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*THE CALIFORNIA ALMANAC OF EMISSIONS AND AIR QUALITY*  
*— 2008 Edition —*

This almanac was prepared and published by the staff of the  
Planning and Technical Support Division  
California Air Resources Board

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This document has been reviewed and approved by the staff of the  
California Air Resources Board. Approval does not signify that the contents necessarily  
reflect the views and policies of the Air Resources Board.

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## *Preface*

This almanac was prepared and published by the Air Resources Board (ARB) staff to aid air quality professionals and the public in evaluating air quality in California (State). The ARB, as part of the California Environmental Protection Agency (CalEPA), is the State board responsible for achieving and maintaining healthful air quality in California. This responsibility is shared with local air districts and the United States Environmental Protection Agency (U.S. EPA).

The following staff and managers of the Planning and Technical Support Division contributed to the production of this almanac: Andy Alexis, Jeff Austin, Dr. Michael Benjamin, Vijay Bhargava, Steve Gouze, Chris Halm, Martin Johnson, Darryl Look, Sylvia Morrow, Chris Nguyen, John Nguyen, Marci Nystrom, Michael Redgrave, Dale Shimp, Webster Tasat, Jon Taylor, Dr. Patricia Velasco, and Xijie Zhang. The project was approved by Dr. Linda Murchison, Chief of the Planning and Technical Support Division. The project was managed by Karen Magliano, Chief of the Air Quality Data Branch, Richard Bode, Chief of the Emission Inventory Branch, Karen Buckley, Manager of the Emission Inventory Systems Section, Mena Shah, Manager of the Air Quality & Statistical Studies Section, and Gayle Sweigert, Manager of the Air Quality Analysis Section.

This is the ninth edition of this almanac which is updated annually as additional air quality and emission inventory data become available. All emissions data in this edition are the same as presented in the previous edition. The emissions data will be updated in the tenth edition. If you find errors or have suggestions for improvements, please let us know. For general issues or issues related to air quality data, contact Paul Cox at (916) 327-7609 or [pcox@arb.ca.gov](mailto:pcox@arb.ca.gov). For issues related to emissions data, contact Andy Delao at (916) 324-7169 or [adelao@arb.ca.gov](mailto:adelao@arb.ca.gov). For issues related to air toxics data, contact Robert Weller at (916) 322-6158 or [rweller@arb.ca.gov](mailto:rweller@arb.ca.gov).

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*The California Almanac of Emissions and Air Quality - 2008 Edition*

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# Chapter 1

## Introduction

## Overview

This almanac contains information about current and historical air quality and emissions in California. In addition, forecasted emissions are presented. This document is a reference for anyone interested in air quality and emissions for criteria pollutants (ozone, particulate matter, carbon monoxide, nitrogen dioxide, and sulfur dioxide) and toxic air contaminants (TACs). When using this information, please remember that the air quality and emission values are a snapshot of data at a particular point in time. This edition of the almanac is a year 2007 snapshot of the air quality database and a year 2006 snapshot of the emission inventory database. It is important to keep in mind that emission and air quality data can change over time. For example, emission data may be revised to reflect improved estimation methods, and air quality data may be changed because of corrections or additions of data.

The information in this document is based on data maintained in ARB's emission and air quality databases. The emission and human population estimates are presented at five-year intervals from 1975 to 2020. Data for vehicle miles traveled (VMT) are also provided at five-year increments, beginning with the year 1980. The air quality statistics in this almanac are for the period 1987 to 2006 for ozone, carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), and lead. In addition, available 2007 statistics for ozone are included for the five major air basins. Particulate matter (PM) monitoring did not begin until 1988 for PM<sub>10</sub> and 1999 for PM<sub>2.5</sub>. Therefore, PM<sub>10</sub> data cover the years 1988 to 2006, and PM<sub>2.5</sub> data cover the period 1999 through 2006. Air quality monitoring of TACs began in 1983; annual statistics for TACs are available from 1989 onward, and the data for TACs presented in this almanac covers the period 1990 to 2006.

## What's New in the 2008 Almanac?

- Added statistics for national ozone and PM nonattainment areas to Chapter 2.
- Updated Air Basin maps in Chapter 4.

**All emissions data in this edition are the same as presented in the previous edition. The emissions data will be updated in the 2009 Almanac.**

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## Organization

This document is divided into five chapters and six appendices that include information, maps, graphs, and tabular data. Chapter 1 contains introductory material. Chapters 2 through 4 and Appendices A and B provide information on the most important criteria pollutants for which health-based ambient air quality standards have been established. Chapter 5 and Appendix C provide information on TACs. Appendix D includes information on population and VMT, and Appendix E contains information on natural emissions. In addition to this information, Appendix F provides lists of the figures and tables included in Chapters 1 through 5 along with a glossary of Air Quality and Emissions terminology.

To help the reader navigate the document, a short summary of each chapter and appendix is provided below:

- ◆ **Chapter 1** contains introductory material designed to help the reader better understand the remaining chapters. Included is information about data interpretation, emission estimation, air quality monitoring, the State and national standards, web resources, area designations for the State and national standards, and TACs. A list of air pollution contacts is provided at the end of this chapter.
- ◆ **Chapter 2** includes current emissions for oxides of nitrogen ( $\text{NO}_x$ ), reactive organic gases (ROG),  $\text{PM}_{10}$ ,  $\text{PM}_{2.5}$ , CO, and ammonia ( $\text{NH}_3$ ) and air quality data for ozone,  $\text{PM}_{10}$ ,  $\text{PM}_{2.5}$ , and CO for each air basin. The emission data also includes lists of the State's highest emitting facilities. Information is included on how air quality in California compares to other parts of the country.
- ◆ **Chapter 3** provides historical emission and air quality trends from a statewide perspective. Statewide emission and air quality trends for ozone,  $\text{PM}_{10}$ ,  $\text{PM}_{2.5}$ , CO, lead, and  $\text{NO}_2$  are included. In addition, emission trends for oxides of sulfur ( $\text{SO}_x$ ) are included.
- ◆ **Chapter 4** provides historical emission and air quality trends for the State's five most populated regions. The pollutants covered are ozone,  $\text{PM}_{10}$ ,  $\text{PM}_{2.5}$ , CO, and  $\text{NO}_2$ .
- ◆ **Chapter 5** contains emission, air quality, and health risk information on TACs for the State as a whole and for five of California's most populated regions. The ten TACs, including diesel PM, that pose the greatest risk in ambient (outdoor) air are covered. The air quality and health risk trends are based on measured ambient data (except for diesel PM, which is based on estimates of ambient concentrations).
- ◆ **Appendix A** includes more detailed emission data for  $\text{NO}_x$ , ROG,  $\text{PM}_{10}$ ,  $\text{PM}_{2.5}$ , and CO organized alphabetically, by air basin. Also included is a list of the highest emitting facilities in each air basin. Air quality data are provided for the criteria pollutants: ozone,  $\text{PM}_{10}$ ,  $\text{PM}_{2.5}$ , CO,  $\text{NO}_2$ , and  $\text{SO}_2$ . Data are provided for all air basins and all counties (or county portions) within these air basins.
- ◆ **Appendix B** provides emission and air quality information similar to that found in Appendix A, but arranged by pollutant.
- ◆ **Appendix C** provides more detailed information on the ten TACs discussed in Chapter 5, including information on the emissions in each county and the air quality and health risk information for the individual sites where TAC concentrations are routinely measured.
- ◆ **Appendix D** provides tabulated information on surface area, population, and VMT for the State, each air basin, and for each county (or county portion) within the air basins.

- ◆ **Appendix E** provides emission estimates for natural sources, including wildfires, vegetation (biogenic sources), and oil seeps (geogenic sources).
- ◆ **Appendix F** provides lists of the figures and tables included in Chapters 1 through 5. A glossary of terms used in the Almanac is provided at the end of this appendix.

*This almanac focuses on air emissions and air quality. The California Environmental Protection Agency (CalEPA) has developed a set of indicators to measure California's overall environmental health. The indicators cover all media, not just air, and help us understand the causes of environmental problems, the status of the environment, and the effectiveness of our environmental strategies. The data in this almanac are more detailed indicators of the State's air quality health, and in conjunction with CalEPA's indicators, provide a continuum of information from detailed air quality trends to California's overall environmental health. The most recent set of CalEPA indicators are available at [www.oehha.ca.gov/multimedia/epic/](http://www.oehha.ca.gov/multimedia/epic/).*

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## *California Facts and Figures*

California is blessed with a wide range of scenery including mountains, valleys, oceans, and deserts. In terms of size, California is larger than many nations in the world today. Of California's total area, about 152,000 square miles are land, and almost 8,000 square miles are water.

The Pacific Ocean forms the western boundary of California, with a coastline more than 1,200 miles long. These coastal areas range from southern California's sunny beaches to northern California's fog-shrouded redwood forests. The inland valleys, with their hot summers and cool winters, have millions of acres of cropland. The Sierra Nevada in the eastern half of California runs nearly two-thirds the length of the State. Most of the southeastern portion of the State is desert, varying from sun-baked Death Valley to the scenic mountain ranges of the Mojave Desert. To a large degree, California's pleasant climate and abundance of relatively level land are the major features that have drawn people to the State.

## *Quick Facts*

Over the last 20 years, California's population has nearly doubled and its economy has prospered. However, despite substantial growth, California has made dramatic progress in improving air quality.

- The population increased 40 percent and vehicle miles traveled during this same period more than doubled.
- Emissions of ROG and NO<sub>x</sub> have been reduced by 60 percent and 26 percent, respectively.
- The number of unhealthy days with concentrations exceeding the State ozone standards decreased an average of 43 percent. While PM<sub>10</sub> standard exceedance days decreased by 21 percent over the last 18 years.
- Population exposure to values above the State 8-hour ozone standard dropped an average of over 70 percent in the major urban areas.
- The entire state now meets all State and national standards with the exception of ozone and PM.

Despite the magnitude of progress, ozone and PM remain major air quality challenges.

- Today, nearly all Californians (about 99 percent) live in areas that are designated as nonattainment for the State health-based ozone and/or PM standards. Additionally, about 93 percent live in areas that are designated as nonattainment for the national health-based ozone and/or PM standards.
- Ozone and PM concentrations in the areas with the most severe problems can be as high as two to three times the level of the State standards on the worst days.
- In the areas with the worst air quality problems, the State ozone and PM standards can be exceeded up to 200 days per year.

Information on the following pages provides a more in-depth description of the current ozone and PM problems in California.

## Quick Facts

### Ozone

This map provides a quick look at the ozone air quality in California. It shows the number of unhealthy days with concentrations greater than the State ozone standard (exceedance days) that occurred in each air basin during 2006. It is important to keep in mind that the number of exceedance days reflects all sites in the basin and that the number can be influenced by a few high sites. This map does not show how air quality differs spatially within an area (see Chapter 4).

The ozone air quality problem varies across the State. There are some rural and coastal areas with none to a few exceedance days. Higher values are found in the more urbanized inland areas and desert regions, with over 50 percent of the State's population living in areas with 100 or more days exceeding the State 8-hour standard.

- California's coastal regions have a temperate climate, with relatively cool temperatures and a pattern of onshore/offshore airflow. Both of these factors favor relatively good air quality. As shown in Figure 1-1, most coastal areas, including the Bay Area, Monterey, Santa Barbara, and San Diego have a small number of exceedance days compared to the inland regions.
- Inland valleys have many more days with sunshine and high temperatures that provide favorable conditions for ozone formation. In addition, frequent temperature inversions coupled with surrounding mountains limit the dispersion of pollutants. The inland regions of the South Coast, San Joaquin Valley, and portions of the Sacramento region have the most severe ozone air quality problems in the State.
- Further inland, the desert regions pose their own challenges to air quality progress. These regions can be the recipients of ozone transported from upwind areas. Therefore, their progress is linked to the progress made upwind. In addition, the desert

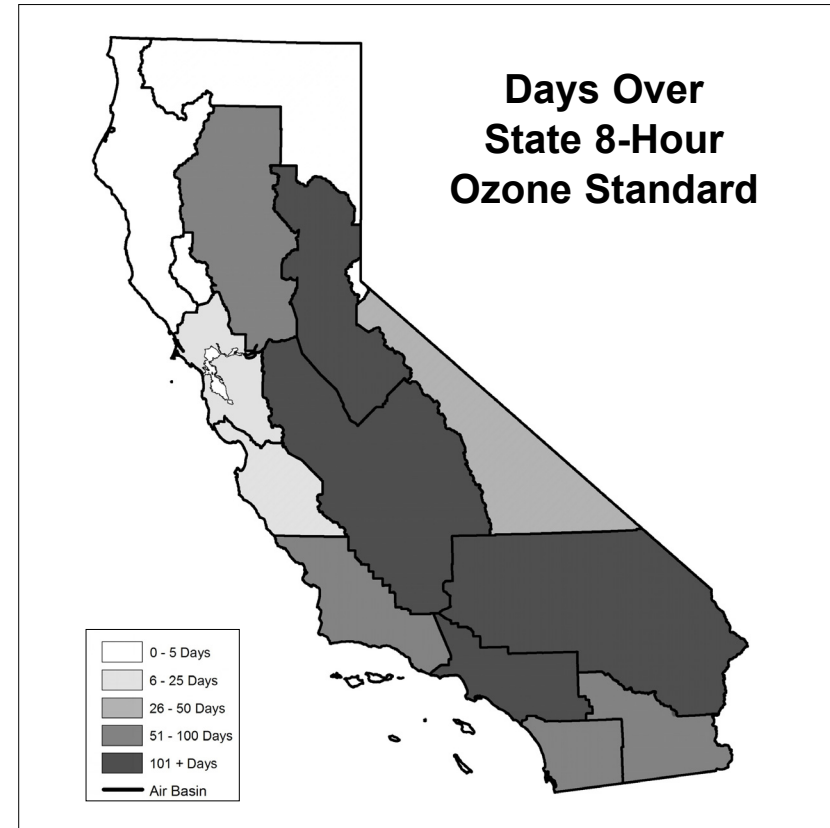


Figure 1-1

regions have more days throughout the year with sunshine and high temperatures, which can contribute to locally generated ozone. The desert regions include the Mojave Desert and eastern Kern, eastern Riverside, and Imperial counties.

- Ozone air quality still poses a substantial challenge in California, but both the maximum concentrations and the number of exceedance days continue to decline. Areas have made tremendous progress over the past several decades. However, despite

this progress, the maximum measured 1-hour and 8-hour ozone concentrations in the worst areas were both about twice the level of the respective State standard during 2006. Without a doubt, there is much more to accomplish.

### ***Particulate Matter***

The following map shows the estimated number of days in which the State 24-hour PM<sub>10</sub> standard was exceeded in each air basin of California. Unlike the ozone map on the previous page which shows an exact count of basinwide exceedance days, the PM<sub>10</sub> map shows an estimated number of exceedance days. Because PM<sub>10</sub> samples are sampled only once every 6 days, we estimate the total by extrapolating from the percentage of total monitored days that exceeded the standard. In addition, on the PM<sub>10</sub> map the data for each air basin reflect only the number of estimated exceedances at the one site with the highest total, whereas the ozone map reflects a composite of exceedance days at all sites in the air basin. During 2006, in the Lake Tahoe air basin, data for the high site was incomplete.

- Generally, the greatest number of estimated exceedance days occurred at sites in the urbanized areas during 2006.
- There were also a relatively high number of days in the Great Basin Valleys Air Basin, where high winds aggravate the local PM<sub>10</sub> problem.
- In the areas where the estimated number of exceedance days are highest, the South Coast, San Joaquin Valley, San Diego, and Salton Sea air basins, the number tends to be very high. All four of these areas had well over 100 estimated exceedance days during 2006: 241 in South Coast, 167 in San Joaquin Valley, 159 in San Diego, and 241 in Salton Sea.
- Although not shown here, annual PM<sub>10</sub> concentrations in the worst urban areas were over twice the level of the State PM<sub>10</sub> standard (in 2006, a maximum of 56 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) in the San Joaquin Valley Air Basin and 62  $\mu\text{g}/\text{m}^3$  in the South Coast Air Basin, compared with a standard of 20  $\mu\text{g}/\text{m}^3$ ). In contrast, peak 24-hour concentrations in the

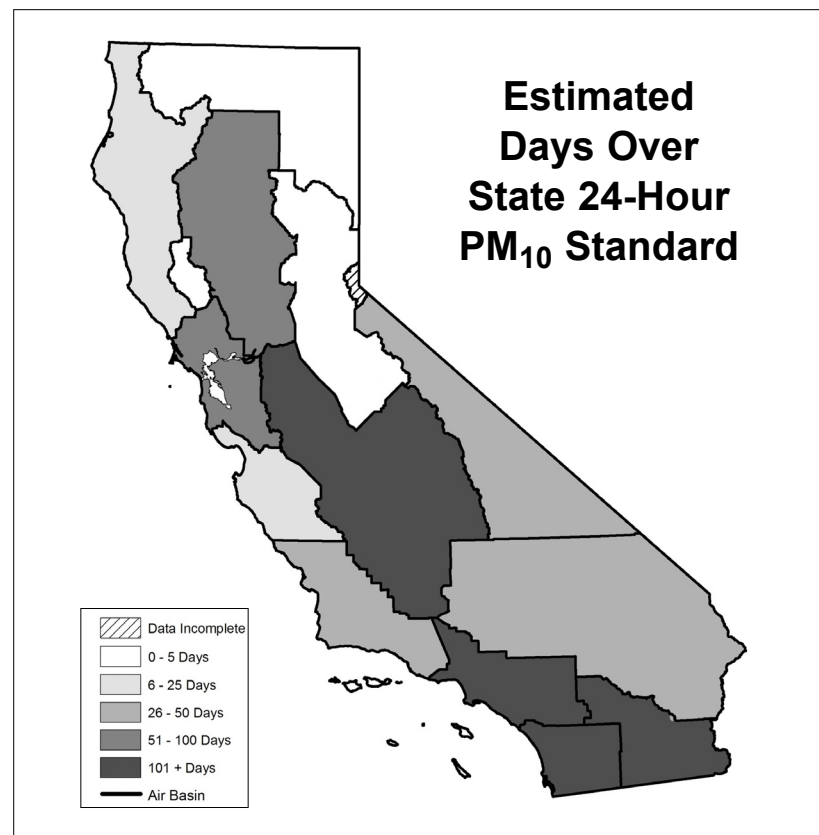


Figure 1-2

worst urban areas were up to four times the level of the State standard (in 2006, a maximum of 169  $\mu\text{g}/\text{m}^3$  in San Diego, 206  $\mu\text{g}/\text{m}^3$  in San Joaquin Valley, and 124  $\mu\text{g}/\text{m}^3$  in South Coast, compared with a standard of 50  $\mu\text{g}/\text{m}^3$ ).

- Similar to ozone, PM<sub>10</sub> still poses substantial challenges. However, over the last 15 years, almost all areas show progress, although at a slower rate relative to ozone. Additional emission controls will be needed to attain the PM<sub>10</sub> standards in all areas of the State.

## *Interpreting the Emission and Air Quality Statistics*

### *Interpreting Criteria Pollutant Emission and Air Quality Statistics.*

A number of pollutant trends are presented in this almanac. Emission and air quality trends for the same pollutant are usually correlated. In some cases, however, the two trends may differ, at least in terms of the rate of increase or decrease. The comparison of emission trends to air quality trends is complex, and a number of confounding factors can affect the resulting trends, such as the impacts of ozone and transported PM from one area to another. An area can show a stable (or flat) emission trend because local emission growth offsets the reductions achieved through technology, but this same area may show an improvement in air quality because ambient concentrations reflect the impact of transport from an upwind region that has improved. Other factors that can affect air quality are meteorology, which can cause large differences from year-to-year, and changes in monitoring sites (both site closures and the establishment of new sites). In addition, the emission data and some air quality statistics are based on estimates. These estimates use the best available methods, however, they embody some degree of uncertainty. All of these factors should be kept in mind when using and interpreting the trends.

Emission inventory trends make use of historical emission inventory data and projections based on expectations of future economic and population growth and emission controls. The historical emission inventory data in this almanac were updated to reflect improvements in emission inventory methodologies. The future year projections for stationary and areawide sources were developed using the California Emission Forecasting System (CEFS) model assuming a 2006 base year and California-specific economic projections. The emissions data in this edition are the same as presented in the previous edition and will be updated in the 2009 Almanac. These economic projections were prepared by E.H. Pechan and Associates and reflect information provided by local air districts. The stationary source emission

forecasts reflect control measure information received from local air districts as of September 2006. Future year emission projections for on- and off-road vehicles were developed using the ARB EMFAC2007 and OFFROAD2007 models, respectively. State Implementation Plan (SIP) and conformity inventory forecasts may differ from the forecasts presented in this almanac. For more information on these forecasts, please see the ARB SIP web page at [www.arb.ca.gov/sip/siprev1.htm](http://www.arb.ca.gov/sip/siprev1.htm).

In general, the criteria pollutant air quality trends in this almanac represent data that have been summarized from a network of monitoring sites to characterize the air quality in a particular region (for example, a county or air basin). Whenever data are summarized, the resulting statistics may be influenced by a number of factors, including the number of monitoring sites in operation and the completeness of the data. To help in interpreting the air quality trends, the ARB has included information on the time periods for which air quality data are available for different pollutants at sites in California and Baja, Mexico in its publication titled: “*California State and Local Air Monitoring Network Plan - 2007*”. This report is available on the web at [www.arb.ca.gov/aqd/netrpt/netrpt.htm](http://www.arb.ca.gov/aqd/netrpt/netrpt.htm), or from the ARB’s Planning and Technical Support Division by calling (916) 322-5350.

A number of air quality statistics or indicators are used in this document. In general, 1-hour, 8-hour, and 24-hour concentrations reflect measured values and can be summarized by day, season, or year. These data are also used to determine the number of days in which State or national standards were exceeded. For the most part, this almanac provides data summarized as annual values. In contrast to measured values, the peak indicators are calculated values based on measured data. The peak indicator is used throughout the almanac for air quality trends for State standards. It represents the maximum concentration expected to be exceeded no more than once per year,



on average, based on the distribution of the data for each monitoring site. Because it is based on a robust statistical calculation using three years of data, it is relatively stable, thereby providing a trend indicator that is not highly influenced by year-to-year changes in weather. Finally, it is important to point out that the calculated number of days above the State and national PM<sub>10</sub> and PM<sub>2.5</sub> standards differ from other pollutants in that they are statistically derived from the measured data. This is because PM monitoring does not occur every day.

***Interpreting the Toxic Air Contaminant Emission and Air Quality Statistics.*** This almanac includes emission data, ambient concentrations, and health risk estimates for the ten toxic air contaminants (TACs) that generally pose the greatest known ambient risk in California. A TAC is defined as “an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health” (Health and Safety Code section 39655). Numerous factors influence ambient measurements of TACs, and a number of assumptions are embodied in the summary statistics. Only the most important factors are summarized below.

The toxics emission inventory for 2006 represents the most current inventory compiled by the ARB staff and is the same inventory as the 2007 edition of the Almanac. The toxic emissions for stationary sources include emission data from the AB 2588 Air Toxics “Hot Spots” Program. For all source categories associated with diesel fuel combustion, all PM emitted from these sources was considered “diesel PM.” The areawide source emissions were estimated by either the local air districts or the ARB staff. These toxic emission estimates were developed by speciating criteria emissions. Emission estimates for the other mobile source categories are primarily from ARB’s OFFROAD2007 model, speciated for toxics. For the categories not currently included in the model, the emission estimates have been developed by either local air districts or ARB staff. Local air districts may also provide estimates for categories usually developed by ARB staff. In this case, toxic emissions for all area sources and mobile

sources are estimated by speciating criteria pollutants with category specific profiles. Finally, the on-road mobile source emission estimates are based on the current model, EMFAC2007. Again, the emission estimates have been speciated for toxics. The toxics emissions data are the same as presented in the previous edition and will be updated in the 2009 Almanac.

Air quality statistics are based on the analysis of monitoring data collected by the ARB. TAC air quality data are also collected by the local air districts and for special studies. However, for consistency, only data collected by the ARB are included here. Based on available data, the ten TACs that pose the greatest known ambient risk are acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, *para*-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (diesel PM).

The ARB established the TAC network after the California Legislature enacted a program in 1983 to identify the health effects of TACs and reduce their exposure to protect the public health. The network measures the presence of TACs in the ambient air, and statewide toxics monitoring data are available from 1989 onwards. In general, TAC concentrations are sampled once every twelve days, for an average of two to three samples per month. The measured concentrations are used to represent average statewide concentrations and health risk. It is important to note that actual concentrations can vary from one location to another, and local concentrations and risks may be either higher or lower than the average values. The ARB has also been involved in efforts to better characterize local and community-wide exposures, and more information on these studies is available at [www.arb.ca.gov/ch/ch.htm](http://www.arb.ca.gov/ch/ch.htm).

Since the TAC network began operation, there have been some site changes. In several cases, the site changes occurred during the middle of a year. Because the site-by-site statistics presented in Appendix C do not combine concentrations measured at different sites, an annual average for the year during which the site change occurred will be missing for those sites. Since all of the valid monthly means from

each site are included in the air basin or statewide annual average, the site changes may lead to some variation in year-to-year statistics. In particular, the average health risk estimates may include a varying number of compounds and sites. Therefore, they may not be directly comparable from one year to the next. Site changes in each of the five major air basins are described in Chapter 5.

During the normal course of monitoring, most of the TACs have experienced some missing data due to sampling or analysis problems, and several TACs show substantial gaps in their data record. The every 12 days sampling schedule only allows for two or three samples to be collected at each site during any month. In order to calculate a valid annual average (a mean of monthly means), each month during the year must have at least one valid measurement. Therefore, if there are no valid data in any given month, data for the year will appear to be missing, even though some data may be available.

In some cases, TAC concentrations are below the level that an instrument can reliably measure. For these measurements, the values are assumed to be one-half the detection limit when estimating an annual average. Table 5-1 in Chapter 5 lists the detection limits for the ten TACs discussed in this almanac. It is important to note that the concentrations and health risk estimates presented in this almanac are based on ambient outdoor measurements. They do not account for any indoor exposures to TACs, which can contribute significantly to individual health risk.

The health risk estimates reflect the estimated number of excess cancer cases per million people exposed over a 70-year period. These data are very useful for comparing relative health risks for the ten compounds considered (e.g., comparing the level of health risk for one compound or area relative to another). However, it is important to note that there are varying degrees of uncertainty associated with these data. The risks presented are only for the ten compounds considered. In addition, the risk is for the general population's outdoor exposure, and actual health risk may be higher or lower than reported here. Furthermore, a number of factors add to the uncertainty, includ-

ing the assumptions of the underlying risk factors, the assumption of a constant 70-year exposure, measurement biases and uncertainties, and the absence of ambient air quality data for other TACs that may pose a substantial health risk. Since risk data do not have precision at the tenth decimal place, risks that are less than one excess cancer case per million people are expressed as “<1”.

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## *Meteorology's Role in Air Quality*

This almanac presents air quality trends for a 20-year period. These trends reflect the progress achieved through a long history of emission control programs. Besides emissions, the trends are affected by meteorology (weather) and terrain. Meteorology causes year-to-year changes in air quality trends that can mask the benefits of emission reductions. Therefore, this almanac focuses on long-term rather than short-term trends.

Meteorology does not affect all pollutants in all places the same way. Ozone is formed in the atmosphere as sunlight initiates a complex set of chemical reactions. On hot sunny days, the abundant sunlight starts the ozone-forming processes and high temperatures promote fast chemical reactions. If the air is stagnant, the ozone formed is not dispersed or diluted by cleaner air. So, the highest ozone concentrations usually occur on hot and sunny days with light breezes or calm air. In some areas, high ozone levels may represent transport from upwind regions; local weather conditions associated with transport may differ from place to place. Since hot and sunny summer days typically lead to high ozone, it is not surprising that cold and cloudy winter days have much lower concentrations.

California's terrain also plays a role in promoting high levels of pollutants. The mountains that surround the San Joaquin Valley and those that form a barrier to the east of the Los Angeles area tend to retain air within these basins, which limits the dispersion of all pollutants, including ozone.

Meteorology affects PM, though some of its effects on PM differ from its effects on ozone. Ambient PM is comprised of primary PM that is directly emitted and secondary PM that forms in the atmosphere through chemical and physical processes. Primary PM includes dust and soot, while secondary PM includes particulate nitrates and sulfates. Some areas are subject to strong winds that lift dust into the air resulting in high concentrations of primary PM. On November 29, 1991, dry hurricane-force winds in the San Joaquin Valley created a massive dust storm and extremely high PM levels. In other situations, cold, calm, and humid air can promote the buildup of secondary PM.

Relatively high PM levels in the South Coast and San Joaquin Valley often occur in the winter under these meteorological conditions. Because winds disperse PM and rain washes PM out of the air, the lowest PM concentrations often occur on rainy winter days.

Meteorology impacts air quality, and year-to-year variations in meteorology can affect year-to-year changes in ambient air quality trends. As a result, meteorological variations add to the difficulty of interpreting long-term air quality trends. However, data for meteorological parameters such as temperature, wind speed, and wind direction can help characterize a year with respect to the weather conditions influencing air pollution. For example, an analysis of daily weather conditions in the South Coast Air Basin showed that there were many days during 1981, 1994, 1995, and 2003 with weather conditions favoring high levels of ozone. In contrast, there were fewer such days during 1986, 1987, 1991, and 1993. A similar analysis of daily weather conditions in the San Joaquin Valley showed a higher than average number of days with high ozone forming potential during 1994, 1996, 2001, 2002, and 2003, while 1997, 1998, and 1999 had a lower than average number of such days. Similar to ozone, annual average PM concentrations are also affected by meteorology – in particular, rainfall. In northern California, 1998 had many rainy days which resulted in lower annual average PM concentrations. In contrast, the following year was quite dry, and annual average PM concentrations increased. These year-to-year variations in the average meteorological conditions are reflected in the long-term pollutant trends.

A full accounting of the impact of weather on pollution levels is desirable but challenging. ARB is currently developing methods to account for these impacts when evaluating air quality trends.

The Web Resources Section provides information on how to access sources of meteorological data. Sources such as ARB's real-time Air Quality and Meteorological Information System (AQMIS2) allow access to various wind parameters including wind speed/direction, temperature, humidity, and visibility.

## *Sources of Emissions in California*

California is a diverse state with many sources of air pollution. To estimate the sources and quantities of pollution, the ARB, in cooperation with local air districts and industry, maintains an inventory of California emission sources. Sources are subdivided into four major emission categories: stationary sources, area-wide sources, mobile sources, and natural sources.

Stationary source emissions are based on estimates made by facility operators and local air districts. Emissions from specific facilities can be identified by name and location. Area-wide emissions are estimated by ARB and local air district staffs. Emissions from area-wide sources may be either from small individual sources, such as residential fireplaces, or from widely distributed sources that cannot be tied to a single location, such as consumer products and dust from unpaved roads. Mobile source emissions are estimated by ARB staff with assistance from districts and other government agencies. Mobile sources include on-road cars, trucks, and buses and other sources such as boats, off-road recreational vehicles, aircraft, and trains. Natural sources are also estimated by the ARB staff and the air districts. These sources include biogenic hydrocarbons, geogenic hydrocarbons, natural wind-blown dust, and wildfires.

For the inventoried emission sources, the ARB compiles emission estimates for both the criteria pollutants and TACs. Chapters 2 through 4 and Appendices A and B focus on five criteria pollutants: ozone, PM, CO, NO<sub>2</sub>, and SO<sub>2</sub>. Emissions related to these criteria pollutants include reactive organic gases (ROG), oxides of nitrogen (NO<sub>x</sub>), CO, oxides of sulfur (SO<sub>x</sub>), ammonia (NH<sub>3</sub>), and directly emitted PM<sub>10</sub> and PM<sub>2.5</sub>.

While some pollutants, such as CO, are directly emitted, others are formed in the atmosphere from *precursor emissions*. Such is the case with ozone, which is formed in the atmosphere when ROG and NO<sub>x</sub>

precursor emissions react in the presence of sunlight. PM which includes PM<sub>10</sub> and PM<sub>2.5</sub>, is a complex pollutant that can either be directly emitted or formed in the atmosphere from precursor emissions. PM precursors include NO<sub>x</sub>, ROG, SO<sub>x</sub>, and NH<sub>3</sub>. Examples of directly emitted PM include dust and soot.

*Hydrocarbon* is a general term used to describe compounds comprised of hydrogen and carbon atoms. Hydrocarbons are classified as to how photochemically reactive they are: relatively reactive or relatively non-reactive. Emissions of *Total Organic Gases (TOG)* and *Reactive Organic Gases (ROG)* are two classes of hydrocarbons measured for California's emissions inventory. TOG includes all hydrocarbons, both reactive and non-reactive. In contrast, ROG includes only the reactive hydrocarbons.

In addition to information about the criteria pollutants, Chapter 5 and Appendix C focus on the ten TACs that pose the greatest potential health risk, primarily based on statewide ambient air quality data. These ten TACs are: acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, *para*-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel PM. Excluding diesel PM, the remaining nine TACs represent about 94 percent of the potential health risk as measured through the statewide TAC air monitoring network. Although diesel PM is not currently monitored, emissions and modeled ambient concentrations indicate that diesel PM has a higher health risk than the other nine compounds combined. It is important to note that there may be other compounds that pose a substantial risk, but have not yet been identified as a concern and which data are not yet available or are currently under review.

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## Air Quality Monitoring

Meteorology acts on the emissions released into the atmosphere to produce pollutant concentrations. These airborne pollutant concentrations are measured throughout California at air quality monitoring sites. The ARB operates a statewide network of monitors. Data from this network are supplemented with data collected by local air districts, other public agencies, and private contractors.

As shown in Figure 1-3, there are more than 250 criteria pollutant monitoring sites in California. Currently, the ARB also monitors ambient concentrations of TACs at 17 of these sites. In addition to the California sites, a few monitoring sites are located in Mexico. These sites were established in cooperation with the U.S. EPA and the Mexican government to monitor the cross-border transport of pollutants and pollutant precursors.

Each year, more than ten million air quality measurements from all of these sites are collected and stored in a comprehensive air quality database maintained by the ARB. To ensure the integrity of the data, the ARB routinely conducts audits and reviews of the monitoring instruments and the resulting data.

