

Toxic Air Contaminant Control Program
ANNUAL REPORT
2013



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

May 2013

TABLE OF CONTENTS

Executive Summary	1
Introduction	4
Air Toxics New Source Review	5
Air Toxics Hot Spots Program	7
Control Measures for Categories of Sources	11
Air Toxics Emissions Inventory	13
Air Toxics Ambient Monitoring Network	14
Community Air Risk Evaluation (CARE) Program	15

EXECUTIVE SUMMARY

For twenty-six years, the Bay Area Air Quality Management District (BAAQMD or District) has implemented programs that are designed to identify and reduce the public's exposure to toxic air contaminants (TACs). TACs are air pollutants which may cause or contribute to an increase in mortality, or in serious illness, or which may pose a potential hazard to human health. In 1987, the Board of Directors adopted Resolution No. 1775, to implement a Toxics Control Program. In 1990, the Board of Directors adopted Resolution No. 1986, to amend the program to include publishing an annual report that updates the TAC Inventory, AB2588 risk assessments, the TAC monitoring program and TAC control measures and plans.

This Toxic Air Contaminant Control Program Annual Report is published to meet the requirements of the Board-adopted Toxics Control Program and the annual reporting requirements of the California Health and Safety Code Section 44363. The report provides the public with information regarding the BAAQMD's programs to reduce ambient concentrations of TACs. The report summarizes the status of the BAAQMD programs that are used to identify and control ambient levels of TACs from stationary sources and contains summaries of the most recent TAC emissions inventory and ambient monitoring network.

Major Toxics Programs: The BAAQMD's Air Toxics Program is primarily directed at reducing TAC emissions from stationary sources. The Air Toxics Program has three main elements that integrate federal and state mandates and local goals: 1) preconstruction review of new and modified sources of TAC emissions (the Air Toxics New Source Review Program), 2) assessment and reduction of health risks from existing facilities (the Air Toxics "Hot Spots" program), and 3) air pollution control measures for specific categories of TAC sources: BAAQMD Regulation 11, Airborne Toxic Control Measures (ATCMs) that are adopted by the California Air Resources Board, and National Emission Standards for Hazardous Air Pollutants (NESHAPs) that are adopted by United States Environmental Protection Agency (U.S. EPA). In addition, in 2004 the BAAQMD initiated the Community Air Risk Evaluation (CARE) program to assess and address risk in communities with disproportionate air quality impacts.

- **Air Toxics New Source Review:** The goal of the Air Toxics New Source Review (NSR) Program is to prevent significant increases in health risks resulting from new and modified sources of TACs through preconstruction permit review. Only projects that have cancer risk impacts less than or equal to 10.0 in one million, and non-cancer hazard indices less than or equal to 1.0 may be permitted. Additionally, if any single new or modified source has a cancer risk impact greater than 1.0 in a million or a chronic hazard index greater than 0.20, that source is required to use the Best Available Control Technology for Toxics (TBACT). The Air Toxics NSR Program was originally implemented in 1987, pursuant to the Risk Management Policy (RMP) established at the request of the BAAQMD's Board of Directors. The BAAQMD has replaced the RMP with Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants, which was adopted by the BAAQMD Board of Directors on June 15, 2005 and amended on January 6, 2010. The majority of health risk screening analyses for permits are for installation of new standby emergency diesel engines, but include new power generating plants, petroleum refineries, and gasoline stations.

- **Air Toxics Hot Spots Program:** Under the Air Toxics Hot Spots (ATHS, AB2588) Program, health risks due to routine or predictable TAC emissions from existing industrial and commercial facilities are evaluated. The BAAQMD has established specific public notification measures for various levels of risk identified under the program. In 1991, the first year of the risk assessment phase of the program, 30 facilities were identified with Level 1 health risks that triggered public notification requirements. A Level 1 health risk is a facility cancer risk greater than 10 in a million, but less than 100 in a million, or a non-cancer hazard index greater than 1, but less than 10. The number of facilities requiring public notification had steadily decreased over the first decade of the program as industries reduced toxic emissions and refined estimates of risk. Pacific Steel Casting Company of Berkeley is currently the only Bay Area facility identified as subject to the public notification process. In addition to public notification requirements, the ATHS Program requires facilities to reduce their health risks below levels determined by the air district to be significant within a certain timeframe. The BAAQMD requires mandatory risk reduction measures for those facilities with health risks of Level 2 or greater. A Level 2 health risk is a facility cancer risk of 100 in a million or greater, but less than 500 in a million. There are currently no facilities in the Bay Area that have risks identified as Level 2 or greater.
- **Control Measures for Categories of Sources:** The California Air Resources Board (CARB) has adopted eighteen Airborne Toxic Control Measures (ATCMs) for stationary sources, which the BAAQMD implements in the Bay Area. More recent ATCM activity includes amendments to ATCMs for perchloroethylene dry cleaners, stationary diesel engines and portable diesel engines.

