ATCM allows dry cleaners to switch from a cleaning system that utilizes Perc to a variety of other systems, the AB 998 Program focuses solely on those technologies that are both non-toxic and non-smog forming. To qualify as an eligible system under AB 998, the replacement system must be a professional dry cleaning system that uses a non-toxic and non-smog forming process, as determined by CARB, in consultation with the Office of Environmental Health Hazard Assessment (OEHHA), the State Water Resources Control Board, the Department of Toxic Substances Control, and any other entity CARB determines to be appropriate. To date, only water-based and carbon dioxide (CO<sub>2</sub>) cleaning systems meet these criteria and are eligible to be funded through the grant program.

To increase awareness about the availability of this grant program, CARB staff have on a continuing basis engaged in an extensive public outreach effort to California dry cleaners. In addition to meetings with dry cleaning representatives, State and local regulatory agencies, and public health advocates, CARB has released many advisories

and factsheets from its inception in 2004 to mid-2018 to inform dry cleaners of the AB 998 Program opportunities. These outreach efforts include the work performed through the AB 998 grant and demonstration programs, which are described in more detail below.

### Accomplishments of the Grant Program

As a result of CARB's effort in providing the extensive outreach and education as described above to all California dry cleaners, CARB has awarded 151 grants throughout California. This is a significant accomplishment considering the small handful of dry cleaners who used professional wet cleaning systems before the AB 998 Program was adopted. Overcoming the industry's perception of wet cleaning systems' cleaning capabilities and gaining acceptance of a new method for cleaning garments was no small task. Through an extensive education campaign and public outreach efforts, the dry cleaning industry has since changed its perception of professional wet cleaning operations.

#### **B. Demonstration Program**

In addition to the grant program, AB 998 required CARB to establish a demonstration program to showcase clean, non-toxic, and non-smog forming dry cleaning systems statewide. The overall goal of the demonstration program is to educate California dry cleaners about qualifying non-toxic non-smog forming garment care systems by providing hands-on experience, which is essential for the commercial development and deployment of these systems. The demonstration program provides dry cleaners:

- Opportunities to view the systems and operations at these sites.
- Technical assistance and training on the systems.
- Information on the benefits, costs, and overall effectiveness of the systems.

AB 998 also requires the demonstration program to be funded 50 percent through matching funds. Any entity can participate in the program by contributing matching funds; this includes, but is not limited to, a state or federal agency, an air pollution control district or air quality management district, a public utility district, or a non-profit organization.

### Accomplishments of the Demonstration Program

To implement the AB 998 demonstration program, CARB initially contracted with various entities to showcase grant-eligible dry cleaning systems, host workshops, and perform other methods of outreach statewide. These actions are summarized below.

In 2007, CARB contracted with the Institute for Research and Technical Assistance (IRTA) to showcase both water-based and CO<sub>2</sub> dry cleaning systems throughout California. The accomplishments of IRTA's demonstration program include:

- Completion of five workshops, with over 100 dry cleaning facility owners and representatives in attendance.
- Completion of one dry cleaning exposition at the Southern California Edison facility in Irwindale, California.
- Distribution of over 5,000 flyers/brochures to dry cleaners to advertise the events.

In 2007, CARB also contracted with the Pollution Prevention Education and Research Center (PPC) at Occidental College for showcasing water-based and CO<sub>2</sub> dry cleaning systems. The accomplishments of PPC's demonstration program include:

- Completion of 33 workshops, with about 300 dry cleaners in attendance. Surveys conducted as part of the workshop yielded results below:
  - 74 percent of dry cleaners who were surveyed were impressed with the water-based and CO<sub>2</sub> dry cleaning systems after attending a workshop.
  - 80 percent of dry cleaners surveyed expressed an interest in switching to or adding CO<sub>2</sub> and/or water-based cleaning to their existing facility.
  - 41 attendees applied for an AB 998 grant after attending a workshop.
- Creation of a demonstration center for showcasing wet-cleaning technologies at the Customer Technology Application Center (CTAC) located in Irwindale, California.