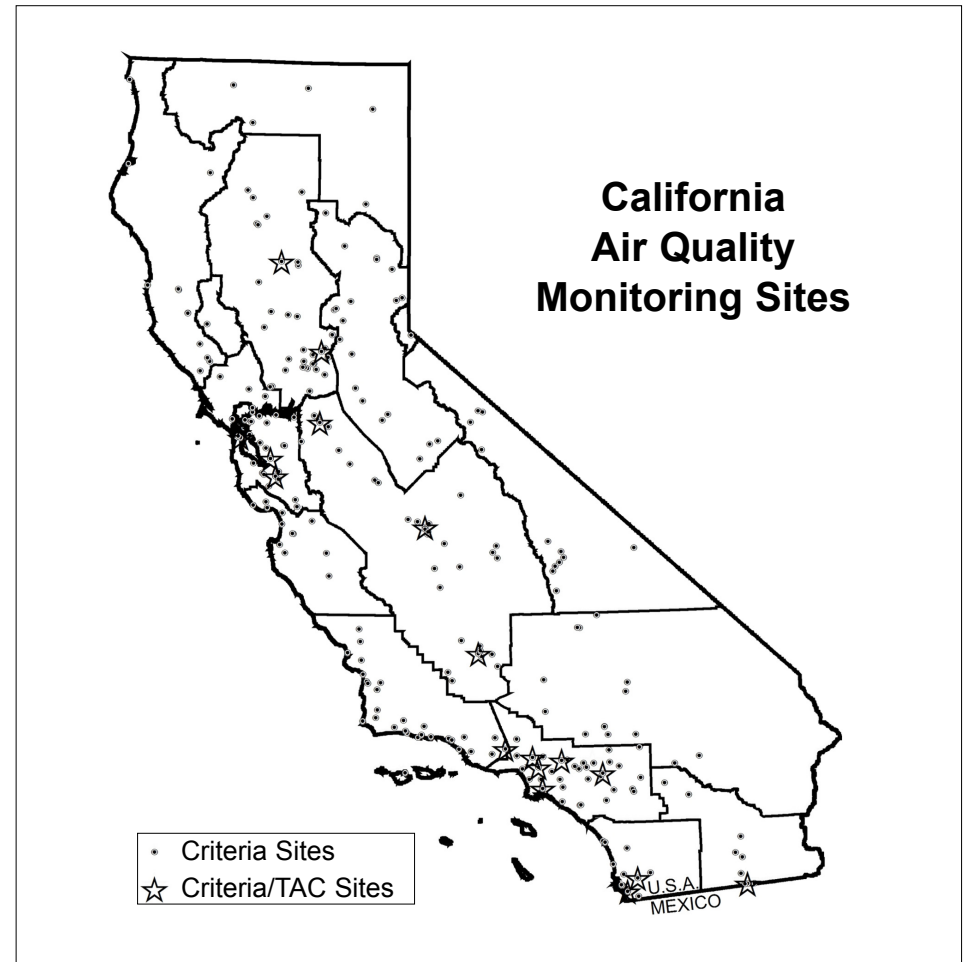


Figure 1-3

## California Air Basins

California contains a wide variety of climates, physical features, and emission sources. This variety makes the task of improving air quality complex, because what works in one area may not be effective in another area. To better manage common air quality problems, California is divided into 15 air basins, as shown in Figure 1-4 and Table 1-1. The ARB established the initial air basin boundaries during 1968.

An air basin generally has similar meteorological and geographical conditions throughout. To the extent possible, the air basin boundaries follow along political boundary lines and are defined to include both the source area and the receptor area. However, air masses can move freely from basin to basin. As a result, pollutants such as ozone and PM, as well as their precursors, can be transported across air basin boundaries, and interbasin transport is a reality that must be dealt with in air quality programs. Although established in 1968, the air basin boundaries have been changed several times over the years, to provide for better air quality management.



Figure 1-4

## List of Counties in Each Air Basin

### Great Basin Valleys Air Basin

- Alpine
- Inyo
- Mono

### Lake County Air Basin

- Lake

### Lake Tahoe Air Basin

- El Dorado (portion)
- Placer (portion)

### Mojave Desert Air Basin

- Kern (portion)
- Los Angeles (portion)
- Riverside (portion)
- San Bernardino (portion)

### Mountain Counties Air Basin

- Amador
- Calaveras
- El Dorado (portion)
- Mariposa
- Nevada
- Placer (portion)
- Plumas
- Sierra
- Tuolumne

### North Central Coast Air Basin

- Monterey
- San Benito
- Santa Cruz

### North Coast Air Basin

- Del Norte
- Humboldt
- Mendocino
- Sonoma (portion)
- Trinity

### Northeast Plateau Air Basin

- Lassen
- Modoc
- Siskiyou

### Sacramento Valley Air Basin

- Butte
- Colusa
- Glenn
- Placer (portion)
- Sacramento
- Shasta
- Solano (portion)
- Sutter
- Tehama
- Yolo
- Yuba



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## List of Counties in Each Air Basin

### Salton Sea Air Basin

- Imperial
- Riverside (portion)

### San Diego Air Basin

- San Diego

### San Francisco Bay Area Air Basin

- Alameda
- Contra Costa
- Marin
- Napa
- San Francisco
- San Mateo
- Santa Clara
- Solano (portion)
- Sonoma (portion)

### San Joaquin Valley Air Basin

- Fresno
- Kern (portion)
- Kings
- Madera
- Merced
- San Joaquin
- Stanislaus
- Tulare

### South Central Coast Air Basin

- San Luis Obispo
- Santa Barbara
- Ventura

### South Coast Air Basin

- Los Angeles (portion)
- Orange
- Riverside (portion)
- San Bernardino (portion)

Table 1-1 (continued)

## *Criteria Air Pollutants*

### California and National Ambient Air Quality Standards

Very simply, an ambient air quality standard is the definition of “clean air.” More specifically, a standard establishes the concentration above which the pollutant is known to cause adverse health effects to sensitive groups within the population, such as children and the elderly. Both the California and federal governments have adopted health-based standards for the *criteria pollutants*, which include but are not limited to ozone, PM<sub>10</sub>, PM<sub>2.5</sub>, and CO. U.S. EPA recently revised the national PM and ozone standards. Information on the new PM standards can be found on the U.S. EPA’s website at [www.epa.gov/air/particlepollution/actions.html](http://www.epa.gov/air/particlepollution/actions.html) and on the new ozone standards at [www.epa.gov/air/ozonepollution/actions.html](http://www.epa.gov/air/ozonepollution/actions.html).

For most pollutants the State standards are more stringent than the national standards. The differences in the standards are generally explained by the different health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the State standards incorporate a margin of safety to protect sensitive individuals (an abbreviated list of the State and national ambient air quality standards can be found on page 1-22, while a complete list can be found on the ARB website at [www.arb.ca.gov/research/aaqs/aaqs.htm](http://www.arb.ca.gov/research/aaqs/aaqs.htm)). In general, the air quality standards are expressed as a measure of the amount of pollutant per unit of air. For example, the PM standards are expressed as micrograms of particulate matter per cubic meter of air ( $\mu\text{g}/\text{m}^3$ ) and the ozone standards are expressed in parts per million (ppm).

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## Ozone

Ozone, a colorless gas which is odorless at ambient levels, is the chief component of urban smog. Ozone is not directly emitted as a pollutant, but is formed in the atmosphere when hydrocarbon and NO<sub>x</sub> precursor emissions react in the presence of sunlight. Meteorology plays a major role in ozone formation. Generally, low wind speeds or stagnant air, coupled with warm temperatures and cloudless skies provide the optimum conditions for ozone formation. As a result, summer is generally the peak ozone season. Because of the reaction time involved, peak ozone concentrations often occur far downwind of the precursor emissions. Therefore, ozone is a regional pollutant that often impacts a large area.

The ARB and EPA are required to periodically review its air quality standards and the most recent health studies to ensure that the standards are adequately protective of human health. Air quality standards have become more stringent over time as new studies have shown adverse impacts at lower concentration levels.

Most recently, ARB and EPA have adopted 8-hour ozone standards designed to protect the public against the chronic health effects from day-long exposures to unhealthy ozone concentrations. California also has a 1-hour standard to protect the public against acute exposures from elevated short-term ozone concentrations.

California's 8-hour ozone standard of 0.070 ppm is the most health-protective ozone standard in the country. On March 12, 2008, U.S. EPA completed their review of the most current health studies and concluded that the level of the current national ozone standard at 0.08 ppm was not sufficiently protective of human health. They adopted a new standard of 0.075 ppm, which will become effective later this year. It will trigger a new set of planning requirements in the next three years which will build upon our current SIP efforts. For more information on the new national ozone standard, please refer to the U.S. EPA's webpage at <http://www.epa.gov/air/ozonepollution/actions.html>.

**State Ozone Standards:**

0.070 ppm for 8 hours,  
not to be exceeded *and*  
0.09 ppm for 1 hour,  
not to be exceeded.

**National Ozone Standard:**

0.08 ppm for 8 hours,  
not to be exceeded,  
based on the fourth highest  
concentration averaged  
over three years.

Table 1-2

## Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>)

Exposure to PM aggravates a number of respiratory illnesses and may even cause early death in people with existing heart and lung disease. Both long-term and short-term exposure can have adverse health impacts. All particles with a diameter of 10 microns or smaller (PM<sub>10</sub>) are harmful. For comparison, the diameter of a human hair is about 50 to 100 microns. PM<sub>10</sub> includes the subgroup of finer particles with an aerodynamic diameter of 2.5 microns or smaller (PM<sub>2.5</sub>). These finer particles pose an increased health risk because they can deposit deep in the lung and contain substances that are particularly harmful to human health.

PM is a mixture of substances that includes elements such as carbon and metals; compounds such as nitrates, sulfates, and organic compounds; and complex mixtures such as diesel exhaust and soil. These substances may occur as solid particles or liquid droplets. Some particles are emitted directly into the atmosphere. Others, referred to as secondary particles, result from gases that are transformed into particles through physical and chemical processes in the atmosphere.

In 1982, the ARB adopted 24-hour average and annual average PM<sub>10</sub> standards. National ambient air quality standards for PM<sub>10</sub> have been in place since 1987. However, California's PM<sub>10</sub> standards are more health-protective.

In June 2002, the ARB lowered the level of the PM<sub>10</sub> annual standard from 30  $\mu\text{g}/\text{m}^3$  to 20  $\mu\text{g}/\text{m}^3$  and established a new annual PM<sub>2.5</sub> standard of 12  $\mu\text{g}/\text{m}^3$ . The ARB plans to review short-term PM exposure studies in the future to determine if the current State 24-hour PM standards adequately protect public health. Additional information on the State PM standards is available on the ARB's website at [www.arb.ca.gov/research/aaqs/std-rs/std-rs.htm](http://www.arb.ca.gov/research/aaqs/std-rs/std-rs.htm).

The U.S. EPA promulgated new national ambient air quality standards for PM<sub>2.5</sub> in 1997 (annual of 15  $\mu\text{g}/\text{m}^3$  and 24-hour of 65  $\mu\text{g}/\text{m}^3$ ) to

complement the national PM<sub>10</sub> standards. SIPs for these standards were due in Spring 2008. In 2006, U.S. EPA strengthened the 24-hour PM<sub>2.5</sub> standard (to 35  $\mu\text{g}/\text{m}^3$ ) and revoked the annual PM<sub>10</sub> standard. SIPs for the revised PM<sub>2.5</sub> standard are due in 2012.

### State PM<sub>10</sub> Standards:

50  $\mu\text{g}/\text{m}^3$  for 24 hours

not to be exceeded *and*

20  $\mu\text{g}/\text{m}^3$  annual arithmetic mean,

not to be exceeded.

### State PM<sub>2.5</sub> Standard:

12  $\mu\text{g}/\text{m}^3$  annual arithmetic mean,

not to be exceeded.

### National PM<sub>10</sub> Standard:

150  $\mu\text{g}/\text{m}^3$  for 24 hours, not to be exceeded,

more than once per year.

### National PM<sub>2.5</sub> Standards:

35  $\mu\text{g}/\text{m}^3$  for 24 hours based on the

98<sup>th</sup> percentile concentration averaged

over three years, not to be exceeded *and*

15  $\mu\text{g}/\text{m}^3$  annual arithmetic mean

averaged over 3 years, not to be exceeded.

Table 1-3

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## Carbon Monoxide

Carbon monoxide is a colorless and odorless gas that is directly emitted as a by-product of combustion. The highest concentrations are generally associated with cold stagnant weather conditions that occur during winter. In contrast to ozone, which tends to be a regional pollutant, CO problems tend to be localized.

Carbon monoxide is harmful because it is readily absorbed through the lungs into the blood, where it binds with hemoglobin and reduces the ability of the blood to carry oxygen. As a result, insufficient oxygen reaches the heart, brain, and other tissues. The harm caused by CO can be critical for people with heart disease (angina), chronic lung disease, or anemia, as well as for unborn children. Even healthy people exposed to high levels of CO can experience headaches, fatigue, slow reflexes, and dizziness. Health damage caused by CO is of greater concern at high elevations where the air is less dense, aggravating the consequences of reduced oxygen supply. As a result, California has a more stringent CO standard for the Lake Tahoe Air Basin.

### **State CO Standards:**

20 ppm for 1 hour *and*  
9.0 ppm for 8 hours,  
neither to be exceeded.

6 ppm for 8 hours  
(Lake Tahoe Air Basin only),  
not to be equaled or exceeded.

### **National CO Standards:**

35 ppm for 1 hour *and*  
9 ppm for 8 hours,  
neither to be exceeded more  
than once per year.

Table 1-4

## Air Quality Standards

| Pollutant                                    | Averaging Time         | California Standards <sup>1</sup> | National Standards <sup>2</sup> |                          |
|--|------------------------|-----------------------------------|---------------------------------|--------------------------|
|  |                        | Concentration                     | Primary <sup>3</sup>            | Secondary <sup>4</sup>   |
| Ozone (O <sub>3</sub> )                      | 1 Hour                 | 0.09 ppm                          | —                               | —                        |
|  | 8 Hour                 | 0.070 ppm                         | 0.08 ppm                        | Same as Primary Standard |
| Particulate Matter (PM <sub>10</sub> )       | 24 Hour                | 50 µg/m <sup>3</sup>              | 150 µg/m <sup>3</sup>           | Same as Primary Standard |
|  | Annual Arithmetic Mean | 20 µg/m <sup>3</sup>              | —                               |                          |
| Fine Particulate Matter (PM <sub>2.5</sub> ) | 24 Hour                | —                                 | 35 µg/m <sup>3</sup>            | Same as Primary Standard |
|  | Annual Arithmetic Mean | 12 µg/m <sup>3</sup>              | 15 µg/m <sup>3</sup>            |                          |
| Carbon Monoxide (CO)                         | 8 Hour                 | 9.0 ppm                           | 9 ppm                           | None                     |
|  | 1 Hour                 | 20 ppm                            | 35 ppm                          |                          |
|  | 8 Hour (Lake Tahoe)    | 6 ppm                             | —                               | —                        |
| Nitrogen Dioxide (NO <sub>2</sub> )          | Annual Arithmetic Mean | 0.030 ppm                         | 0.053 ppm                       | Same as Primary Standard |
|  | 1 Hour                 | 0.18 ppm                          | —                               |                          |
| Sulfur Dioxide (SO <sub>2</sub> )            | Annual Arithmetic Mean | —                                 | 0.030 ppm                       | —                        |
|  | 24 Hour                | 0.04 ppm                          | 0.14 ppm                        | —                        |
|  | 3 Hour                 | —                                 | —                               | 0.5 ppm                  |
|  | 1 Hour                 | 0.25 ppm                          | —                               | —                        |
| Lead   | 30 Day Average         | 1.5 µg/m <sup>3</sup>             | —                               | —                        |
|  | Calendar Quarter       | —                                 | 1.5 µg/m <sup>3</sup>           | Same as Primary Standard |

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, PM<sub>10</sub>, PM<sub>2.5</sub>, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM<sub>10</sub>, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m<sup>3</sup> is equal to or less than one. For PM<sub>2.5</sub>, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

3. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

4. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

Table 1-5

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## California and National Area Designations

Both the California and federal governments use monitoring data to designate areas according to their attainment status for most of the pollutants with ambient air quality standards. The purpose of the designations is to identify those areas with air quality problems and thereby initiate planning efforts to make the air more healthful. There are three basic designation categories: nonattainment, attainment, and unclassified. In addition, the State designations include a subcategory of the nonattainment designation, called nonattainment-transitional. The nonattainment-transitional designation is given to nonattainment areas that are making progress and nearing attainment.

A *nonattainment designation* indicates that the air quality violates an ambient air quality standard. Although a number of areas may be designated as nonattainment for a particular pollutant, the severity of the problem can vary greatly. For example, in two ozone nonattainment areas, the first area has a measured maximum concentration of 0.13 ppm, while the second area has a measured maximum concentration of 0.23 ppm. While both areas are designated as nonattainment, it is obvious that the second area has a more severe ozone problem and will need a more stringent emission control strategy. To identify the severity of the problem and the extent of planning required, ozone and PM nonattainment areas are assigned a classification that is commensurate with the severity of their air quality problem (e.g., moderate, serious, severe).

In contrast to nonattainment, an *attainment designation* indicates that the air quality does not violate the established standard. Under the federal Clean Air Act, nonattainment areas that are redesignated as attainment must develop and implement maintenance plans designed to assure continued compliance with the standard.

Finally, an *unclassified designation* indicates that there are insufficient data for determining attainment or nonattainment. The U.S. EPA

combines unclassified and attainment into one designation for ozone, PM<sub>10</sub>, PM<sub>2.5</sub> and CO. More detailed information on the area designation categories can be found on the ARB's website at [www.arb.ca.gov/desig/desig.htm](http://www.arb.ca.gov/desig/desig.htm).



## Ozone - State Area Designations

On April 28, 2005, the ARB approved the nation's most health-protective ozone standard, with special consideration for children's health. The new 8-hour average standard of 0.070 ppm will further protect California's most vulnerable population from the chronic adverse health effects associated with ground-level ozone, or smog. ARB retained the 1-hour standard of 0.09 ppm to continue to protect the public from health effects associated with acute short-term exposures.

Figure 1-5 shows the State ozone designations which became effective July 26, 2007. The designation map on this page reflects the designations as approved by the Board. These designations reflect both the 1-hour and 8-hour standards. In order to be designated as attainment, an area must meet both standards. Because the 8-hour standard is more health-protective, there are now more nonattainment areas than during previous years, when only the 1-hour standard was in effect.

As indicated on the map, only a few areas attain the State ozone standards. However, new air quality plans and emission controls strategies will continue to reduce emissions and move areas closer to attainment.



Figure 1-5

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## Ozone - National 8-Hour Area Designations

Figure 1-6 shows the designations for the national 8-hour standard, which became effective on June 15, 2004. An area violates the national 8-hour ozone standard if the calculated fourth highest 8-hour concentrations averaged over a three-year period exceeds the level of the standard at any monitoring site in the region. There are 15 nonattainment areas in California, including the State's five largest urban areas. In addition, a number of smaller counties and rural areas exceed the standard. California has submitted to the U.S. EPA 8-hour ozone SIPs needed to attain this standard.



Figure 1-6

## PM<sub>10</sub> - State Area Designations

The majority of California is designated as nonattainment for the State PM<sub>10</sub> standards. Three areas in the northern half of the State, Siskiyou County, Lake County, and Northern Sonoma Air District, have been designated as attainment.

PM<sub>10</sub> remains a widespread problem, and its causes are very diverse. Because of the variety of sources and the size and chemical make-up of the particles, the PM<sub>10</sub> problem can vary considerably from one area to the next. In addition, high PM<sub>10</sub> concentrations are seasonal, and the high season varies from area to area. For example, in some areas, windblown dust may contribute to high PM<sub>10</sub> concentrations in the summer and fall, while in other areas, high concentrations due to secondary particles may occur during the winter. As a result, two areas with similar PM<sub>10</sub> concentrations may have very different PM<sub>10</sub> problems, and multiple control strategies are needed to effectively deal with these problems.

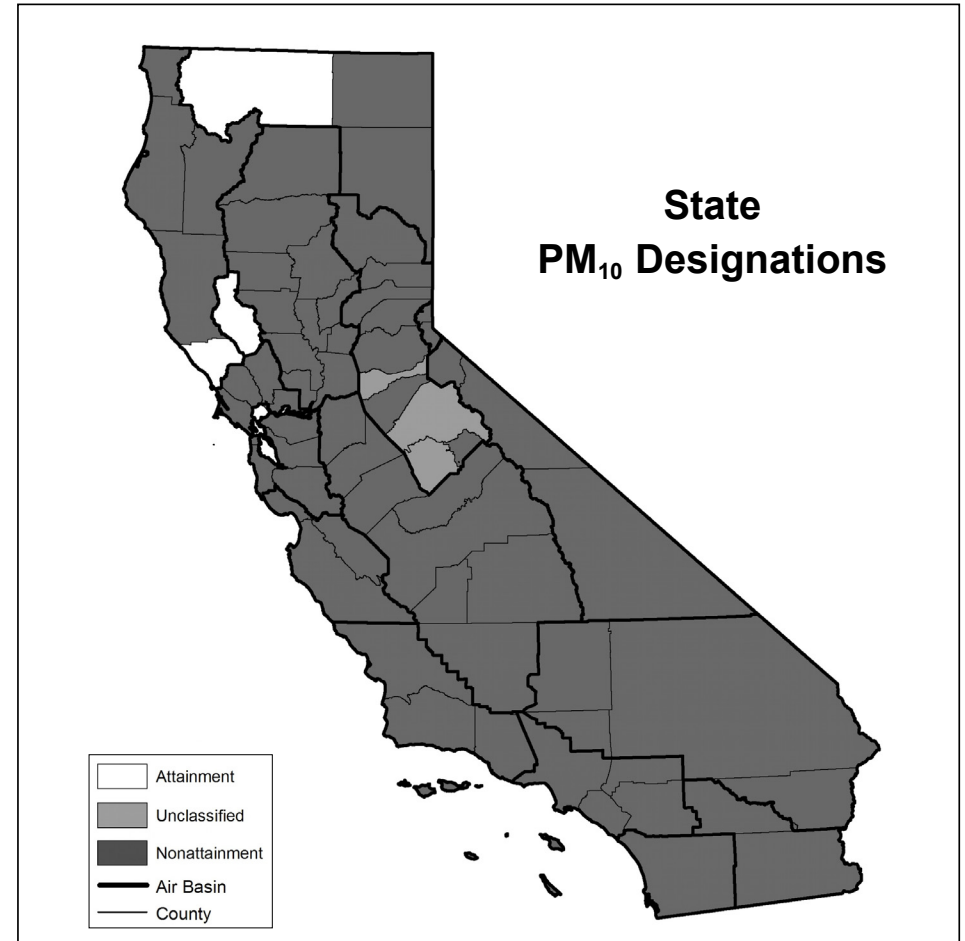


Figure 1-7

## PM<sub>10</sub> - National Area Designations

In contrast to the State PM<sub>10</sub> designations, there are only two designation categories for the national PM<sub>10</sub> standard: attainment/unclassified and nonattainment. Areas designated as nonattainment for the national PM<sub>10</sub> standard are required to develop and implement plans designed to meet the standard. Although not reflected in Figure 1-8, the San Joaquin Valley Air Basin is now in attainment of the national standard. Areas still designated as nonattainment, but which meet the national PM<sub>10</sub> standard, include the South Coast Air Basin, Sacramento County, Mammoth Lakes, Trona (northwestern San Bernardino County), and that portion of San Bernardino County outside of the South Coast Air Basin.

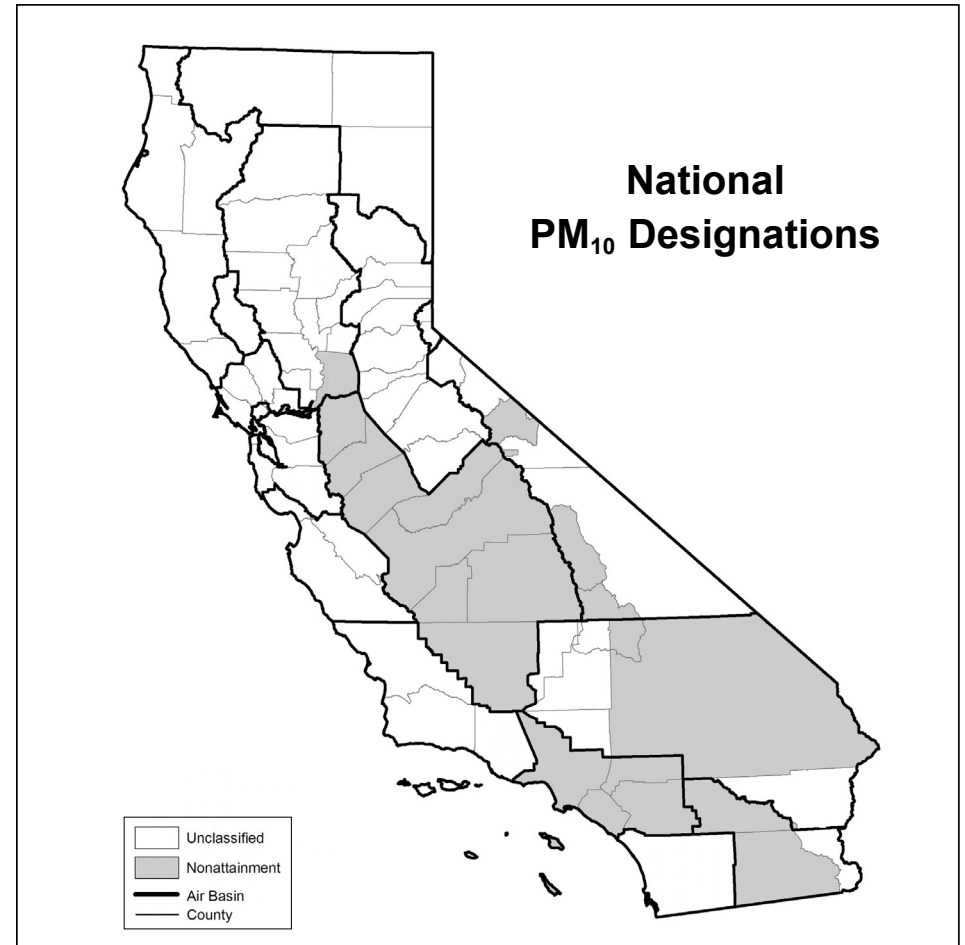


Figure 1-8

## PM<sub>2.5</sub> - State Area Designations

California adopted the new PM<sub>2.5</sub> standard in 2002, and this is the fourth year of area designations for the State PM<sub>2.5</sub> standard. Approximately half of California is designated as nonattainment for the State PM<sub>2.5</sub> standard, with the Lake County, Lake Tahoe, and North Central Coast air basins and San Luis Obispo County designated as attainment. Nonattainment areas include all of the major urban areas, as well as a few rural areas. Secondary formation of PM<sub>2.5</sub> and particles directly emitted from combustion processes are major contributors to high PM<sub>2.5</sub> concentrations in these areas.

California's programs to reduce ozone, PM<sub>10</sub>, and diesel PM are also helping reduce PM<sub>2.5</sub>. In addition, as required by legislation enacted in 2003 (Senate Bill 656), ARB assembled a list of measures that can be used by air districts to further reduce PM and PM precursors. Air districts recently adopted implementation schedules for a subset of these measures to address the nature and severity of their PM problem. This list is available on the web at [www.arb.ca.gov/pm/pmmeasures/pmmeasures.htm](http://www.arb.ca.gov/pm/pmmeasures/pmmeasures.htm).

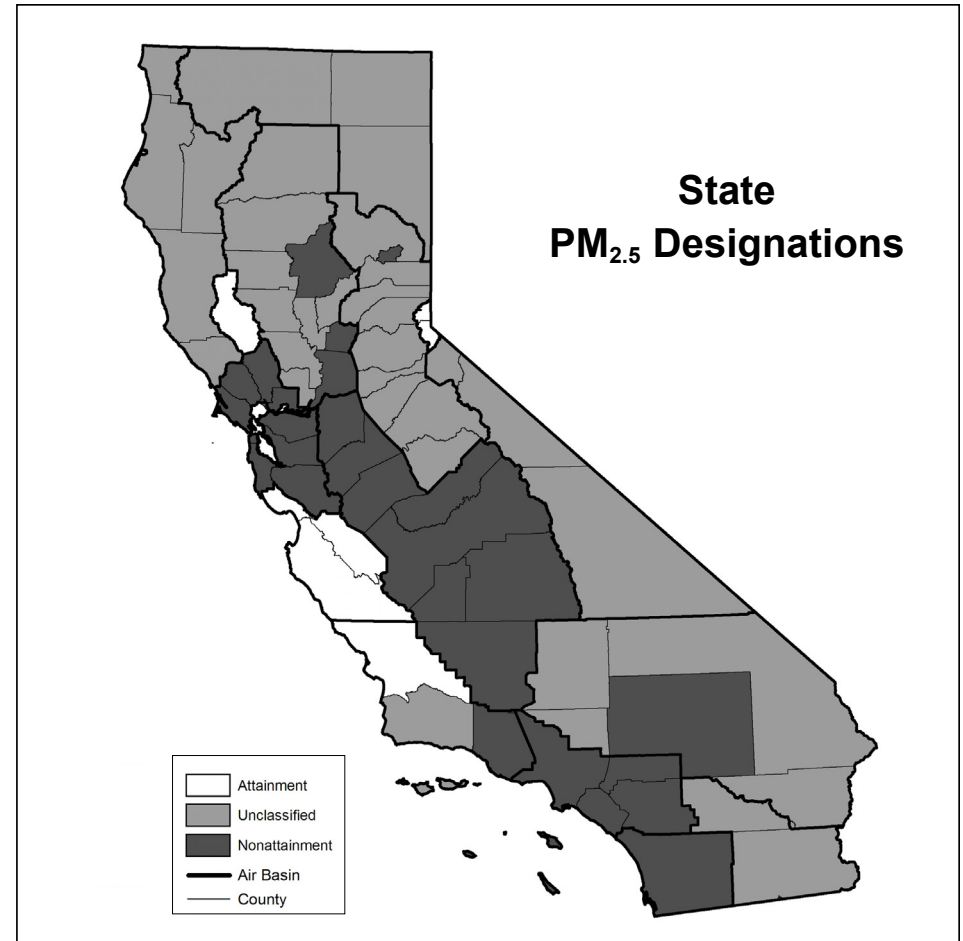


Figure 1-9

## PM<sub>2.5</sub> - National Area Designations

The U.S. EPA promulgated first time area designations for PM<sub>2.5</sub> in early 2005. The San Joaquin Valley and South Coast air basins are the only two areas designated as nonattainment. These air basins include major urban areas, as well as some rural areas. Reactions in the atmosphere from precursor gases emitted from combustion sources and direct particulate emissions from mobile sources and burning activities lead to high PM<sub>2.5</sub> concentrations in these areas. The remaining areas of the State are designated as unclassified.

SIPs for PM<sub>2.5</sub> nonattainment areas were scheduled for submittal in early 2008. U.S. EPA will promulgate area designations for the recently tightened 24-hour PM<sub>2.5</sub> standard in 2010. Nonattainment areas will submit SIPs in early 2013. Meanwhile, actions taken to reduce ozone, PM<sub>10</sub>, and diesel PM will also help in reducing PM<sub>2.5</sub>.

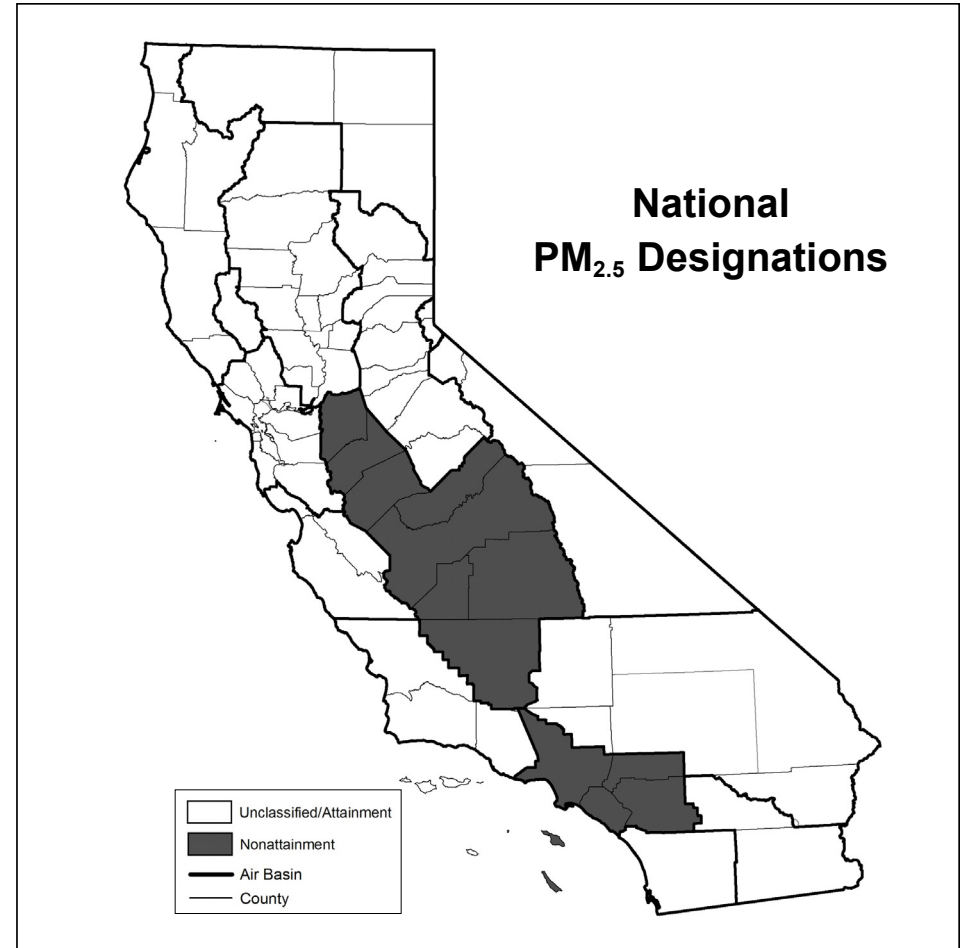


Figure 1-10

## Carbon Monoxide - State Area Designations

Currently, there are no areas in the State that exceed the State CO standards. The City of Calexico, in Imperial County, was the last area with concentrations exceeding the standards.

California has made tremendous progress in reducing CO concentrations in the last 12 years, during which a number of areas were redesignated as attainment. Most recently, the City of Calexico was redesignated as attainment. Los Angeles County was also redesignated as attainment in early 2005. Much of the progress in reducing ambient CO is attributable to motor vehicle controls and the introduction of cleaner fuels.