National Emission Standards for Hazardous Air Pollutants (NESHAPs), developed by U.S. EPA in accordance with Title III of the 1990 federal Clean Air Act Amendments, are also considered Airborne Toxics Control Measures in California. These rules generally focus on larger “major source” facilities, and require that emissions be reduced using the Maximum Achievable Control Technology (MACT). The focus of recent NESHAP development has shifted to rules that apply to smaller “area source” facilities. Under State law, the BAAQMD must implement and enforce all MACT Standards, or rules that are at least as stringent.

The BAAQMD has adopted a number of local toxic regulations (see Regulation 11 and Regulation 9, Rule 13) to complement the state and federal toxic rules. For example, the District adopted a local dry cleaning rule (Regulation 11, Rule 16) to address concerns about high cancer risk from dry cleaners that operate in apartment buildings (co-residential facilities) in 1994. In addition, in September 2012, the District adopted Regulation 9, Rule 13, Nitrogen Oxides, Particulate Matter, and Toxic Air Contaminants from Portland Cement Manufacturing.

- **Air Toxics Emissions Inventory:** The air toxics emissions inventory is a database that contains information concerning emissions of TACs from permitted stationary sources in the Bay Area. The inventory includes routine or predictable releases, and is not intended to describe the potential for acute hazards from accidental releases. Information submitted by industry is reviewed for accuracy by BAAQMD staff prior to inclusion in the inventory.

This inventory, and a similar inventory for mobile and area sources compiled by CARB, is used to plan strategies to reduce public exposure to TACs.

- **Ambient Monitoring Network:** The toxic air monitoring network is operated by the BAAQMD, collecting samples over 24-hour periods, generally on a 12-day sampling frequency; however, several sites use a 6-day sampling frequency. The District's air monitoring network began in 1986 with six sites, and has gradually been expanded to its present size of 30 sites. Currently 18 sites are used to collect toxic samples. One of the air monitoring stations is portable and has been temporarily located in Cupertino near Lehigh Southwest Cement Company in order to help assess the impact from this facility on the surrounding area. The California Air Resources Board (CARB) has collocated samplers at three BAAQMD sites to help determine precision and accuracy of the program. A summary of the ambient toxics monitoring network data for 2010, including the results of the CARB samplers, is available at:

<http://www.baaqmd.gov/Divisions/Engineering/Air-Toxics/Toxic-Air-Contaminant-Control-Program-Annual-Report.aspx>

More recent data from the BAAQMD's air toxics monitoring network will soon be available on the District website.

- **Community Air Risk Evaluation (CARE):** The Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor toxic air contaminants (TACs) in the Bay Area. The program modeled TAC emissions from stationary point and area sources, and on-road and off-road mobile sources, to identify areas where vulnerable population would be exposed. The program then assisted in developing appropriate mitigation strategies for these areas.

INTRODUCTION

Since 1987, the Bay Area Air Quality Management District has had a Toxics Control Program to describe, control, and where possible, eliminate public exposure to airborne toxic compounds. In 1990, the Board of Directors adopted Resolution No. 1986, to amend the program to include publishing an annual report that updates the TAC Inventory, AB2588 risk assessments, the TAC monitoring program, and TAC control measures and plans. This Toxic Air Contaminant Control Program Annual Report is published to meet the requirements of the Board-adopted Toxics Control Program and the annual reporting requirements of the California Health and Safety Code Section 44363.

The air toxics program is distinct from the BAAQMD's efforts to control ambient levels of the "criteria pollutants" (e.g., carbon monoxide, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide). The State and federal government have set health-based ambient air quality standards for criteria pollutants. The air toxics program was established as a separate and complementary program designed to evaluate and reduce adverse health effects resulting from exposure to toxic air contaminants (TACs).

