



# Air Quality in San Diego

**2009 Annual Report**

# Director's Message

More than ever in 2009, the San Diego Air Pollution Control District recognized the efforts and commitment of San Diego County residents, government agencies, and local businesses for the important role they play in our continuing improvements in air quality.

In 2009, the District launched its first Industry Recognition Program to spotlight those companies or organizations that have made a positive contribution to the regional environment through innovative projects that reduce air pollution and global warming. These Clean Air Champions are committed to keeping the skyline clean and clear in San Diego County.

To further recognize industry for their efforts, the District partnered with the Industrial Environmental Association to create the first APCD-IEA Blue Sky Leadership Award to honor companies whose outstanding clean air efforts inspire others to follow their example. The award was so well received that it was expanded in late 2009 to encompass three categories based on a company's size: small, medium, and large.



To help local businesses understand and comply with air quality regulations, the District conducted industry-specific training throughout the year.

In July, San Diego unveiled one of the first school buses in the country to be retrofitted with a pollution control device using American Recovery and Reinvestment Act funding from the U.S. Environmental Protection Agency.

Almost \$170,000 in federal stimulus funds were used to retrofit school buses, improving the health of local schoolchildren and the community by reducing their exposure to diesel particulate matter, which is a carcinogen.

In May, the annual lawn mower exchange was a sell-out as local residents traded-in their polluting gasoline mowers to obtain a zero-emission rechargeable mower at a reduced price. More than 400 highly polluting mowers were exchanged. In just one hour of use, these new mowers reduced pollution the equivalent of a car being driven 90,000 miles.

Our challenges for the coming year are daunting: a new federal standard for oxides of nitrogen, potential changes in the ozone standard, and likely new mandates to reduce greenhouse gases.

The good news is that the District has positioned itself to provide better service to the public and businesses through improvements in efficiency.

Achieving and maintaining clean air in our region is an effort truly shared by District staff, local businesses, and local residents.

Throughout this report, you'll read about the progress we've made and our commitment to the goal of protecting the public from the harmful effects of air pollution.

# San Diego's Air Quality in 2009

Air quality in San Diego County has improved dramatically during the past several decades. This improvement has resulted primarily from emission reductions from industrial and business processes; fuel distribution and use; cleaner cars, trucks, and buses; and the efforts of our neighboring population centers to the north and south. These combined efforts have resulted in cleaner air despite the region's large growth in population and the fact that on a per-person basis, each person travels more miles per day than in previous decades.

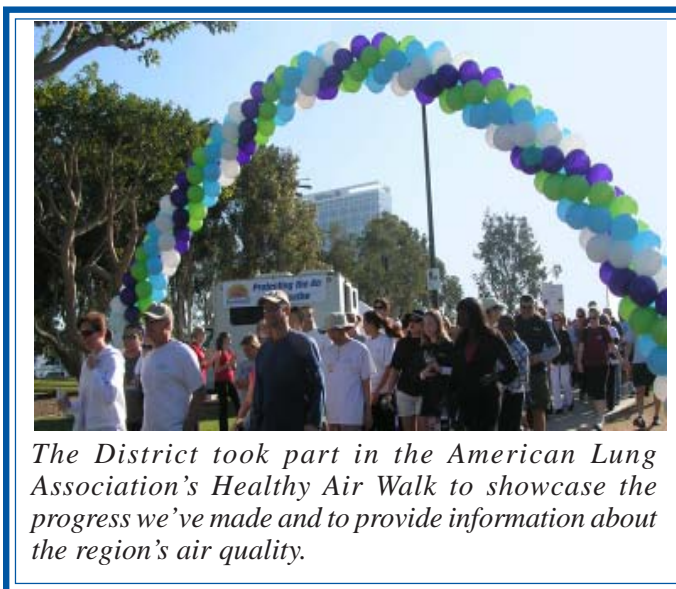
The ambient air quality standards\* set by the federal and State governments can be used as a yardstick to measure the progress San Diego has made in cleaning the air. For example, San Diego County exceeded the State 1-hour ozone standard (ozone is the chief component of smog) on 160 days in 1988. The State 1-hour ozone standard was exceeded on only 8 days in 2009, making San Diego one of the most improved large metropolitan areas in California for reducing exceedances of this standard.

