2011 Annual Report to the Governor and Legislature on the Air Resources Board's Expenditure of Fees on Non-Vehicular Sources, Consumer Products, and Architectural Coatings for Fiscal Year 2010-2011

California Environmental Protection Agency
Air Resources Board

Document Availability

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Introduction

Health and Safety Code (HSC) sections 39612 and 39613 authorize the Air Resources Board (ARB) to assess permit fees on non-vehicular sources and fees on consumer products and architectural coatings in order to recover the costs of ARB programs related to these sources. In the fiscal year (FY) 2010-2011 budget, the Legislature authorized the ARB to collect $20 million in fees from non-vehicular sources (i.e., facilities subject to air district permits) and the manufacturers of consumer products and architectural coatings. The facilities subject to the non-vehicular fees are those authorized by an air district to emit 250 tons or more per year of an air pollutant that forms ozone or particulate matter. The fees for consumer products and architectural coatings apply to manufacturers with total sales in California that result in emissions of 250 tons per year or more of volatile organic compounds.

As required by HSC section 39612(g), this report to the Governor and the Legislature provides information on the expenditure of the fees collected in FY 2010-2011 and a report on the implementation of programs funded pursuant to HSC sections 39612 and 39613. These programs are necessary to fulfill ARB's responsibilities as California's designated air pollution control agency for all purposes set forth in federal law, as specified in HSC section 39602, and to carry out activities necessary to implement the California Clean Air Act of 1988 and as amended.

Fiscal Year 2010-2011 Expenditures

The total fee expenditures for five major program activities for FY 2010-2011 are shown in Table 1 below. Following Table 1 are descriptions of the specific activities that were funded by the fees.

Table 1
Expenditure of Fees for Fiscal Year 2010-2011

Activity	Expenditure
Rule Development and Implementation	$6,636,000
Air Monitoring and Laboratory Analysis	$4,349,000
Enforcement	$2,289,000
Research	$2,369,000
Air Quality Planning & Emission Inventories	$4,357,000
Total Expenditures	$20,000,000

Major Activities Funded by the Fees

Rule Development and Implementation

Consumer Products and Architectural Coatings

In FY 2010-2011, ARB staff held several Consumer Products Workgroup meetings to discuss staff's proposals for amendments to the Consumer Products Regulation and prepared rulemaking documents. In November 2010, the Board considered and approved staff's proposal for new or lower volatile organic compounds (VOC) limits for 11 product categories. When fully effective, the amendments will reduce VOC emissions by about 7 tons per day. ARB staff posted a 15-day notice of modified regulatory text and documents in July 2011. The Final Statement of Reasons (FSOR) for this rulemaking was being developed in early 2011; it was filed with the Office of Administrative Law in September 2011. The documents pertaining to this rulemaking effort are available at http://www.arb.ca.gov/regact/2010/cp2010/cp2010.htm.

An FSOR for a 2009 rulemaking was prepared and filed with the Office of Administrative Law in August 2010. The amendments became legally effective in October 2010; when fully effective, VOC emissions will be reduced by almost fifteen tons per day. The FSOR and other documents pertaining to this rulemaking effort are available at http://www.arb.ca.gov/regact/2009/cpmthd310/cpmthd310.htm. In January 2011, staff submitted these amendments to the United States Environmental Protection Agency (U.S. EPA) as a revision to the California State Implementation Plan.

In the previous FY, the Tables of Maximum Incremental Reactivity Values were amended. The FSOR for these amendments was prepared and filed with the Office of Administrative Law in July 2010. The amendments became legally effective in October 2010. The FSOR and documents pertaining to this rulemaking effort are available at http://www.arb.ca.gov/regact/2009/mir2009/mir2009.htm.

Many consumer products implementation activities are ongoing. For example staff reviewed and evaluated requests and applications for product determinations, charcoal lighter material certifications, alternative control plans and annual reports, and innovative product exemptions. Staff responded to numerous inquiries from manufacturers, consultants, product certification/labeling programs and other regulatory agencies (including federal, local, other states and Canadian and Chinese air quality management/air pollution control agencies).