The BAAQMD works to understand and to minimize both locally-elevated concentrations (i.e., "Hot Spots") and ambient background concentrations of TACs. Major elements of the BAAQMD's air toxics program are:

- **Preconstruction review of new and modified sources** for potential health impacts, and the requirement for new/modified sources with TAC emissions, greater than de minimus levels, to use Best Available Control Technology for Toxics (Air Toxics New Source Review).
- **The Air Toxics Hot Spots Program**, designed to identify industrial and commercial facilities that may result in locally-elevated ambient concentrations of toxic air contaminants, to report toxic emissions to the affected public, to analyze health risks, and to reduce significant health risks.
- **Control measures** designed to reduce emissions from source categories of TACs, including rules originating from the State Toxic Air Contaminant Control Act and the federal Clean Air Act.
- **The toxic air contaminant emissions inventory**, a database that contains information concerning routine and predictable emissions of TACs from permitted stationary sources.
- **Ambient monitoring** of toxic air contaminant concentrations at a number of sites throughout the Bay Area.
- **The Community Air Risk Evaluation (CARE) Program** began in 2004 and involves investigation of toxic emissions (e.g., diesel particulate) from stationary, mobile and area sources to determine impact at a community level, and development and implementation of toxic control measures for communities identified as having significant impacts.

This report (Volume I) describes elements of the BAAQMD's air toxics program and discusses changes that have occurred. The BAAQMD's 2011 annual air toxics emissions inventory and data from the BAAQMD's air toxics monitoring network collected in 2010 are provided in separate tables (Volume II). . More recent data from the BAAQMD's air toxics monitoring network will soon be available on the District website.

AIR TOXICS NEW SOURCE REVIEW

On June 15, 2005, the BAAQMD adopted Regulation 2, Rule 5 New Source Review of Toxic Air Contaminants. This Toxic NSR rule superseded the BAAQMD's Risk Management Policy, which had been in effect since 1987. The new Toxic NSR rule updated and enhanced program requirements primarily to increase conformity with updated State guidelines. BAAQMD engineers evaluate permit applications for new and modified stationary sources of toxic air contaminants to ensure that the health risks are acceptable. In addition, net health risk benefits are realized when older, more highly polluting, sources are replaced or modified and must meet more stringent control requirements (TBACT).

Regulation 2, Rule 5 changed the Air Toxics NSR Program by:

- (1) adding a project risk limit for acute health risks (Hazard Index (HI) = 1.0);
- (2) requiring TBACT for chronic non-cancer health risks (at HI > 0.20);
- (3) using updated toxicity values and exposure assessment procedures (primarily from the Air Toxic Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments [Office of Environmental Health Hazard Assessment (OEHHA), August 2003]);
- (4) removing "special" project cancer risk limits for perchloroethylene dry cleaners; and
- (5) eliminating discretionary risk authority for the APCO; all new projects are now limited to cancer risk of 10 in a million and non-cancer Hazard Index of 1.0.

Regulation 2, Rule 5 was later amended on January 6, 2010, primarily to update the rule with revised risk assessment procedures. The revisions included:

- (1) new and revised health effect values that were adopted by OEHHA as of June 1, 2009 (a new cancer potency factor for ethyl benzene, chronic Reference Exposure Levels (RELs) for crystalline silica and sulfur trioxide, an acute REL for acetaldehyde, and revised RELs for acetaldehyde, acrolein, arsenic, formaldehyde, manganese, and mercury; several obsolete health effect values were deleted;
- (2) new Age Sensitivity Factors (ASFs) that were adopted by OEHHA on June 1, 2009 and used to estimate cancer risk for children and residential receptors [Age Sensitivity Factors were developed to account for inherent increased susceptibility to carcinogens during infancy and childhood. ASFs are used to estimate cancer risk as follows: (1) a factor of 10 for exposures that occur from the third trimester of pregnancy to 2 years of age, and (2) a factor of 3 for exposures that occur from 2 years through 15 years of age. When considering typical exposure parameters and these ASFs, lifetime residential cancer risk is increased by a factor of 1.7.]