In 2009, CARB contracted with the University of California, Los Angeles (UCLA) Sustaining Technology Policy Program at the UCLA School of Public Health. The accomplishments of UCLA's demonstration program include:

- Selection of 15 demonstration sites.
- Completion of 33 workshops, with a total of 285 attendees represented 234 dry cleaning establishments. Workshops were spread out geographically with 14 held in the Bay Area, seven held in the Los Angeles region, five held in the Sacramento area, four held in the San Diego area, and three held in areas outside the four metro areas.
- Participation in the California Cleaners Association 2019 Fabricare trade show to showcase wet cleaning technologies in a demonstration booth. Over 52 dry cleaners visited the demonstration booth at the trade show

In 2012, CARB continued its contract with the UCLA Sustaining Technology Policy Program at UCLA School of Public Health. The accomplishments of UCLA's demonstration program include:

- Distribution of 17 workshop notices to cleaners announcing the educational workshops and distributed between 500-800 mailers per workshop held.
- Completion of 16 workshops, with a total of 123 attendees representing 85 different cleaners. Workshops were spread out geographically with six held in the Bay Area, six held in the Los Angeles region, one held in the Sacramento area, and three held in areas outside the three metro areas. All but one workshop was held on Sundays. Sundays were selected since many facilities were closed at that time. As a result, the workshops did not interfere with normal operating days, which made it easier for cleaners to attend.

In 2014, CARB once again contracted with the UCLA Sustaining Technology Policy Program at UCLA School of Public Health to develop a professional wet cleaning guidebook in both English and Korean for the demonstration program. This guidebook provides information on all aspects of wet cleaning including technology and operation of the machines, and is meant to provide valuable information to dry cleaners who are looking to transition to these technologies. The book is available to dry cleaners at the CARB dry cleaning web page:

[https://www.arb.ca.gov/toxics/dryclean/wetcleaning\\_guidebook.pdf](https://www.arb.ca.gov/toxics/dryclean/wetcleaning_guidebook.pdf).

In mid-2015, CARB revised the demonstration program to encourage further participation and to better utilize funds. CARB is now implementing the demonstration program in conjunction with local air districts. Since the revision of the demonstration program, CARB has held 11 demonstration workshops within the South Coast Air Quality Management District (SCAQMD), the Bay Area Air Quality Management District (BAAQMD), and the San Joaquin Air Pollution Control District (SJAPCD), with approximately 150 attendees. CARB has provided additional incentives for dry cleaners who use wet cleaning technologies to become demonstration sites. This change has helped CARB maximize the use of the dry cleaning incentive funds to further outreach within the dry cleaning community for the ultimate goal of replacing Perc dry cleaning machines with cleaner technologies. To date, CARB has added over 90 demonstration facilities to the program.

#### **IV. FEE COLLECTION**

As discussed earlier in this document, funds for the AB 998 Program are generated by assessing a fee on the distributors who sell Perc to California dry cleaners. Since the inception of the AB 998 Program, the collection of these fees was based on voluntary reporting and record keeping. To further ensure that these fees were collected as required, CARB has adopted new requirements for Perc distributors under the 2007 Dry Cleaning ATCM amendments. Under the 2007 Dry Cleaning ATCM amendments, any solvent distributor that sells Perc or recycled Perc to a California dry cleaning facility is

considered a Perc dry cleaning distributor and is required to keep records and report these to CARB. These requirements allow CARB to enforce the fee collection mandates of AB 998 and track annual Perc sales to California dry cleaners. To date, the Program has maintained a near 100 percent compliance rate with the collection of these fees.

## **V. PROGRAM SUCCESS**

The AB 998 Program was established to address the toxic impacts of Perc used as the primary solvent in California dry cleaning operations by providing financial incentives to replace Perc-based machines with cleaner dry cleaning systems. The AB 998 Program has successfully helped dry cleaners replace their Perc solvent machines with cleaner non-toxic and non-smog forming technologies. The Program was able to maintain a consistent source of funds from the collection of fees allocated to the sale of Perc solvent used in dry cleaning. This collection of fees allowed CARB to fund 151 clean non-toxic and non-smog forming dry cleaning machines and replace the same number of toxic Perc cleaning machines. The funds collected for the Program also allowed CARB to fund numerous demonstration sites and educate hundreds of cleaners across California on the benefits of using cleaner dry cleaning technologies and switching to cleaner alternatives. CARB has funded 11 demonstration grants to cleaners who showcased professional wet cleaning technology to other dry cleaners within the State. The demonstration program has, in and of itself, resulted in educating and leading several dry cleaners in transitioning to cleaner dry cleaning technologies. The Program will continue to collect Perc fees and use any available funding until the effective sunset date of January 1, 2023, when all Perc machines in California are required to be replaced.