ARB staff assisted the air districts in developing rules to implement the 2007 architectural coatings Suggested Control Measure (SCM), which included rule language development, emission reduction calculations, participation in public workshops, review of staff reports, responding to comments, providing letters of support, and providing public testimony.

Staff undertook a technology assessment prior to the 2007 SCM VOC limits for sixteen product categories coming into effect and conducted the annual reporting required by the 2000 SCM-based architectural coating rules. Staff also responded to inquiries and conducted product determinations and rule interpretations.

Air Monitoring and Laboratory Analysis

Consumer Products and Architectural Coatings

ARB staff conducted laboratory analyses of products submitted for determination of compliance with applicable VOC and reactivity limits. When appropriate, test results were used to support follow up enforcement efforts. In response to several external inquiries/requests, laboratory staff conducted special studies involving: (1) evaluation of solvents with respect to low vapor pressure VOC criteria; (2) analysis of hydrocarbon solvents to determine the most appropriate analytical method to identify and determine their product-weighted maximum incremental reactivity values; (3) evaluation of Method 310 applicability for analysis of several new and proposed categories of consumer products; (4) analytical method development for new and proposed categories, including analytical procedures to measure the aromatic compound content in paint thinners and multi-purpose solvents and the VOC content of fabric softener dryer sheets; and (5) analytical method development for lower standards of existing categories, including an analytical procedure to measure VOC content in products with high water content.

Non-vehicular Sources

Activities include measuring ambient air levels of gaseous and particulate criteria air pollutants from samples collected from the State's air monitoring network. These efforts are used in measuring progress towards attainment of the State and federal ambient air quality standards in various parts of the State.

Enforcement

Consumer Products and Architectural Coatings

During FY 2010-2011, ARB staff collected 2,574 samples of household and institutional consumer products during inspections conducted statewide at a variety of retail stores, commercial businesses and internet sites. Sample selections focused on air fresheners, hair styling products, lubricants, footwear and leather care products, and imported products. After an initial evaluation to determine compliance with the administrative requirements of the consumer product regulations, the samples were submitted for laboratory analysis to determine compliance with applicable VOC and reactivity limits.

The laboratory results for approximately 791 samples indicated that the products may have exceeded the VOC limits. Investigations were conducted to determine if a violation had occurred, identify the parties involved, and determine the magnitude of the violations. Other violations for failure to display the date of manufacture, submit

requested reports, or obtain certification were pursued. As a result of these investigations, ARB issued 55 notices of violation during the fiscal year. After conducting office conferences, ARB staff worked to resolve the enforcement cases through administrative or civil actions. During the fiscal year, staff settled 35 cases. The $957,555 in penalties collected helped to mitigate more than 75 tons of excess emissions resulting from these violations.

Staff also implemented Senate Bill 1402 (Dutton, Chapter 413, Statutes of 2010), which required ARB to provide air pollution violators with written information on how ARB determines their penalties. The bill required ARB to adopt a written penalty policy which is available at: http://www.arb.ca.gov/enf/sb1402/sb1402.htm.

Non-vehicular Sources

ARB's enforcement programs and activities include conducting inspections of stationary sources, investigating complaints, issuing notices of violations, evaluating district variances for compliance with regulatory requirements, obtaining and analyzing evidence to determine the date of onset, cause, and extent of violation of air pollution regulations, and reviewing district rules for enforceability. Some key programs and activities are described below.

- **Stationary Source Investigations, Inspections, and Surveillance:** Conducting joint investigations of cross media environmental cases, and providing enforcement assistance to local air districts and other local and regional environmental agencies**.**
- **Indoor Air Cleaning Device Program:** Enforcing requirements to limit the ozone emitted from indoor air cleaning devices from ozone-generating devices and air cleaning devices with electrostatic precipitators.
- **Complaint Investigations and Hotline:** Responding to air pollution complaints, conducting investigations, and referring them to other agencies when appropriate.
- **Variance Program:** Reviewing all district hearing board orders for compliance with HSC requirements.
- **Air Facility System:** Collecting and conducting quality assurance on data received from 26 of the 35 air districts for federally required compliance, permitting, and violation status of major sources.
- **Continuous Emissions Monitoring Program:** Gathering and analyzing data from emission monitoring devices required by air districts at stationary sources.
- **Rule Review:** Reviewing air district rules for enforceability, compliance with State laws, clarity, and accuracy.
- **Fuels Enforcement:** Conducting random inspections of fuel facilities, including refineries, distribution terminals, import vessels, and retail outlets, by obtaining samples of motor vehicle fuel to evaluate compliance with the motor vehicle fuel regulations.
- **Goods Movement Enforcement Programs**: Inspecting cargo handling equipment, ocean-going vessels, harbor craft, and locomotives in California's ports and rail yards for compliance with the State's Goods Movement regulations.