The staff report for the amendments to Regulation 2-5 may be viewed at:

http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Public%20Hearings/2009/0205_RFC_102109/0205_stfcomplete_121109.ashx?la=en

The requirements of Air Toxics New Source Review for a proposed project are based on the results of a Health Risk Screening Analysis (HRSA), an assessment that describes the possible adverse health effects which may result from public exposure to routine emissions of toxic air contaminants. HRSAs do not address adverse health effects that may result from accidental releases of toxic compounds. In California, review of industry's preparation for, and protection from, accidental releases is performed by Certified Unified Program Agencies or Administering Agencies (primarily at the county level).

Toxic emissions are estimated for all sources within a proposed project; if these emissions exceed the trigger levels of Table 2-5-1, a Health Risk Screening Analysis (HRSA) is required to determine risk from each source and total risk for the project (all sources in a permit application plus related sources). BAAQMD staff completes an HRSA using computer-modeled estimates of atmospheric dispersion. An HRSA may be a conservative screening-level analysis, or a more refined analysis involving the use of various site-specific data (e.g., the use of actual meteorological data and terrain elevations).

Where the predicted health risk from a proposed toxic source exceeds a cancer risk greater than 1.0 in one million (1.0 E-6), and/or a chronic hazard index greater than 0.20, the source must use Best Available Control Technology to minimize TAC emissions (TBACT).

The BAAQMD denies Authority to Construct or a Permit to Operate for any new or modified source of TACs if the project risk exceeds a cancer risk of 10.0 in one million (10 E-6), a chronic hazard index of 1.0, or an acute hazard index of 1.0.

In the vast majority of cases of excess risk, the use of emissions control technology and other available risk reduction measures are successful in reducing the health risks associated with the proposed project's emissions to acceptable levels.

The large number of HRSAs completed in recent years is due primarily to the elimination of permit exemptions in 2000 and 2001 for diesel engines that are used for power in the event of emergencies and more stringent regulations (ATCMs) that mandated replacement of older "dirty" engines with new lower emitting engines.

AIR TOXICS HOT SPOTS PROGRAM

The Air Toxics "Hot Spots" Information and Assessment Act (AB2588, Connelly, 1987) established a formal regulatory program for site-specific air toxics emissions inventory and health risk quantification that is managed by California air districts. Under this program, a wide variety of industrial, commercial, and public facilities are required to report the types and quantities of toxic substances their facilities routinely release into the air. The goals of the Air Toxics Hot Spots (ATHS) Program are to collect emissions data, to identify facilities with potential for localized health impacts, to ascertain health risks, to notify nearby residents of risks that are determined to warrant such notification, and to reduce significant risks.

There are five steps to implementing the ATHS program:

- **Air Toxics Emissions Inventory:** Facilities subject to the ATHS program are required to report emissions of toxic compounds to the BAAQMD. Each facility's emissions inventory must be updated on a regular basis (in order to reflect changes in equipment, materials, and production levels at the facility). An air toxics emissions inventory is prepared for each facility in the Bay Area based upon information supplied to the BAAQMD by the affected facility during the annual permit renewal process; this information is reviewed by BAAQMD engineers. Subject facilities may be required to refine their emission estimates (e.g., conduct source testing) and submit a comprehensive toxics emissions inventory report. Individual facility inventories are integrated into a District-wide emission inventory. The most recent district-wide air toxics emission inventory is available at:

<http://www.baaqmd.gov/Divisions/Engineering/Air-Toxics/Toxic-Air-Contaminant-Control-Program-Annual-Report.aspx>
- **Prioritization:** In the second step of the ATHS Program, the BAAQMD ranks or prioritizes facilities for potential to cause risk, considering the quantity and toxicity of pollutants emitted, and the proximity of persons that may live or work nearby. Each facility is categorized as high, medium or low priority. High priority facilities are required to prepare a facility-wide Health Risk Assessment (HRA). The fact that a facility has been identified as high priority does not necessarily mean that nearby persons are exposed to significant risk from the facility's air emissions; rather, a designation of high priority indicates that the facility emissions need to be analyzed in more detail.
- **Health Risk Assessment:** The air district and Cal/EPA's Office of Environmental Health Hazard Assessment (OEHHA) review the HRAs prepared for the ATHS program. These HRAs must be prepared in accordance with the ATHS Program Risk Assessment Guidelines. These guidelines include sections for assessing the impacts of acute and chronic exposures, estimating risks due to carcinogens, and inclusion of stochastic modeling. The current Air Toxics Hot Spots Program Risk Assessment Guidelines were completed and adopted by OEHHA in October 2003. OEHHA occasionally revises or adopts new health effects values for toxic compounds: for example, a cancer potency factor (CPF) for naphthalene was adopted in August 2004; a chronic Reference Exposure Level (REL) for crystalline silica was adopted in February 2005; a CPF for ethyl benzene was adopted in November 2007; acute and chronic RELs for acetaldehyde, acrolein,