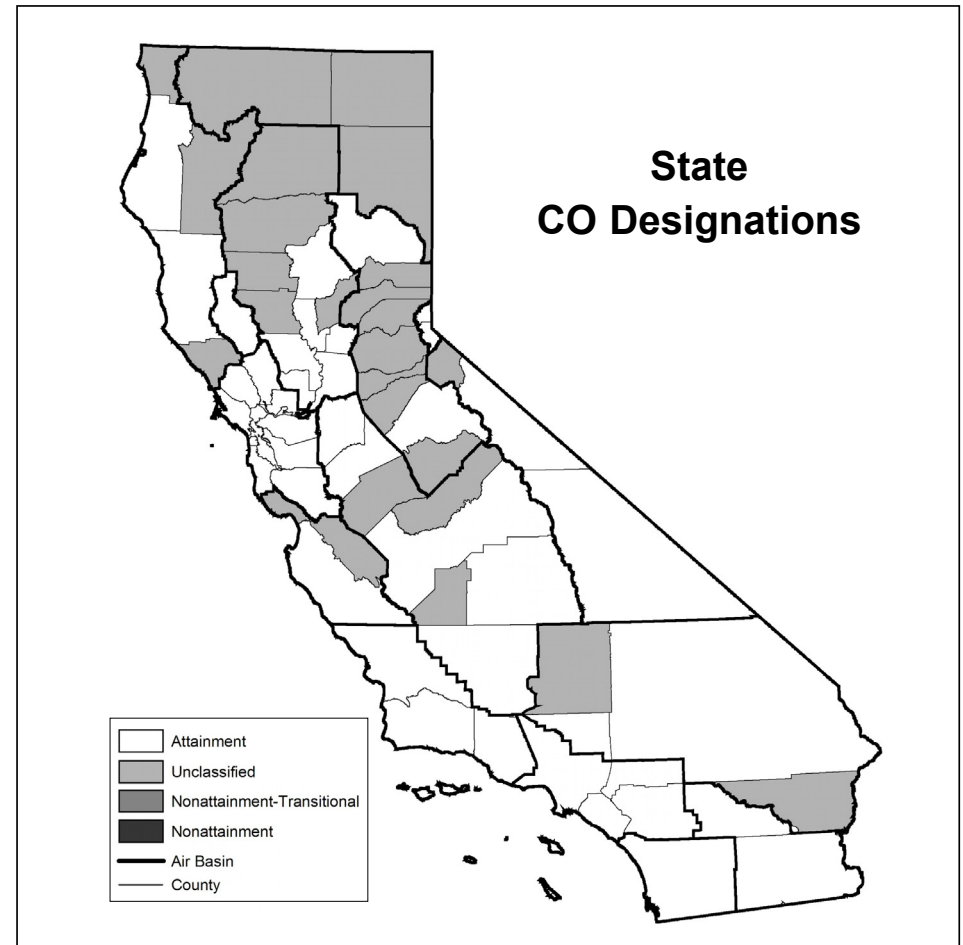


Figure 1-11



## Carbon Monoxide - National Area Designations

The U.S. EPA uses only two designation categories for CO: attainment/unclassified and nonattainment. All areas of California are currently designated as attainment/unclassified for the national CO standards. The South Coast Air Basin was the final area to meet the requirements for attainment, and the U.S. EPA redesignated the South Coast as attainment effective June 11, 2007.

Most CO is directly emitted by cars and trucks, and the ARB's motor vehicle controls should be sufficient to continue controlling the problem in the coming years.



Figure 1-12

## Toxic Air Contaminants

A toxic air contaminant or TAC is defined as an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air. However, their high toxicity or health risk may pose a threat to public health even at very low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which adverse health impacts are not expected to occur. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the State and federal governments have set ambient air quality standards.

The ARB's TAC program traces its beginning to the criteria pollutant program in the 1960s. For many years, the criteria pollutant control program has been effective at reducing TACs since many volatile organic compounds and PM constituents are also TACs. During the 1980s, the public's concern over toxic chemicals heightened. As a result, citizens demanded protection and control over the release of toxic chemicals into the air. In response to public concerns, the California legislature enacted a 1983 law governing the release of TACs into the air. This law charges the ARB with the responsibility for identifying substances as TACs, setting priorities for control, adopting control strategies, and promoting alternative processes. The ARB has designated almost 200 compounds as TACs. Additionally, the ARB has implemented control strategies for a number of compounds that pose high health risk and show potential for effective control.

The majority of the estimated health risk from TACs can be attributed to a relatively few compounds, the most important being PM from diesel-fueled engines (diesel PM). In addition to diesel PM, benzene and 1,3-butadiene are also significant contributors to overall ambient public health risk in California.

Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions will vary depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other TACs, diesel PM does not have ambient monitoring data because an accepted measurement method does not currently exist. However, the ARB has made preliminary concentration estimates for the State and its 15 air basins using a PM-based exposure method. The method uses the ARB emission inventory's PM<sub>10</sub> database, ambient PM<sub>10</sub> monitoring data, and the results from several studies on chemical speciation of ambient data. These data were used, along with receptor modeling techniques, to estimate outdoor concentrations of diesel PM. Details on the method and the resulting estimates for individual air basins can be found in the ARB report entitled: *“Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant -- Appendix III Part A Exposure Assessment,”* (April 1998). Currently, the diesel PM estimates are being reviewed to reflect control measures that were outlined in the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (October 2000).

Chapter 5 and Appendix C include information for ten TACs: acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, *para*-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel PM. These ten compounds pose the greatest known ambient risk based on air quality data, or concentration estimates in the case of diesel PM. The data are summarized for the State as a whole, for each of the five major air basins, and for each individual site within these air basins. Chapter 5 also discusses dioxins, based on available data. Note that other TACs may pose significant health risks, but sufficient air quality data are unavailable for these compounds.

Most of the TAC data in this almanac were obtained from monitors operated by the ARB. The majority of the information is presented on a pollutant-by-pollutant basis, with a focus on cancer risk. The available data represent average population exposures and may not represent the health risk near local sources. Localized impacts may involve exposure to different TACs or to higher or lower concentrations than those represented by the ambient monitoring data. ARB participated in several studies to address localized impacts and community health issues to learn which communities are the most impacted and who in those communities are the most vulnerable. More information on these studies is available on the web at [www.arb.ca.gov/ch/ch.htm](http://www.arb.ca.gov/ch/ch.htm).

Since Statewide TAC monitoring started in 1989, the ARB has substantially increased its knowledge about TACs, and the data indicate that control efforts have been effective in reducing public exposures and associated health risks. The future gradual phase-in of control strategies will likely continue to result in lower exposures for California's citizens. In the interim, work continues on identifying toxic substances and developing a better understanding of the risks they pose. Health experts still have only a limited knowledge of the mechanisms by which many toxic substances harm the body, and there is still much work to be done in researching health effects and quantifying cancer risks. Cooperative strategies between the ARB, businesses, and other State, local, and federal agencies will be a major focus of future control efforts.

Additional information on TACs may be found on the ARB website at [www.arb.ca.gov/toxics/toxics.htm](http://www.arb.ca.gov/toxics/toxics.htm). Detailed information on the health effects of these pollutants, as well as many other TACs, can be found in a report entitled: "Toxic Air Contaminant Identification List-Summaries." This report, dated September 1997, is available from the ARB Public Information Office and on the web at [www.arb.ca.gov/toxics/tac/intro.htm](http://www.arb.ca.gov/toxics/tac/intro.htm).



Figure 1-13

## Climate Change

The earth's climate has been warming for the past century. It is believed that this warming trend is related to the release of certain gases, commonly referred to as "greenhouse gases", into the atmosphere. The greenhouse gases (GHG) include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and hydrofluorocarbons. Climate research has identified other greenhouse agents that can drive climate change, particularly tropospheric ozone and atmospheric aerosols (particles containing sulfate, black carbon or other carbonaceous compounds).

Greenhouse gases absorb infrared energy that would otherwise escape from the earth. As the infrared energy is absorbed, the air surrounding the earth is heated. An overall warming trend has been recorded since the late 19<sup>th</sup> century, with the most rapid warming occurring over the past two decades. The 10 warmest years of the last century all occurred within the last 15 years, and it appears that the decade of the 1990s was the warmest in human history.

It is a fact that human activities have increased the atmospheric abundance of greenhouse gases. There are uncertainties as to exactly what the climate changes will be in various local areas, and what the effects of clouds will be in determining the rate at which the mean temperature will increase. There are also uncertainties associated with the magnitude and timing of other consequences of a warmer planet: sea level rise, spread of certain diseases out of their usual geographic range, effect on agricultural production, water supply, sustainability of ecosystems, increased strength and frequency of storms, extreme heat events, air pollution episodes, and the consequence of these effects on the economy. Already, some of these effects have been seen in California.

The United States has the highest emissions of greenhouse gases of any nation on Earth. California's transportation sector is the single largest contributor of GHGs in the State. In the absence of controls, the State's inventory of greenhouse gases would mirror the growth in

population. Transportation and land use trends in California would continue to increase greenhouse gas production.

California has been studying the impacts of climate change since 1988, when the legislature approved AB 4420. This legislation directed the California Energy Commission (CEC), in consultation with the ARB and other agencies, to study the implications of global warming on California's environment, economy, and water supply. The CEC was also directed to prepare and maintain the State's inventory of GHG emissions. More information on the CEC's climate change activities can be found on the web at [www.energy.ca.gov/global\\_climate\\_change](http://www.energy.ca.gov/global_climate_change).

In 2002, recognizing that global warming would impact California, the legislature approved AB 1493. This bill directed the ARB to adopt regulations to achieve the maximum feasible and cost-effective reduction of greenhouse gas emissions from motor vehicles. ARB staff's proposal implementing these regulations was approved by the ARB in September 2004. These regulations will be reviewed and may be modified by the California Legislature. More information on ARB's Climate Change regulations can be found on the web at [www.arb.ca.gov/cc/cc.htm](http://www.arb.ca.gov/cc/cc.htm).

AB 1803 was approved in 2006. This bill directed the ARB to prepare, adopt and update the greenhouse gas emission inventory formerly required to be adopted and updated by the CEC. Also approved was the California Global Warming Solutions Act of 2006 (AB 32). Among the several new responsibilities for ARB is the requirement to establish the 1990 GHG emissions level as a limit to be achieved by 2020. At the Board Meeting held in December 2007, the Board adopted a regulation for the mandatory reporting of greenhouse gas emissions. The Board also approved the 1990 GHG emissions level equivalent to the 2020 emissions limit. More information on ARB's greenhouse gas inventory can be found on the web at [www.arb.ca.gov/cc/ccei.htm](http://www.arb.ca.gov/cc/ccei.htm).

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## *California Air Quality Regulation*

The responsibility for controlling air pollution in California is shared between 35 local air districts, the ARB, and the U.S. EPA. The basic responsibilities of each of these entities are outlined below.

### **District Responsibilities:**

- Control and permit industrial pollution sources (such as power plants, refineries, and manufacturing operations) and widespread area-wide sources (such as bakeries, dry cleaners, service stations, and commercial paint applicators).
- Adopt local air quality plans and rules.

### **Air Resources Board Responsibilities:**

- Establish State ambient air quality standards.
- Adopt and enforce emission standards for mobile sources (except where federal law preempts ARB's authority), fuels, consumer products, and TACs.
- Provide technical support to the local districts.
- Oversee local district compliance with State and federal law.
- Approve local air quality plans and submit SIPs to U.S. EPA.

### **United States Environmental Protection Agency Responsibilities:**

- Establish national ambient air quality standards.
- Set emission standards for mobile sources, including those sources under exclusive federal jurisdiction (like interstate trucks, aircraft, marine vessels, locomotives, and farm/construction equipment).
- Oversee State air programs as they relate to the Federal Clean Air Act.
- Approve SIPs.

## *List of Air Pollution Contacts*

### **Amador County Air Pollution Control District**

All of Amador County  
(209) 257-0112  
[www.amadorapcd.org](http://www.amadorapcd.org)

### **Antelope Valley Air Quality Management District**

Northeast portion of Los Angeles County  
(661) 723-8070  
[www.avaqmd.ca.gov](http://www.avaqmd.ca.gov)

### **Bay Area Air Quality Management District**

All of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, western portion of Solano County, and southern portion of Sonoma County  
(415) 749-5000  
[www.baaqmd.gov](http://www.baaqmd.gov)

### **Butte County Air Quality Management District**

All of Butte County  
(530) 891-2882  
[www.bcaqmd.org](http://www.bcaqmd.org)

### **Calaveras County Air Pollution Control District**

All of Calaveras County  
(209) 754-6504  
[www.co.calaveras.ca.us/departments/env.asp](http://www.co.calaveras.ca.us/departments/env.asp)

### **Colusa County Air Pollution Control District**

All of Colusa County  
(530) 458-0590  
[www.colusanet.com/apcd](http://www.colusanet.com/apcd)

### **El Dorado County Air Quality Management District**

All of El Dorado County  
(530) 621-6662  
[www.co.el-dorado.ca.us/emd/apcd](http://www.co.el-dorado.ca.us/emd/apcd)

### **Feather River Air Quality Management District**

All of Sutter and Yuba counties  
(530) 634-7659  
[www.fraqmd.org](http://www.fraqmd.org)

### **Glenn County Air Pollution Control District**

All of Glenn County  
(530) 934-6500  
[www.countyofglenn.net/air\\_pollution\\_control](http://www.countyofglenn.net/air_pollution_control)

### **Great Basin Unified Air Pollution Control District**

All of Alpine, Inyo, and Mono counties  
(760) 872-8211  
[www.gbuapcd.org](http://www.gbuapcd.org)

### **Imperial County Air Pollution Control District**

All of Imperial County  
(760) 482-4606  
[www.imperialcounty.net](http://www.imperialcounty.net)

### **Kern County Air Pollution Control District**

Eastern portion of Kern County  
(661) 862-5250  
[www.kernair.org](http://www.kernair.org)

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**Lake County Air Quality Management District**

All of Lake County  
(707) 263-7000  
[www.lcaqmd.net](http://www.lcaqmd.net)

**Lassen County Air Pollution Control District**

All of Lassen County  
(530) 251-8110  
[lassenag@psln.com](mailto:lassenag@psln.com)

**Mariposa County Air Pollution Control District**

All of Mariposa County  
(209) 966-2220  
[www.mariposacounty.org/healthdepartment](http://www.mariposacounty.org/healthdepartment)

**Mendocino County Air Quality Management District**

All of Mendocino County  
(707) 463-4354  
[www.co.mendocino.ca.us/aqmd](http://www.co.mendocino.ca.us/aqmd)

**Modoc County Air Pollution Control District**

All of Modoc County  
(530) 233-6419  
[apcd@modocounty.us](mailto:apcd@modocounty.us)

**Mojave Desert Air Quality Management District**

Northern portion of San Bernardino County and eastern portion of Riverside County  
(760) 245-1661  
[www.mdaqmd.ca.gov](http://www.mdaqmd.ca.gov)

**Monterey Bay Unified Air Pollution Control District**

All of Monterey, San Benito and Santa Cruz counties  
(831) 647-9411  
[www.mbuapcd.org](http://www.mbuapcd.org)

**North Coast Unified Air Quality Management District**

All of Del Norte, Humboldt, and Trinity counties  
(707) 443-3093  
[www.ncuaqmd.org](http://www.ncuaqmd.org)

**Northern Sierra Air Quality Management District**

All of Nevada, Plumas, and Sierra counties  
(530) 274-9360  
[www.myairdistrict.com](http://www.myairdistrict.com)

**No. Sonoma County Air Pollution Control District**

Northern portion of Sonoma County  
(707) 433-5911  
[nsc@sonic.net](mailto:nsc@sonic.net)

**Placer County Air Pollution Control District**

All of Placer County  
(530) 745-2330  
[www.placer.ca.gov/air.aspx](http://www.placer.ca.gov/air.aspx)

**Sacramento Metro Air Quality Management District**

All of Sacramento County  
(916) 874-4800  
[www.airquality.org](http://www.airquality.org) or [www.sparetheair.com](http://www.sparetheair.com)

**San Diego County Air Pollution Control District**

All of San Diego County  
(858) 586-2600  
[www.sdapcd.org](http://www.sdapcd.org)

**San Joaquin Valley Air Pollution Control District**

All of Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare counties and western portion of Kern County  
(559) 230-6000  
[www.valleyair.org](http://www.valleyair.org)

**San Luis Obispo County Air Pollution Control District**

All of San Luis Obispo County

(805) 781-5912

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

**Santa Barbara County Air Pollution Control District**

All of Santa Barbara County

(805) 961-8800

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

**Shasta County Air Quality Management District**

All of Shasta County

(530) 225-5674

[www.co.shasta.ca.us/Departments/Resourcemgmt/drm/aqmain.htm](http://www.co.shasta.ca.us/Departments/Resourcemgmt/drm/aqmain.htm)

**Siskiyou County Air Pollution Control District**

All of Siskiyou County

(530) 841-4029

[www.co.siskiyou.ca.us/agcomm/airpollution.htm](http://www.co.siskiyou.ca.us/agcomm/airpollution.htm)

**South Coast Air Quality Management District**

Los Angeles County except for portion covered by Antelope Valley APCD, all of Orange County, western portion of San Bernardino County, and western and central portions of Riverside County

(909) 396-2000

[www.aqmd.gov](http://www.aqmd.gov)

**Tehama County Air Pollution Control District**

All of Tehama County

(530) 527-3717

[www.tehcoapcd.net](http://www.tehcoapcd.net)

**Tuolumne County Air Pollution Control District**

All of Tuolumne County

(209) 533-5693

[www.tuolumnecounty.ca.gov](http://www.tuolumnecounty.ca.gov)

**Ventura County Air Pollution Control District**

All of Ventura County

(805) 645-1400

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

**Yolo-Solano Air Quality Management District**

All of Yolo County and eastern portion of Solano County

(530) 757-3650

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



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## *Milestones in California's Emission Control Programs*

### **Historical Milestones:**

- 1963:** First vehicle emission control in the country – positive crankcase ventilation required to reduce evaporative emissions.
- 1966:** First tailpipe emission standards for hydrocarbons (HC) and carbon monoxide (CO).
- 1971:** First oxides of nitrogen (NO<sub>x</sub>) standards for cars and light trucks.
- 1973:** First heavy-duty diesel truck standards.
- 1975:** Two-way catalytic converters first used to control HC and emissions from cars.
- 1976:** “Unleaded” gasoline first offered for sale, with reduced lead levels.  
Three-way catalyst first used to control NO<sub>x</sub>, HC, and CO emissions from cars.
- 1984:** California Smog Check program implemented to identify and repair ineffective emission control systems on cars and light-trucks.
- 1988:** California Clean Air Act enacted, setting forth the framework for meeting State ambient air quality standards.
- 1992:** California’s reformulated gasoline introduced – reducing evaporative emissions, phasing out lead in gasoline, and requiring wintertime oxygenates to reduce CO formation.  
First consumer product regulations take effect, regulating HC emissions from aerosol antiperspirants and deodorants.
- 1993:** Cleaner diesel fuel launched, reducing emissions of diesel PM, sulfur dioxide, and NO<sub>x</sub>.  
Regulations to limit HC emissions from consumer products such as hairspray, windshield washer fluid, and air fresheners take effect.
- 1994:** Low emission vehicle regulations to further reduce emissions from cars and light trucks take effect.
- 1996:** Cleaner burning gasoline debuts with emission benefits equivalent to removing 3.5 million cars from California roads.  
Regulations reducing HC emissions from spray paint take effect.
- 1998:** Tighter standards for California diesel trucks and buses take effect.  
Revamped Smog Check II program implemented.
- 1999:** ARB acts to phaseout MTBE in gasoline.
- 2000:** Tighter emission standards for off-road diesel equipment, such as tractors and generators, take effect nationwide.  
More stringent California standards for the small engines used in lawn and garden equipment take effect.  
ARB enacts Diesel Risk Reduction Plan.
- 2001:** First California standards for large spark ignition off-road engines such as forklifts and pumps take effect.  
More stringent standards for pleasure boats and personal watercraft sold in California begin.  
Limits on HC emissions from products such as carpet and upholstery cleaners take effect.

**2002:** Emission standards for new heavy-duty diesel trucks are cut in half, nationwide.

**2003:** New emission standards for inboard marine engines sold in California take effect.

**2004:** Regulations to further reduce emissions from cars (and require light-trucks and sport-utility vehicles to meet the same emission standards as cars) take effect in California. MTBE in California gasoline is fully phased out. Tighter standards for on-road motorcycles begin.

**2005:** Limits on HC emissions from paint removers take effect.

**2006:** Low sulfur diesel fuel required nationwide. Regulations requiring cleaner fuels in locomotives take effect. Goods Movement emission reduction plan adopted.

**2007:** Tighter emission standards for heavy-duty diesel trucks take effect nationwide.

Regulations requiring cleaner fuels in ship auxiliary engines and cleaner port-side equipment take effect.

1990 Greenhouse Gas Emission Inventory and mandatory reporting requirements adopted by ARB.

### **Upcoming Milestones:**

**2009:** Greenhouse gas emission standards for passenger cars and light trucks.

**2011:** Tighter emission standards for off-road diesel equipment.

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## *Web Resources (www.arb.ca.gov/californiaalmanac)*

Much of the information used to develop the Almanac is accessible through a variety of databases and tools available on the ARB website at [www.arb.ca.gov/californiaalmanac](http://www.arb.ca.gov/californiaalmanac).

### Data

**Real-time Air Quality Data** - Air Quality and Meteorological Information System (AQMIS2) - Allows access to near real-time air quality and meteorological data. These data are available in tabular summary reports.

**Historical Air Quality Data** - Aerometric Data Analysis and Management System (iADAM) - Allows access to historical data (data for record) in tabular summary reports or displayed as graphs.

**Emission Inventory Data** - Allows access to historical and projected emissions, vehicle activity, and human population. Data are available for 2006, as well as for the years 1975-2020 at five year intervals.

**Facility Search Engine** - Allows users to locate criteria or toxics emissions data for a specific facility.

**Top 25 Source Categories** - Provides users with emissions for the top 25 highest emitting source categories by geographic area.

**Community Level Emissions** - Community Health Air Pollution Information System (CHAPIS) - Allows users to query and view emissions using a map interface.

**Toxics Emission Factors** - California Air Toxics Emission Factor database (CATEF) - Provides over 2000 emission factors to estimate toxic air emissions for specific industrial processes or emissions.

### Information

**Area Designations** - Provides information regarding the designation of areas in California with respect to the State ambient air quality standards.

**Air Quality Standards** - Provides information on State and national air quality standards.

**Central California Air Quality Studies (CCAQS)** - Comprises two studies with the goal of providing an improved understanding of PM and visibility in central California.

**Climate Change** - Information regarding ARB's Climate Change Program.

**Goods Movement Plan (GMP)** - Presentation materials and policy information on California's Goods Movement Plan.

**Community Health** - Provides information on Community Health programs in place.

**Air Quality Data Monitoring Sites** - Air monitoring web site with access to the most recent quality assurance information on any particular air monitoring site. This information consists of pollutants monitored, location, operation information, and photos of the site, if available.

**Transport** - Information on the movement of ozone and ozone precursors between basins or regions and established mitigation requirements.

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## Chapter 2

### Current Emissions and Air Quality -- Criteria Pollutants

## Introduction

This chapter provides statewide information on current emissions and air quality, relative to the State and national ambient air quality standards (see Chapter 5 for information on toxic air contaminants). This section gives a national perspective on how California's air quality compares with that in other areas of the nation. The second section of this chapter includes a summary table of the statewide emission inventory. It should be noted that emission inventories are developed for many purposes, including SIPs, Goods Movement activities, and for other planning and regulatory needs. For this edition of the Almanac, the current emissions data represent a calendar year 2006 snapshot that was developed by growing the 2004 inventory to 2006 and by updating the mobile source estimates using the EMFAC2007 and OFFROAD2007 models. These emissions data remain the same as presented in the previous edition and will be updated in the 2009 Almanac.

National, State, and local agencies have implemented many control measures during the three decades to improve air quality. As a result, all national air pollutant standards are attained statewide, except for ozone and particulate matter. However, the challenges that California faces in attainment of these two pollutants is substantial. The severity of California's ozone and PM<sub>2.5</sub> air quality problem is illustrated in Figures 2-1 through 2-4. California has over 65 percent of the population exposure to unhealthy ozone concentrations (above the national standard), when compared to the rest of the nation, although we only have ten percent of the population. The same challenges exist for attainment of PM<sub>2.5</sub>. As show in Figure 2-2, Californian's experience roughly half of the total national population exposure to unhealthy PM<sub>2.5</sub> concentrations.

Figure 2-3 shows the national 8-hour ozone design values for the top 15 urban areas in the nation, based on data for 2003 to 2005. The design values in all these areas exceed the national 8-hour standard of 0.08 ppm. Eight of the top 15 areas are located in California, with the South Coast Air Basin and San Joaquin Valley areas ranking first

and second. This table indicates that we are still far from attainment of the national standard.

In contrast, the PM<sub>2.5</sub> problem is prevalent in both the eastern United States and in California. Figure 2-4 shows the top PM<sub>2.5</sub> areas in the nation and their design values for 2003 to 2005. California has two areas that rank in the top 15 in the nation. Values in California's two areas continue to be significantly above the level of the standard.

Although we face many challenges in attaining ozone and PM<sub>2.5</sub> standards statewide, we have made substantial progress. This progress is a result of our long history of emission control programs and as part of the recently adopted 2007 SIP. The 2007 SIP includes a new series of far reaching and aggressive emission control programs to be developed and implemented at the local, State, and National levels over the next 15 years. These programs are designed to bring the entire State into attainment for the current ozone and PM<sub>2.5</sub> standards.

The summary table shows emission data by three major source categories: stationary sources, area-wide sources, and mobile sources. Emission data for natural sources are provided in Appendix E. The remaining sections of this Chapter provide information on emissions (including the high emitting facilities) and air quality on a statewide basis. This information is organized by pollutant, for ozone (and ozone precursor emissions), PM<sub>10</sub>, PM<sub>2.5</sub>, CO, and ammonia (NH<sub>3</sub>).

Emissions are reported as annual averages, in tons per day. For most sources and pollutants that are not seasonal, this describes emissions very well. However, for some pollutants such as PM<sub>10</sub> and PM<sub>2.5</sub>, annual averages do not give an accurate indication of the seasonal nature of emissions. Therefore, they may appear to be artificially low. Many sources of PM<sub>10</sub> and PM<sub>2.5</sub> are seasonal, including wildfires, agricultural processes, residential wood combustion, or dust storms in the Owens Valley and Mono Lake areas. Many sources of PM<sub>10</sub> and PM<sub>2.5</sub> can also be very localized, and basinwide annual averages do not give any information about these sources.

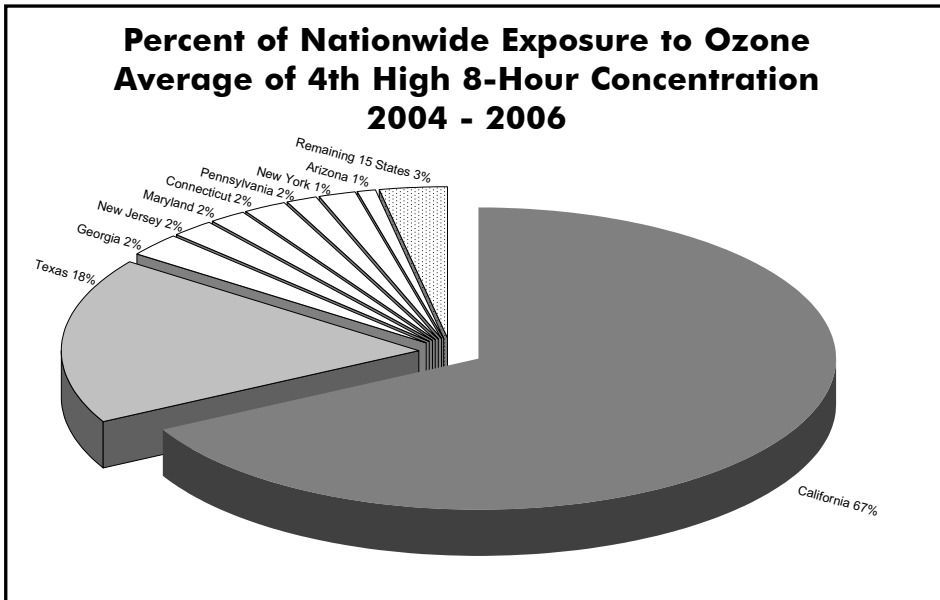


Figure 2-1

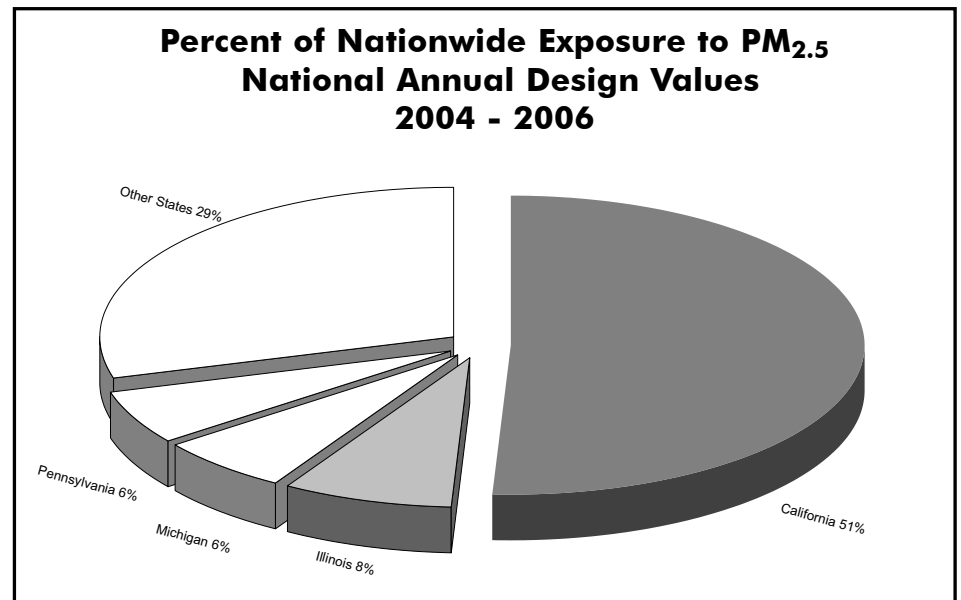


Figure 2-2

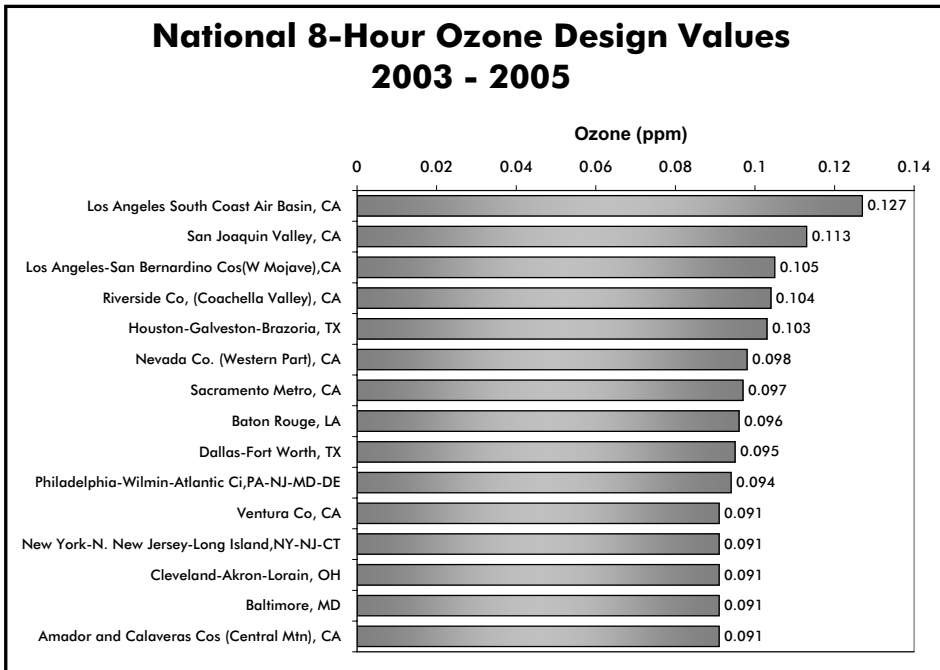


Figure 2-3

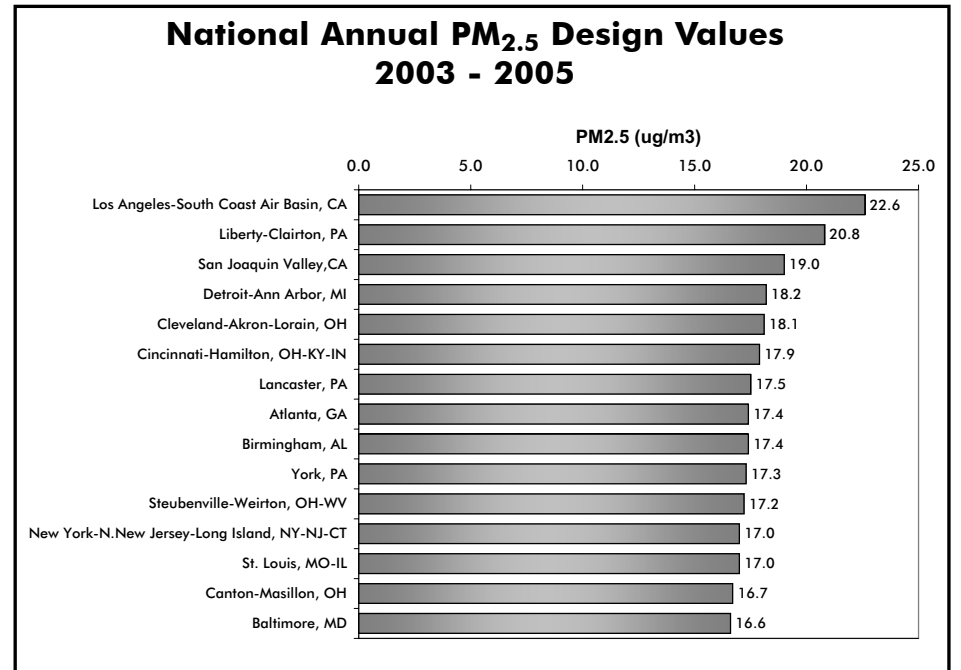


Figure 2-4

## 2006 Statewide Emission Inventory Summary

| Division<br>Major Category             | Emissions (tons/day, annual average) |              |                 |                 |                    |                     |                 |
|--|--------------------------------------|--------------|-----------------|-----------------|--------------------|---------------------|-----------------|
|  | ROG                                  | CO           | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> * | PM <sub>2.5</sub> * | NH <sub>3</sub> |
| <b>Stationary Sources</b>              | <b>381</b>                           | <b>346</b>   | <b>380</b>      | <b>114</b>      | <b>136</b>         | <b>83</b>           | <b>78</b>       |
| Fuel Combustion                        | 28                                   | 274          | 286             | 42              | 34                 | 32                  | 10              |
| Waste Disposal                         | 18                                   | 2            | 3               | 1               | 1                  | 1                   | 50              |
| Cleaning And Surface Coatings          | 142                                  | 1            | 0               | 0               | 1                  | 1                   | 0               |
| Petroleum Production And Marketing     | 134                                  | 14           | 9               | 43              | 3                  | 2                   | 1               |
| Industrial Processes                   | 59                                   | 56           | 81              | 29              | 97                 | 47                  | 16              |
| <b>Area-Wide Sources</b>               | <b>658</b>                           | <b>1974</b>  | <b>98</b>       | <b>6</b>        | <b>1777</b>        | <b>450</b>          | <b>599</b>      |
| Solvent Evaporation                    | 413                                  | 0            | 0               | 0               | 0                  | 0                   | 35              |
| Miscellaneous Processes                | 246                                  | 1974         | 98              | 6               | 1777               | 450                 | 564             |
| <b>Mobile Sources</b>                  | <b>1282</b>                          | <b>10136</b> | <b>3081</b>     | <b>184</b>      | <b>173</b>         | <b>146</b>          | <b>61</b>       |
| Light Duty Passenger Vehicles          | 283                                  | 2658         | 229             | 2               | 16                 | 9                   | 29              |
| Light and Medium Duty Trucks           | 262                                  | 2972         | 352             | 2               | 19                 | 12                  | 30              |
| Heavy Duty Trucks                      | 143                                  | 984          | 1190            | 9               | 49                 | 43                  | 2               |
| Other On-Road                          | 55                                   | 575          | 77              | 0               | 2                  | 1                   | 0               |
| Aircraft and Trains                    | 46                                   | 300          | 201             | 11              | 13                 | 13                  | -               |
| Ships and Commercial Boats             | 15                                   | 45           | 327             | 153             | 25                 | 24                  | -               |
| Recreational Boats and Vehicles        | 209                                  | 925          | 38              | 1               | 9                  | 7                   | -               |
| Off-Road Equipment                     | 210                                  | 1559         | 551             | 4               | 33                 | 30                  | -               |
| Other Off-Road                         | 58                                   | 117          | 116             | 1               | 7                  | 7                   | 0               |
| <b>Total Statewide - All Sources**</b> | <b>2322</b>                          | <b>12456</b> | <b>3558</b>     | <b>305</b>      | <b>2086</b>        | <b>680</b>          | <b>738</b>      |

\* Includes directly emitted particulate matter only.