Ambient air quality standards exist for a variety of pollutants. Particulate pollution is another area where San Diego County is working to meet all federal and State standards through implementation of new rules that limit emissions of particulates and particulate forming precursors. Annual average PM<sub>2.5</sub> concentrations have declined in San Diego County over the past decade, showing progress to-

\* The District's publication "On the Air" contains more information about the State and federal Clean Air Standards in addition to general information about air pollution. It is available on the District's website at [www.sdapcd.org](http://www.sdapcd.org) under Basic Information.

wards meeting standards.

The ambient air quality standards themselves continue to evolve over time as new health-based information becomes available. Meeting these changing standards will require evermore effort from the District, which has implemented numerous regulations and continues to explore innovative ways to reduce polluting emissions as new technologies become available. Our work to provide clean, healthy air to breathe also requires close collaboration with the public, businesses, and local, state, and federal agencies and we appreciate those partnerships.

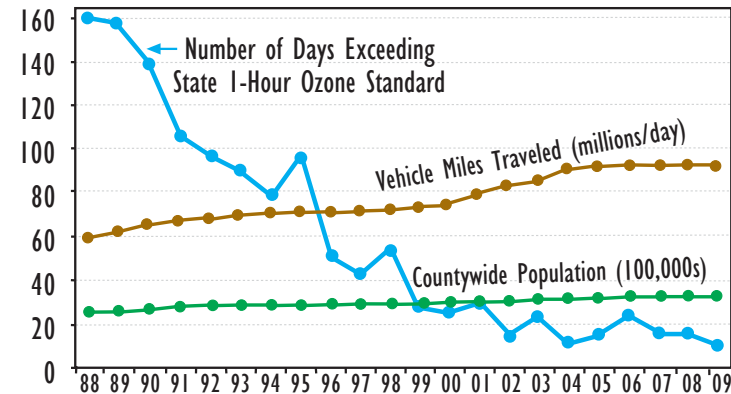


*The District took part in the American Lung Association's Healthy Air Walk to showcase the progress we've made and to provide information about the region's air quality.*

# 2009 Pollutant Data

The San Diego Air Pollution Control District measures ozone levels in the outdoor air at nine monitoring stations located throughout the San Diego Air Basin. Ozone is the primary ingredient in smog.

During the past 20 years, San Diego has experienced a decline in the number of days with unhealthy levels of ozone despite the region's growth in population and vehicle miles traveled, which both contribute to air pollution problems. This improvement in air quality clearly shows that our efforts to reduce air pollution are working.