arsenic and arsenic compounds, formaldehyde, manganese and manganese compounds, mercury and mercury compounds were revised in December 2008; some of the RELs for polychlorinated biphenyls (PCBs), dioxins and furans were revised in January 2011; the RELs for nickel and nickel compounds were revised in March 2012, and several obsolete health effect values were deleted. In August 2012, OEHHA adopted an updated version of the document Air Toxics Hot Spots Program Risk Assessment Guidelines: Technical Support Document for Exposure Assessment and Stochastic Analysis (http://www.oehha.ca.gov/air/hot_spots/tsd082712.html). OEHHA is currently working on updating “The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments”. This Guidance Manual combines the critical information from the technical support documents into a manual for the preparation of health risk assessments. In addition, ARB will update the Hot Spots Analysis and Reporting Program (HARP), which is a computer program used to implement the risk assessments as outlined in the guidance manual.

- **Public Notification:** If the health risks resulting from the facility’s emissions exceed action levels established by the air district, the facility is required to notify all exposed persons regarding the results of the HRA by direct mail to affected households and workplaces. The facility is required to conduct at least one public meeting to present the HRA and explain the results. The BAAQMD has established a cancer risk of greater than 10 in a million and a noncancer Hazard Index of greater than one as ATHS public notification thresholds (for Level 1 and higher facilities).
- **Risk Reduction:** If the health risks resulting from the facility’s emissions exceed significance levels established by the air district, the facility is required to conduct a toxic risk reduction audit and develop a plan to implement measures that will reduce risk from the facility to a level below the significance level within five years. The BAAQMD has established a cancer risk of 100 in a million or greater and a noncancer Hazard Index of ten or greater as ATHS mandatory risk reduction levels (for Level 2 and higher facilities).

District policy allows facilities to implement voluntary risk reduction measures in order to change their ATHS status. These risk reductions must be real and must be made enforceable through permit conditions. Many facilities have adopted this incentive to implement risk reduction projects in lieu of satisfying the public notification requirements (e.g., virtually all of the Bay Area chrome plating facilities installed high efficiency filtration devices to reduce emissions of hexavalent chromium, a potent carcinogen).

ATHS Status: Air districts maintain toxics emission inventories, revising them on at least a quadrennial basis. In the Bay Area, emission inventories are updated annually for most sources of TACs through the BAAQMD's ongoing permit renewal process. This annual update is used to reprioritize the facilities in the program, thus allowing for identification of any facility of interest that may have had a significant increase in emissions or some other changes that would increase risk significantly. In recent years, several large companies have been reprioritized because of changes in production, increases in emissions, or in one case, encroachment of residential properties.