- **Enforcement Training:** Conducting and administering comprehensive educational courses in stationary source enforcement throughout the State on air pollution history; procedures required to properly evaluate emissions; analysis of industrial processes; theory and application of emission controls; and waste stream reduction.
- **Compliance Assistance**: Developing a variety of practical, rule-specific publications that describe source processes and emission control equipment, clarify rule requirements, identify compliance issues, and promote self-regulation.

Research

Consumer Products and Architectural Coatings

ARB staff managed several research contracts and was involved in a number of projects or activities, some of which originated in previous fiscal years, which are listed below.

- One contract resulted from participation in a multi-year industry-agency project conducted by University of California (U.C.), Riverside entitled "Paint and Coatings Environmental Study" to investigate the overall environmental impact of coatings.
- The University of Texas submitted a final report, "Development of an Updated Base Case Ambient VOC Mixture for Assessing Atmospheric Reactivity" in May 2011. This project updated the base VOC mixture using current ambient VOC data, thereby improving air pollution modeling accuracy. The final report can be viewed at: http://www.arb.ca.gov/research/apr/past/08-327.pdf
- A U.C. Riverside project on secondary organic aerosol (SOA) formation from VOCs, "SOA Formation: Chamber Study and Model Development," is adapting the SAPRC-07 mechanism to model for formation of particulate matter, including experiments in the U.C. Riverside environmental chamber. The final report can be viewed at: http://www.arb.ca.gov/research/apr/past/08-326.pdf
- Cal Poly San Luis Obispo performed comparative testing of low-VOC and high-VOC stain-blocking primers to confirm the technical feasibility of a VOC limit for specialty primers, sealers, and undercoaters that is effective in 2012. Staff provided information to districts that draft results indicated the limit to be feasible and advised them not to delay implementation of standards. The final report on "Low-VOC, Stain Blocking Specialty Primer Coatings" can be viewed at: http://www.arb.ca.gov/coatings/arch/ongoingresearch.htm

Non-vehicular Sources

Activities undertaken to address air pollution from non-vehicular sources include investigating the reactivity of VOCs and the atmospheric processes that contribute to ozone and particulate matter formation, conducting vulnerable populations and children's exposure and health studies, and research to support future updating of ambient air quality standards.

Air Quality Planning and Emissions Inventory Improvement

Consumer Products and Architectural Coatings

ARB staff conducted the 2010 Aerosol Coatings and Aerosol Adhesives Product Survey (2010 Survey). The 2010 Survey is part of the ARB's effort to evaluate the feasibility of further reducing the reactivity-based VOC emissions for consumer products and update our emissions inventory for more than 80 product categories. Over 180 companies responded, providing sales and VOC content information for over 4,000 products. Staff released preliminary data summaries for the 2010 Survey in September 2011. Staff continued to evaluate manufacturers' requests for revisions to their VOC emissions estimates which are used to assess fees authorized by Assembly Bill (AB) X1 10 (Oropeza, Chapter 1, Statutes of 2003, First Extraordinary Session). Staff also developed a suite of updated species profiles for more than a hundred consumer products categories to update the consumer products inventory for State Implementation Plan (SIP) modeling and planning purposes.

Non-vehicular Sources

Activities necessary for air quality attainment planning include developing, maintaining and updating emission inventories; evaluating air quality trends and indicators; and conducting sophisticated air quality modeling. These activities are necessary for development and implementation of air quality plans for ozone and particulate matter. Several planning related activities are identified as priorities under HSC section 39612(c). Among these priorities, the major focus in FY 2010-2011 was updating the emission inventories for emissions that cause or contribute to the nonattainment of federal ambient air quality standards.