## Ozone (Smog)

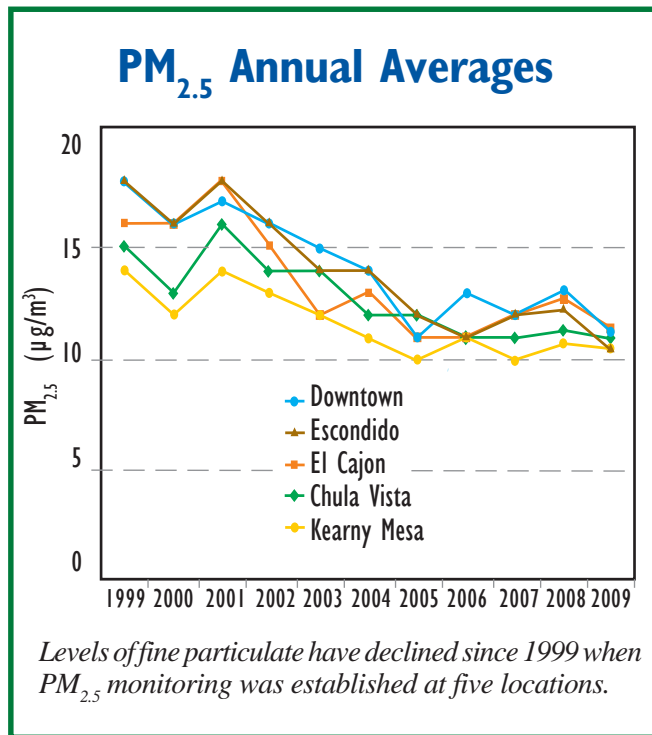
Monitoring Site	Number of Days Exceeding Federal Standard 8-Hour Concentration 0.075 ppm**	Number of Days Exceeding State Standard 8-Hour Concentration 0.070 ppm	Maximum 8-Hour Concentration (ppm)	Date of Maximum 8-Hour Concentration	Number of Days Exceeding Former* Federal Standard 1-Hour Concentration 0.12 ppm	Number of Days Exceeding State Standard 1-Hour Concentration 0.09 ppm	Maximum 1-Hour Concentration (ppm)	Date of Maximum 1-Hour Concentration
Chula Vista	0	3	0.075	Sept. 25	0	1	0.10	Sept. 25
El Cajon	2	4	0.082	Aug. 30	0	2	0.10	Aug. 30
Kearny Mesa	1	3	0.082	Sept. 25	0	2	0.11	Sept. 25
Del Mar	1	3	0.084	April 20	0	1	0.10	April 20
Escondido	1	7	0.080	Aug. 27	0	0	0.09	Aug. 27
Alpine	22	40	0.097	Aug. 30	0	6	0.12	Aug. 30
Downtown San Diego	0	0	0.063	March 18	0	0	0.08	April 20
Camp Pendleton	1	4	0.076	April 20	0	0	0.09	April 20
Otay Mesa	0	0	0.068	Sept. 25	0	1	0.11	Sept. 25
Basinwide	24	43	0.097	Aug. 30	0	8	0.12	Aug. 30

\*Although the federal 1-hour ozone standard was revoked on June 15, 2005, it is included in this table for comparison purposes to previous years.

\*\*The federal 8-hour standard was revised to 0.075 on March 12, 2008, with an effective date of March 12, 2009.

# 2009 Pollutant Data

Although all inhalable particulates can cause health problems, the greatest concern is for microscopic particles that can, when inhaled, bypass the respiratory tract's natural filtering system. Inhalable particles smaller than 10 microns are called PM-10 and those 2.5 microns or smaller are called PM-2.5.



## PM<sub>2.5</sub>

Monitoring Site	Annual Arithmetic Mean Federal Standard 15 micrograms/m <sup>3</sup> State Standard 12 micrograms/m <sup>3</sup>	Maximum 24-Hour Sample Federal Standard 35 micrograms/m <sup>3</sup>	Date of Maximum 24-Hour Sample
Chula Vista	11.45	43.7	Jan. 1
El Cajon	12.18	56.5	Jan. 1
Kearny Mesa	10.56	25.1	March 17
Escondido	10.56	34.1	Dec. 24
Downtown San Diego	11.78	52.1	Jan. 1

## PM<sub>10</sub>

Monitoring Site	Annual Arithmetic Mean State Standard 20 micrograms/m <sup>3</sup>	Maximum 24-Hour Sample Federal Standard 150 micrograms/m <sup>3</sup> State Standard 50 micrograms/m <sup>3</sup>	Date of Maximum 24-Hour Sample
Chula Vista	25.7	57	Oct. 28
El Cajon	25.0	55	Jan. 1
Kearny Mesa	24.8	50	Oct. 28
Escondido	24.6	73	Jan. 1
Downtown San Diego	28.7	59	Oct. 28
Otay Mesa*	53.3	126	Oct. 16
Donovan*	34.3	81	Nov. 3

\*PM<sub>10</sub> concentrations at the Otay Mesa site are heavily influenced by the site's proximity to the truck border crossing at the U.S.-Mexico port of entry. To better measure concentrations representing the Otay Mesa area as a whole, a parallel monitor — Donovan — was established two miles north of the existing monitor, which is not unduly influenced by specific local sources.