- **Pacific Steel Casting Company** (Berkeley) was identified in 2005 as a facility with potential for high risk. PSC conducted an extensive source test program and prepared a revised toxic emission inventory report in February 2007 and a Health Risk Assessment (HRA). Based on the results of the HRA, Pacific Steel Casting Company is subject to the public notification requirements of the Hot Spots Act, but not mandatory risk reduction. (PSC implemented a number of voluntary risk reduction measures that significantly mitigated the level of risk). A community meeting to discuss the HRA was held in Berkeley. PSC periodically (calendar quarter) mails written notices to people in nearby areas with risk that exceeds the notification thresholds. PSC is currently the only Bay Area facility identified as subject to the public notification process.
- **Lehigh Southwest Cement Company** (Cupertino) operates a quarry and a large cement production facility. They had prepared a HRA for the AHS program in 1996, and risks were determined to be less than public notification levels. Because of state-wide interest in potential chromium exposure for people living close to cement plants, the District reviewed Lehigh's emission inventory and determined that some emissions data were questionable or not available. At the District's request, Lehigh conducted a comprehensive source testing program and submitted an updated AHS emission inventory in 2009 that indicated higher emissions for some toxic air contaminants. The District reviewed the emissions report and changed the prioritization status of the facility to High Priority. Lehigh was required to prepare a HRA, which they submitted in September, 2010. The District requested revision of the HRA and Lehigh submitted a revised HRA in March, 2011. The revised HRA includes several production scenarios that incorporated several new risk reduction measures and a future production scenario that considers full compliance with the federal NESHAP in 2015 (Lehigh intends to improve recent mitigation measures and add one or two new tall stacks). The HRA has been approved; it indicates that risk levels for the 2011 production scenario are less than public notification levels. Lehigh will continue to track their emissions and periodically report to the District.
- **Sentinel Crematory** (Emeryville) operates two crematory retorts and was determined to be a high risk facility. Operations had not changed but several high-rise condominium buildings were built in very close proximity to the facility. The company is in the process of relocating to a commercial/industrial area in order to reduce risk below notification levels. An Authority to Construct has been issued for the new location.
- **Kraft Foods Global** (San Leandro) operates multiple large coffee roasters and was determined to be a high priority facility. The facility submitted a health risk assessment in 2011. In response to staff comments, Kraft submitted an addendum to their health risk assessment in May 2012. Staff has verified the results in the HRA addendum through independent AERMOD modeling runs and risk calculations, and agrees with the finding that the risk levels are below AHS Program action levels.

- **Microsoft Corporation** (Santa Clara) operates 26 diesel emergency engines and was determined to be a high priority facility. The facility submitted a health risk assessment in February 2012 and a revised HRA in September 2012. In addition, Microsoft applied for a change in permit conditions to allow for more flexibility in their schedules for reliability-related testing. The permit to operate with the change in permit conditions was issued on January 23, 2013. As part of the review process of the application for the change in permit conditions, a HRA was prepared for the new hours of operation for reliability-related testing. The results of the HRA indicate risk levels that are below ATHS Program action levels.

The BAAQMD added the emissions of diesel exhaust particulate matter from diesel internal combustion engines to the toxic inventory in 2007. Thousands of facilities operate diesel engines (primarily emergency generators) in the Bay Area and some of these facilities may have health risk levels that would trigger public notification requirements. Although emergency operations are not subject to “Hot Spots” reporting, the operation of these diesel engines must comply with the requirements of the state stationary diesel engine ATCM. The diesel engine ATCM establishes emission standards that must be met and limits hours of non-emergency operation between 20 to 50 hours per year. The BAAQMD is screening facilities with potentially high health risk impacts due to diesel engine operations. Facilities that have a cancer risk impact exceeding 10 in a million due to non-emergency diesel engine operations will be subject to public notification requirements.

Industry-wide facilities:

Dry cleaning facilities were evaluated in an “industry-wide” risk assessment on a statewide basis as a part of the ATHS Program. Risk assessments for these facilities indicate that many dry cleaners had Level 2 risks. In 1994, the BAAQMD adopted Regulation 11, Rule 16, Perchloroethylene and Synthetic Solvent Dry Cleaning Operations, which incorporated the risk reduction requirements of SB-1731. These risk reduction measures were fully implemented by 1998, and the health risks from all permitted dry cleaners have been reduced to Level 1 or lower. There are currently no facilities in the Bay Area that have been identified as having Level 2 or greater risks that require further mandatory risk reduction measures under the ATHS Program. However, because of the residual risk for many dry cleaners, CARB revised the state-wide dry cleaning ATCM in January 2007 to phase out perchloroethylene as a dry cleaning solvent. About half of the dry cleaners in the Bay Area removed their old perchloroethylene machines in 2010 and 2011; the remaining machines (approximately 180) will be phased out by 2023.

Gasoline dispensing facilities were also evaluated in “industry-wide” risk assessments on a statewide basis as a part of the ATHS Program. All gasoline stations are either low or medium priority.