Status of Program Activities

The following sections discuss the status of activities related to five specific areas outlined in HSC section 39612.

Updating the Emissions Inventories

ARB compiles, maintains, and is constantly working to improve a very detailed and complex inventory of air pollution sources. Emission inventories form the basis for air quality planning and regulatory development processes. It is also an important ARB research category. ARB routinely publishes the inventory for all California air basins. In FY 2010-2011, some of the major activities ARB completed related to emissions inventories include the following:

Preparation of Particulate Matter (PM) 2.5 Emission Inventories: ARB and the local air districts continued working on the development of SIP for attainment of the federal PM 2.5 air quality standard. ARB staff is leading the preparation of the emissions inventory that will be used in the air quality

modeling to demonstrate attainment of the standard. One of the most important components of this effort has been the updating of growth assumptions to reflect the recent economic downturn and its effect on the expected emission trends in the near and long term. Other ongoing efforts to improve the emissions inventory include continuous refinements of ARB's methodologies for estimating area source emissions; improvements to size and speciation profiles; and regular review and updating of rule-specific control profiles as rules are adopted and/or amended.

Training for District Staff: ARB provides training and guidance for district emission inventory staff. In FY 2010-2011, training consisted of one-on-one sessions between ARB's emission inventory staff and district staff for implementation of the California Emission Inventory Data and Reporting System (CEIDARS). Use of CEIDARS allows districts to directly transfer emissions from sources in their district to ARB. ARB's emission forecasting team provided on-going instruction and guidance to district staff to support their local SIP elements. In addition, ARB hosted periodic Emission Inventory Technical Advisory Committee meetings and workshops to keep districts informed on its emission inventory program.

Web Accessibility: ARB maintains web-based tools that give districts direct access to their emission inventory data. These tools are augmented and enhanced on a continual basis. Extensive emission inventory reference and documentation is available on-line (www.arb.ca.gov/ei/ei.htm) for those who are creating and/or using emission inventories. These web tools allow districts and the general public to obtain and review emission inventory data in a number of ways.

Identifying, Assessing, and Mitigating the Transport of Air Pollutants

ARB assesses the contribution of ozone and ozone precursors from upwind regions on ozone concentrations in downwind regions. To address this ozone transport, ARB (1) identifies district transport couples, (2) assesses the relative contribution of upwind emissions on downwind ozone concentrations, and (3) establishes mitigation requirements commensurate with the level of contribution. In 2010, ARB summarized transport couple impacts as part of required Weight of Evidence Assessments for federal air quality standards.

ARB uses air quality models to account for transport in the development of air quality plans. Beginning in the late 1990's with the Southern California Ozone Study (SCOS) and followed in the early 2000's by the Central California Ozone Study (CCOS) programs, the State was split into two modeling domains, one for Southern California and one for Northern and Central California. Transport relationships between air districts within these large domains are implicitly captured within photochemical models. This is the mechanism ARB uses in its oversight role to ensure transport impacts on downwind areas are addressed for purposes of both State and federal air quality standards. Modeling attainment demonstrations take into account the shared responsibility for reducing emissions in regions where air pollution transport can at times

be significant. ARB reviews air quality data every three years and proposes changes to the transport mitigation regulation when warranted by the data.

ARB's transport mitigation regulation established mitigation requirements for upwind areas found to have either overwhelming or significant impacts on downwind areas. The mitigation requirements include application of best available retrofit control technology and requirements that upwind districts adopt all feasible measures for the ozone-forming pollutants, independent of the upwind district's attainment status. In addition, they include a requirement that "no net increase" thresholds for new source review permitting programs in upwind areas be as stringent as those in downwind districts.

Local air districts must frequently update local control strategies to comply with the air quality planning requirements. ARB staff works closely with local air district staff as they develop the required local source control strategies. A key element of ARB's assistance is to ensure that local air districts comply with the requirements for mitigation of transported air pollution. ARB's contribution to that effort (although not funded through these fees) is the development of new mobile source control strategies.

Identifying Indicators to Assess Air Quality Progress

HSC section 39607(f) requires that ARB, in consultation with air districts, evaluate air quality indicators that can be used to measure progress towards attainment of State air quality standards.