# 2009 Pollutant Data

The U. S. Environmental Protection Agency (EPA) is creating a new national air quality standard for nitrogen dioxide (NO<sub>2</sub>). Along with this new standard, the EPA is establishing new monitoring requirements that will measure NO<sub>2</sub> levels around major roadways.

NO<sub>2</sub> is a by-product of combustion emitted from sources such as motor vehicles, ships, trains, construction equipment, and power plants. It contributes to the formation of smog and fine particulates. Short-term exposures to NO<sub>2</sub> primarily occur near major roads and have been linked to impaired lung function and increased respiratory infections, especially in people with asthma.

## Nitrogen Dioxide

Monitoring Site	Average Annual Federal Standard 0.053 ppm State Standard 0.030 ppm	Maximum 1-Hour Concentration State Standard 0.18 ppm*	Date of Maximum 1-Hour Concentration
Chula Vista	0.013	0.065	Oct. 17
El Cajon	0.014	0.054	Feb. 4
Kearny Mesa	0.014	0.060	Nov. 2
Escondido	0.016	0.073	Nov. 2
Alpine	0.008	0.056	Oct. 2
Downtown San Diego	0.017	0.078	April 20
Camp Pendleton	0.010	0.068	Jan. 20
Otay Mesa	0.021	0.091	Nov. 9

\*The State standard was amended on February 22, 2007, lowering the 1-hour standard from 0.25 ppm to 0.18 ppm and establishing a new annual standard of 0.030 ppm. The new federal standard requires additional monitoring being established by January 1, 2013.

The EPA set the new national one-hour standard for NO<sub>2</sub> at a level of 100 parts per billion (ppb), which is substantially more stringent than the State of California's 1-hour standard of 180 ppb. The EPA is also retaining the existing annual average standard of 53 ppb.

By January 1, 2013, San Diego County must have two NO<sub>2</sub> monitors placed within 50 meters from the edge of the nearest traffic lane of the two roadways with the highest average annual traffic volumes.

The EPA expects to identify or designate areas not meeting the new standard, based on the existing community-wide monitoring network, by January 2012. New monitors must begin operating no later than January 1, 2013. When three years of air quality data are available from the new monitoring network, the EPA intends to redesignate areas as appropriate.

Based on our current monitoring data, we **attain** the new standard, however, the basin's final designation will depend on data from the upcoming roadside monitors and the existing stations.



*The new NO<sub>2</sub> monitors must be placed along roadways with the most traffic.*

# 2009 Pollutant Data

The San Diego Air Basin meets both state and federal clean air standards for carbon monoxide, sulfur dioxide, and lead. Ten years ago, the amount of lead in the atmosphere had fallen so far below the air quality standard due to the use of unleaded gasoline that it was no longer necessary to monitor for lead. However, in fall 2008, the U. S. Environmental Protection Agency revised the federal standards for lead from 1.5 to 0.15 micrograms/m<sup>3</sup>, and monitoring for lead will resume on or before January 1, 2011.

## Carbon Monoxide

Monitoring Site	Maximum 1-Hour Concentration Federal Standard 35 ppm State Standard 20 ppm	Date of Maximum 1-Hour Concentration	Maximum 8-Hour Concentration Federal Standard 9 ppm State Standard 9.0 ppm	Date of Maximum 8-Hour Concentration
Chula Vista	2.4	Oct. 20	1.4	Jan. 8
Escondido	4.4	Jan. 8	3.4	Jan. 1
Downtown San Diego	4.0	Jan. 13	2.8	Jan. 10
Otay Mesa	4.6	Jan. 1	3.1	Dec. 19

## Sulfur Dioxide

Monitoring Site	Annual Average Federal Standard 0.030 ppm	Maximum 24-Hour Concentration Federal Standard 0.14 ppm State Standard 0.04 ppm	Maximum 3-Hour Concentration Federal Standard* 0.5 ppm	Maximum 1-Hour Concentration State Standard 0.25 ppm
Chula Vista	0.002	0.003	0.01	0.01
Downtown San Diego	0.002	0.006	0.01	0.02
Otay Mesa	0.004	0.009	0.02	0.03

\*The 3-hour maximum is a secondary standard. Secondary standards set limits to protect public welfare, which includes visibility and vegetation. For most other pollutants, the secondary standards are the same as the primary standards that protect public health.