\*\* Natural sources are provided in Appendix E. These summaries do not include emissions from wind blown dust - exposed lake beds from Owens and Mono Lakes. These emissions are estimated to be about 131 tons/day of PM<sub>10</sub>.

Note: All emissions data remain the same as presented in the previous edition and will be updated in the 2009 edition of the Almanac.

Table 2-1



## 2006 Statewide Emission Inventory by Sub-Category

| Division<br>Major Category<br>Sub-Category                   | Emissions (tons/day, annual average) |            |                 |                 |                    |                     |                 |
|--|--------------------------------------|------------|-----------------|-----------------|--------------------|---------------------|-----------------|
|  | ROG                                  | CO         | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> * | PM <sub>2.5</sub> * | NH <sub>3</sub> |
| <b>Stationary Sources (division total)</b>                   | <b>381</b>                           | <b>346</b> | <b>380</b>      | <b>114</b>      | <b>136</b>         | <b>83</b>           | <b>78</b>       |
| Fuel Combustion (major category total)                       | 28                                   | 274        | 286             | 42              | 34                 | 32                  | 10              |
| - Electric Utilities   | 3                                    | 49         | 26              | 3               | 6                  | 6                   | 4               |
| - Cogeneration   | 4                                    | 44         | 23              | 1               | 4                  | 4                   | 1               |
| - Oil And Gas Production (Combustion)                        | 4                                    | 19         | 20              | 2               | 2                  | 2                   | 0               |
| - Petroleum Refining (Combustion)                            | 3                                    | 14         | 24              | 16              | 3                  | 3                   | 1               |
| - Manufacturing And Industrial                               | 4                                    | 56         | 90              | 14              | 6                  | 6                   | 3               |
| - Food And Agricultural Processing                           | 5                                    | 52         | 34              | 3               | 3                  | 3                   | 0               |
| - Service And Commercial                                     | 5                                    | 32         | 50              | 3               | 5                  | 5                   | 0               |
| - Other (Fuel Combustion)                                    | 2                                    | 8          | 18              | 1               | 5                  | 4                   | 0               |
| Waste Disposal (major category total)                        | 18                                   | 2          | 3               | 1               | 1                  | 1                   | 50              |
| - Sewage Treatment   | 1                                    | 0          | 0               | 0               | 0                  | 0                   | 2               |
| - Landfills  | 8                                    | 1          | 1               | 0               | 1                  | 0                   | 11              |
| - Incinerators   | 0                                    | 1          | 1               | 0               | 0                  | 0                   | 0               |
| - Soil Remediation   | 1                                    | 0          | 0               | -               | 0                  | 0                   | 0               |
| - Other (Waste Disposal)                                     | 8                                    | 0          | 0               | -               | 0                  | 0                   | 37              |
| Cleaning And Surface Coatings (major category total)         | 142                                  | 1          | 0               | 0               | 1                  | 1                   | 0               |
| - Laundering   | 1                                    | 0          | 0               | -               | -                  | -                   | -               |
| - Degreasing   | 32                                   | -          | -               | -               | 0                  | 0                   | 0               |
| - Coatings And Related Process Solvents (sub-category total) | 66                                   | 0          | 0               | 0               | 1                  | 1                   | 0               |
| - <i>Auto Marine, &amp; Aircraft</i>                         | 24                                   | 0          | 0               | 0               | 0                  | 0                   | 0               |
| - <i>Paper &amp; Fabric</i>                                  | 3                                    | 0          | 0               | 0               | 0                  | 0                   | 0               |
| - <i>Metal, Wood, &amp; Plastic</i>                          | 24                                   | 0          | 0               | 0               | 0                  | 0                   | 0               |
| - <i>Other</i>   | 15                                   | 0          | 0               | 0               | 1                  | 1                   | 0               |

\* Includes directly emitted particulate matter only.

Table 2-2

## 2006 Statewide Emission Inventory by Sub-Category

| Division<br>Major Category<br>Sub-Category                 | Emissions (tons/day, annual average) |    |                 |                 |                    |                     |                 |
|--|--------------------------------------|----|-----------------|-----------------|--------------------|---------------------|-----------------|
|  | ROG                                  | CO | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> * | PM <sub>2.5</sub> * | NH <sub>3</sub> |
| <b>Stationary Sources (division total) (continued)</b>     |                                      |    |                 |                 |                    |                     |                 |
| Cleaning And Surface Coatings (major category) (continued) |                                      |    |                 |                 |                    |                     |                 |
| - Printing   | 17                                   | 0  | 0               | -               | 0                  | 0                   | 0               |
| - Adhesives And Sealants                                   | 20                                   | -  | -               | -               | 0                  | -                   | -               |
| - Other (Cleaning And Surface Coatings)                    | 5                                    | 0  | 0               | 0               | 0                  | 0                   | 0               |
| Petroleum Production And Marketing (major category total)  | 134                                  | 14 | 9               | 43              | 3                  | 2                   | 1               |
| - Oil And Gas Production                                   | 43                                   | 1  | 3               | 0               | 0                  | 0                   | 0               |
| - Petroleum Refining                                       | 14                                   | 12 | 6               | 43              | 3                  | 2                   | 1               |
| - Petroleum Marketing (sub-category total)                 | 77                                   | 0  | 0               | -               | 0                  | 0                   | -               |
| - Fuel Distribution Losses                                 | 4                                    | 0  | 0               | 0               | 0                  | 0                   | 0               |
| - Fuel Storage Losses                                      | 2                                    | 0  | 0               | 0               | 0                  | 0                   | 0               |
| - Vehicle Refueling  | 38                                   | 0  | 0               | 0               | 0                  | 0                   | 0               |
| - Other  | 33                                   | 0  | 0               | 0               | 0                  | 0                   | 0               |
| - Other (Petroleum Production And Marketing)               | 0                                    | -  | -               | -               | -                  | -                   | 0               |
| Industrial Processes (major category total)                | 59                                   | 56 | 81              | 29              | 97                 | 47                  | 16              |
| - Chemical   | 22                                   | 1  | 1               | 4               | 4                  | 4                   | 0               |
| - Food And Agriculture                                     | 19                                   | 2  | 9               | 1               | 15                 | 7                   | 0               |
| - Mineral Processes  | 5                                    | 41 | 54              | 20              | 53                 | 20                  | 1               |
| - Metal Processes  | 1                                    | 1  | 1               | 0               | 1                  | 1                   | -               |
| - Wood And Paper   | 3                                    | 1  | 2               | 0               | 13                 | 8                   | -               |
| - Glass And Related Products                               | 0                                    | 1  | 9               | 3               | 2                  | 1                   | 1               |
| - Electronics  | 1                                    | -  | -               | -               | 0                  | 0                   | -               |
| - Other (Industrial Processes)                             | 9                                    | 8  | 5               | 1               | 10                 | 6                   | 14              |

\* Includes directly emitted particulate matter only.

Table 2-2 (continued)

## 2006 Statewide Emission Inventory by Sub-Category

| Division<br>Major Category<br>Sub-Category                                | Emissions (tons/day, annual average) |             |                 |                 |                    |                     |                 |
|---|--------------------------------------|-------------|-----------------|-----------------|--------------------|---------------------|-----------------|
|   | ROG                                  | CO          | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> * | PM <sub>2.5</sub> * | NH <sub>3</sub> |
| <b>Area-Wide Sources (division total)</b>                                 | <b>658</b>                           | <b>1974</b> | <b>98</b>       | <b>6</b>        | <b>1777</b>        | <b>450</b>          | <b>599</b>      |
| Solvent Evaporation (major category total)                                | 413                                  | 0           | 0               | 0               | 0                  | 0                   | 35              |
| - Consumer Products   | 236                                  | -           | -               | -               | -                  | -                   | -               |
| - Architectural Coatings And Related Process Solvent (sub-category total) | 92                                   | -           | -               | -               | -                  | -                   | -               |
| - <i>Architectural Coating</i>  | 76                                   | 0           | 0               | 0               | 0                  | 0                   | 0               |
| - <i>Thinning &amp; Cleanup Solvents</i>                                  | 16                                   | 0           | 0               | 0               | 0                  | 0                   | 0               |
| - Pesticides/Fertilizers (sub-category total)                             | 53                                   | -           | -               | -               | -                  | -                   | 35              |
| - <i>Farm Use</i>   | 51                                   | 0           | 0               | 0               | 0                  | 0                   | 0               |
| - <i>Commercial Use</i>   | 2                                    | 0           | 0               | 0               | 0                  | 0                   | 0               |
| - Asphalt Paving / Roofing  | 32                                   | -           | -               | -               | 0                  | 0                   | -               |
| - Other (Solvent Evaporation)   | -                                    | -           | -               | -               | -                  | -                   | -               |
| Miscellaneous Processes (major category total)                            | 246                                  | 1974        | 98              | 6               | 1777               | 450                 | 564             |
| - Residential Fuel Combustion (sub-category total)                        | 54                                   | 791         | 71              | 4               | 114                | 110                 | 6               |
| - <i>Wood Combustion</i>  | 50                                   | 763         | 10              | 1               | 108                | 104                 | 6               |
| - <i>Cooking And Space Heating</i>  | 3                                    | 25          | 52              | 2               | 5                  | 5                   | 0               |
| - <i>Other</i>  | 0                                    | 4           | 10              | 0               | 1                  | 1                   | 0               |
| - Farming Operations (sub-category total)                                 | 116                                  | -           | -               | -               | 161                | 40                  | 495             |
| - <i>Tilling, Harvesting, &amp; Growing</i>                               | 0                                    | 0           | 0               | 0               | 126                | 19                  | 0               |
| - <i>Livestock</i>  | 116                                  | 0           | 0               | 0               | 34                 | 21                  | 495             |

\* Includes directly emitted particulate matter only.

Table 2-2 (continued)

## 2006 Statewide Emission Inventory by Sub-Category

| Division<br>Major Category<br>Sub-Category            | Emissions (tons/day, annual average) |      |                 |                 |                    |                     |                 |
|---|--------------------------------------|------|-----------------|-----------------|--------------------|---------------------|-----------------|
|   | ROG                                  | CO   | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> * | PM <sub>2.5</sub> * | NH <sub>3</sub> |
| <b>Area-Wide Sources (division total) (continued)</b> |                                      |      |                 |                 |                    |                     |                 |
| Miscellaneous Processes (major category) (continued)  |                                      |      |                 |                 |                    |                     |                 |
| - Construction And Demolition (sub-category total)    | -                                    | -    | -               | -               | 205                | 20                  | -               |
| - Building  | 0                                    | 0    | 0               | 0               | 116                | 12                  | 0               |
| - Road Construction Dust                              | 0                                    | 0    | 0               | 0               | 89                 | 9                   | 0               |
| - Paved Road Dust                                     | -                                    | -    | -               | -               | 392                | 59                  | -               |
| - Unpaved Road Dust                                   | -                                    | -    | -               | -               | 479                | 52                  | -               |
| - Fugitive Windblown Dust (sub-category total)        | -                                    | -    | -               | -               | 286                | 45                  | -               |
| - Farm Lands  | 0                                    | 0    | 0               | 0               | 160                | 28                  | 0               |
| - Pasture Lands                                       | 0                                    | 0    | 0               | 0               | 13                 | 2                   | 0               |
| - Unpaved Roads                                       | 0                                    | 0    | 0               | 0               | 113                | 15                  | 0               |
| - Fires   | 1                                    | 10   | 0               | -               | 1                  | 1                   | -               |
| - Managed Burning And Disposal (sub-category total)   | 68                                   | 1171 | 26              | 2               | 109                | 100                 | 4               |
| - Agricultural Burning**                              | 23                                   | 245  | 14              | 1               | 30                 | 28                  | 3               |
| - Non-Agricultural Burning                            | 40                                   | 881  | 10              | 1               | 73                 | 65                  | 1               |
| - Other   | 5                                    | 46   | 1               | 0               | 7                  | 7                   | 0               |
| - Cooking   | 7                                    | 0    | -               | -               | 30                 | 23                  | -               |
| - Other (Miscellaneous Processes)                     | 0                                    | 2    | 0               | -               | 1                  | 1                   | 60              |

\* Includes directly emitted particulate matter only.

\*\* Agricultural burning includes the prescribed burning of prunings and field crops. Non-agricultural burning includes prescribed burning activities associated with range improvement, forest management, wildland fire use, and weed abatement.

Table 2-2 (continued)

## 2006 Statewide Emission Inventory by Sub-Category

| Division<br>Major Category<br>Sub-Category                      | Emissions (tons/day, annual average) |              |                 |                 |                    |                     |                 |
|---|--------------------------------------|--------------|-----------------|-----------------|--------------------|---------------------|-----------------|
|   | ROG                                  | CO           | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> * | PM <sub>2.5</sub> * | NH <sub>3</sub> |
| <b>Mobile Sources (division total)</b>                          | <b>1282</b>                          | <b>10136</b> | <b>3081</b>     | <b>184</b>      | <b>173</b>         | <b>146</b>          | <b>61</b>       |
| On-Road Motor Vehicles (major category total)                   | 743                                  | 7189         | 1849            | 14              | 85                 | 66                  | 61              |
| - Light Duty Passenger (sub-category total)                     | 283                                  | 2658         | 229             | 2               | 16                 | 9                   | 29              |
| - Non-Evaporative   | 154                                  | 2657         | 227             | 2               | 16                 | 9                   | 29              |
| - Evaporative   | 129                                  | 0            | 0               | 0               | 0                  | 0                   | 0               |
| - Diesel  | 0                                    | 1            | 2               | 0               | 0                  | 0                   | 0               |
| - Light Duty Trucks (<3750 lbs.) (sub-category total)           | 90                                   | 939          | 85              | 1               | 4                  | 2                   | 6               |
| - Non-Evaporative   | 52                                   | 935          | 76              | 0               | 4                  | 2                   | 6               |
| - Evaporative   | 38                                   | 0            | 0               | 0               | 0                  | 0                   | 0               |
| - Diesel  | 0                                    | 4            | 9               | 0               | 0                  | 0                   | 0               |
| - Light Duty Trucks (>3750 lbs) (sub-category total)            | 117                                  | 1347         | 173             | 1               | 10                 | 7                   | 13              |
| - Non-Evaporative   | 67                                   | 1346         | 172             | 1               | 10                 | 7                   | 13              |
| - Evaporative   | 51                                   | 0            | 0               | 0               | 0                  | 0                   | 0               |
| - Diesel  | 0                                    | 0            | 1               | 0               | 0                  | 0                   | 0               |
| - Medium Duty Trucks (sub-category total)                       | 55                                   | 687          | 94              | 1               | 5                  | 3                   | 10              |
| - Non-Evaporative   | 37                                   | 687          | 93              | 1               | 5                  | 3                   | 10              |
| - Evaporative   | 18                                   | 0            | 0               | 0               | 0                  | 0                   | 0               |
| - Diesel  | 0                                    | 0            | 1               | 0               | 0                  | 0                   | 0               |
| - Light Heavy Duty Gas Trucks (<10000 lbs) (sub-category total) | 31                                   | 268          | 38              | 0               | 1                  | 0                   | 2               |
| - Non-Evaporative   | 20                                   | 268          | 38              | 0               | 1                  | 0                   | 2               |
| - Evaporative   | 11                                   | 0            | 0               | 0               | 0                  | 0                   | 0               |
| - Light Heavy Duty Gas Trucks (>10000 lbs) (sub-category total) | 10                                   | 81           | 10              | 0               | 0                  | 0                   | 0               |
| - Non-Evaporative   | 6                                    | 81           | 10              | 0               | 0                  | 0                   | 0               |
| - Evaporative   | 4                                    | 0            | 0               | 0               | 0                  | 0                   | 0               |
| - Medium Heavy Duty Gas Trucks (sub-category total)             | 20                                   | 178          | 18              | 0               | 0                  | 0                   | 0               |
| - Non-Evaporative   | 15                                   | 178          | 18              | 0               | 0                  | 0                   | 0               |
| - Evaporative   | 5                                    | 0            | 0               | 0               | 0                  | 0                   | 0               |

\* Includes directly emitted particulate matter only.

Table 2-2 (continued)

## 2006 Statewide Emission Inventory by Sub-Category

| Division<br>Major Category<br>Sub-Category          | Emissions (tons/day, annual average) |     |                 |                 |                    |                     |                 |
|---|--------------------------------------|-----|-----------------|-----------------|--------------------|---------------------|-----------------|
|   | ROG                                  | CO  | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> * | PM <sub>2.5</sub> * | NH <sub>3</sub> |
| <b>Mobile Sources (division total) (continued)</b>  |                                      |     |                 |                 |                    |                     |                 |
| On-Road Motor Vehicles (major category) (continued) |                                      |     |                 |                 |                    |                     |                 |
| - Heavy Heavy Duty Gas Trucks (sub-category total)  | 11                                   | 158 | 22              | 0               | 0                  | 0                   | 0               |
| - Non-Evaporative                                   | 10                                   | 158 | 22              | 0               | 0                  | 0                   | 0               |
| - Evaporative                                       | 1                                    | 0   | 0               | 0               | 0                  | 0                   | 0               |
| - Light Heavy Duty Gas Trucks (<10000 lbs)          | 1                                    | 6   | 35              | 0               | 0                  | 0                   | 0               |
| - Light Heavy Duty Gas Trucks (>10000 lbs)          | 1                                    | 4   | 26              | 0               | 0                  | 0                   | 0               |
| - Medium Heavy Duty Diesel Trucks                   | 3                                    | 30  | 159             | 2               | 5                  | 4                   | 0               |
| - Heavy Heavy Duty Diesel Trucks                    | 66                                   | 260 | 883             | 7               | 43                 | 38                  | 0               |
| - Motorcycles (Mcy) (sub-category total)            | 47                                   | 441 | 11              | -               | 0                  | 0                   | 0               |
| - Non-Evaporative                                   | 35                                   | 441 | 11              | 0               | 0                  | 0                   | 0               |
| - Evaporative                                       | 11                                   | 0   | 0               | 0               | 0                  | 0                   | 0               |
| - Heavy Duty Diesel Urban Buses                     | 1                                    | 6   | 29              | 0               | 1                  | 0                   | 0               |
| - Heavy Duty Gas Urban Buses (sub-category total)   | 1                                    | 11  | 2               | 0               | 0                  | 0                   | 0               |
| - Non-Evaporative                                   | 1                                    | 11  | 2               | 0               | 0                  | 0                   | 0               |
| - Evaporative                                       | 0                                    | 0   | 0               | 0               | 0                  | 0                   | 0               |
| - School Buses (sub-category total)                 | 1                                    | 14  | 14              | 0               | 1                  | 0                   | 0               |
| - Non-Evaporative                                   | 1                                    | 11  | 1               | 0               | 0                  | 0                   | 0               |
| - Evaporative                                       | 0                                    | 0   | 0               | 0               | 0                  | 0                   | 0               |
| - Diesel  | 0                                    | 3   | 13              | 0               | 1                  | 0                   | 0               |
| - Other Buses (sub-category total)                  | 2                                    | 22  | 10              | 0               | 0                  | 0                   | 0               |
| - Non-Evaporative                                   | 1                                    | 21  | 3               | 0               | 0                  | 0                   | 0               |
| - Evaporative                                       | 0                                    | 0   | 0               | 0               | 0                  | 0                   | 0               |
| - Diesel  | 0                                    | 1   | 7               | 0               | 0                  | 0                   | 0               |
| - Motor Homes (sub-category total)                  | 3                                    | 81  | 11              | 0               | 0                  | 0                   | 0               |
| - Non-Evaporative                                   | 3                                    | 81  | 7               | 0               | 0                  | 0                   | 0               |
| - Evaporative                                       | 0                                    | 0   | 0               | 0               | 0                  | 0                   | 0               |
| - Diesel  | 0                                    | 0   | 4               | 0               | 0                  | 0                   | 0               |

\* Includes directly emitted particulate matter only.

Table 2-2 (continued)

## 2006 Statewide Emission Inventory by Sub-Category

| Division<br>Major Category<br>Sub-Category            | Emissions (tons/day, annual average) |              |                 |                 |                    |                     |                 |
|---|--------------------------------------|--------------|-----------------|-----------------|--------------------|---------------------|-----------------|
|   | ROG                                  | CO           | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> * | PM <sub>2.5</sub> * | NH <sub>3</sub> |
| <b>Mobile Sources (division total) (continued)</b>    |                                      |              |                 |                 |                    |                     |                 |
| Other Mobile Sources (major category total)           | 539                                  | 2946         | 1232            | 170             | 88                 | 81                  | 0               |
| - Aircraft  | 34                                   | 266          | 53              | 3               | 9                  | 9                   | -               |
| - Trains  | 12                                   | 34           | 149             | 8               | 5                  | 4                   | -               |
| - Ships And Commercial Boats                          | 15                                   | 45           | 327             | 153             | 25                 | 24                  | -               |
| - Residual Oil  | 6                                    | 18           | 230             | 147             | 20                 | 19                  | 0               |
| - Diesel  | 6                                    | 16           | 70              | 2               | 3                  | 3                   | 0               |
| - Gasoline  | 0                                    | 3            | 0               | 0               | 0                  | 0                   | 0               |
| - Other Fuel  | 2                                    | 8            | 26              | 5               | 2                  | 2                   | 0               |
| - Recreational Boats                                  | 143                                  | 741          | 35              | 0               | 8                  | 6                   | -               |
| - Non-Evaporative                                     | 102                                  | 740          | 33              | 0               | 8                  | 6                   | 0               |
| - Evaporative   | 40                                   | 0            | 0               | 0               | 0                  | 0                   | 0               |
| - Diesel  | 1                                    | 1            | 2               | 0               | 0                  | 0                   | 0               |
| - Off-Road Recreational Vehicles (sub-category total) | 66                                   | 184          | 2               | 1               | 1                  | 1                   | -               |
| - All-Terrain Vehicles                                | 16                                   | 47           | 0               | 1               | 0                  | 0                   | 0               |
| - Motorcycles   | 39                                   | 62           | 0               | 0               | 0                  | 0                   | 0               |
| - Snowmobiles   | 8                                    | 21           | 0               | 0               | 0                  | 0                   | 0               |
| - Golf Carts, Specialty Carts & Minibikes             | 4                                    | 54           | 0               | 1               | 0                  | 0                   | 0               |
| - Off-Road Equipment (sub-category total)             | 210                                  | 1559         | 551             | 4               | 33                 | 30                  | -               |
| - Lawn And Garden Equipment                           | 96                                   | 565          | 15              | 0               | 2                  | 1                   | 0               |
| - Non-Evaporative                                     | 50                                   | 562          | 8               | 0               | 1                  | 1                   | 0               |
| - Evaporative   | 45                                   | 0            | 0               | 0               | 0                  | 0                   | 0               |
| - Diesel  | 1                                    | 3            | 6               | 0               | 0                  | 0                   | 0               |
| - Commercial & Industrial Equipment                   | 114                                  | 993          | 536             | 4               | 31                 | 29                  | 0               |
| - Non-Evaporative                                     | 28                                   | 653          | 30              | 0               | 2                  | 2                   | 0               |
| - Evaporative   | 13                                   | 0            | 0               | 0               | 0                  | 0                   | 0               |
| - Diesel  | 72                                   | 251          | 485             | 4               | 29                 | 27                  | 0               |
| - Natural Gas   | 1                                    | 89           | 22              | 0               | 0                  | 0                   | 0               |
| - Farm Equipment (sub-category total)                 | 24                                   | 117          | 116             | 1               | 7                  | 7                   | -               |
| - Non-Evaporative                                     | 2                                    | 65           | 2               | 0               | 0                  | 0                   | 0               |
| - Evaporative   | 3                                    | 0            | 0               | 0               | 0                  | 0                   | 0               |
| - Diesel  | 18                                   | 53           | 114             | 1               | 7                  | 6                   | 0               |
| - Fuel Storage and Handling                           | 34                                   | -            | -               | -               | -                  | -                   | -               |
| <b>Total Statewide - All Sources**</b>                | <b>2322</b>                          | <b>12456</b> | <b>3558</b>     | <b>305</b>      | <b>2086</b>        | <b>680</b>          | <b>738</b>      |

\* Includes directly emitted particulate matter only.

\*\* Natural sources are provided in Appendix E. These summaries do not include emissions from wind blown dust - exposed lake beds from Owens and Mono Lakes. These emissions are estimated to be about 131 tons/day of PM<sub>10</sub>.

Table 2-2 (continued)

## Ozone

### 2006 Statewide Emission Inventory - Ozone Precursors by Category

#### NO<sub>x</sub> Sources - Statewide

NO<sub>x</sub> is a group of gaseous compounds of nitrogen and oxygen, many of which contribute to the formation of ozone, PM<sub>10</sub>, and PM<sub>2.5</sub>. Most NO<sub>x</sub> emissions are produced by the combustion of fuels. Industrial sources report NO<sub>x</sub> emissions to local air districts and to the ARB. Other sources of NO<sub>x</sub> emissions are estimated by the local air districts and the ARB. Mobile sources (including on-road and other) make up about 87 percent of the total statewide NO<sub>x</sub> emissions. Area-wide sources, which include residential fuel combustion and managed burning and disposal, contribute only a small portion of the total NO<sub>x</sub> emissions. The emissions data remain the same as presented in the previous edition and will be updated in the 2009 Almanac.

| NO <sub>x</sub> Emissions (annual average) |             |             |
|--|-------------|-------------|
| Emissions Source                           | tons/day    | Percent     |
| <b>Stationary Sources</b>                  | 380         | 11%         |
| <b>Area-wide Sources</b>                   | 98          | 3%          |
| <b>On-Road Mobile</b>                      | 1849        | 52%         |
| Gasoline Vehicles                          | 740         | 21%         |
| Diesel Vehicles                            | 1108        | 31%         |
| <b>Other Mobile</b>                        | 1232        | 35%         |
| Gasoline Vehicles                          | 306         | 9%          |
| Diesel Vehicles                            | 826         | 23%         |
| Other                                      | 101         | 3%          |
| <b>Total Statewide</b>                     | <b>3558</b> | <b>100%</b> |

Table 2-3

#### ROG Sources - Statewide

ROG are VOCs that are photochemically reactive and contribute to the formation of ozone, as well as PM<sub>10</sub> and PM<sub>2.5</sub>. These emissions result primarily from incomplete fuel combustion and the evaporation of chemical solvents and fuels. On-road mobile sources are the largest contributors to statewide ROG emissions. Stationary sources of ROG emissions include processes that use solvents (such as dry cleaning, degreasing, and coating operations) and petroleum-related processes (such as petroleum refining and marketing and oil and gas extraction). Area-wide ROG sources include consumer products, pesticides, aerosol and architectural coatings, asphalt paving and roofing, farming operations, and other evaporative emissions. The emissions data remain the same as presented in the previous edition and will be updated in the 2009 Almanac.

| ROG Emissions (annual average) |             |             |
|--------------------------------|-------------|-------------|
| Emissions Source               | tons/day    | Percent     |
| <b>Stationary Sources</b>      | 381         | 16%         |
| <b>Area-wide Sources</b>       | 658         | 28%         |
| <b>On-Road Mobile</b>          | 743         | 32%         |
| Gasoline Vehicles              | 672         | 29%         |
| Diesel Vehicles                | 71          | 3%          |
| <b>Other Mobile</b>            | 539         | 23%         |
| Gasoline Vehicles              | 391         | 17%         |
| Diesel Vehicles                | 111         | 5%          |
| Other                          | 37          | 2%          |
| <b>Total Statewide</b>         | <b>2322</b> | <b>100%</b> |

Table 2-4



## Largest Stationary Sources Statewide

### Largest Stationary Sources of NO<sub>x</sub> Statewide

| Air Basin              | Facility Name                  | City           | Tons/Year |
|------------------------|--------------------------------|----------------|-----------|
| Mojave Desert          | Cemex - Black Mountain Quarry  | Apple Valley   | 4754      |
| Mojave Desert          | TXI Riverside Cement Company   | Oro Grande     | 4111      |
| Mojave Desert          | California Portland Cement     | Mojave         | 2975      |
| Mojave Desert          | Mitsubishi Cement 2000         | Lucerne Valley | 2770      |
| Mojave Desert          | Searles Valley Minerals        | Trona          | 2001      |
| San Francisco Bay Area | Valero Refining Company        | Benicia        | 1963      |
| San Francisco Bay Area | Shell Martinez Refinery        | Martinez       | 1782      |
| San Francisco Bay Area | Tesoro Refining And Marketing  | Martinez       | 1511      |
| Mojave Desert          | National Cement                | Lebec          | 1300      |
| Mojave Desert          | PG&E Topock Compressor Station | Needles        | 1140      |

Table 2-5

### Largest Stationary Sources of ROG Statewide

| Air Basin              | Facility Name                          | City       | Tons/Year |
|------------------------|--|------------|-----------|
| San Francisco Bay Area | Tesoro Refining And Marketing          | Martinez   | 1555      |
| San Francisco Bay Area | Chevron Products Company               | Richmond   | 1311      |
| San Francisco Bay Area | Shell Martinez Refinery                | Martinez   | 1235      |
| San Joaquin Valley     | Pactiv Corporation (Packaging)         | Visalia    | 828       |
| South Coast            | ChevronTexaco Products                 | El Segundo | 775       |
| South Coast            | BP West Coast Products Carson Refinery | Carson     | 745       |
| South Coast            | ExxonMobil Oil Corporation             | Torrance   | 713       |
| San Francisco Bay Area | New United Motor Manufacturing         | Fremont    | 556       |
| San Francisco Bay Area | Valero Refining Company                | Benicia    | 494       |
| San Francisco Bay Area | ConocoPhillips - San Francisco         | Rodeo      | 464       |

Table 2-6

Facility totals are the most recent available data. Some facilities may have reduced or increased emissions since these data were collected. These changes will be reflected in subsequent almanacs. The list of facilities does not include military bases, landfills, or airports.