The success of CARB's implementation of the AB 998 Program can be used as a model for future incentive programs to promote green technology replacement programs for sources of toxic emissions. The grant program has contributed to the expansion of wet cleaning technology. More vendors are offering machines that meet the grant requirements. Lower cost machines are becoming more readily available and our demonstration program has educated hundreds of dry cleaners to the benefits of clean dry cleaning technologies. The grant program has been able to reduce the financial risk involved for dry cleaners to learn the new technology by supplementing some of the cost. The grant program has helped several dry cleaners located in disadvantaged communities convert from Perc to non-toxic, non-smog forming dry cleaning alternatives. The California Environmental Protection Agency's CalEnviroScreen 3.0 identifies disadvantage communities as the top 25 percent most affected census tracts disproportionately burdened by multiple sources of pollution and with population characteristics that make them more vulnerable to environmental pollutants. Many of these sources operate in or near communities that are high-priority disadvantaged communities. Communities neighboring dry cleaners who participated in the grant program will benefit from reduced exposure of Perc emissions. The transition towards wet cleaning technology also contributes towards the implementation of the State's Community Air Protection Program (AB 617, Garcia, C., Chapter 136, Statutes of 2017)

to reduce air toxics exposures in communities most impacted by air pollution. Effective incentive programs such as AB 998 can provide a method for helping communities fund efforts to reduce emissions of harmful air toxics.

Other industries that use airborne toxics face similar issues as those faced by dry cleaners using Perc. The lack of widely accepted technologies hampers the replacement of toxics with cleaner alternatives from a variety of industrial sources, such as decorative and hard chrome plating. Funding programs like AB 998 could help facilities make the necessary process changes to use less toxic or non-toxic technology in order to prove the viability of the technology. For example, certain types of hexavalent chromium plating operations can be replaced with less toxic trivalent chromium technology. Grant programs like AB 998 can be very effective at advancing clean non-toxic technology in those industries where needs exist.

Even though Perc is not completely phased out statewide until 2023, the vast majority of the remaining Perc dry cleaners are set to be phased out by the end of 2020. There will be very few remaining Perc dry cleaners operating in the State between January 2021 and January 2023. Therefore, significant fee collection or grant activity it is not expected to occur beyond 2020. CARB staff is looking forward to the successful completion of the AB 998 Program as well as the application of the lessons learned to any future incentive programs that may follow the AB 998 framework.

**APPENDIX A: AB 998 Legislation**  
**Non-Toxic Dry Cleaning Incentive Program**

**Assembly Bill No. 998**

**CHAPTER 821**

An act to add Article 9.1 (commencing with Section 41998) to Chapter 3 of Part 4 of Division 26 of the Health and Safety Code, relating to air quality.

[Approved by Governor October 10, 2003.  
Filed with Secretary of State October 11, 2003.]

**LEGISLATIVE COUNSEL'S DIGEST**

AB 998, Lowenthal. Air quality: Nontoxic Dry Cleaning Incentive Program.

Existing law designates the State Air Resources Board as the state agency charged with coordinating efforts to attain and maintain ambient air quality standards.

This bill would require the state board to impose a \$3 per gallon fee on every manufacturer of perchloroethylene in the state, and on every person that imports perchloroethylene into the state for use in dry cleaning, and to deposit the revenues generated by that fee in the Nontoxic Dry Cleaning Incentive Trust Fund, which would be established in the State Treasury by the bill. The bill would increase that fee by \$1 each year until 2013, inclusive. The bill would provide that moneys deposited in the fund are available for expenditure by the state board, upon appropriation by the Legislature, to fund a grant program and demonstration program, and would require those programs to be developed by the state board. This bill would require the state board to expend, upon appropriation by the Legislature, moneys sufficient to repay any General Fund moneys expended to implement the programs. The grant program would provide \$10,000 grants to any eligible dry cleaner in the state that utilizes perchloroethylene in its operations to aid its transition to dry cleaning systems determined by the state board, in consultation with certain other entities, to be nontoxic and nonsmog-forming. The bill would require the state board to ensure that 50% of the grant moneys are awarded in a manner that directly reduces air contaminants or reduces the public health risk associated with air contaminants in communities with the most significant exposure to air contaminants or localized contaminants, or both, including communities of minority populations or low-income populations, or both. The bill would require the state board, commencing January 1, 2007, and every 3 years thereafter, to provide a report to the Legislature evaluating the effectiveness of the grant program. The bill would require the demonstration program to be funded 50% by matching funds.