*District monitoring equipment continuously measures pollutant levels, which can be viewed on the District's web site on the air quality page under hourly pollution data.*



*District chemists analyze air samples from monitoring sites in the laboratory.*

# Air Toxics

Toxic air contaminants, also called hazardous air pollutants or air toxics, are those that are known or suspected to cause cancer or other serious health effects. Air toxics may produce health effects at extremely low levels, and some may accumulate in the body from repeated exposures. There are hundreds of compounds that are air toxics.

Toxic emissions from stationary sources have been reduced by a total of approximately 10.4 million pounds or 83% since 1989. Based on the most recent estimates, industrial facilities emit about 2.4 million pounds of toxic air contaminants annually.

Sources such as motor vehicles, consumer products, wildfires, and others not having a specific point of origin emit more than 67 million pounds, as reported by the California Air Resources Board's 2006 California Toxics Inventory.

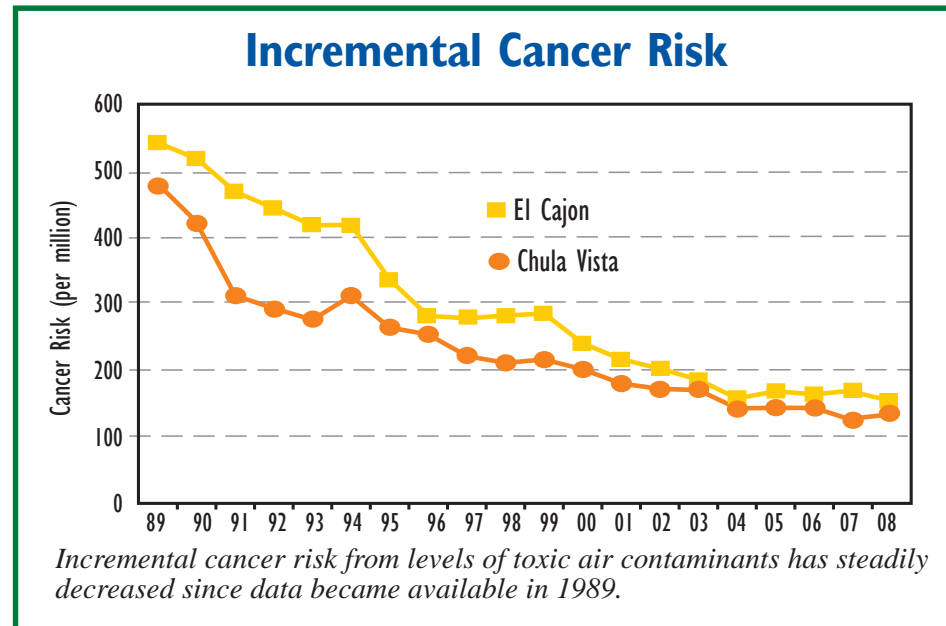
The District started sampling for toxic air contaminants at the El Cajon and Chula Vista monitoring stations in the mid-1980s. These sites were chosen because they are located nearby and

downwind of transportation, industrial, and other air pollutant sources. In 2006, three more sites were added: Escondido, Otay Mesa, and downtown San Diego.

Integrated 24-hour air samples are taken once every 12 days by the District and they are analyzed and validated by ARB.

Excluding diesel particulates, a 72% reduction in the ambient incremental cancer risk from air toxics has been measured in Chula Vista and a 73% reduction in El Cajon has occurred since 1989, as shown in the graph below.

More information on air toxics is available on the District's website at [www.sdapcd.org](http://www.sdapcd.org) under Air Toxics.