### Statewide Emissions Maps - Ozone Precursors

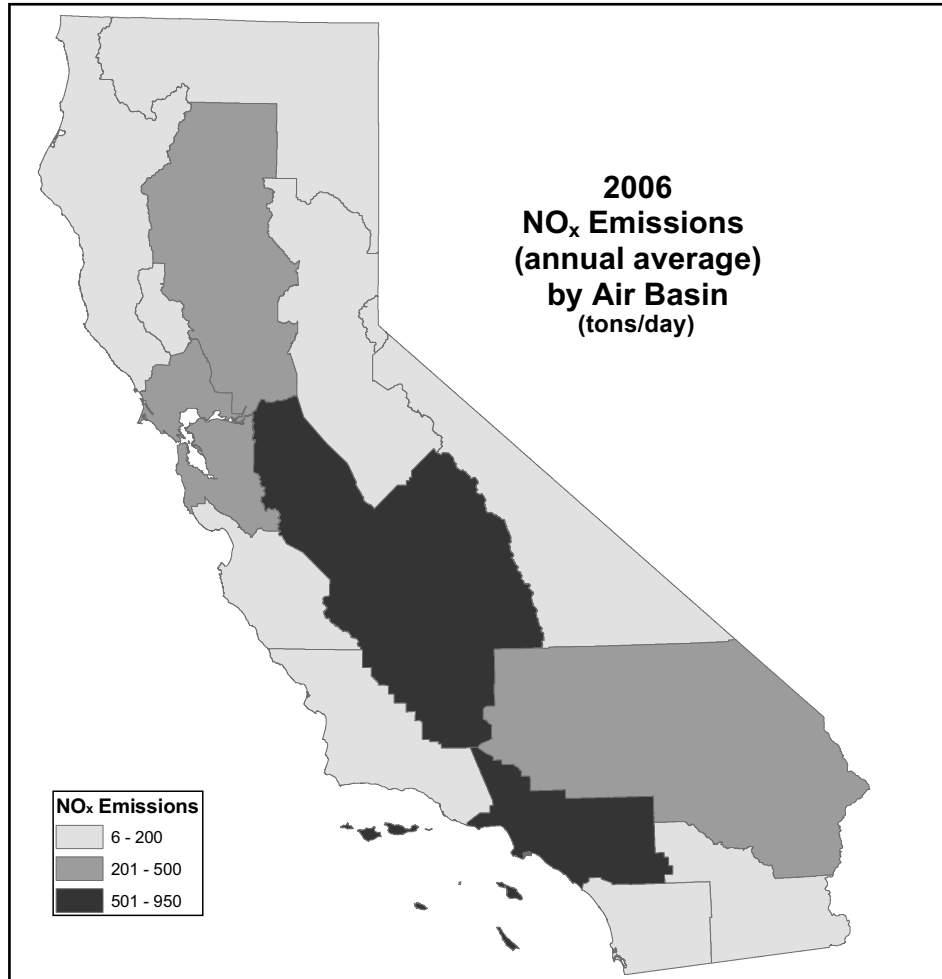


Figure 2-5

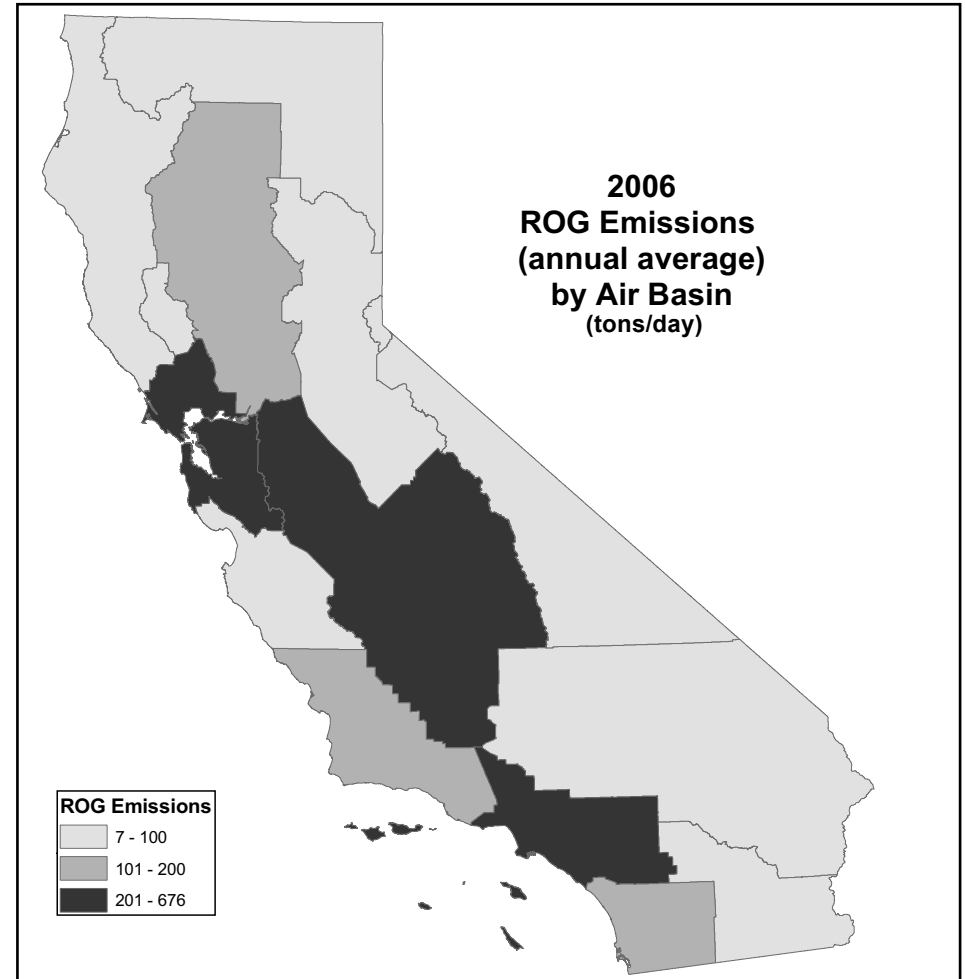


Figure 2-6

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## Ozone - 2006 Air Quality

Air quality as it relates to ozone has improved greatly in California over the last several decades, although not uniformly throughout the State. However, despite aggressive emission controls, maximum measured ozone concentrations still exceed the State 1-hour and national 8-hour standards in 10 of the 15 air basins. California's highest ozone concentrations occur in the South Coast Air Basin, where the peak 1-hour and 8-hour indicators are close to two times the level of the State standards.

Ozone concentrations are generally lower near the coast than they are inland. The inland regions typically experience some of the higher ozone concentrations. This is because there are many more days with hot temperatures and stagnant conditions that are conducive to ozone formation. Typically, they also have mountain ranges which keep pollutants trapped. Based on current ozone concentrations, substantial additional emission control measures will be needed to attain the standards throughout the State. 2006 air quality data for California's five largest air basins can be found in Chapter 4, along with preliminary 2007 ozone data.

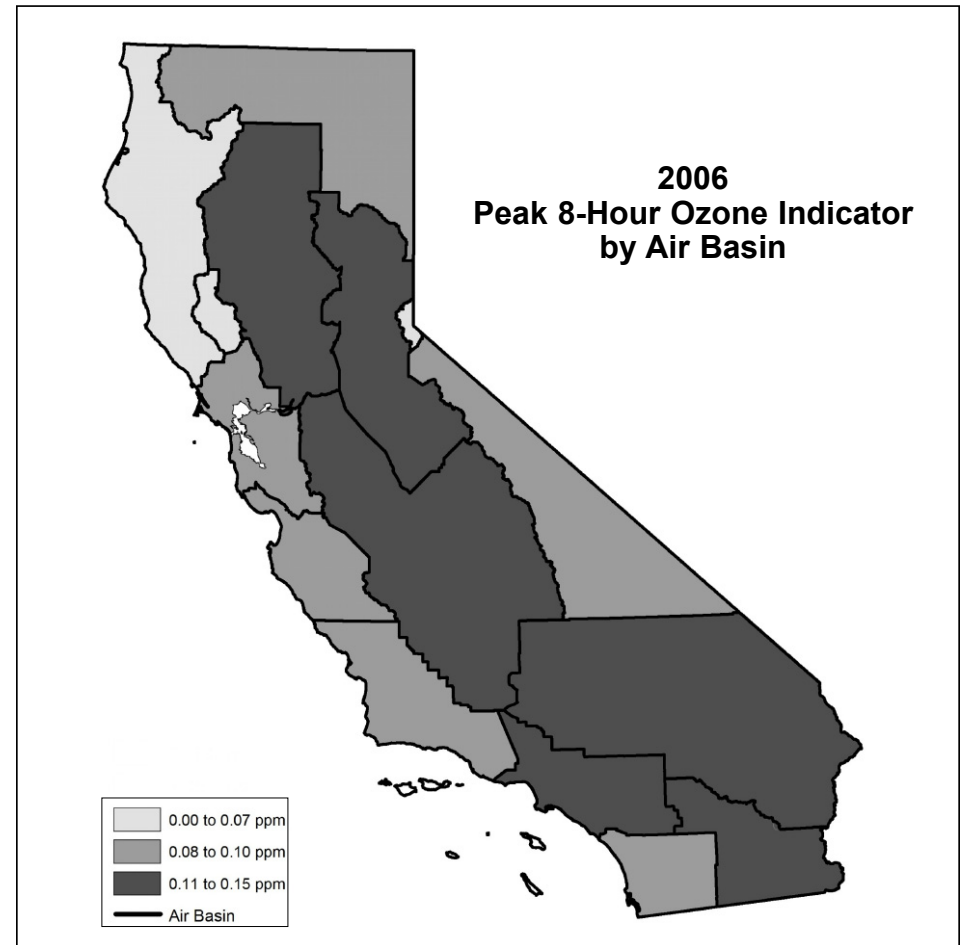


Figure 2-7

## Ozone - 2006 Air Quality Tables

### Peak 1-Hour and 8-Hour Indicator and Exceedance Days by Air Basin

| AIR BASIN                        | 2006 Maximum Peak Indicator in parts per million |        | Number of Days in 2006 above the Standard |        |          |
|----------------------------------|--|--------|---|--------|----------|
|                                  | 1-Hour   | 8-Hour | State                                     |        | National |
|                                  |  |        | 1-Hour                                    | 8-Hour | 8-Hour   |
| Great Basin Valleys Air Basin    | 0.091  | 0.090  | 0   | 33     | 2        |
| Lake County Air Basin            | 0.076  | 0.068  | 0   | 1      | 0        |
| Lake Tahoe Air Basin             | 0.079  | 0.074  | 0   | 2      | 0        |
| Mojave Desert Air Basin          | 0.132  | 0.119  | 61  | 124    | 50       |
| Mountain Counties Air Basin      | 0.122  | 0.111  | 50  | 103    | 44       |
| North Central Coast Air Basin    | 0.095  | 0.085  | 2   | 20     | 2        |
| North Coast Air Basin            | 0.075  | 0.067  | 0   | 0      | 0        |
| Northeast Plateau Air Basin      | 0.078  | 0.073  | 0   | 2      | 0        |
| Sacramento Valley Air Basin      | 0.130  | 0.115  | 44  | 88     | 39       |
| Salton Sea Air Basin             | 0.131  | 0.119  | 51  | 94     | 32       |
| San Diego Air Basin              | 0.111  | 0.099  | 23  | 68     | 14       |
| San Francisco Bay Area Air Basin | 0.123  | 0.097  | 18  | 22     | 12       |
| San Joaquin Valley Air Basin     | 0.140  | 0.119  | 90  | 141    | 86       |
| South Central Coast Air Basin    | 0.113  | 0.101  | 24  | 78     | 22       |
| South Coast Air Basin            | 0.158  | 0.141  | 102                                       | 130    | 85       |

Table 2-7

### National 8-Hour Nonattainment Areas: Design Values and 8-Hour Exceedance Days by Area

| Area                                      | Design Values | Exceedance Days | Percent above Standard |
|---|---------------|-----------------|------------------------|
| South Coast                               | 0.121         | 85              | 45%                    |
| San Joaquin Valley                        | 0.110         | 86              | 30%                    |
| Sacramento Metro                          | 0.097         | 42              | 15%                    |
| Ventura                                   | 0.090         | 17              | 10%                    |
| San Diego                                 | 0.088         | 14              | 5%                     |
| San Francisco Bay Area                    | 0.080         | 12              | Meets standard*        |
| Western Nevada County                     | 0.096         | 26              | 15%                    |
| Central Mountain Counties                 | 0.093         | 14              | 10%                    |
| Southern Mountain Counties                | 0.086         | 6               | 5%                     |
| Eastern Kern                              | 0.086         | 8               | 5%                     |
| Coachella                                 | 0.102         | 26              | 20%                    |
| Antelope Valley and Western Mojave Desert | 0.103         | 50              | 25%                    |
| Imperial                                  | 0.085         | 11              | 5%                     |
| Butte County                              | 0.084         | 7               | Meets standard*        |
| Sutter Buttes                             | 0.082         | 7               | Meets standard*        |

\* This area has air quality that meets the national ozone standard of 0.08 ppm but is still designated as nonattainment.

Table 2-8

## Top Sites with Peak 8-Hour Indicator Values above the State 8-Hour Ozone Standard

### Great Basin Valleys Air Basin

- Death Valley Nat'l Monument

### Lake Tahoe Air Basin

- South Lake Tahoe-1901 Airport Rd

### Mojave Desert Air Basin

- Joshua Tree-National Monument
- Hesperia-Olive Street
- Phelan-Beekley Rd & Phelan Rd
- Lancaster-43301 Division Street
- Victorville-14306 Park Avenue

### Mountain Counties Air Basin

- Placerville-Gold Nugget Way
- Cool-Highway 193
- Colfax-City Hall
- Grass Valley-Litton Building
- San Andreas-Gold Strike Road

### North Central Coast Air Basin

- Pinnacles National Monument
- Hollister-Fairview Road
- Scotts Valley-Scotts Valley Drive

### Northeast Plateau Air Basin

- Yreka-Foothill Drive

### Sacramento Valley Air Basin

- Folsom-Natoma Street
- Sloughhouse
- Sacramento-Del Paso Manor
- Auburn-Dewitt C Avenue
- Roseville-N Sunrise Blvd

### Salton Sea Air Basin

- Palm Springs-Fire Station
- Indio-Jackson Street
- Westmorland-W 1<sup>st</sup> Street
- El Centro-9<sup>th</sup> Street
- Joshua Tree National Park

### San Diego Air Basin

- Alpine-Victoria Drive
- Escondido-East Valley Parkway
- Camp Pendleton
- San Diego-Overland Avenue
- El Cajon-Redwood Avenue

### San Francisco Bay Area Air Basin

- Livermore-793 Rincon Avenue
- San Martin-Murphy Avenue
- Bethel Island Road
- Concord-2975 Treat Blvd
- Los Gatos

### San Joaquin Valley Air Basin

- Arvin-Bear Mountain Blvd
- Sequoia and Kings Canyon Nat'l Park
- Bakersfield-5558 California Avenue
- Fresno-1<sup>st</sup> Street
- Edison

### South Central Coast Air Basin

- Simi Valley-Cochran Street
- Ojai-Ojai Avenue
- Carrizo Plains School-9640 Carrizo
- Piru-3301 Pacific Avenue
- Thousand Oaks-Moorpark Road

### South Coast Air Basin

- Crestline
- Redlands-Dearborn
- San Bernardino-4<sup>th</sup> Street
- Fontana-Arrow Highway
- Banning Airport

Sites with 8-hour peak indicator values above the level of the State ozone standard during 2006. The top five sites in each air basin are listed in descending order of their peak indicator value. If an air basin is not listed, the peak indicator values at sites in that air basin were not above the State 8-hour ozone standard. If more than 5 sites are listed, there were multiple sites with the same maximum concentration.

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## The Nature of Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>)

PM<sub>10</sub> is a mixture of particles and droplets that vary in size and chemical composition, depending on each particle's origin. PM<sub>10</sub> includes the subsets of "coarse" particles, those between 2.5 microns and 10 microns in diameter (PM<sub>2.5-10</sub>), and "fine" particles, those 2.5 microns or smaller (PM<sub>2.5</sub>). Particulate matter can be directly emitted into the air in the form of dust and soot (primary PM) or, similar to ozone, it can be formed in the atmosphere from the reaction of gaseous precursors such as NO<sub>x</sub>, SO<sub>x</sub>, ROG, and ammonia (secondary PM). Primary particles are mostly coarse in size, but include some fine particles, while secondary particles are mostly fine.

Sources of ambient PM include: combustion sources such as trucks and passenger cars, off-road equipment, industrial processes, residential wood burning, and forest/agricultural burning; fugitive dust from paved and unpaved roads, construction, mining, and agricultural activities; and ammonia sources such as livestock operations, fertilizer application, and motor vehicles. In general, combustion processes emit and form fine particles, whereas particles from dust sources tend to fall in the coarse range.

The levels and chemical make-up of ambient PM vary widely from one area to another. In some areas, PM levels vary strongly by season. This is due to seasonal activity increase for some emissions sources and to weather conditions that are conducive to the build-up of PM. Seasonal sources of PM include wildfires, agricultural processes, dust storms, and residential wood burning. Stagnant conditions and cool temperatures during the winter contribute to the formation of secondary ammonium nitrate, leading to higher ambient PM<sub>2.5</sub> concentrations. Warm, stagnant conditions during the summer lead to the formation of secondary ammonium sulfate, contributing to higher PM<sub>2.5</sub> concentrations. Dry weather and windy conditions cause higher coarse PM emissions, resulting in elevated PM<sub>10</sub> concentrations.

The remainder of the discussion on PM includes summarized emission inventory data for directly emitted PM<sub>10</sub> and PM<sub>2.5</sub>, summarized information on ambient PM<sub>10</sub> and PM<sub>2.5</sub> concentrations, and description of the link between source emissions and ambient PM concentrations in selected regions of the State.

Consistent with last year's almanac, is the reporting of both State and national statistics for PM<sub>10</sub> and PM<sub>2.5</sub>. State and national values may differ for several reasons: 1) the State and national criteria for assessing data completeness are different, 2) different monitors are approved for assessing compliance with each standard, and 3) the State PM and national PM<sub>2.5</sub> standards use local conditions while the national PM<sub>10</sub> standard uses standard conditions for data reporting.

## *Directly Emitted Particulate Matter (PM<sub>10</sub>)*

### 2006 Statewide Emission Inventory - Directly Emitted PM<sub>10</sub> by Category

Area-wide sources account for about 85 percent of the statewide emissions of directly emitted PM<sub>10</sub>. The major area-wide source of PM<sub>10</sub> is fugitive dust, especially dust from unpaved and paved roads, agricultural operations, and construction and demolition. Fugitive dust emissions from unpaved and paved roads are related to motor vehicle population levels due to vehicular travel on both types of roads. Other sources of PM<sub>10</sub> emissions include brake and tire wear, residential wood burning, and industrial sources. Exhaust emissions from mobile sources contribute a relatively small portion of directly emitted PM<sub>10</sub> emissions but are a major source of the ROG and NO<sub>x</sub> that form secondary particles. The section titled *PM<sub>10</sub> and PM<sub>2.5</sub> - Linking Emissions Sources with Air Quality* describes how emissions from specific sources are linked to measured PM<sub>10</sub> levels. The emissions data remain the same as presented in the previous edition and will be updated in the 2009 Almanac.

| PM <sub>10</sub> Emissions (annual average) |             |             |
|---|-------------|-------------|
| Emissions Source                            | tons/day    | Percent     |
| <b>Stationary Sources</b>                   | 136         | 7%          |
| <b>Area-wide Sources</b>                    | 1777        | 85%         |
| <b>On-Road Mobile</b>                       | 85          | 4%          |
| Gasoline Vehicles                           | 36          | 2%          |
| Diesel Vehicles                             | 49          | 2%          |
| <b>Other Mobile</b>                         | 88          | 4%          |
| Gasoline Vehicles                           | 33          | 2%          |
| Diesel Vehicles                             | 44          | 2%          |
| Other                                       | 11          | 1%          |
| <b>Total Statewide</b>                      | <b>2086</b> | <b>100%</b> |

Table 2-10

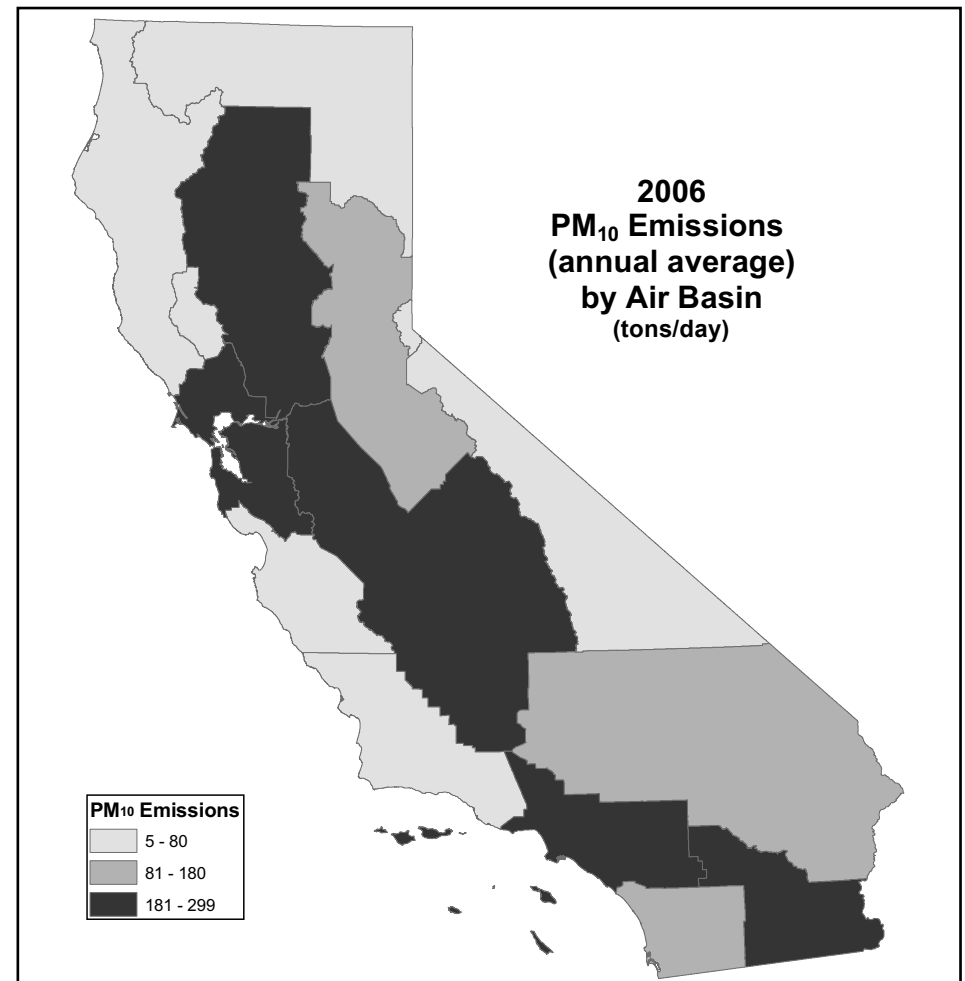


Figure 2-8



## *Largest Stationary Sources Statewide*

### **Largest Stationary Sources of Directly Emitted PM<sub>10</sub> Statewide**

| <b>Air Basin</b>       | <b>Facility Name</b>                   | <b>City</b>    | <b>Tons/Year</b> |
|------------------------|--|----------------|------------------|
| Mojave Desert          | Mitsubishi Cement 2000                 | Lucerne Valley | 1468             |
| Mojave Desert          | TXI Riverside Cement Company           | Oro Grande     | 755              |
| Mojave Desert          | Antelope Valley Aggregate              | Little Rock    | 691              |
| Mountain Counties      | Sierrapine Ltd Ampine Division         | Martell        | 518              |
| San Francisco Bay Area | Shell Martinez Refinery                | Martinez       | 373              |
| South Coast            | ChevronTexaco Products                 | El Segundo     | 356              |
| Mojave Desert          | California Portland Cement             | Mojave         | 329              |
| Mojave Desert          | National Cement                        | Lebec          | 309              |
| South Coast            | BP West Coast Products Carson Refinery | Carson         | 298              |
| Mojave Desert          | Granite Construction                   | Little Rock    | 297              |

Facility totals are the most recent available data. Some facilities may have reduced or increased emissions since these data were collected. These changes will be reflected in subsequent editions of the almanac. The list of facilities does not include military bases, landfills, or airports.

Table 2-11

## *Directly Emitted Particulate Matter (PM<sub>2.5</sub>)*

### 2006 Statewide Emission Inventory - Directly Emitted PM<sub>2.5</sub> by Category

Area-wide sources account for about 66 percent of the statewide emissions of directly emitted PM<sub>2.5</sub>. The major area-wide source of PM<sub>2.5</sub> is fugitive dust, especially dust from unpaved and paved roads, agricultural operations, and construction and demolition. Fugitive dust emissions from unpaved and paved roads are related to motor vehicle population levels due to vehicular travel on both types of roads. Other sources of PM<sub>2.5</sub> emissions include brake and tire wear, residential wood burning, and industrial sources. Exhaust emissions from mobile sources contribute only a very small portion of directly emitted PM<sub>2.5</sub> emissions, but are a major source of the ROG and NO<sub>x</sub> that form secondary particles. The section titled *PM<sub>10</sub> and PM<sub>2.5</sub> - Linking Emissions Sources with Air Quality* describes how emissions from specific sources are linked to measured PM<sub>2.5</sub> levels. The emissions data remain the same as presented in the previous edition and will be updated in the 2009 Almanac.

| PM <sub>2.5</sub> Emissions (annual average) |            |             |
|--|------------|-------------|
| Emissions Source                             | tons/day   | Percent     |
| <b>Stationary Sources</b>                    | 83         | 12%         |
| <b>Area-wide Sources</b>                     | 450        | 66%         |
| <b>On-Road Mobile</b>                        | 66         | 10%         |
| Gasoline Vehicles                            | 22         | 3%          |
| Diesel Vehicles                              | 43         | 6%          |
| <b>Other Mobile</b>                          | 81         | 12%         |
| Gasoline Vehicles                            | 29         | 4%          |
| Diesel Vehicles                              | 41         | 6%          |
| Other  | 11         | 2%          |
| <b>Total Statewide</b>                       | <b>680</b> | <b>100%</b> |

Table 2-12

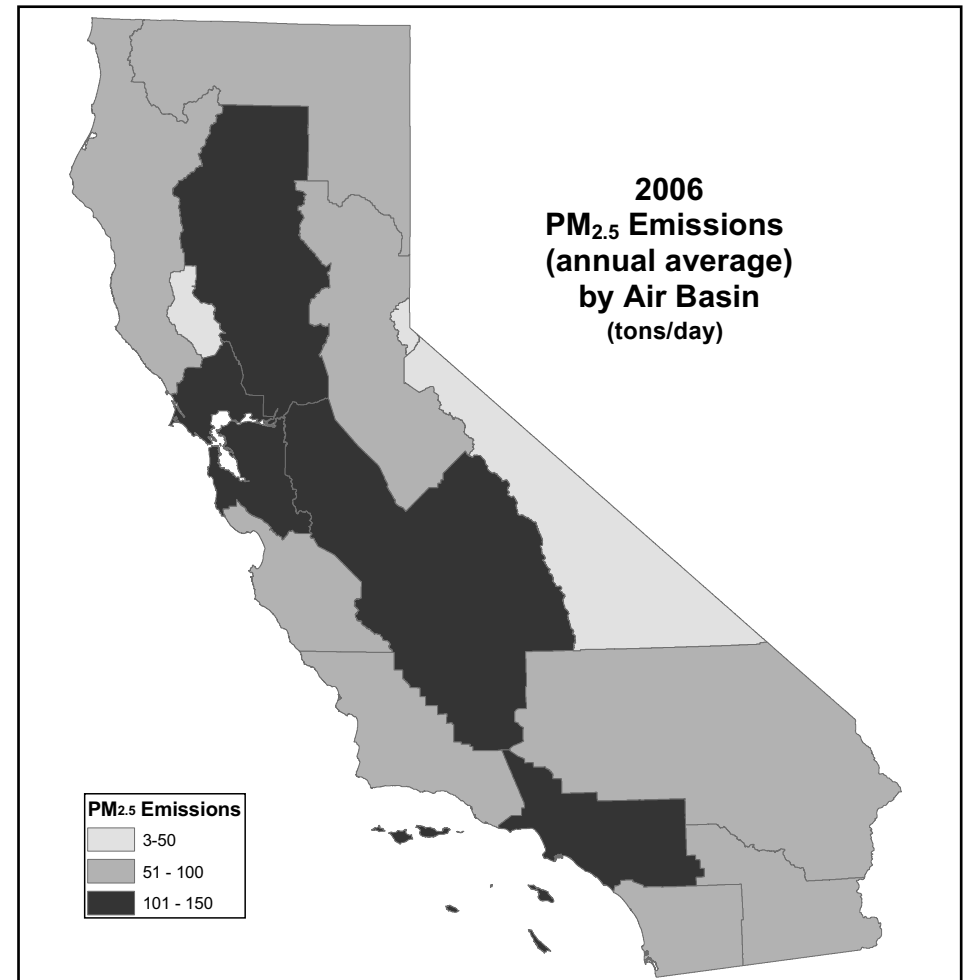


Figure 2-9

## *Largest Stationary Sources Statewide*

### **Largest Stationary Sources of Directly Emitted PM<sub>2.5</sub> Statewide**

| <b>Air Basin</b>       | <b>Facility Name</b>                   | <b>City</b>    | <b>Tons/Year</b> |
|------------------------|--|----------------|------------------|
| Mojave Desert          | Mitsubishi Cement 2000                 | Lucerne Valley | 928              |
| Mountain Counties      | Sierrapine Ltd Ampine Division         | Martell        | 414              |
| San Francisco Bay Area | Shell Martinez Refinery                | Martinez       | 360              |
| Mojave Desert          | TXI Riverside Cement Company           | Oro Grande     | 344              |
| South Coast            | ChevronTexaco Products                 | El Segundo     | 303              |
| South Coast            | BP West Coast Products Carson Refinery | Carson         | 284              |
| Mojave Desert          | Antelope Valley Aggregate              | Littlerock     | 257              |
| San Francisco Bay Area | Chevron Products Company               | Richmond       | 232              |
| Sacramento Valley      | Johns-Manville (Insulation)            | Willows        | 220              |
| Mojave Desert          | Searles Valley Minerals                | Trona          | 213              |

Facility totals are the most recent available data. Some facilities may have reduced or increased emissions since these data were collected. These changes will be reflected in subsequent editions of the almanac. The list of facilities does not include military bases, landfills, or airports.

Table 2-13

## PM<sub>10</sub> - 2006 Air Quality

Most areas of California have either 24-hour or annual PM<sub>10</sub> concentrations that exceed the State standards. Some areas exceed both State standards. Several areas, both urban and rural, also exceed the national standards. The highest annual average values during 2006 occurred in the Salton Sea, South Coast, San Diego, San Joaquin Valley, and Great Basin Valleys air basins. The 2006 data are summarized in Table 2-13. The highest 24-hour concentrations generally occurred in the desert areas where wind-blown dust contributes to local PM<sub>10</sub> problems. However, the 2006 maximum 24-hour concentrations are not equivalent to the values used for area designations, which consider frequency of occurrence and potential impact from exceptional or unusual events. Current area designations can be found on the ARB website at [www.arb.ca.gov/desig/desig.htm](http://www.arb.ca.gov/desig/desig.htm).

Particles resulting from combustion contribute to high PM<sub>10</sub> in a number of urban areas. While many of the control programs implemented for ozone will also reduce PM<sub>10</sub>, more controls specifically for PM<sub>10</sub> will be needed to reach attainment.

The table on the following page lists the highest value for each statistic. Within an air basin, the highest value for each statistic may reflect a different site or different monitor. For example, the State and national maximum 24-hour concentrations in the Great Basin Valleys, Mojave Desert, and Mountain Counties air basins reflect measurements from two different sites.

In addition, the State and national requirements for data completeness are different. This may result in marked differences between the State and national values for the same statistic (e.g. in the Mountain Counties and the San Diego air basins, due to differing State and national data completeness criteria, the State and national maximum annual averages reflect values from two different sites.)

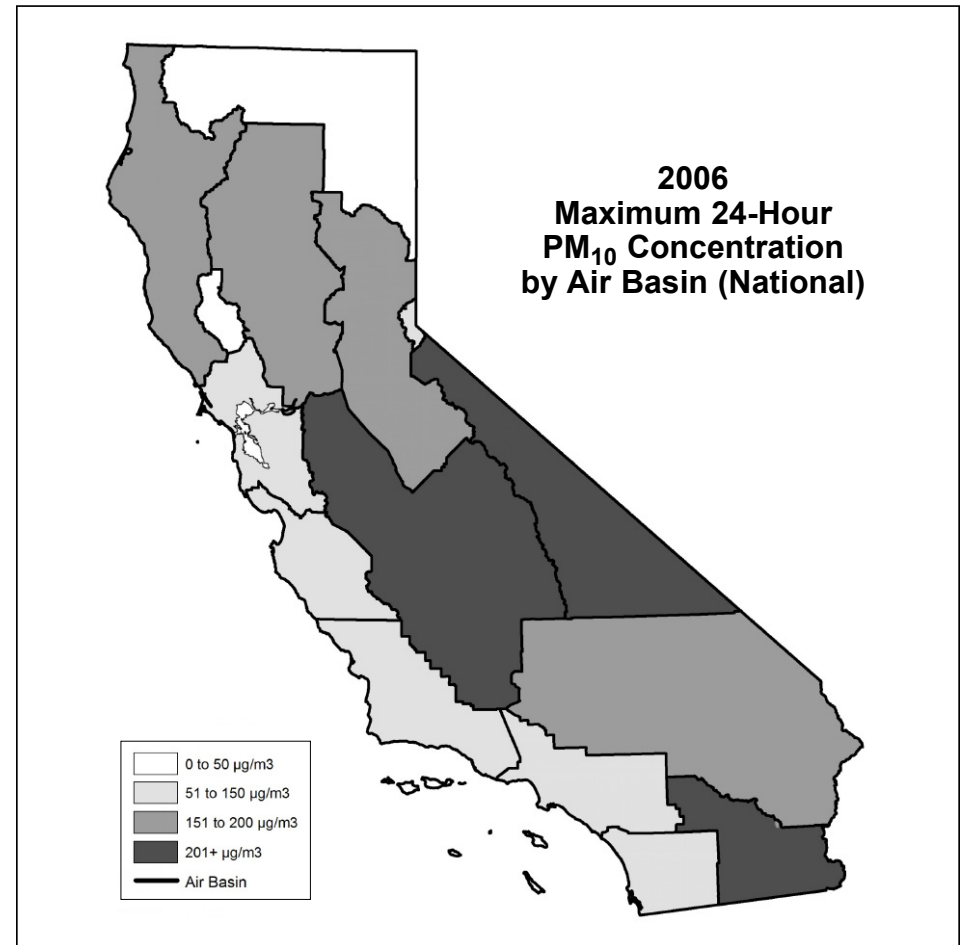


Figure 2-10

# PM<sub>10</sub> - 2006 Air Quality Tables

## Maximum 24-Hour and Annual PM<sub>10</sub> Concentrations by Air Basin

| AIR BASIN                        | 2006 Maximum 24-Hour Concentration (µg/m <sup>3</sup> ) |          | 2006 Maximum Annual Average of Quarters (µg/m <sup>3</sup> ) |          |
|----------------------------------|---|----------|--|----------|
|                                  | State   | National | State  | National |
| Great Basin Valleys Air Basin    | 7709.0  | 8299.0   | 63.1   | 93.2     |
| Lake County Air Basin            | 32.8  | *        | 11.7   | *        |
| Lake Tahoe Air Basin             | *   | 66.6     | *  | 17.1     |
| Mojave Desert Air Basin          | 77.0  | 184.4    | 30.5   | 33.0     |
| Mountain Counties Air Basin      | 97.0  | 167.1    | 17.6   | 29.0     |
| North Central Coast Air Basin    | 65.0  | 63.0     | 25.0   | 23.9     |
| North Coast Air Basin            | 153.9   | 160.6    | 21.9   | 25.8     |
| Northeast Plateau Air Basin      | 43.7  | 49.6     | 13.4   | 14.1     |
| Sacramento Valley Air Basin      | 111.0   | 159.6    | 28.8   | 37.8     |
| Salton Sea Air Basin             | 261.0   | 248.0    | 71.6   | 70.9     |
| San Diego Air Basin              | 134.0   | 133.0    | 54.1   | 53.7     |
| San Francisco Bay Area Air Basin | 106.3   | 103.9    | 35.0   | 34.1     |
| San Joaquin Valley Air Basin     | 255.0   | 304.0    | 56.5   | 55.4     |
| South Central Coast Air Basin    | 135.0   | 131.0    | 27.9   | 29.7     |
| South Coast Air Basin            | 135.0   | 142.0    | 62.3   | 64.0     |

\* Data provided may be incomplete or may not meet the reporting criteria required for the related standard.