To that end, ARB has developed four air quality indicators for districts to use in assessing progress toward State and federal standards, which are: (1) expected peak day concentration, (2) population-weighted exposure, (3) area-weighted exposure, and (4) air quality contour maps designed to assess spatial ozone air quality progress within an air basin or nonattainment area. Districts have used these indicators in assessing progress in their State ozone plan updates. Every three years, ARB provides technical assistance and data to districts so they can use the indicators to assess progress toward attainment of the State's 1-hour peak, and 8-hour average ozone standards. In 2010 ARB provided data and technical assistance for 8-hour ozone indicators to districts for use in plan updates.

The air quality contour maps have been used to evaluate how air quality has changed spatially in an area over time. Various reports and documents rely on them to help the public better understand progress made towards attainment of State and federal air quality standards.

ARB provides the public with easy access to air quality data and indicators through numerous web pages. Air quality data as well as emission projections into the future for various source categories can be viewed at http://www.arb.ca.gov/adam/. A real-time air quality database is also available, which is an important tool that allows the public and districts to continually track and measure progress. Real-time air quality data are available at http://www.arb.ca.gov/aqmis2/aqmis2.php.

Methodology for Assessing Population Exposure

As required, ARB established a uniform method for districts to assess population exposure to air pollution at levels above ambient air quality standards. ARB provides information and assistance for assessing exposure for use in ozone attainment plans on an ongoing basis.

Ranking Control Measures for Stationary Sources

Since enactment of the California Clean Air Act in 1988, ARB has implemented a number of programs that have generated stationary source control measures for direct administration by ARB or for adoption and implementation by local air districts. All of these programs have assessed and incorporated metrics of cost-effectiveness in selecting appropriate levels of emission control. Such programs and studies include:

Identification of Performance Standards for Existing Stationary Sources: A Resource Document. This document was developed in direct response to requirements of the California Clean Air Act. The document identifies source categories and the most stringent performance standards adopted by districts. Information is continually updated upon review by ARB of newly adopted district prohibitory rules. The document is available at http://www.arb.ca.gov/ssps/ssps.htm.

ARB and Air District Measures to Reduce Particulate Matter Emissions: Information on the most restrictive particulate matter emission reduction regulations adopted by ARB and districts for a spectrum of stationary, area, and mobile source categories is available at http://www.arb.ca.gov/pm/pmmeasures/pmmeasures.htm.

Statewide Best Available Control Technology (BACT) Clearinghouse: ARB and the California Air Pollution Control Officers Association maintain a database of BACT decisions for use in the permitting of new stationary sources. These control equipment and emission limit specifications serve as the basis for identifying new stationary source regulations to be considered by districts when air quality plans are upgraded to meet new more stringent State air quality standards. This database is available at http://www.arb.ca.gov/bact/bact.htm.

Reasonably Available Control Technology (RACT)/Best Available Retrofit Control Technology (BARCT) Databases: A provision of the California Clean Air Act requires districts to adopt RACT and BARCT rules to reduce emissions from existing stationary sources when districts are nonattainment for State air quality standards. These requirements are periodically updated through the collaborative efforts of ARB and districts using cost-effectiveness and emission reduction analyses of current emission control technologies. Information is available at http://www.arb.ca.gov/ractbarc/ractbarc.htm.

Additional Activities

Consumer Products and Green Chemistry

As part of ARB's participation in the Leadership Council for the California Green Chemistry Initiative, staff continued to provide input on proposals released by the Department of Toxic Substances Control for its work on Safer Consumer Products Alternatives regulations. In September 2010, the department initiated the formal rulemaking process when it released proposed regulations for a 45-day public comment period. In November 2010, the department released revised proposed regulations for a 15-Day public notice and comment period. However, the department decided to take additional time to respond to concerns raised and revisit the proposed regulations. Staff continued to participate in workshops conducted by the department and the Green Ribbon Science Panel in 2011. Information on the department's Green Chemistry activities is available at: http://www.dtsc.ca.gov/PollutionPrevention/GreenChemistryInitiative/index.cfm.