CONTROL MEASURES FOR CATEGORIES OF SOURCES

Airborne Toxic Control Measures (ATCMs): The primary mechanism for the development of retrofit air toxics control measures in California has been through the Toxic Air Contaminant Act, which was enacted in 1983 with the passage of AB-1807. Under this legislation, Airborne Toxic Control Measures (ATCMs) adopted by the California Air Resources Board (CARB) are implemented and enforced by the local air districts. Eighteen statewide ATCMs for stationary sources have been implemented in the Bay Area and are listed in Table 1:

Table 1 Airborne Toxic Control Measures (ATCMs)

Number	ATCMs for Stationary Sources	Date Adopted or last amended
17 CCR 93101	Benzene ATCM for Retail Service Stations	05/13/1988
17 CCR 93102	Hexavalent Chromium ATCM for Decorative and Hard Chrome Plating and Chromic Acid Anodizing Operations.	02/18/1988 12/07/2006 *
17 CCR 93101.5	ATCM for Thermal Spraying	09/30/2005
17 CCR 93103	Chromate Treated Cooling Towers	03/09/1989
17 CCR 93104	Dioxins ATCM for Medical Waste Incinerators	07/13/1990
17 CCR 93105	Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations	07/26/2001
17 CCR 93106	Asbestos ATCM for Surfacing Applications	07/20/1990 07/20/2000
17 CCR 93107	ATCM for Emissions of Toxic Metals from Non-Ferrous Metal Melting	01/14/1993
17 CCR 93108 17 CCR 93108.5	Ethylene Oxide ATCM for Sterilizers and Aerators Parts 1 & 2	05//21/1998
17 CCR 93109	ATCM for Emissions of Perchloroethylene from Dry Cleaning Operations	10/14/1993 01/25/2007 *
17 CCR 93110	Environmental Training Program Regulation for Perchloroethylene Dry Cleaning Operations	10/14/1993
17 CCR 93111	ATCM for Emissions of Chlorinated Toxic Air Contaminants from Automotive Maintenance and Repair Activities	04/27/2000
17 CCR 93112	ATCM for Emissions of Hexavalent Chromium and Cadmium from Motor Vehicle and Mobile Equipment Coatings	09/20/2001
17 CCR 93113	ATCM to Reduce Emissions of Toxic Air Contaminants from Outdoor Residential Waste Burning.	02/03/2003
17 CCR 93114	ATCM to Reduce Particulate Emissions from Diesel-Fueled Engines -- Standards for Nonvehicular Diesel Fuel	07/24/2003
17 CCR 93115	ATCM for Stationary Compression Ignition Engines	02/26/2004 10/18/2007
17 CCR 93116	ATCM for Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower and Greater	02/26/2004 02/19/2011
17 CCR 93120	ATCM to Reduce Formaldehyde Emissions from Composite Wood Products	04/18/2008

Based on: <http://www.arb.ca.gov/toxics/atcm/atcm.htm> (updated October 7, 2011)

National Emission Standards for Hazardous Air Pollutants (NESHAPs): In addition to the ATCMs, the District also enforces National Emission Standards for Hazardous Air Pollutants (NESHAPs) developed by the U.S. EPA. These federal rules are also commonly referred to as MACT Standards, because they reflect Maximum Achievable Control Technology. The MACT Standards focus primarily on controlling emissions from facilities that are "major sources" of hazardous air pollutants (HAPs). A major source of HAPs is a facility that emits, or has the potential to emit, 10 tons per year or more of any individual HAP, or 25 tons per year or more of any combination of HAPs. The BAAQMD is required to implement and enforce all MACT Standards, or rules that are at least as stringent. Over the last several years, U.S. EPA has focused the NESHAPS on smaller "area sources" (i.e., facilities with HAP emissions below the major source thresholds). A complete listing of NESHAPS may be viewed at:

<http://www.epa.gov/ttn/atw/mactfnlalph.html>

AIR TOXICS EMISSIONS INVENTORY

The air toxics emissions inventory is a database that contains information concerning emissions of TACs from permitted stationary sources in the Bay Area. The inventory includes routine or predictable releases, and is not intended to describe the potential for acute hazards from accidental releases. Information submitted by industry is reviewed for accuracy by BAAQMD staff prior to inclusion in the inventory. This inventory, and a similar inventory for mobile and area sources compiled by CARB, is used to plan strategies to reduce public exposure to TACs.