# Highlights of 2009

## Industry Recognition

The District designed its Industry Recognition Program to honor companies that make an extra effort to go above and beyond simple compliance with current regulations. Recognition is given to programs, projects, or technologies that directly reduce emissions of criteria pollutants or toxic air contaminants; are innovative and unique; and provide a model for others to follow.

On an on-going basis, the District designates “Clean Air Champions” to publicly express the District’s appreciation for their clean air efforts.



*District Director Bob Kard, left, congratulates Lyn Hall of Qualcomm Incorporated after they received the APCD-IEA Blue Sky Leadership Award at the IEA Fall Conference.*

In addition, the first APCD-IEA Blue Sky Leadership Award was presented in the fall of 2009 to Qualcomm Incorporated for their commitment to improving air quality.

Created by the District in partnership with the Industrial Environmental Association, the annual award was also expanded in late 2009 to recognize small and medium-sized business as well as large corporations.

## Greenhouse Gas Verification

The District took its first step to become an official verification body as prescribed by the Air Resources Board (ARB) in its Mandatory Reporting of Greenhouse Gas Emissions regulation.

Two District employees passed the stringent Greenhouse Gas Verifier accreditation exam. This means that the District can now apply to ARB to be an official verification body for the purposes of mandatory greenhouse gas emissions reporting.

Facilities subject to mandatory reporting will be required to have their

greenhouse gas emissions verified beginning in 2010, for their 2009 reported emissions. Only ARB accredited verification bodies and verifiers may provide the required verification.

## RAQS Revision

The 2009 Regional Air Quality Strategy (RAQS) Revision was adopted by the Air Pollution Control Board. The RAQS serves as the District’s blueprint to reduce smog-forming emissions.

The revision incorporated additional control measures to address automotive refinishing, architectural coatings, solvent wipe cleaning, stationary combustion turbines, small boilers, medium boilers, and residential water heaters. During the next two years, these measures will be further developed into proposed rules or rule amendments which, collectively, will reduce ozone-forming emissions by four tons per day.

The revised RAQS also included a “further study” measure to evaluate the feasibility of an Indirect Source Rule to enhance travel options and reduce transportation emissions at new land developments.

# Highlights of 2009

## Fugitive Dust Control

The Air Pollution Control Board adopted new Rule 55 to minimize dust released from the soil during construction and demolition activities. These activities are one of the largest sources of particulate matter emissions in the region.

The new rule prohibits discharging visible dust into the atmosphere beyond the property line for more than three

minutes in any hour, but leaves the selection of dust control measures to the project owner/operator.

The new rule also requires project owners/operators to prevent tracking out mud and dust onto public roadways and to clean up any visible roadway dust and dirt each day.

Homeowner operations are exempt but remain subject to existing Rule 51, which prohibits public nuisances.



*District inspectors ensure that vapor recovery equipment works properly.*

## New Vapor Recovery

The statewide deadline for installing Enhanced Vapor Recovery (EVR) Phase II equipment at gasoline dispensing facilities was April 1, 2009.

For nearly a decade, the District had been working diligently with station owners throughout the county to help them meet this State mandate. As a result, most of the county's 850 gas stations were able to make the transition smoothly to the new requirements.

The new EVR systems reduce gasoline vapor emissions that harm human health and contribute to smog formation.