VOC Exemption Assessments

Staff developed exposure scenarios and modeling analyses to determine if adverse exposures could result if Dimethyl Carbonate (DMC) were to be excluded from the definition of VOC. The scenarios included use of DMC in architectural coatings, automotive maintenance and repair products (i.e., brake cleaners), and paint thinners. The architectural coatings exposure assessments were conducted to assist districts with their VOC exemption evaluation. Paint thinner and brake cleaner exposure assessments are part of staff's evaluation as to whether DMC should be excluded from the VOC definition in the Consumer Products Regulation.

Staff authored an article, entitled "Comprehensive environmental impact assessment of exempt volatile organic compounds in California." It was published in the journal "Environmental Science & Policy" in 2011. Additionally, staff completed a journal article "VOC Source Reactivity Analysis" and submitted it to "Atmospheric Environment" for publication.

History of the Fee Program

The Legislature enacted HSC section 39612 as part of the California Clean Air Act of 1988. The act requires attainment of State ambient air quality standards by the earliest practicable date. As part of that mandate, the act also requires ARB and the air pollution control and air quality management districts (districts) to take various actions to reduce air pollution from motor vehicles, industrial facilities, and other sources of emissions.

As originally enacted, HSC section 39612 authorized the ARB to assess fees on nonvehicular sources (i.e., facilities) that were allowed by district permits to emit 500

tons or more per year of any nonattainment pollutant or its precursors. In 1989, the Board approved the California Clean Air Act Nonvehicular Source Fee Regulation (Fee Regulation). The original regulation included the fee rate and amounts to be remitted to ARB by the districts for the first year of the program, fiscal year 1989-90. In subsequent years, the Board approved amendments to the Fee Regulation identifying the amount of fees to be collected by each district for the following fiscal year. To streamline the process, in 1998 the Board approved amendments that established a process whereby the ARB Executive Officer assesses the fees administratively.

In 2003, the Legislature enacted ABX1 10, which amended HSC section 39612 and added HSC section 39613. ABX1 10 made a number of changes to HSC section 39612, including: (1) increasing the cap on stationary source fees from $3 million to $13 million for FY 2003-2004**,** and allowing the fees to be adjusted annually thereafter for inflation; (2) expanding the universe of facilities subject to the fees by specifying that the fees are to be collected from facilities authorized by district permits to emit 250 tons (instead of the previous 500 tons) or more per year of any nonattainment pollutant or its precursors; and (3) authorizing ARB to collect the fees directly from all sources subject to the fees. In addition, new HSC section 39613 required ARB for the first time to assess fees on manufacturers of consumer products and architectural coatings sold in California. The fees are assessed on those manufacturers whose total sales of consumer products or architectural coatings will result in the emission in California of 250 tons or more per year of VOC. ARB must use these fees solely to mitigate or reduce air pollution in the State created by consumer products and architectural coatings. In July 2003, the Board approved a regulation to collect the fees authorized by ABX1 10. The full text version of the regulation can be found on ARB's website at http://www.arb.ca.gov/regact/feereg03/feereg03.htm.

For FY 2003-2004, the Legislature authorized ARB to collect $17.4 million in fees from facilities and consumer product and architectural coating manufacturers**.** In 2004, the Legislature authorized ARB to assess an additional $2.6 million in fees for a total of $20 million for FY 2004-2005. In November 2004, the Board approved amendments to the Fee Regulation to establish a procedure to collect the additional $2.6 million for FY 2004-2005 from facilities. The amendments also provided for collection from facilities of any legislatively-approved fees in fiscal years beyond 2004-2005 that are in excess of $17.4 million. In each subsequent year, this limitation can be increased by an amount not to exceed the annual percentage change in the California Consumer Index as compiled and reported by the Department of Industrial Relations. The full text of the revised regulation can be found on the ARB's website at http://www.arb.ca.gov/regact/feereg04/feereg04.htm.

HSC section 39612(g) requires the Board to report to the Governor and the Legislature on the expenditure of permit fees collected pursuant to this section and HSC section 39613. The report is to include a status of the programs prioritized for funding. ARB staff annually prepares a report to fulfill this mandate. Previous reports are available at: http://www.arb.ca.gov/mandrpts/mandrpts.htm.