\*\* The 24-hour PM<sub>10</sub> max for each basin is based on data obtained from federal reference monitors and federal equivalent monitors operating in the basin.

**24-hour data** - The table may include data from extreme, exceptional, or unusual concentration events; however, there is a mechanism in place to review for these types of events during the area designation process.

**Annual average data** - Extreme, exceptional, or unusual concentration events do not generally significantly influence the annual average. However, their exclusion can be considered on a case-by-case basis.

Table 2-14

## National Nonattainment Areas: Expected Exceedance Days and Max National Concentrations by Area

| Area                  | 2004-2006 Expected Number of Exceedances | 2004-2006 Max High National 24-Hr Avg | Percent above Standard |
|-----------------------|--|---------------------------------------|------------------------|
| Owens Valley          | 18.8                                     | 6338.0                                | 4015%                  |
| Coso Junction         | 1.0                                      | 97.0                                  | -35%                   |
| Mammoth Lakes         | 0.0                                      | 86.0                                  | -45%                   |
| Mono Basin            | 22.2                                     | 4300.0                                | 2695%                  |
| Sacramento County     | 0.3                                      | 110.0                                 | -30%                   |
| San Joaquin Valley    | 0.0                                      | 154.0                                 | meets standard         |
| South Coast           | 0.0                                      | 137.0                                 | -10%                   |
| Imperial Valley       | 11.9                                     | 248.0                                 | 64%                    |
| Coachella Valley      | 2.2                                      | 226.0                                 | 45%                    |
| San Bernardino County | 1.0                                      | 80.0                                  | -50%                   |
| Trona                 | 0.0                                      | 88.0                                  | -45%                   |

Table 2-15

### Top Sites with 24-Hour Concentrations above the State PM<sub>10</sub> Standard

#### Great Basin Valleys Air Basin

- Shell Cut-Highway 190
- Dirty Sox
- Flat Rock-Highway 190
- Mono Lake North Shore
- Keeler-Cerro Gordo Road

#### Mojave Desert Air Basin

- Barstow
- Trona-Athol and Telegraph
- Ridgecrest-100 West California Avenue
- Lancaster-43301 Division Street
- Mojave-923 Poole Street

#### Mountain Counties Air Basin

- Yosemite Village-Visitor Center

#### North Central Coast Air Basin

- Davenport
- Salinas-#3

#### North Coast Air Basin

- Weaverville-Courthouse
- Eureka-I Street
- Fort Bragg-N Franklin Street

#### Sacramento Valley Air Basin

- Sacramento-T Street
- Sacramento-3801 Airport Road
- Sacramento-Branch Center Road #2
- Chico-Manzanita Avenue
- West Sacramento-15<sup>th</sup> Street
- Woodland-Gibson Road

#### Salton Sea Air Basin

- Calexico-Grant Street
- Palm Springs-Fire Station
- Westmorland-W 1<sup>st</sup> Street
- Calexico-Ethel Street
- El Centro-9<sup>th</sup> Street

#### San Diego Air Basin

- Otay Mesa-Paseo International
- San Diego-1110 Beardsley Street
- Chula Vista
- Escondido-E Valley Parkway

#### San Francisco Bay Area Air Basin

- San Jose-Tully Road
- Santa Rosa-5<sup>th</sup> Street
- Bethel Island Road
- Concord-2975 Treat Blvd
- San Jose-Jackson Street

#### San Joaquin Valley Air Basin

- Corcoran-Patterson Avenue
- Bakersfield-Golden State Highway
- Oildale-3311 Manor Street
- Bakersfield-5558 California Avenue
- Visalia-North Church Street

#### South Central Coast Air Basin

- Nipomo-Guadalupe Road
- El Rio-Rio Mesa School #2
- Nipomo-Regional Park
- San Luis Obispo-3220 South Higuera St
- Paso Robles-Santa Fe Avenue
- Morro Bay

#### South Coast Air Basin

- Fontana-Arrow Highway
- Riverside-5130 Poinsettia Place
- Perris
- Long Beach-East Pacific Coast Highway
- Riverside-Rubidoux

Sites with 24-hour PM<sub>10</sub> concentrations above the level of the State PM<sub>10</sub> standard during 2006. The top five sites in each air basin are listed in descending order of their maximum 24-hour concentration. If an air basin is not listed, the 24-hour PM<sub>10</sub> concentrations at sites in that air basin were not above the State 24-hour PM<sub>10</sub> standard. If more than 5 sites are listed, there were multiple sites with the same maximum concentration.

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## PM<sub>2.5</sub> - 2006 Air Quality

As explained in the Introduction section of Chapter 1, the U.S. EPA has promulgated national 24-hour and annual average standards for PM<sub>2.5</sub>. The ARB has established a more health-protective State annual average PM<sub>2.5</sub> standard.

The 2006 data from California's PM<sub>2.5</sub> network are summarized in Table 2-15. Sites in the Great Basin Valleys Air Basin recorded the highest national 24-hour concentrations, while sites in the San Joaquin Valley Air Basin recorded the highest 98th percentile 24-hour concentrations (see footnote on the following page for an explanation of the 98th percentile statistic). However, the 2006 maximum 24-hour concentrations are not equivalent to the values used for area designations, which consider frequency of occurrence and potential impact from exceptional or unusual events. Sites in the South Coast and San Joaquin Valley air basins recorded the highest annual average concentrations in the State. The annual averages for these areas were nearly twice the level of the State annual PM<sub>2.5</sub> standard. Current area designations can be found on the ARB website at [www.arb.ca.gov/desig/adm/adm.htm](http://www.arb.ca.gov/desig/adm/adm.htm).

The table on the following page lists the highest value for each statistic. Within an air basin, the highest value for each statistic may reflect a different site or monitor. In addition, the State and national requirements for data completeness are different. This may result in marked differences between the State and national values for the same statistic (e.g. maximum 24-hour concentrations in the Mountain Counties and South Central Coast air basins, and maximum 24-hour concentrations and maximum annual averages for the Salton Sea and San Joaquin Valley air basins.)

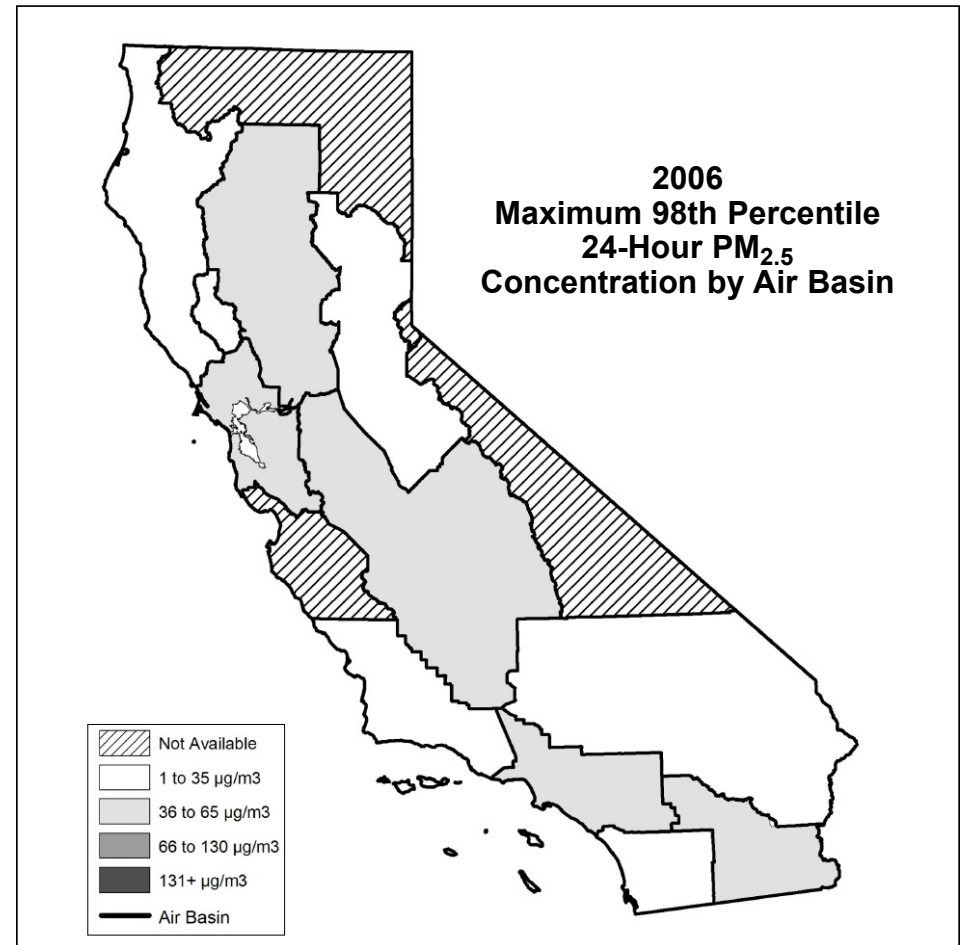


Figure 2-11



## PM<sub>2.5</sub> - 2006 Air Quality Tables

### Maximum 24-Hour, 98th Percentile, and Annual PM<sub>2.5</sub> Concentrations by Air Basin

| AIR BASIN              | 2006 Maximum 24-Hr Concentration (µg/m <sup>3</sup> ) |                 | 98th Percentile 24-Hr Conc. (µg/m <sup>3</sup> )** | 2006 Average of Quarterly Means (µg/m <sup>3</sup> )** |                 |
|------------------------|---|-----------------|--|--|-----------------|
|                        | State   | National        |  | State  | National        |
| Great Basin Valleys    | 193.0   | 193.0           | Incomplete Data                                    | Incomplete Data  | Incomplete Data |
| Lake County            | 21.6  | 21.6            | 21.4   | 5.1  | 5.1             |
| Lake Tahoe             | Incomplete Data                                       | Incomplete Data | Incomplete Data                                    | Incomplete Data  | Incomplete Data |
| Mojave Desert          | 22.0  | 22.0            | 19.0   | 10.3   | 10.4            |
| Mountain Counties      | 62.7  | 51.0            | 31.0   | 8.6  | 10.9            |
| North Central Coast    | 13.0  | 13.0            | Incomplete Data                                    | Incomplete Data  | Incomplete Data |
| North Coast            | 35.0  | 35.0            | 17.4   | 6.8  | 6.8             |
| Northeast Plateau      | 22.0  | 22.0            | Incomplete Data                                    | Incomplete Data  | Incomplete Data |
| Sacramento Valley      | 78.6  | 78.0            | 59.0   | 15.2   | 13.2            |
| Salton Sea             | 80.8  | 68.8            | 46.0   | 17.3   | 12.5            |
| San Diego              | 63.3  | 63.3            | 28.4   | 13.1   | 13.1            |
| San Francisco Bay Area | 75.3  | 75.3            | 42.8   | 12.4   | 9.3             |
| San Joaquin Valley     | 88.1  | 87.0            | 64.7   | 21.6   | 19.3            |
| South Central Coast    | 119.5   | 31.7            | 27.6   | 10.3   | 10.3            |
| South Coast            | 72.2  | 72.2            | 54.4   | 16.6   | 20.8            |

\* These statistics and determination of their validity are calculated according to the methods specified in 40 CFR Part 50, Appendix N. Validity is based on the number of measurements available per quarter and therefore, depends on data completeness. Both the 98<sup>th</sup> percentile concentration and the average of quarters concentration relate to the national PM<sub>2.5</sub> standards, while only the average of quarters concentration relates to the State PM<sub>2.5</sub> standard.

**24-hour data** - The table may include data from extreme, exceptional, or unusual concentration events; however, there is a mechanism in place to review for these types of events during the area designation process.

**Annual average data** - Extreme, exceptional, or unusual concentration events do not generally significantly influence the annual average. However, their exclusion can be considered on a case-by-case basis.

Table 2-17

### National Nonattainment Areas: Annual and 24-Hour Average Design Value by Area

| Area               | 2004-2006 Annual Design Value | 2004-2006 24-Hr Avg Design Value | Percent above Annual Standard |
|--------------------|-------------------------------|----------------------------------|-------------------------------|
| San Joaquin Valley | 18.9                          | 64.0                             | 26%                           |
| South Coast        | 20.6                          | 57.0                             | 37%                           |

Table 2-18

## PM<sub>10</sub> and PM<sub>2.5</sub> - Linking Emissions Sources with Air Quality

The size, concentration, and chemical composition of PM vary by region and by season. A number of areas exhibit strong seasonal patterns. Other areas have a much more uniform distribution with PM concentrations remaining high throughout the year. In yet other areas, isolated PM exceedances can occur at any time of the year.

In the San Joaquin Valley, the San Francisco Bay Area, and the Sacramento region, there is a strong seasonal variation in PM, with higher PM<sub>10</sub> and PM<sub>2.5</sub> concentrations in the fall and winter months (refer to Figure 2-10). In the winter, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations remain elevated for extended periods. These higher concentrations are caused by increased activity for some emission sources and meteorological conditions that are conducive to the build-up of PM. During the winter, the PM<sub>2.5</sub> size fraction drives the PM concentrations, and the major contributor to high levels of ambient PM<sub>2.5</sub> is the secondary formation of PM caused by the reaction of NO<sub>x</sub> and ammonium to form ammonium nitrate. The San Joaquin Valley also records high PM<sub>10</sub> levels during the fall. During this season, both the coarse fraction and the PM<sub>2.5</sub> fraction drove the PM concentrations.

In the eastern South Coast region, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations remain high throughout the year (refer to Figure 2-11). The more uniform activity patterns of emission sources, as well as less variable weather patterns, leads to this more uniform concentration pattern. In other areas, high PM can be more episodic than seasonal. For example, in the Owens Lake area of the Great Basin Valleys Air Basin, episodic fugitive dust events lead to very high PM<sub>10</sub> levels, with soil dust as the major contributor to ambient PM<sub>10</sub>.

Analysis of PM chemical composition data collected from a variety of routine and special monitoring programs provides insight into the fraction of PM<sub>2.5</sub> that is secondary. Data were obtained from the California PM<sub>2.5</sub> and PM<sub>10</sub> monitoring networks, California Regional PM<sub>10</sub>/PM<sub>2.5</sub> Air Quality Study, Children's Health Study,

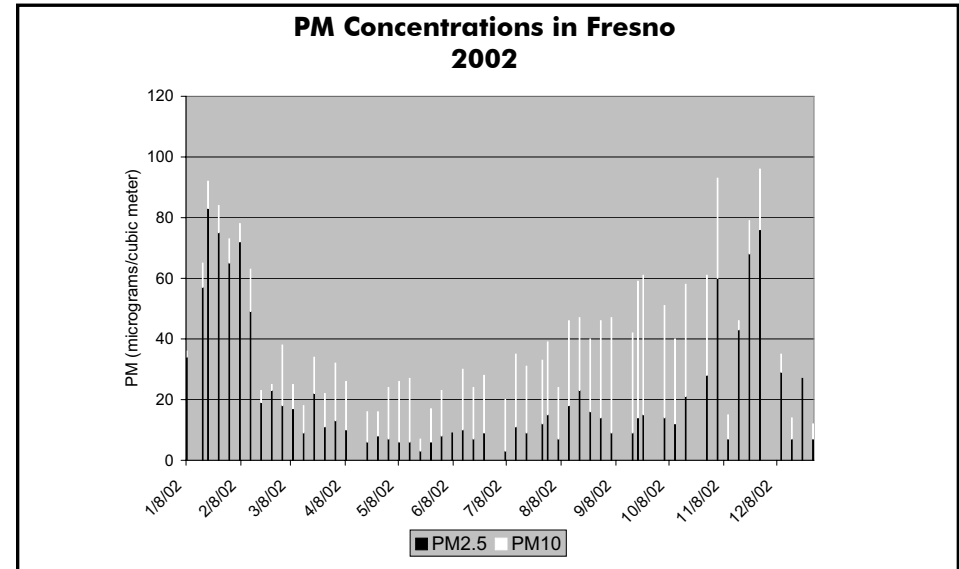


Figure 2-12

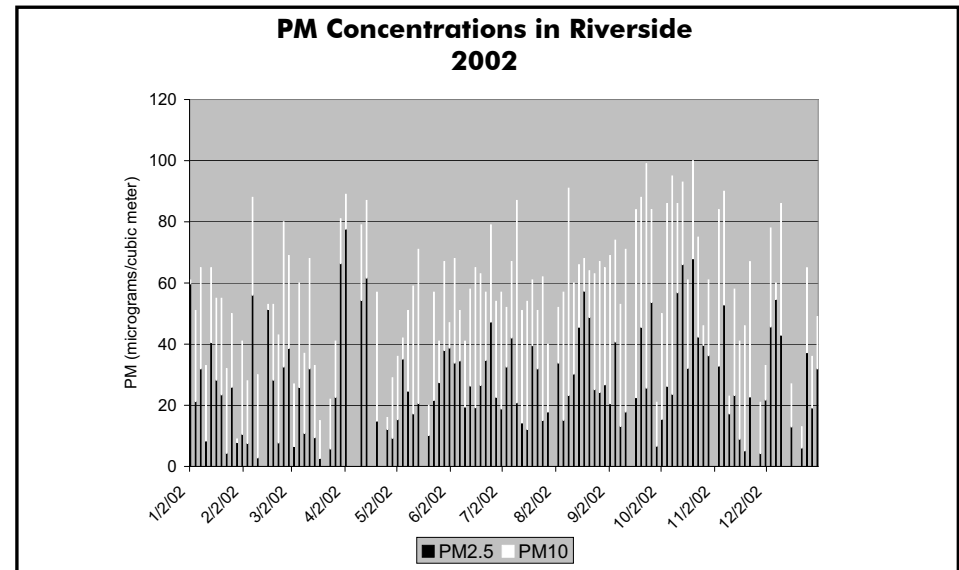


Figure 2-13

Integrated Monitoring and Protected Visual Environments Program, and South Coast Air Quality Management District's PM Technical Enhancement Programs of 1995 and 1998-1999. Secondary PM<sub>2.5</sub> estimates include ammonium nitrate and ammonium sulfate components, which form through reactions in the atmosphere of nitrogen oxides and sulfur oxides emitted by motor vehicles and other combustion processes. PM<sub>2.5</sub> also includes secondary organic aerosols (SOA) resulting from atmospheric reactions of organic compounds emitted from combustion sources and biogenic processes. Since only limited information is available on how much of the measured PM<sub>2.5</sub> organic carbon component is secondary, SOA are not included in the secondary PM<sub>2.5</sub> estimates. However, available studies suggest that in the South Coast, on an annual average basis, SOA may constitute 6 to 16 percent of PM<sub>2.5</sub> (Schauer et. al. 1996) and in urban areas of the San Joaquin Valley, during the winter, SOA may contribute up to an average of eight percent of PM<sub>2.5</sub> (Schauer and Cass, 1998).

Chemical Mass Balance (CMB) models are used to establish which sources and how much of their emissions contribute to ambient PM concentrations. CMB models use chemical composition data from ambient PM samples and from emission sources. These data are often collected during special source attribution studies. The source attribution data presented in this section were derived from a variety of studies with differing degrees of chemical speciation. In general, however, the source categories can be interpreted in the following manner. The road and other dust, wood smoke, cooking, vehicle exhaust, and construction categories represent sources which directly emit particles. Road and other dust represents the combination of mechanically disturbed soil (paved and unpaved roads, agricultural activities) and wind-blown dust. Wood smoke generally represents residential wood combustion, but may also include combustion from other biomass burning such as agricultural or prescribed burning. The vehicle exhaust category represents direct motor vehicle exhaust particles from both gasoline and diesel vehicles. Construction reflects construction and demolition activities. Ammonium nitrate and ammonium sulfate represent secondary species (i.e., they form

in the atmosphere from the emissions of NO<sub>x</sub>, SO<sub>x</sub>, and ammonia). Combustion sources such as motor vehicles and stationary sources contribute to the NO<sub>x</sub> that forms ammonium nitrate. Mobile sources such as diesel vehicles, locomotives, and ships and stationary combus-

| Estimated Secondary Portion of PM <sub>2.5</sub><br>(annual average) |                                    |
|--|------------------------------------|
| Air Basin  | Secondary PM <sub>2.5</sub><br>(%) |
| Great Basin Valleys  | 30                                 |
| Lake County  | 30                                 |
| Lake Tahoe   | 40                                 |
| Mojave Desert  | 40                                 |
| Mountain Counties  | 30                                 |
| North Central Coast  | 40                                 |
| North Coast  | 30                                 |
| Northeast Plateau  | 30                                 |
| Sacramento Valley  | 30                                 |
| Salton Sea   | 40                                 |
| San Diego  | 50                                 |
| San Francisco Bay Area   | 40                                 |
| San Joaquin Valley   | 40                                 |
| South Central Coast  | 50                                 |
| South Coast  | 60                                 |

Table 2-19

tion sources emit the SO<sub>x</sub> that forms ammonium sulfate. Ammonia sources include animal feedlots, fertilizers, and motor vehicles. The other carbon sources category reflects organic sources not included in the source attribution models, such as natural gas combustion, as well as secondary organic carbon formation. The unidentified category represents the mass that cannot be accounted for by the identified source categories. It can include particle-bound water, as well as other unidentified sources.

The figures on the following pages present the best available source attribution data from CMB modeling for selected regions. These presentations are representative of typical days when the State PM<sub>10</sub>

standards are exceeded (refer to Chapter 1, for a review of the State standards). The fractions of the constituents shown can vary daily and from year to year, depending on factors such as meteorology.

A detailed description of  $PM_{10}$  and  $PM_{2.5}$  characteristics in each of California's 35 air districts by air basin is included in the ARB's technical report titled "*Characterization of Ambient  $PM_{10}$  and  $PM_{2.5}$  in California*," which can be found on the ARB website at [www.arb.ca.gov/pm/pm.htm](http://www.arb.ca.gov/pm/pm.htm).

## San Joaquin Valley Air Basin

Figures 2-12 and 2-13 illustrate contributions to ambient PM in the San Joaquin Valley during the winter and on an annual average basis. These are the results from analysis of data collected during the California Regional PM<sub>10</sub>/PM<sub>2.5</sub> Air Quality Study. (San Joaquin Valley Air Pollution Control District, 2003)

During the winter in Fresno, secondary ammonium nitrate was the largest contributor to PM<sub>10</sub>, formed from NO<sub>x</sub> emissions from mobile and stationary combustion sources, combined with ammonia. Emissions from wood smoke, vehicle exhaust, and road and agricultural sources also contribute significantly to PM<sub>10</sub> levels. On an annual average basis, elevated concentrations of PM<sub>10</sub> were associated with high levels of road and agricultural dust. Secondary ammonium nitrate, wood smoke, and vehicle exhaust particles also contributed significantly to annual PM<sub>10</sub> concentrations.

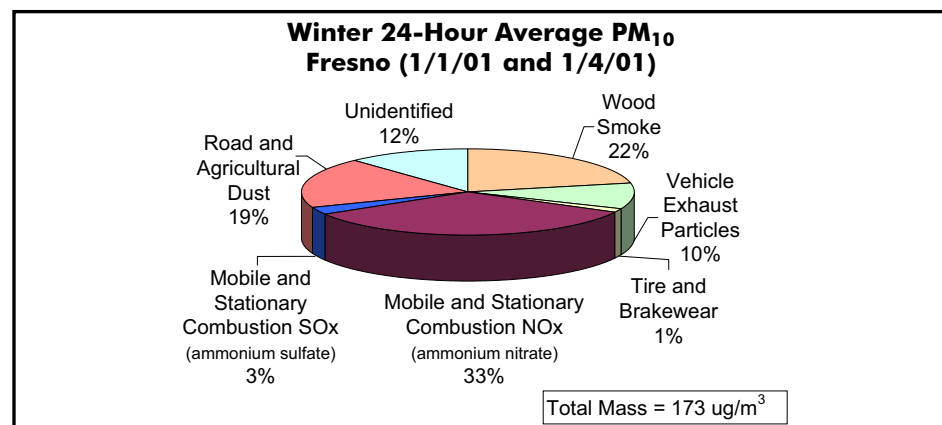


Figure 2-14

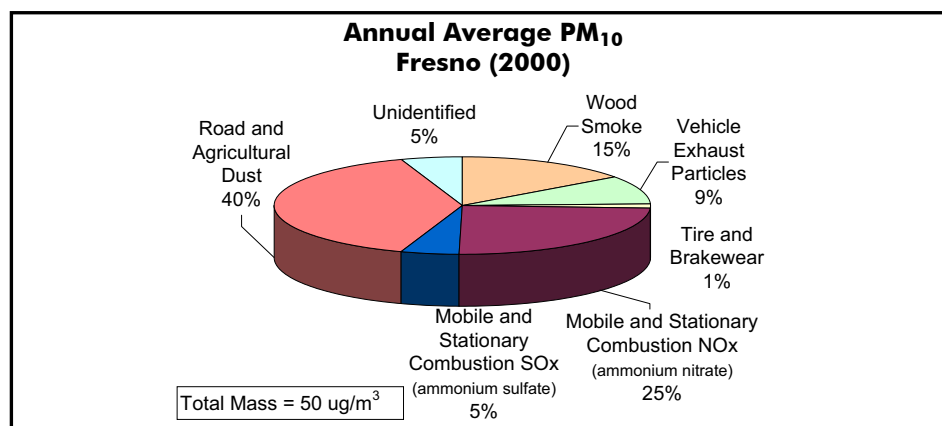


Figure 2-15

## San Francisco Bay Area Air Basin

Figures 2-14 and 2-15 illustrate the sources of PM during the winter in the San Francisco Bay Area. The data are from the source apportionment analysis conducted by the Bay Area Air Quality Management District using samples collected during two special studies (Fairley, 1996, 2001).

During the winter, in San Jose, high PM concentrations are associated with high levels of wood smoke, primarily from residential wood combustion, and cooking.  $\text{NO}_x$  emitted from mobile and stationary combustion sources, in combination with ammonia, contributes about one-fourth of the PM levels in the form of ammonium nitrate. Particle emissions from mobile and stationary combustion sources are also a major contributor to  $\text{PM}_{2.5}$ . Road dust is a significant contributor to  $\text{PM}_{10}$ , but not  $\text{PM}_{2.5}$ .

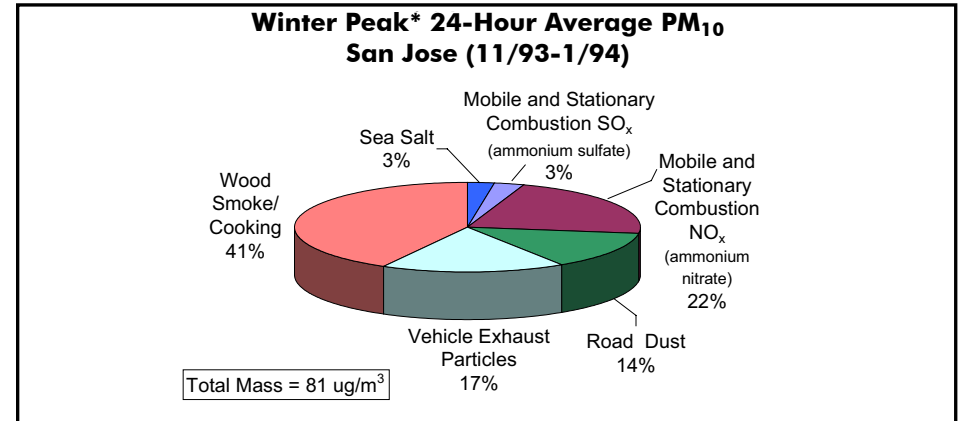


Figure 2-16

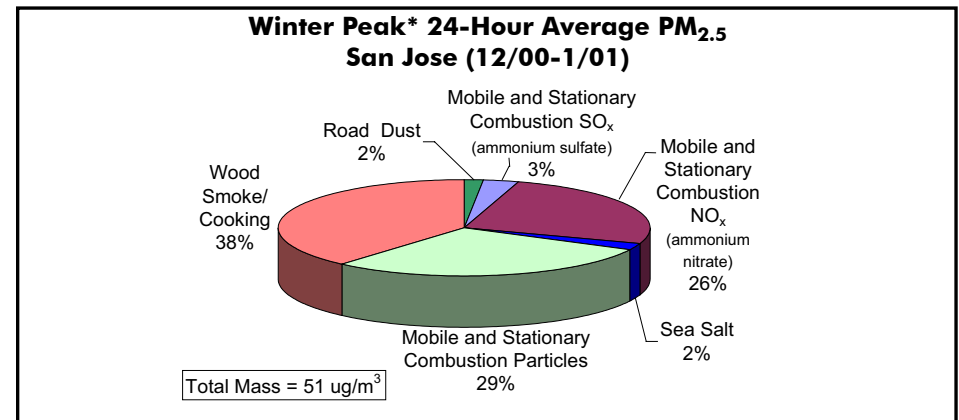
\* Average of days with  $\text{PM}_{10} > 50 \mu\text{g}/\text{m}^3$ 

Figure 2-17

\* Average of days with  $\text{PM}_{2.5} > 40 \mu\text{g}/\text{m}^3$

## Sacramento Valley Air Basin

Figures 2-16 and 2-17 illustrate source contributions to ambient  $PM_{10}$  and  $PM_{2.5}$  during the winter in Sacramento. The data are from the analysis of ambient air samples collected from November through January, during the six year period of 1991 through 1996 (Motallebi, 1999).

$NO_x$  emissions from mobile and stationary combustion sources, combined with ammonia to form ammonium nitrate, are the largest contributor to ambient PM levels. Vehicle exhaust particle emissions and wood smoke from residential wood combustion also contribute significantly. While road and other dust is a significant component of ambient  $PM_{10}$ , its contribution to  $PM_{2.5}$  is minor.

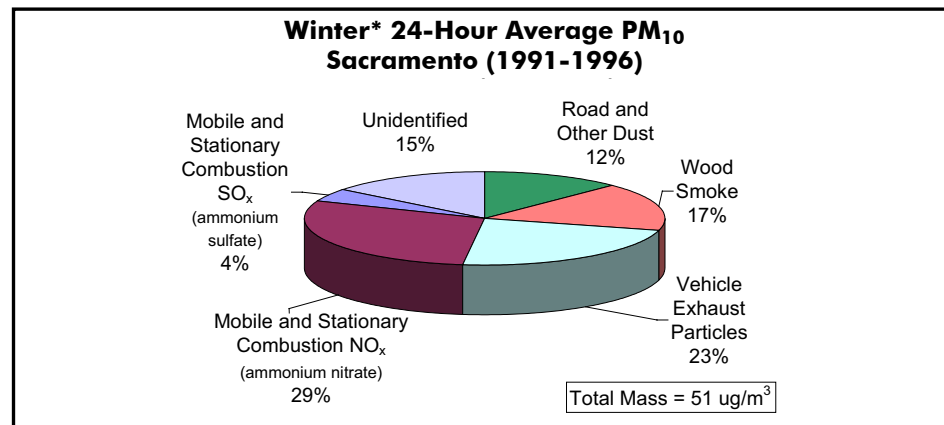


Figure 2-18

\* Average of days with  $PM_{10} > 40 \mu g/m^3$

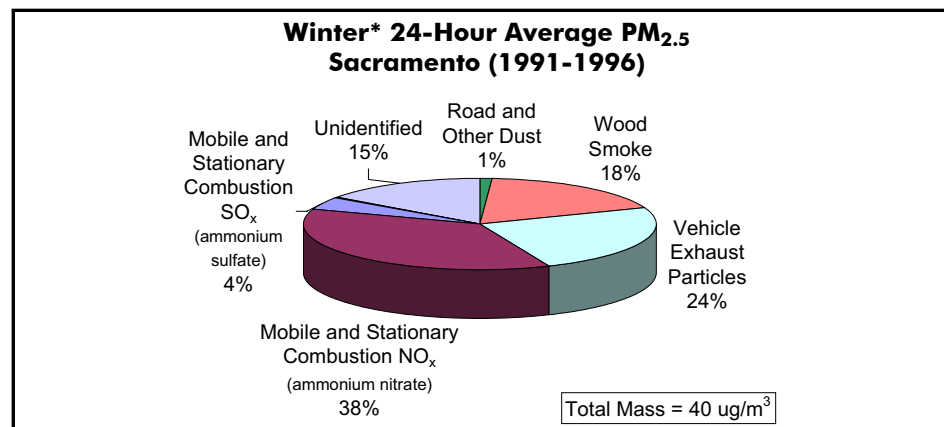


Figure 2-19

\* Average of days with  $PM_{10} > 40 \mu g/m^3$

## South Coast Air Basin

Data for Figures 2-18, 2-19, 2-20, and 2-21 are from the source apportionment analysis that the South Coast Air Quality Management District (SCAQMD) performed for the 1997 Air Quality Management Plan. SCAQMD collected samples during a one-year special study from January 1995 to February 1996, as part of the PM<sub>10</sub> Technical Enhancement Program (SCAQMD, 1996).

On an annual basis, in Central Los Angeles, dust from roads and construction is the major contributor to ambient PM<sub>10</sub>. This is not the case for the episode on November 17, 1995. In both cases, NO<sub>x</sub> and SO<sub>x</sub> emitted from mobile and stationary combustion sources, combined with ammonia, contribute significantly in the form of ammonium nitrate and sulfate. Vehicle exhaust particles and emissions from other carbon sources also contribute to both annual and episodic ambient PM<sub>10</sub> levels.