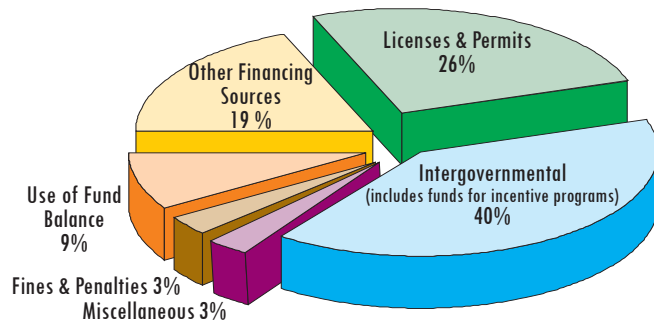
## Other Rule Developments

- Adopted Rule 69.2.1 to reduce oxides of nitrogen (NOx) emissions from new and replacement small boilers, process heaters, and steam generators.
- Repealed outdated versions and adopted current federal versions of New Source Performance Standards limiting NOx emissions from:
  - existing and new boilers, and
  - existing and new stationary combustion turbines.
- Proposed a new rule for Motor Vehicle and Mobile Equipment Refinishing Operations to conform with state guidelines.
- Proposed a new Rule 66 for miscellaneous surface coating operations and the repeal of existing Rule 66 for organic solvents which has become outdated. The proposed rule reflects the latest control technologies applicable to a variety of sources.

# Funding Clean Air

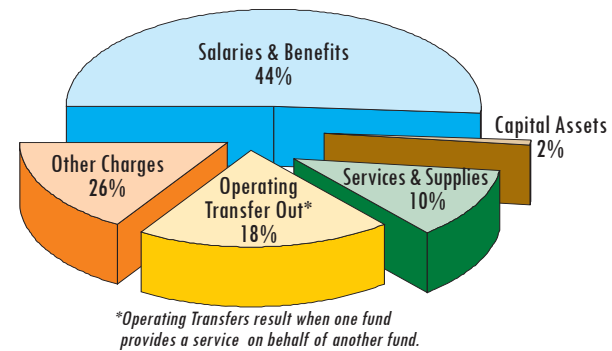
## Where the money comes from...

The District's funding comes primarily from the state and federal governments, not City or County general funds.



## Where the money goes...

The District's budget funds the operations and programs needed to attain and maintain its clean air goals.



Partnering with the California Air Resources Board, the District acquired American Recovery and Reinvestment Act (economic stimulus) funding to retrofit school buses with diesel particulate filters, demonstrating how federal, state, and local agencies are working together to create a cleaner environment and revitalized economy.

## Compliance Statistics for 2009

- 12 compliance assistance training classes for businesses
- 90 one-on-one compliance assistance sessions with businesses
- 10 compliance advisories
- 3 vapor recovery outreach sessions for contractors/testers
- 7855 permit inspections
- 546 public complaint inspections
- 122 breakdown inspections
- 471 asbestos inspections
- 1032 notices of violation issued
- 373 notices to comply issued
- 419 corrective action reports

# San Diego County Air Pollution Control Board

District 1  
**Greg Cox**

District 2  
**Dianne Jacob**

District 3  
**Pam Slater-Price**

District 4  
**Ron Roberts**

District 5  
**Bill Horn**

## Air Pollution Control District

### Management Team

Engineering
Chemical & Vapor Recovery
Mechanical
Air Toxics & Emissions Inventory
Special Projects & Title V

Compliance
Industrial Inspections
Citizen Complaint Investigations
Violation Settlement Program
Hearing Board Liaison
Asbestos Program
Open Burn Program
Small Business Compliance Assistance

Air Resources & Strategy Development
Air Quality Plan Preparation/Progress Reporting
Mobile Source Rule Development, Planning & Emissions Inventory
CEQA Implementation
Rule Development

Monitoring & Technical Services
Air Quality Network
Monitoring & Maintenance
Emissions Testing
Meteorology & Modeling

Administrative Services
Mobile Emission Reduction Incentive Program
Outreach & Training
Permit Processing
Accounting & Finance
Contracts
Information Technology Coordination



## San Diego County Air Pollution Control District

10124 Old Grove Road, San Diego, CA 92131

Permit & General Information ..... (858) 586-2600  
 Air Quality Forecast Message ..... (858) 586-2800  
 Burn Forecast for Open Burning ..... (858) 586-2800  
 Citizen/Odor Complaints ..... (858) 586-2650  
 Small Business Assistance (with air quality rules) ..... (858) 586-2650  
 Smoking Vehicle Hotline ..... (800) 28-SMOKE

[www.sdapcd.org](http://www.sdapcd.org)