*The people of the State of California do enact as follows:*

SECTION 1. The Legislature finds and declares all of the following:

- (a) State and federal scientific health agencies have determined that perchloroethylene is either a probable, possible, or known carcinogen.
- (b) Occupational health studies have found elevated rates of lung, cervical, bladder, and other cancers in dry cleaning workers.

(c) Laboratory studies have found increased numbers of cancerous tumor in animals exposed to perchloroethylene.

SEC. 2. Article 9.1 (commencing with Section 41998) is added to Chapter 3 of Part 4 of Division 26 of the Health and Safety Code, to read:

#### Article 9.1. Nontoxic Dry Cleaning Incentive Program

41998. (a) (1) The state board shall impose a three dollar (\$3.00) per gallon fee on every manufacturer of perchlorethylene in the state and on every person that imports perchloroethylene into the state for use in dry cleaning.

(2) The amount of the fee imposed pursuant to paragraph (1) shall increase by one dollar (\$1.00) per gallon on January 1, 2005, and shall increase by one dollar (\$1.00) each subsequent year, until January 1, 2013, inclusive.

(b) Moneys generated by the fee imposed pursuant to subdivision (a) shall be deposited in the Nontoxic Dry Cleaning Incentive Trust Fund, which is hereby established in the State Treasury.

(c) Moneys deposited in the Nontoxic Dry Cleaning Incentive Trust Fund are available for expenditure by the state board, upon appropriation by the Legislature, to fund the grant program described in Section 41999 and to fund the demonstration project described in subdivision (f) of Section 41999. The state board shall allocate, from the moneys derived from the imposition of the fee pursuant to this section, moneys that it determines are sufficient to fund the demonstration project described in subdivision (f) of Section 41999, and shall utilize the remaining moneys to fund the grant program.

(d) Not more than 5 percent of the moneys in the fund, calculated annually, may be utilized by the state board to administer the grant and demonstration programs.

(e) The state board shall expend moneys from the fund, upon appropriation by the Legislature, sufficient to repay any General Fund moneys expended to implement the requirements of this article.

41999. (a) The state board shall develop and establish a grant program that provides incentives for dry cleaners in the state that utilize perchloroethylene in their operations to transition to utilizing dry cleaning systems determined by the state board, in consultation with the Office of Environmental Health Hazard Assessment, the State Water Resources Control Board, the Department of Toxic Substances Control, and any other entity the state board determines to be appropriate, to be nontoxic and nonsmog-forming.

(b) To be eligible for a grant pursuant to this section, applicants shall completely replace their perchlorethylene-based dry cleaning system with a system that the state board, in consultation with the Office of Environmental Health Hazard Assessment, the State Water Resources Control Board, the Department of Toxic Substances Control, and any other entity the state board determines to be appropriate, has determined to be nontoxic and nonsmog-forming. The state board shall determine the eligibility of grant recipients.

(c) The state board shall make grants available in the amount of ten thousand dollars (\$10,000) to any eligible dry cleaning operation for the purchase of a professional dry cleaning system that uses a nontoxic and nonsmog-forming process, as determined by the state board, in consultation with the Office of Environmental Health Hazard

Assessment, the State Water Resources Control Board, the Department of Toxic Substances Control, and any other entity the state board determines to be appropriate.

(d) The state board shall ensure that at least 50 percent of the grant moneys provided pursuant to this section are awarded in a manner that directly reduces air contaminants or reduces the public health risk associated with air contaminants in communities with the most significant exposure to air contaminants or localized air contaminants, or both, including, but not limited to, communities of minority populations or low-income populations, or both.

(e) Commencing January 1, 2007, and every three years thereafter, the state board shall provide a report to the Legislature evaluating effectiveness of the grant program.

(f) The state board shall establish a demonstration program to showcase professional nontoxic and nonsmog forming dry cleaning technologies in the state. The demonstration program shall require 50 percent matching funds to cover the costs of the demonstration program. Any entity may contribute monies as matching funds, including, but not limited to, a state or federal agency, an air pollution control district or air quality management district, a public utility district, or a nonprofit entity. Not more than 30 percent of the funds deposited annually in the Nontoxic Dry Cleaning Incentive Trust Fund may be used for the demonstration program.