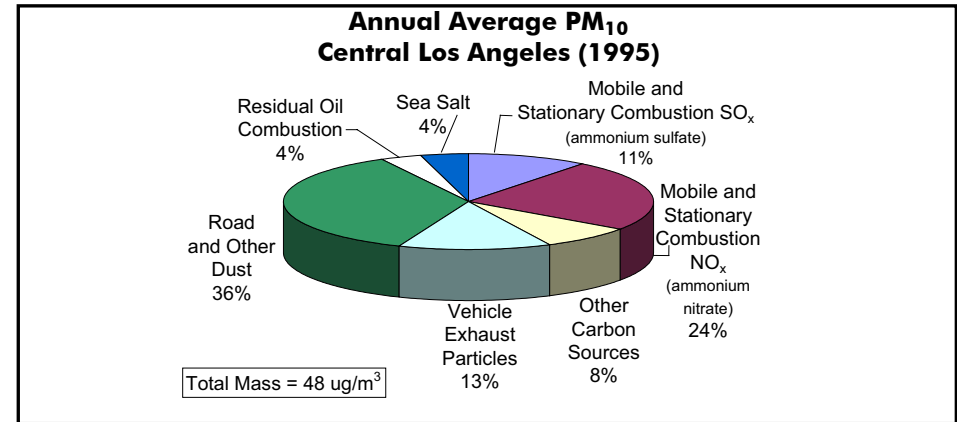


Figure 2-20

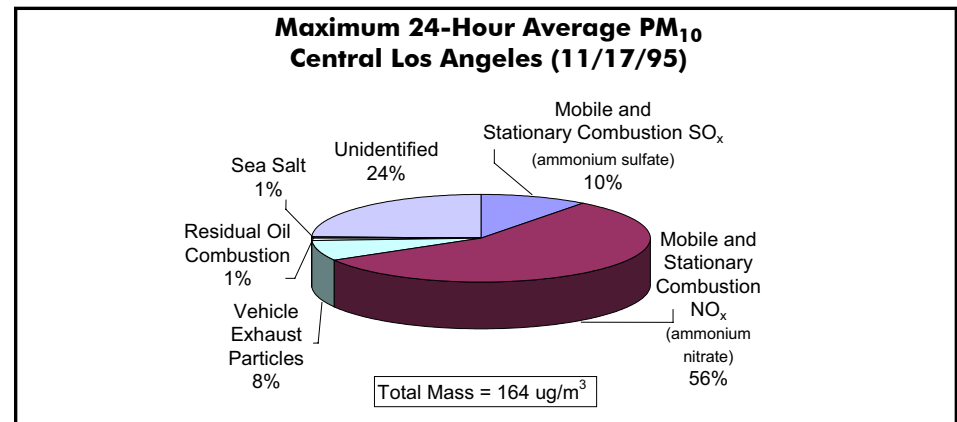


Figure 2-21



## South Coast Air Basin (cont'd)

On an annual basis, in Rubidoux, dust from roads and construction is the major contributor to ambient PM<sub>10</sub>. In contrast, dust was a minor contributor to the PM<sub>10</sub> episode on November 17, 1995. In both cases, ammonium nitrate formed from NO<sub>x</sub> emitted from mobile and stationary combustion sources, combined with ammonium, contributes significantly. Vehicle exhaust particles and emissions from other carbon sources also contribute to both annual and episodic ambient PM<sub>10</sub> levels.

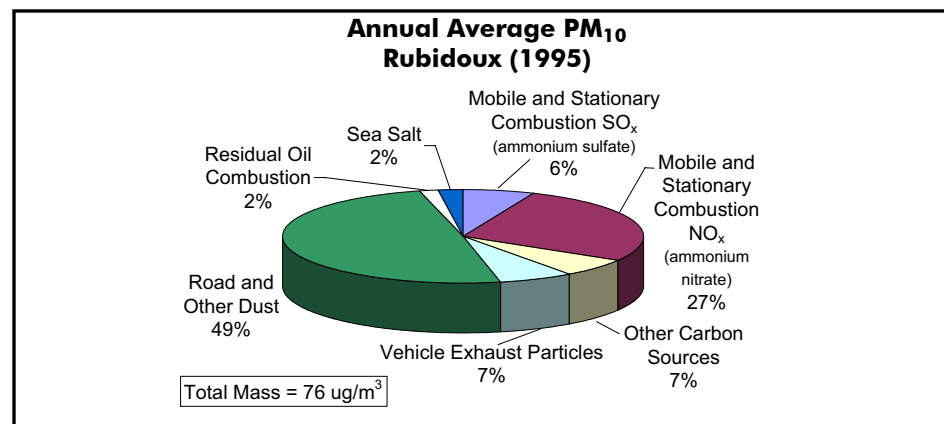


Figure 2-22

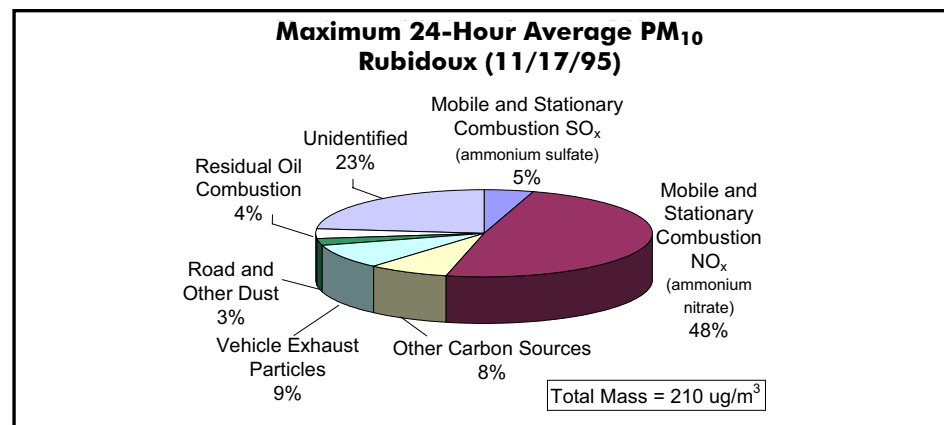


Figure 2-23

**References for Particulate Matter:**

Fairley, D. *Source Apportionment of Bay Area Particulates*. 1996; Personal communication.

Fairley, D. *PM<sub>2.5</sub> Source Apportionment for San Jose 4<sup>th</sup> Street*. 2001; Personal communication.

Motallebi, N. *Wintertime PM<sub>10</sub> and PM<sub>2.5</sub> Source Apportionment at Sacramento, California*. *Journal of the Air & Waste Management Association* 1999; 49:PM-25-34.

South Coast Air Quality Management District. *“Modeling and Attainment Demonstrations”* in 1997 Air Quality Management Plan, Diamond Bar, California. 1996.

Schauer, J. J., Rogge, W. F., Hidemann, L. M., Mazurek, M. A., and Cass, G. R. *Source Apportionment of Airborne Particulate Matter Using Organic Compounds as Tracers*. *Atmospheric Environment*; 30: 22, 3837-3855, 1996.

San Joaquin Valley Air Pollution Control District. *2003 PM<sub>10</sub> Plan: San Joaquin Valley Plan to Attain Federal Standards for Particulate Matter 10 Microns and Smaller*. Appendix N.

## Carbon Monoxide

### 2006 Statewide Emission Inventory - Carbon Monoxide by Category

Carbon monoxide (CO) gas is formed as the result of incomplete combustion of fuels and waste materials such as gasoline, diesel fuel, wood, and agricultural debris. Mobile sources generate about 82 percent of the statewide CO emissions. Diesel-powered on-road and other mobile vehicles are small CO contributors. Stationary and area-wide sources of CO are the same types of fuel combustion sources that also generate NO<sub>x</sub>. The stationary source contribution to statewide CO is small, due in part to widespread use of natural gas as a fuel and the presence of combustion controls. The emissions data remain the same as presented in the previous edition and will be updated in the 2009 Almanac.

| CO Emissions (annual average) |              |             |
|-------------------------------|--------------|-------------|
| Emissions Source              | tons/day     | Percent     |
| <b>Stationary Sources</b>     | 346          | 3%          |
| <b>Area-wide Sources</b>      | 1974         | 16%         |
| <b>On-Road Mobile</b>         | 7189         | 58%         |
| Gasoline Vehicles             | 6883         | 55%         |
| Diesel Vehicles               | 306          | 2%          |
| <b>Other Mobile</b>           | 2946         | 24%         |
| Gasoline Vehicles             | 2225         | 18%         |
| Diesel Vehicles               | 358          | 3%          |
| Other                         | 363          | 3%          |
| <b>Total Statewide</b>        | <b>12456</b> | <b>100%</b> |

Table 2-20

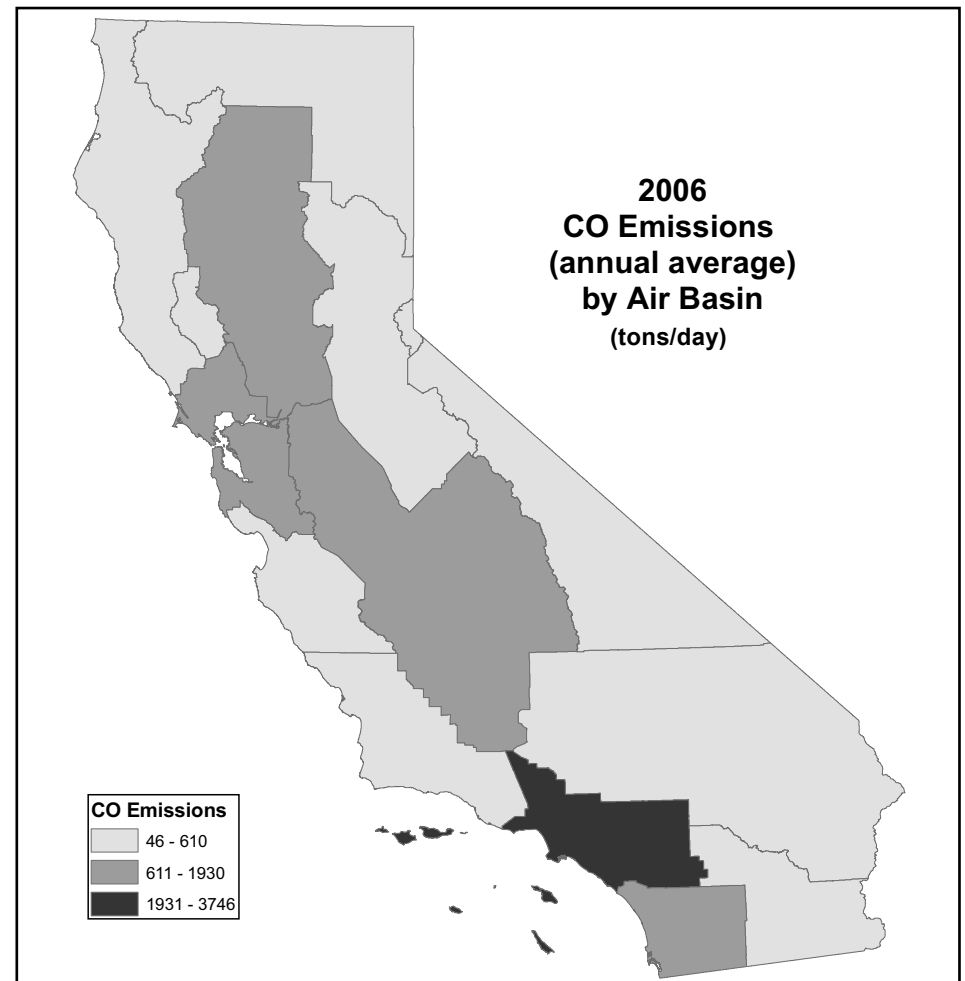


Figure 2-24

## Carbon Monoxide - 2006 Air Quality

The State and national CO standards are now attained statewide in California. The requirements for cleaner vehicles and fuels have been primarily responsible for the reductions in CO, despite significant increases in population, the number of vehicle miles traveled each day, and the apparent impact of emissions from Mexico.

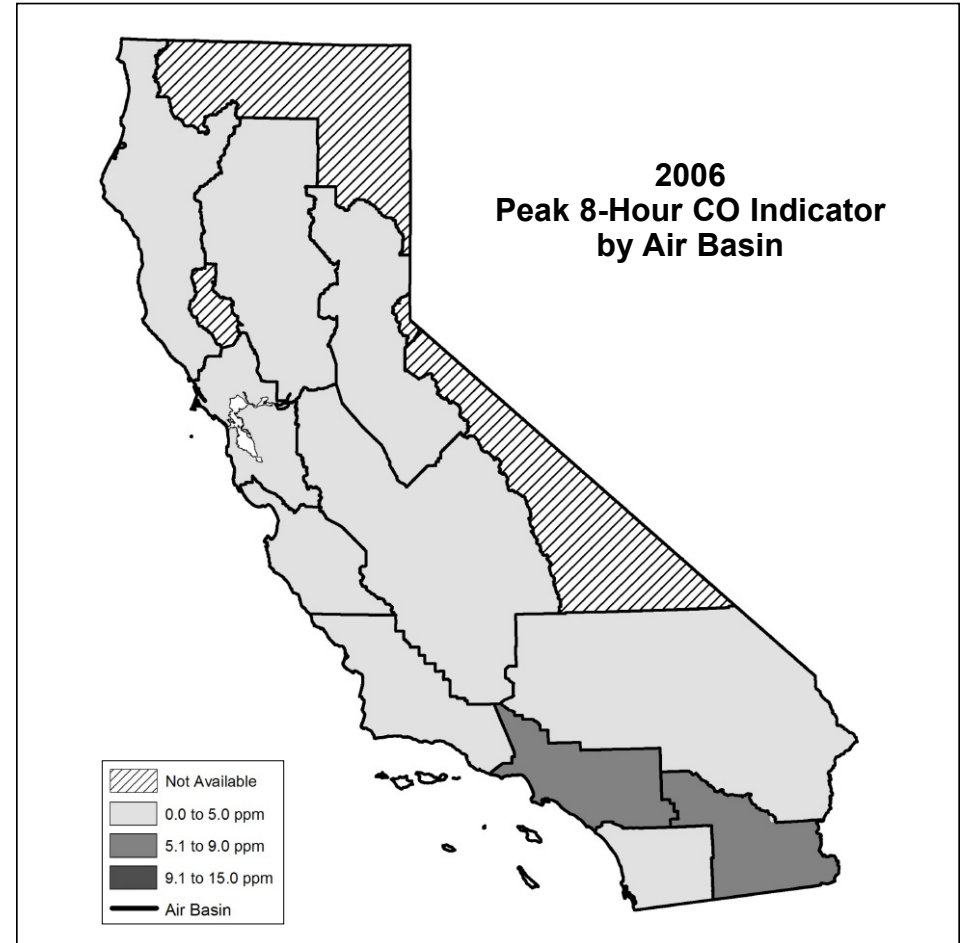


Figure 2-25

## Carbon Monoxide - 2006 Air Quality Tables

### Maximum Peak 8-Hour Indicator by Air Basin

| AIR BASIN              | 2006 Maximum Peak 8-Hour Indicator in parts per million | Number of Days in 2006 above 8-Hour Standard |          |
|------------------------|---|--|----------|
|                        |   | State  | National |
| Great Basin Valleys    | No Data   | No Data                                      | No Data  |
| Lake County            | No Data   | No Data                                      | No Data  |
| Lake Tahoe             | No Data   | No Data                                      | No Data  |
| Mojave Desert          | 1.8   | 0  | 0        |
| Mountain Counties      | 0.5   | 0  | 0        |
| North Central Coast    | 1.1   | 0  | 0        |
| North Coast            | 1.7   | 0  | 0        |
| Northeast Plateau      | No Data   | No Data                                      | No Data  |
| Sacramento Valley      | 4.2   | 0  | 0        |
| Salton Sea             | 8.0   | 1  | 1        |
| San Diego              | 3.8   | 0  | 0        |
| San Francisco Bay Area | 3.5   | 0  | 0        |
| San Joaquin Valley     | 3.4   | 0  | 0        |
| South Central Coast    | 1.9   | 0  | 0        |
| South Coast            | 6.4   | 0  | 0        |

Table 2-21

**Sites with Peak 8-Hour Indicator Values  
above the State CO Standard**

**No Sites had Peak 8-Hour Indicator  
Values above the State CO Standard**

# Ammonia

## 2006 Statewide Emission Inventory - Ammonia by Category

Area-wide sources account for 81 percent of the statewide emissions of ammonia. The major area-wide source of ammonia is livestock waste. Ammonia emissions from on-road vehicles are produced by three-way catalyst equipped gasoline vehicles. Ammonia emissions from stationary sources are primarily related to NO<sub>x</sub> emission controls, the manufacture of a variety of products, and waste disposal.

Ammonia emission sources have strong geographic differences. In the San Joaquin Valley, ammonia emissions are dominated by livestock and other agricultural sources. However, in the South Coast Air Basin, motor vehicle sources are more significant. The emissions data remain the same as presented in the previous edition and will be updated in the 2009 Almanac.

| NH <sub>3</sub> Emissions (annual average) |            |             |
|--|------------|-------------|
| Emissions Source                           | tons/day   | Percent     |
| <b>Stationary Sources</b>                  | 78         | 11%         |
| <b>Area-wide Sources</b>                   | 599        | 81%         |
| <b>On-Road Mobile</b>                      | 61         | 8%          |
| Gasoline Vehicles                          | 60         | 8%          |
| Diesel Vehicles                            | 1          | <1%         |
| <b>Other Mobile*</b>                       | 0          | 0%          |
| Gasoline Vehicles                          | 0          | 0%          |
| Diesel Vehicles                            | 0          | 0%          |
| Other                                      | 0          | 0%          |
| <b>Total Statewide</b>                     | <b>738</b> | <b>100%</b> |

\* No data available

Table 2-22

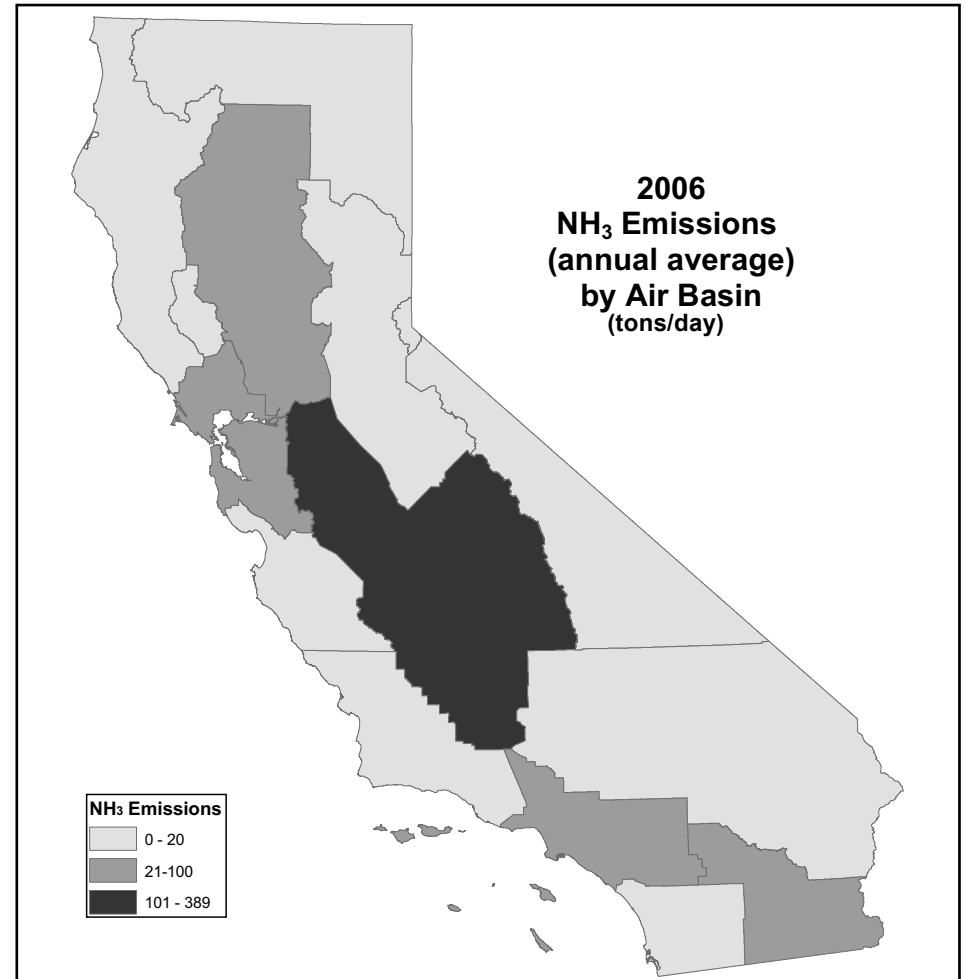


Figure 2-26

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# Chapter 3

## Statewide Trends and Forecasts -- Criteria Pollutants

## Introduction

### Emission Trends and Forecasts

The most current emissions data available are from 2006. These data were presented in the previous edition of the Almanac and will be updated in the 2009 Almanac. Any data prior to this year are derived from historical emissions data where available, and backcasted emissions based on historical socioeconomic growth and control information. Future year data are forecasted from the 2006 base year and control measures reported through September 2006. Forecasts take into account emissions data, projected growth rates, and future adopted control measures to calculate emissions in future years.

On a statewide basis, emissions of NO<sub>x</sub> increased between 1975 and 1980, decreased slightly in 1985, and are forecasted to decline between 1990 and 2020. Emissions of ROG decrease steadily between 1975 and 2020. In addition to being ozone precursors, both NO<sub>x</sub> and ROG are secondary contributors to PM<sub>10</sub> and PM<sub>2.5</sub>. Direct PM<sub>10</sub> emissions show an increase from 1975 to 1990, a slight decrease in 1995, hold relatively constant from 1995 to 2010, and then a slow increase after 2010. Direct PM<sub>2.5</sub> emissions decreased from 1975 to 1985, increased from 1985 to 1990, decreased slightly between 1990 and 1995, held relatively constant from 1995 to 2015, and are predicted to increase after 2015.

Emissions of CO have decreased since 1985 and are forecasted to continue declining. The recent decreases in NO<sub>x</sub>, ROG, and CO are occurring even with increases in population and VMT.

Statewide SO<sub>x</sub> emissions decreased sharply from 1975 through 1985, decreased steadily through 1995, and remained relatively constant through 2010. On-shore SO<sub>x</sub> emissions are projected to increase moderately through 2020. Off-shore emissions are projected to increase substantially through 2020 due to increased shipping activity. In 2005, off-shore emissions represent approximately 40 percent of the

statewide SO<sub>x</sub> emission inventory. By 2020, off-shore emissions are forecasted to comprise 56 percent of the statewide SO<sub>x</sub> emissions.

| Statewide Emissions (tons/day, annual average) |       |       |       |       |       |       |       |       |      |      |
|--|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| Pollutant                                      | 1975  | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015 | 2020 |
| NO <sub>x</sub>                                | 4928  | 4941  | 4791  | 4991  | 4429  | 4025  | 3556  | 3025  | 2553 | 2273 |
| ROG  | 7128  | 6598  | 5998  | 4707  | 3741  | 3084  | 2410  | 2087  | 1953 | 1911 |
| PM <sub>10</sub>                               | 1864  | 1898  | 1982  | 2208  | 2105  | 2173  | 2125  | 2123  | 2186 | 2261 |
| PM <sub>2.5</sub>                              | 718   | 693   | 691   | 754   | 687   | 696   | 685   | 680   | 690  | 709  |
| SO <sub>x</sub>                                | 1277  | 953   | 529   | 504   | 294   | 285   | 295   | 323   | 382  | 462  |
| CO   | 42207 | 37991 | 35302 | 30119 | 22439 | 17237 | 13167 | 10598 | 9188 | 8419 |

Table 3-1

## Statewide Population and VMT

Airborne pollutants result in large part from human activities, and growth generally has a negative impact on air quality. California is fortunate in that it boasts the world's most progressive emission controls. These controls have resulted in significant air quality improvements, despite substantial growth.

During 1987 through 2006, statewide maximum 8-hour ozone values decreased 32 percent, and maximum 8-hour carbon monoxide values dropped 50 percent. These air quality improvements occurred at the same time the State's population increased 35 percent and the average daily VMT increased 56 percent. Ambient annual average PM<sub>10</sub> values in the non-desert areas also show improvement: a 23 percent decrease from 1989 to 2006. While the air quality improvements are impressive, additional emission controls will be needed to offset future growth.

## Percent Change in Air Quality and Growth

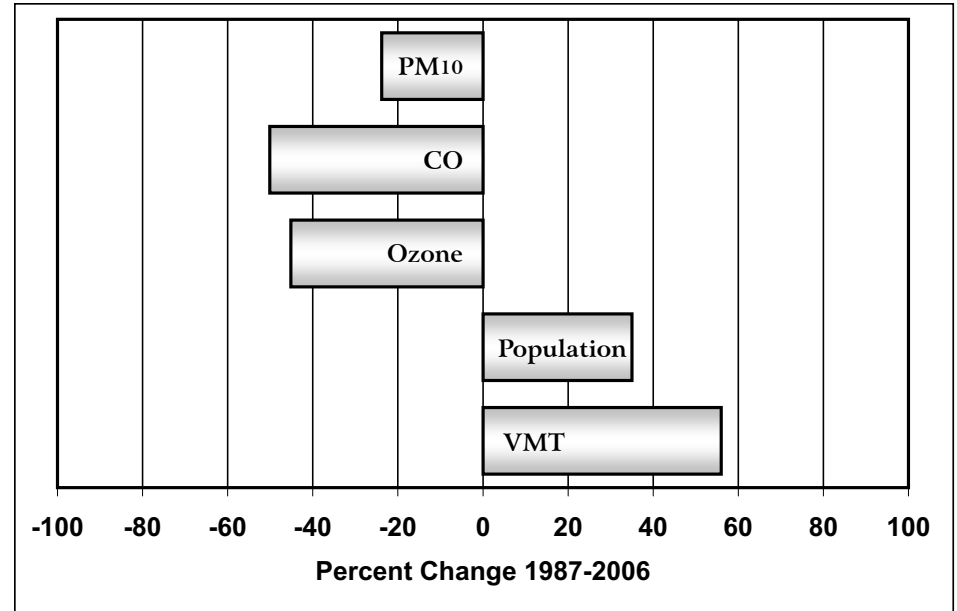


Figure 3-1

| Statewide Population and VMT Trends |          |          |          |          |          |          |          |          |          |
|-------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Parameter                           | 1980     | 1985     | 1990     | 1995     | 2000     | 2005     | 2010     | 2015     | 2020     |
| Population                          | 23782000 | 26402401 | 29828496 | 31711849 | 34098740 | 37004660 | 39246767 | 41549270 | 43851741 |
| Avg. Daily VMT/1000                 | 403567   | 538319   | 691048   | 733629   | 799848   | 955233   | 958078   | 1033400  | 1104522  |

Table 3-2

## Ozone

### Emission Trends and Forecasts - Ozone Precursors

#### NO<sub>x</sub> Emission Trends and Forecasts

NO<sub>x</sub> emission standards for on-road motor vehicles were introduced in 1971 and followed in later years by the implementation of more stringent standards and the introduction of three-way catalysts. NO<sub>x</sub> emissions from on-road motor vehicles have declined by 23 percent from 1990 to 2000. NO<sub>x</sub> emissions are projected to decrease by 66 percent between 2000 and 2020. This has occurred as vehicles meeting more stringent emission standards enter the fleet, and all vehicles use cleaner burning gasoline and diesel fuel or alternative fuels.

NO<sub>x</sub> emissions from other mobile categories on the whole decreased from 1990 to 2020. The two largest NO<sub>x</sub> contributors in the other mobile category are off-road combustion equipment and ships. The emissions from off-road combustion equipment decrease significantly over the entire forecast period. However, the emissions for ships have increased to better reflect actual shipping activity resulting in a fairly constant NO<sub>x</sub> emission level for the trend and forecast period for the other mobile category as a whole. Stationary source NO<sub>x</sub> emissions dropped by 68 percent between 1980 and 2005. This decrease has been largely due to a switch from fuel oil to natural gas and the implementation of combustion controls such as low-NO<sub>x</sub> burners for boilers and catalytic converters for both external and internal combustion stationary sources. SIP and conformity inventory forecasts may differ from the forecasts presented in this almanac. For additional information on these forecasts, please refer to the ARB SIP web page at [www.arb.ca.gov/planning/sip/sip.htm](http://www.arb.ca.gov/planning/sip/sip.htm).

In the previous edition of the Almanac, the NO<sub>x</sub> emissions were lower for on-road motor vehicles from 1995 onward and lower for other mobile sources from 1990 onward. The higher values in this edition reflect the use of the EMFAC2007 and OFFROAD2007 models. Also

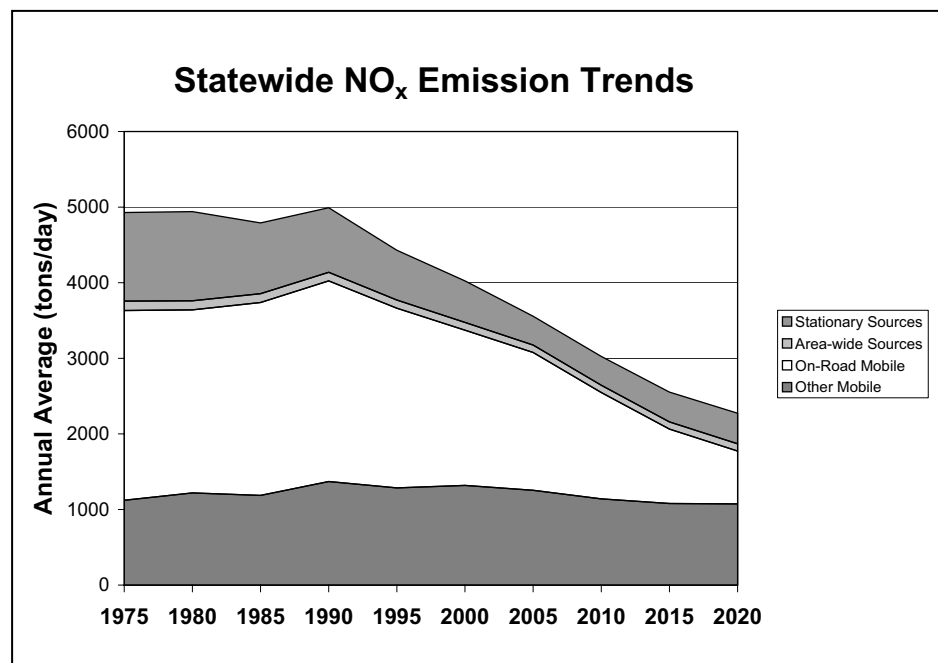


Figure 3-2

in this edition, lower NO<sub>x</sub> values for area-wide sources after 1995 are mainly the result of updates to the statewide waste burning categories.

## ROG Emission Trends and Forecasts

ROG emissions in California are projected to decrease by over 73 percent between 1975 and 2020, largely as a result of the State's on-road motor vehicle emission control program. This includes the use of improved evaporative emission control systems, computerized fuel injection, engine management systems to meet increasingly stringent California emission standards, cleaner gasoline, and the Smog Check program. ROG emissions from other mobile sources are projected to decline between 1990 and 2020 as more stringent emission standards are adopted and implemented. Substantial reductions have also been obtained for area-wide sources through the vapor recovery program for service stations, bulk plants, and other fuel distribution operations. There are also on-going programs to reduce overall solvent ROG emissions from coatings, consumer products, cleaning and degreasing solvents, and other substances used within California. Again, SIP and conformity inventory forecasts may differ from the forecasts presented in this almanac. For additional information on these forecasts, please refer to the ARB SIP web page at [www.arb.ca.gov/planning/sip/sip.htm](http://www.arb.ca.gov/planning/sip/sip.htm).

The ROG emissions for other mobile sources are generally higher than the emissions presented in the previous edition of the Almanac. This is due to the use of the OFFROAD2007 model. Also, the ROG emissions for area-wide sources are lower than in the previous edition, due to updates for the waste burning categories.