The detailed emissions inventory data for 2011 are presented at:

<http://www.baaqmd.gov/Divisions/Engineering/Air-Toxics/Toxic-Air-Contaminant-Control-Program-Annual-Report.aspx>

The data are presented for each facility sorted by county and city, and alphabetically by pollutant. The total inventory for the Bay Area is provided by county and by pollutant sorted in several different ways. These are the BAAQMD's best estimates of TAC emissions, based on the information that facilities submitted in their annual update reports.

Emission thresholds above which emissions are reported have been established individually for each TAC based on relative toxicity. The reporting thresholds reflect the emission level that is estimated to result in a de minimus level of health risk based on a series of conservative risk assessment assumptions (e.g., lifetime exposure, screening modeling methods, low-level stack release located in close proximity to receptors). For carcinogens, the threshold reporting levels have been set at the emission level that corresponds to a maximum cancer risk of 1 in one million. Non-carcinogen trigger levels were set at the amount estimated to result in a maximum air concentration equal to the TAC's Reference Exposure Level (i.e., a hazard index of one). The BAAQMD reduced some of the non-carcinogenic chronic trigger levels in 2005 to correspond to hazard indexes of 0.2 or less (new TBACT standard in Regulation 2, Rule 5).

AIR TOXICS AMBIENT MONITORING NETWORK

Monitoring is considered the definitive method for establishing ambient pollutant concentrations. One limitation of air monitoring is that it is spatially limited to specific monitoring locations. This problem has been minimized to a great extent in the Bay Area by the operation of an extensive air toxics monitoring network. You may view detailed information about the monitoring network at:

<http://www.baaqmd.gov/Divisions/Technical-Services/Ambient-Air-Monitoring/AAMN-Plan.aspx>

The toxic air monitoring network is operated by the BAAQMD, collecting samples over 24-hour periods, generally on a 12-day sampling frequency; however, several sites use a 6-day sampling frequency. The District's air monitoring network began in 1986 with six sites, and has gradually been expanded to its present size of 30 sites. Currently 18 sites are used to collect toxic samples. One of the air monitoring stations is portable and has been temporarily located in Cupertino near Lehigh Southwest Cement Company in order to help assess the impact from this facility on the surrounding area. The California Air Resources Board has collocated samplers at three BAAQMD sites to help determine precision and accuracy of the program. The data for the BAAQMD's ambient toxics monitoring network are presented at:

<http://www.baaqmd.gov/Divisions/Engineering/Air-Toxics/Toxic-Air-Contaminant-Control-Program-Annual-Report.aspx>

These data are sorted both by monitoring station and by pollutant. Data from the BAAQMD's air toxics monitoring network collected in 2010 are provided in separate tables (Volume II). More recent data from the BAAQMD's air toxics monitoring network will soon be available on the District website.

Trends in air monitoring data are analyzed by Dr. David Fairley in Ambient Toxic Trends, Appendix D to the Rule Development Staff Report, December 2009, Proposed Amendments to Regulation 2: Permits, Rule 5: New Source Review of Toxic Air Contaminants. Data indicate significant reduction in exposure to many of the toxic compounds (e.g., perchloroethylene, benzene) that have been monitored:

http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Public%20Hearings/2009/0205_RFC_102109/0205_stfrcomplete_121109.ashx?la=en

COMMUNITY AIR RISK EVALUATION (CARE) PROGRAM

The Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor toxic air contaminants (TACs) in the Bay Area. The program examines TAC emissions from point sources, area sources and on-road and off-road mobile sources co-located with sensitive populations to help focus mitigation strategies. The main objectives of the program are to:

- Characterize and evaluate potential cancer and non-cancer health risks associated with exposure to TACs from both stationary and mobile sources throughout the Bay Area.
- Assess potential exposures to sensitive receptors including children, senior citizens, and people with respiratory illnesses.
- Identify significant sources of TAC emissions and prioritize use of resources to reduce TACs in the most highly impacted areas (i.e., priority communities).
- Develop and implement mitigation measures - such as grants, guidelines, or regulations - to achieve cleaner air for the public and the environment, focusing initially on priority communities.

Starting in 2009, the CARE program also began evaluating exposures to fine particulate matter (PM) and helping to craft mitigations to reduce these exposures to address the growing evidence that exposure to fine particles has serious health effects.

<http://www.baaqmd.gov/Divisions/Planning-and-Research/CARE-Program.aspx>