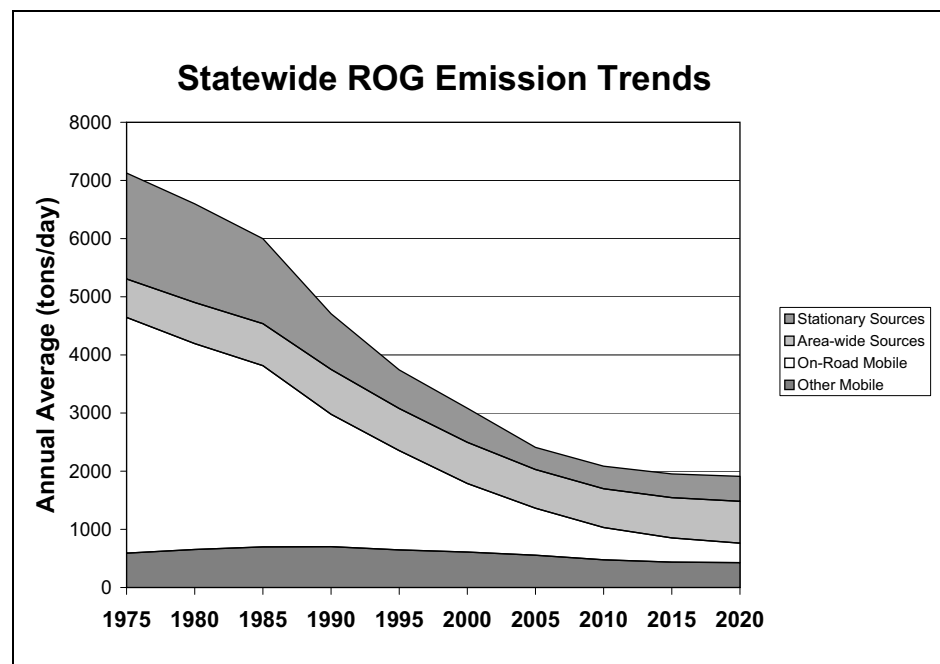


Figure 3-3

## Emission Trends and Forecasts - Ozone Precursors

| <b>NO<sub>x</sub> Emission Trends (tons/day, annual average)</b> |             |             |             |             |             |             |             |             |             |             |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Emission Source</b>   | <b>1975</b> | <b>1980</b> | <b>1985</b> | <b>1990</b> | <b>1995</b> | <b>2000</b> | <b>2005</b> | <b>2010</b> | <b>2015</b> | <b>2020</b> |
| <b>All Sources</b>   | <b>4928</b> | <b>4941</b> | <b>4791</b> | <b>4991</b> | <b>4429</b> | <b>4025</b> | <b>3556</b> | <b>3025</b> | <b>2553</b> | <b>2273</b> |
| <b>Stationary Sources</b>  | 1172        | 1180        | 936         | 853         | 659         | 551         | 381         | 381         | 394         | 404         |
| <b>Area-wide Sources</b>   | 125         | 121         | 117         | 114         | 108         | 102         | 99          | 96          | 95          | 97          |
| <b>On-Road Mobile</b>  | 2510        | 2421        | 2552        | 2654        | 2377        | 2053        | 1823        | 1407        | 984         | 699         |
| <b>Gasoline Vehicles</b>   | 2197        | 2014        | 1958        | 1839        | 1574        | 1160        | 754         | 504         | 359         | 263         |
| <b>Diesel Vehicles</b>   | 312         | 407         | 593         | 815         | 803         | 893         | 1069        | 904         | 625         | 435         |
| <b>Other Mobile</b>  | 1122        | 1219        | 1186        | 1370        | 1286        | 1319        | 1254        | 1140        | 1079        | 1074        |
| <b>Gasoline Fuel</b>   | 52          | 57          | 62          | 72          | 70          | 70          | 76          | 68          | 64          | 64          |
| <b>Diesel Fuel</b>   | 917         | 1002        | 954         | 1095        | 980         | 966         | 854         | 696         | 567         | 464         |
| <b>Other Fuel</b>  | 154         | 160         | 169         | 202         | 237         | 284         | 325         | 376         | 448         | 546         |

Table 3-3

| <b>ROG Emission Trends (tons/day, annual average)</b> |             |             |             |             |             |             |             |             |             |             |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Emission Source</b>                                | <b>1975</b> | <b>1980</b> | <b>1985</b> | <b>1990</b> | <b>1995</b> | <b>2000</b> | <b>2005</b> | <b>2010</b> | <b>2015</b> | <b>2020</b> |
| <b>All Sources</b>                                    | <b>7128</b> | <b>6598</b> | <b>5998</b> | <b>4707</b> | <b>3741</b> | <b>3084</b> | <b>2410</b> | <b>2087</b> | <b>1953</b> | <b>1911</b> |
| <b>Stationary Sources</b>                             | 1822        | 1697        | 1460        | 958         | 664         | 588         | 381         | 389         | 408         | 428         |
| <b>Area-wide Sources</b>                              | 661         | 707         | 723         | 771         | 724         | 708         | 666         | 666         | 692         | 720         |
| <b>On-Road Mobile</b>                                 | 4054        | 3540        | 3116        | 2275        | 1706        | 1179        | 808         | 555         | 417         | 334         |
| <b>Gasoline Vehicles</b>                              | 4015        | 3487        | 3044        | 2184        | 1645        | 1120        | 743         | 497         | 373         | 302         |
| <b>Diesel Vehicles</b>                                | 39          | 53          | 72          | 91          | 62          | 59          | 65          | 58          | 44          | 33          |
| <b>Other Mobile</b>                                   | 591         | 654         | 699         | 703         | 647         | 610         | 555         | 477         | 436         | 428         |
| <b>Gasoline Fuel</b>                                  | 416         | 462         | 518         | 498         | 457         | 436         | 396         | 341         | 316         | 316         |
| <b>Diesel Fuel</b>                                    | 123         | 137         | 129         | 149         | 140         | 131         | 116         | 91          | 70          | 57          |
| <b>Other Fuel</b>                                     | 52          | 56          | 52          | 56          | 50          | 42          | 43          | 45          | 50          | 56          |

Table 3-4

## Statewide Air Quality - Ozone

Air quality as it relates to ozone has improved greatly in all areas of California over the last 20 years, despite significant growth. The statewide trend, which reflects values for the South Coast Air Basin, shows that the peak 8-hour and 1-hour indicators declined by over 45 percent and over 53 percent respectively from 1987 to 2006.

During 1987 to 2006, the statewide population grew by 35 percent and the number of vehicle miles traveled each day was up more than 56 percent. Motor vehicles are the largest source category of ozone precursor emissions, and reducing their emissions will continue to be the cornerstone of California's ozone control efforts. New vehicles must meet the ARB's low emission vehicle (LEV) standards, which equate to about 95 percent fewer smog-forming emissions than vehicles produced in the 1970s.

In recent years, increases in population and driving are partially offsetting the benefits of ARB's emission control programs. As part of the SIP, California will be implementing a comprehensive set of new programs. These programs will include new emission control standards as well as very innovative incentive programs to accelerate clean air technologies and reduce emissions from goods movement. These programs are now being developed and implemented at the National, State, and local levels.

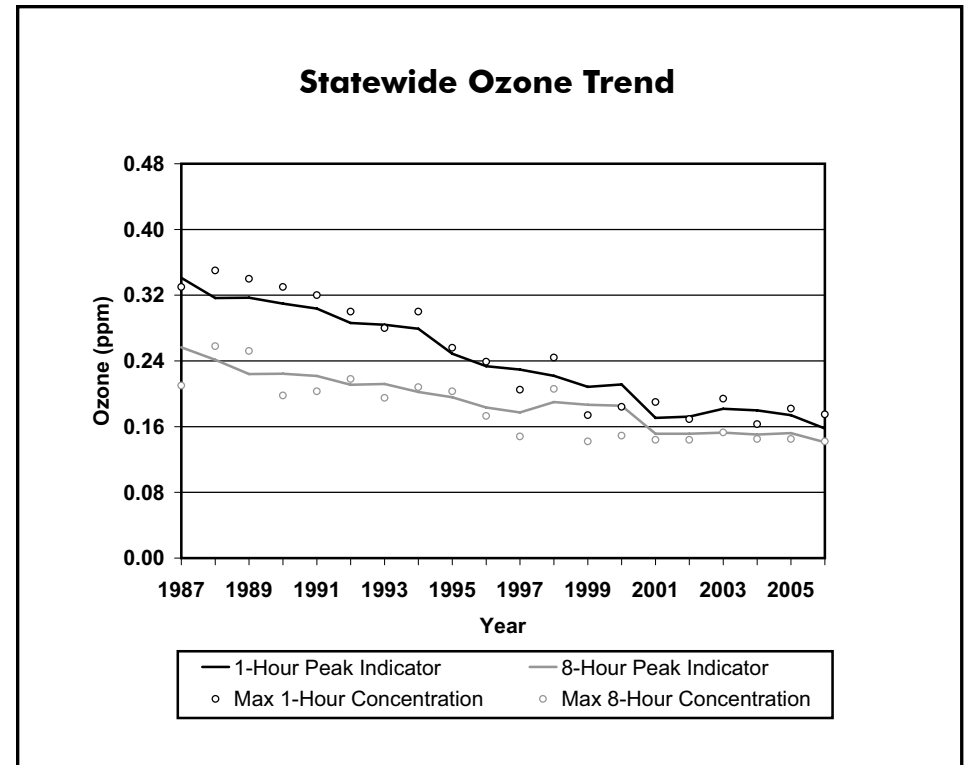


Figure 3-4

## Population-Weighted Exposures Over the State Ozone Standard

There are a number of ways to look at how ozone levels have changed over the years. Though simple indicators are most commonly used, complex indicators can offer additional insight concerning air quality. One such indicator is the population-weighted exposure indicator. As used here, an “exposure” occurs when a person experiences an 8-hour ozone concentration outdoors that is higher than 0.070 ppm, the level of the State 8-hour standard. The population-weighted exposure indicator considers both the level and the duration of ozone concentrations above the State standard. The annual exposure is the sum of all the daily 8-hour ozone exposures during the year and presents the result as an average per exposed person. For a more detailed discussion see Appendix B.

In Figure 3-5, the population-weighted exposures have been graphed from 1985 to 2006 in order to provide a visual representation of how the ozone exposures, in ppm-hours/person, are distributed over the years and how they compare with the increase in population. These values are meant to be a general representation of ozone exposure in the South Coast Air Basin. This graph gives a good indication of how ozone exposures have been steadily declining while the population has been increasing. For example, in Table 3-5 South Coast shows the highest exposure of all five air basins, however, the graph makes it clear that this exposure has been significantly declining and is now one fifth of what it was two decades ago.

The population-weighted exposures in Table 3-5 are listed for each year, from 1985 through 2006, for the five most populated areas of California. While these areas do not encompass all of California’s ozone nonattainment areas, they do include the urban areas where 86 percent of the State’s population lives.

This table also lists the percent of the total population represented in the exposure value. This reflects the percent of the total population in

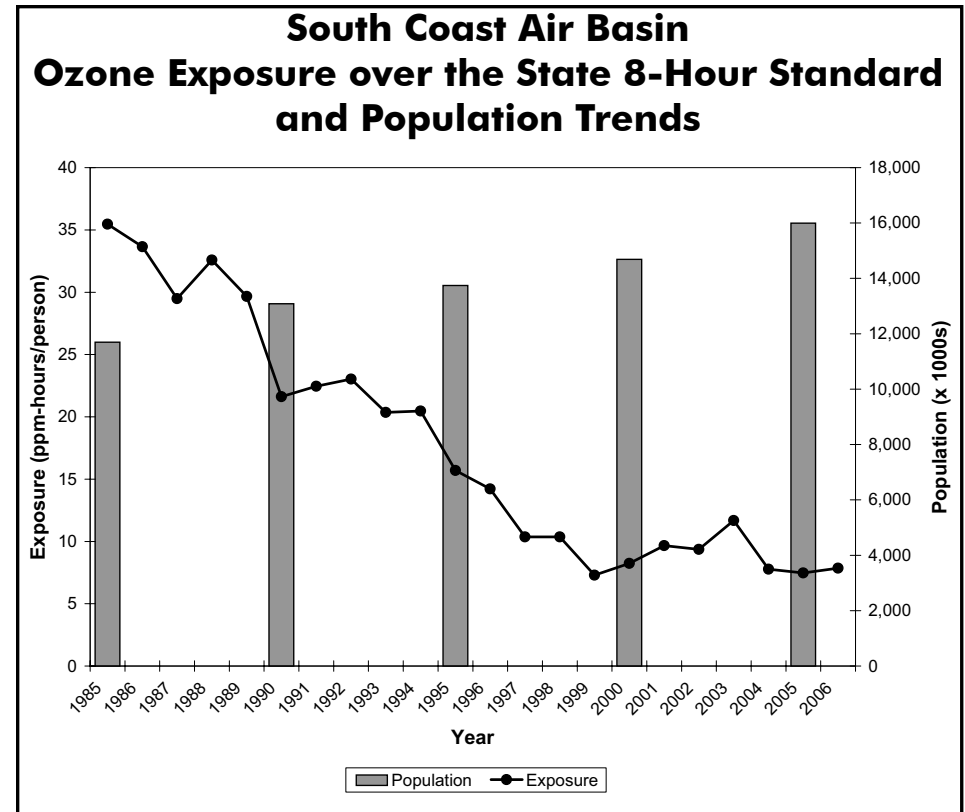


Figure 3-5

the area that was exposed to an ozone concentration above the level of the State 8-hour standard for at least one 8-hour period during the year. This method provides a reasonable approach for comparing exposures among various regions and for assessing trends in exposure reductions.



| Ozone Exposures Over the State 8-Hour Standard: Population-Weighted (ppm-hours / person) |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|
|  | 1986  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004 | 2005 | 2006 |
| <b>South Coast Air Basin</b>   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |
| Exposure   | 33.66 | 29.48 | 32.59 | 29.67 | 21.62 | 22.45 | 23.03 | 20.36 | 20.47 | 15.70 | 14.22 | 10.36 | 10.36 | 7.29  | 8.24  | 9.67  | 9.36  | 11.68 | 7.77 | 7.47 | 7.85 |
| % Pop. Represented *   | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 98%   | 98%   | 99%   | 92%   | 95%   | 97%   | 97%   | 81%   | 97%   | 100% | 98%  | 84%  |
| <b>San Francisco Bay Area Air Basin</b>  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |
| Exposure   | 1.49  | 3.30  | 2.90  | 1.39  | 0.98  | 0.87  | 1.18  | 0.92  | 0.74  | 1.68  | 1.58  | 0.23  | 1.52  | 1.21  | 0.62  | 0.73  | 0.68  | 0.67  | 0.33 | 0.27 | 0.90 |
| % Pop. Represented   | 47%   | 69%   | 90%   | 59%   | 41%   | 41%   | 51%   | 66%   | 36%   | 88%   | 60%   | 68%   | 42%   | 64%   | 18%   | 34%   | 36%   | 68%   | 42%  | 41%  | 44%  |
| <b>San Joaquin Valley Air Basin</b>  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |
| Exposure   | 18.58 | 19.42 | 18.83 | 13.76 | 10.86 | 12.23 | 11.65 | 12.50 | 11.02 | 11.52 | 13.96 | 9.50  | 11.70 | 12.02 | 11.49 | 12.18 | 12.86 | 12.17 | 7.50 | 6.32 | 8.22 |
| % Pop. Represented   | 97%   | 97%   | 98%   | 98%   | 98%   | 99%   | 99%   | 99%   | 99%   | 99%   | 99%   | 99%   | 99%   | 99%   | 99%   | 99%   | 99%   | 99%   | 99%  | 99%  | 99%  |
| <b>San Diego Air Basin</b>   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |
| Exposure   | 8.37  | 8.64  | 10.88 | 10.97 | 9.63  | 7.54  | 6.25  | 5.31  | 5.19  | 4.59  | 3.49  | 1.96  | 3.58  | 2.76  | 2.85  | 2.41  | 1.77  | 2.12  | 1.64 | 1.39 | 2.38 |
| % Pop. Represented   | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 98%   | 94%   | 90%   | 100%  | 86%   | 54%   | 100% | 42%  | 73%  |
| <b>Broader Sacramento Metropolitan Area</b>  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |
| Exposure   | 5.37  | 6.90  | 8.19  | 4.54  | 4.88  | 5.64  | 5.49  | 2.77  | 4.41  | 4.82  | 5.15  | 2.09  | 4.23  | 4.58  | 3.19  | 3.51  | 4.68  | 3.72  | 2.28 | 2.88 | 3.94 |
| % Pop. Represented   | 95%   | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100% | 100% | 100% |

\* % Population Represented is the percent of the total population residing in an area exposed to an ozone concentration above the level of the State 8-hr standard for at least one 8-hour period during the year.

Table 3-5

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## Ozone Transport

Since 1989, the ARB staff has evaluated the impacts of the transport of ozone and ozone precursor emissions from upwind areas to the ozone concentrations in downwind areas. These analyses demonstrate that the air basin boundaries are not true boundaries of air masses. All urban areas are upwind contributors to their downwind neighbors with the exception of San Diego. Figure 3-6 shows the upwind areas that impact downwind areas throughout the State.

The ozone problem in the southern desert areas and some rural areas is significantly impacted by transported pollutants. National ozone air quality plans take into account the shared responsibility between upwind and downwind areas where transport can at times be significant. Areas impacted by overwhelming transport, although designated nonattainment, are not required to adopt an air quality plan to meet State standards because local control strategies in these areas would not be effective in reducing ozone concentrations. However, these areas are subject to many statewide control strategies, such as cleaner fuels and LEVs. More detailed information about ozone transport is available on the web at [www.arb.ca.gov/aqd/transport/transport.htm](http://www.arb.ca.gov/aqd/transport/transport.htm).

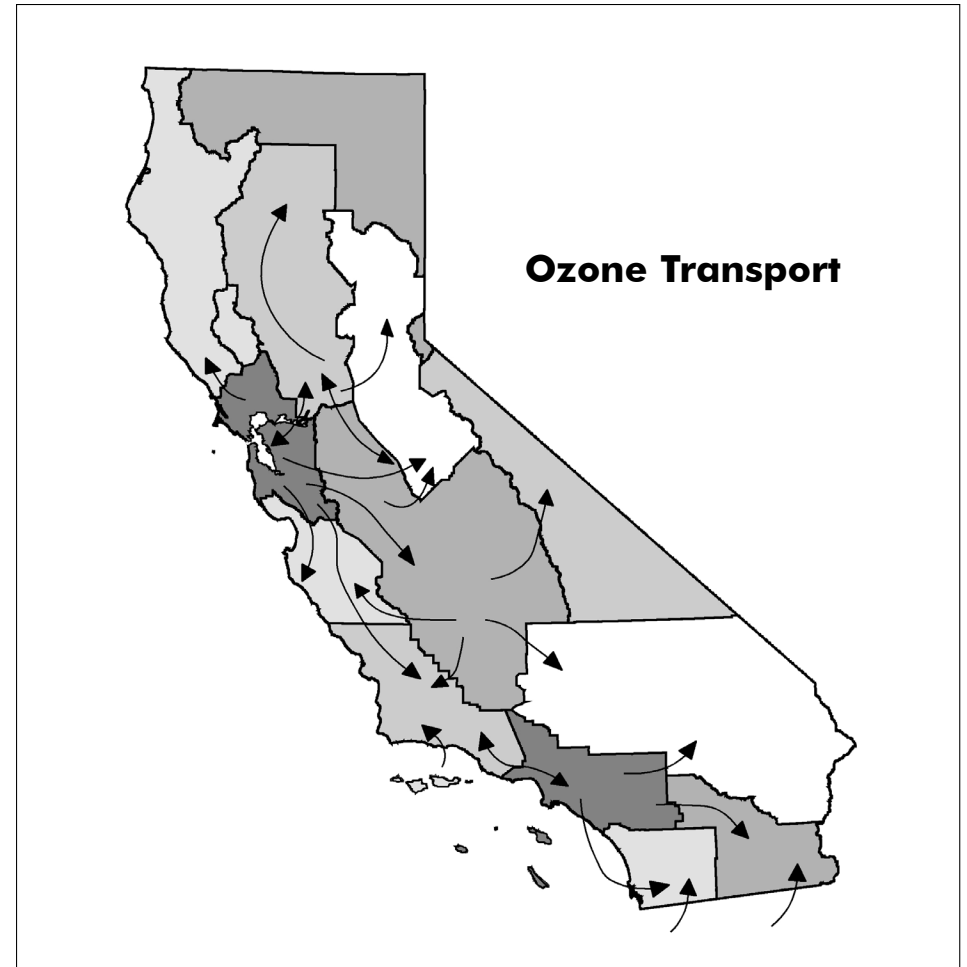


Figure 3-6

## Directly Emitted Particulate Matter (PM<sub>10</sub>)

### Emission Trends and Forecasts - Directly Emitted PM<sub>10</sub>

PM<sub>10</sub> emissions increase from 1975 to 1990, then decrease slightly in 1995, increase in 2000, decrease in 2005, and are projected to slowly increase after 2005. PM<sub>10</sub> emissions are dominated by area-wide sources. Emissions from paved road dust more than double between 1975 and 2000. Unpaved road dust emissions generally increase through the forecast period. Other area-wide sources include farming operations, construction and demolition, and fugitive wind blown dust from agricultural lands. Emissions from these categories have compensating effects resulting in a fairly constant statewide emission level; emissions increase slightly over the forecast period. The increase in emissions of unpaved and paved road dust are due to increases in VMT over these roads. Exhaust emissions from diesel mobile sources dropped by 39 percent from 1990 to 2000 due to more stringent emissions standards and the introduction of cleaner burning diesel fuel. PM<sub>10</sub> emissions from stationary sources are expected to increase slightly in the future due to industrial growth.

| Directly Emitted PM <sub>10</sub> Emission Trends (tons/day, annual average) |             |             |             |             |             |             |             |             |             |             |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Emission Source  | 1975        | 1980        | 1985        | 1990        | 1995        | 2000        | 2005        | 2010        | 2015        | 2020        |
| <b>All Sources</b>   | <b>1864</b> | <b>1898</b> | <b>1982</b> | <b>2208</b> | <b>2105</b> | <b>2173</b> | <b>2125</b> | <b>2123</b> | <b>2186</b> | <b>2261</b> |
| <b>Stationary Sources</b>  | 310         | 221         | 183         | 204         | 176         | 184         | 186         | 142         | 152         | 161         |
| <b>Area-wide Sources</b>   | 1412        | 1518        | 1623        | 1787        | 1762        | 1826        | 1770        | 1819        | 1878        | 1941        |
| Paved Road Dust  | 159         | 196         | 251         | 354         | 379         | 397         | 390         | 413         | 444         | 473         |
| Unpaved Road Dust  | 412         | 437         | 454         | 470         | 477         | 483         | 486         | 485         | 497         | 514         |
| Other Area-wide Sources  | 841         | 885         | 918         | 963         | 906         | 946         | 895         | 921         | 937         | 954         |
| <b>On-Road Mobile</b>  | 57          | 66          | 85          | 109         | 82          | 77          | 81          | 75          | 69          | 66          |
| Gasoline Vehicles  | 23          | 20          | 22          | 27          | 29          | 33          | 39          | 42          | 47          | 51          |
| Diesel Vehicles  | 34          | 46          | 63          | 82          | 53          | 44          | 42          | 33          | 23          | 15          |
| <b>Other Mobile</b>  | 85          | 93          | 91          | 107         | 86          | 87          | 88          | 87          | 87          | 92          |
| Gasoline Fuel  | 6           | 7           | 9           | 10          | 11          | 12          | 12          | 15          | 18          | 22          |
| Diesel Fuel  | 60          | 66          | 61          | 71          | 52          | 50          | 46          | 37          | 26          | 18          |
| Other Fuel   | 19          | 20          | 21          | 26          | 23          | 25          | 30          | 35          | 42          | 52          |

Table 3-6

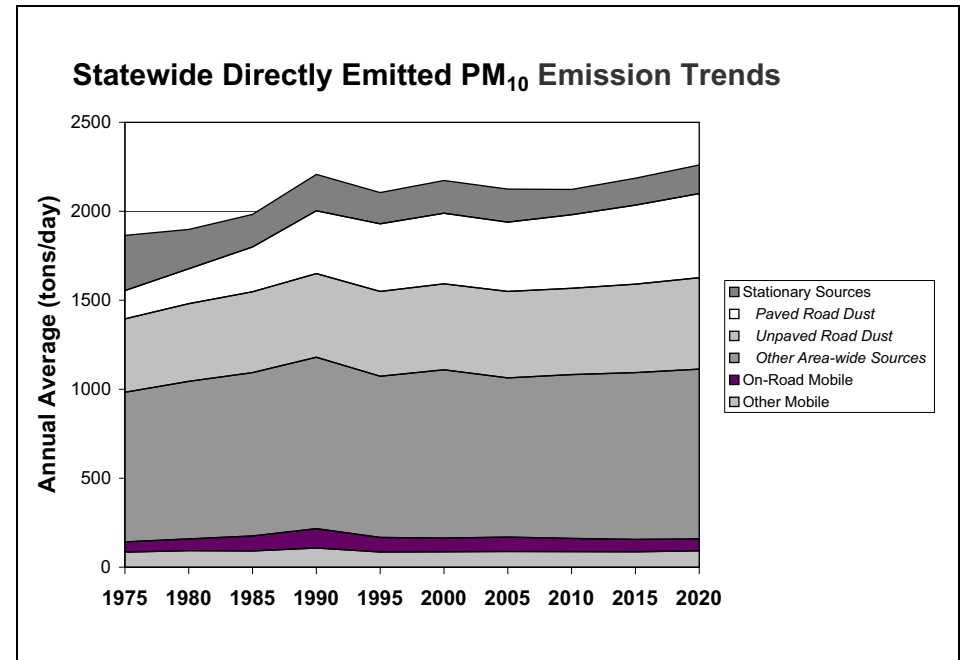


Figure 3-7

The PM<sub>10</sub> emissions for area-wide sources are lower than the emissions presented in the previous edition of the Almanac, due to updated fugitive dust emission estimates. The emissions for stationary sources are higher between 1975 and 2005 than in the previous edition, mainly due to updated cement production estimates for the South Coast air basin. Also, the emissions for on-road motor vehicles are higher than in the previous edition, due to the use of the EMFAC2007 model.

## Directly Emitted Particulate Matter (PM<sub>2.5</sub>)

### Emission Trends and Forecasts - Directly Emitted PM<sub>2.5</sub>

PM<sub>2.5</sub> emissions decrease from 1975 to 1980 as a result of reduced stationary source emissions. Emissions increase slightly between 1980 and 1990, hold steady through 2005, and are projected to increase after 2005. PM<sub>2.5</sub> emissions are dominated by area-wide sources. Emissions from paved road dust more than double between 1975 and 2000. Unpaved road dust emissions increase through the year 1990, decrease in 1995, hold relatively constant through the year 2010, with increased emissions expected after 2015. Other area-wide source emissions increase slightly over the forecast period. The increase in emissions of unpaved and paved road dust are due to increases in VMT over these roads. Exhaust emissions from diesel mobile sources dropped by 38 percent from 1990 to 2000 due to more stringent emissions standards and the introduction of cleaner burning diesel fuel. PM<sub>2.5</sub> emissions from stationary sources are expected to increase slightly in the future due to industrial growth.

| Directly Emitted PM <sub>2.5</sub> Emission Trends (tons/day, annual average) |            |            |            |            |            |            |            |            |            |            |
|---|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Emission Source   | 1975       | 1980       | 1985       | 1990       | 1995       | 2000       | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>  | <b>718</b> | <b>693</b> | <b>691</b> | <b>754</b> | <b>687</b> | <b>696</b> | <b>685</b> | <b>680</b> | <b>690</b> | <b>709</b> |
| <b>Stationary Sources</b>   | 226        | 161        | 121        | 124        | 104        | 106        | 95         | 87         | 92         | 98         |
| <b>Area-wide Sources</b>  | 369        | 392        | 417        | 442        | 440        | 452        | 448        | 459        | 469        | 482        |
| Paved Road Dust   | 24         | 29         | 38         | 53         | 57         | 60         | 58         | 62         | 67         | 71         |
| Unpaved Road Dust   | 45         | 48         | 52         | 54         | 52         | 53         | 53         | 53         | 54         | 56         |
| Other Area-wide Sources   | 300        | 315        | 328        | 335        | 331        | 340        | 337        | 344        | 348        | 355        |
| <b>On-Road Mobile</b>   | 45         | 54         | 70         | 90         | 65         | 60         | 61         | 55         | 49         | 45         |
| Gasoline Vehicles   | 14         | 11         | 12         | 14         | 16         | 19         | 23         | 25         | 28         | 31         |
| Diesel Vehicles   | 31         | 42         | 58         | 76         | 49         | 41         | 38         | 30         | 21         | 14         |
| <b>Other Mobile</b>   | 78         | 85         | 83         | 99         | 78         | 79         | 81         | 80         | 79         | 84         |
| Gasoline Fuel   | 4          | 5          | 7          | 8          | 8          | 9          | 9          | 11         | 14         | 17         |
| Diesel Fuel   | 55         | 60         | 56         | 65         | 48         | 46         | 42         | 34         | 24         | 17         |
| Other Fuel  | 19         | 20         | 21         | 25         | 23         | 24         | 29         | 34         | 41         | 51         |

Table 3-7

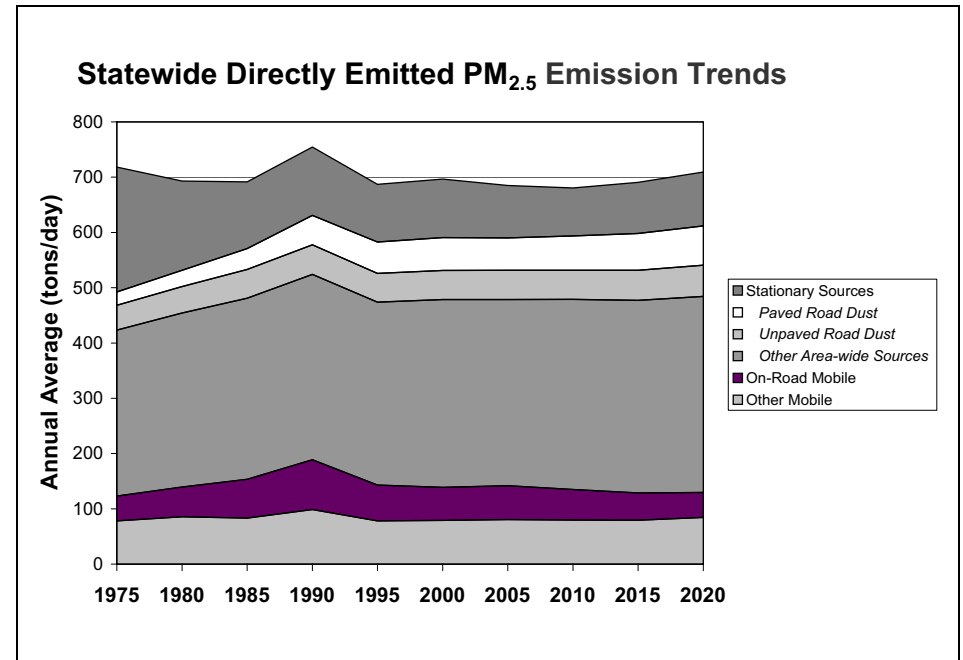


Figure 3-8

The PM<sub>2.5</sub> emissions for area-wide sources are lower than the emissions presented in the previous edition of the Almanac, due to updated fugitive dust emission estimates and to updated size fractions. The emissions for on-road motor vehicles are higher than in the previous edition and reflect the use of the EMFAC2007 model.

## Statewide Air Quality - PM<sub>10</sub>

In contrast to ozone and carbon monoxide, PM<sub>10</sub> concentrations do not relate as well to growth in population or vehicle usage, and high PM<sub>10</sub> concentrations do not always occur in high population areas. Activities that contribute directly to high PM<sub>10</sub> include wood burning, agricultural activities, and driving on unpaved roads. In addition, emissions from stationary sources and motor vehicles form secondary particles that contribute to PM<sub>10</sub> in many areas. Figure 3-9 shows the statewide annual average for PM<sub>10</sub> concentrations for a non-desert area. The trend line reflects, for the most part, the South Coast Air Basin. The low value for the annual average in 1988 is due to the limited number of monitors with complete data for this year during the startup of the PM<sub>10</sub> monitoring network. The period between 1989 and 2006 provides a better indication of trends. Over this period, the three-year average of the annual average shows a decrease of more than 33 percent. However, there is a great deal of variability, especially during the late 1990's. Much of this variability may be due to meteorology rather than changes in emissions. Currently, over 99 percent of Californians live in air basins with concentrations that violate the State PM<sub>10</sub> standards during at least part of the year. As a result, PM is commanding greater attention.

In 2003, the Legislature enacted Senate Bill 656 (SB 656) to reduce public exposure to PM<sub>10</sub> and PM<sub>2.5</sub>. As a first step in the implementation of SB 656, in November 2004, the ARB approved an extensive list of the most readily available, feasible, cost-effective control measures that can be employed by air districts to reduce PM<sub>10</sub> and PM<sub>2.5</sub>. Recently, air districts adopted implementation schedules for the subset of measures selected to address the nature and severity of their PM problem. The goal is to make progress towards attaining the State and national PM<sub>10</sub> and PM<sub>2.5</sub> standards.

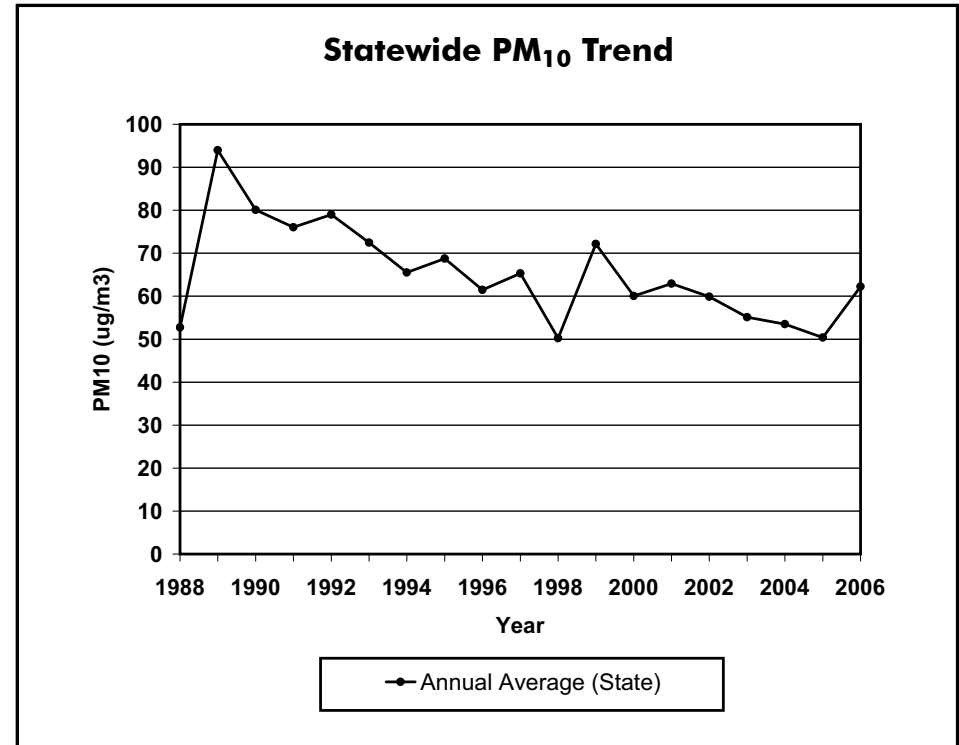


Figure 3-9

## Statewide Air Quality - PM<sub>2.5</sub>

Comprehensive monitoring for PM<sub>2.5</sub> began in 1999, therefore only limited data are available to evaluate statewide trends. Currently, most urban areas in the State, as well as several isolated sub-areas violate the State PM<sub>2.5</sub> annual average standard. Activities that contribute to high PM<sub>2.5</sub> concentrations include direct particulate emissions from mobile sources and burning, as well as the formation of PM<sub>2.5</sub> from the reactions of precursor gases. Attainment plans due in 2008, for the national PM<sub>2.5</sub> standards, are the focus of current planning efforts.

Figure 3-10 shows the maximum statewide annual average PM<sub>2.5</sub> concentrations from 1999 through 2006 from the national perspective. The national annual average is also used in the air basin summaries in Chapter 4. The trend line reflects the South Coast Air Basin. Over the seven year period, the annual average shows a decrease of over 31 percent. Similar to PM<sub>10</sub>, year-to-year changes in meteorology can mask the impacts of emission control programs.

As with PM<sub>10</sub>, PM<sub>2.5</sub> represents one of the most formidable health challenges in California. The measures adopted as part of SB 656 to reduce PM<sub>10</sub> and PM<sub>2.5</sub> (program description can be found on the ARB website at [www.arb.ca.gov/pm/pmmeasures/pmmeasures.htm](http://www.arb.ca.gov/pm/pmmeasures/pmmeasures.htm)), as well as programs to reduce ozone and diesel PM will help in reducing public exposure to PM<sub>2.5</sub>.

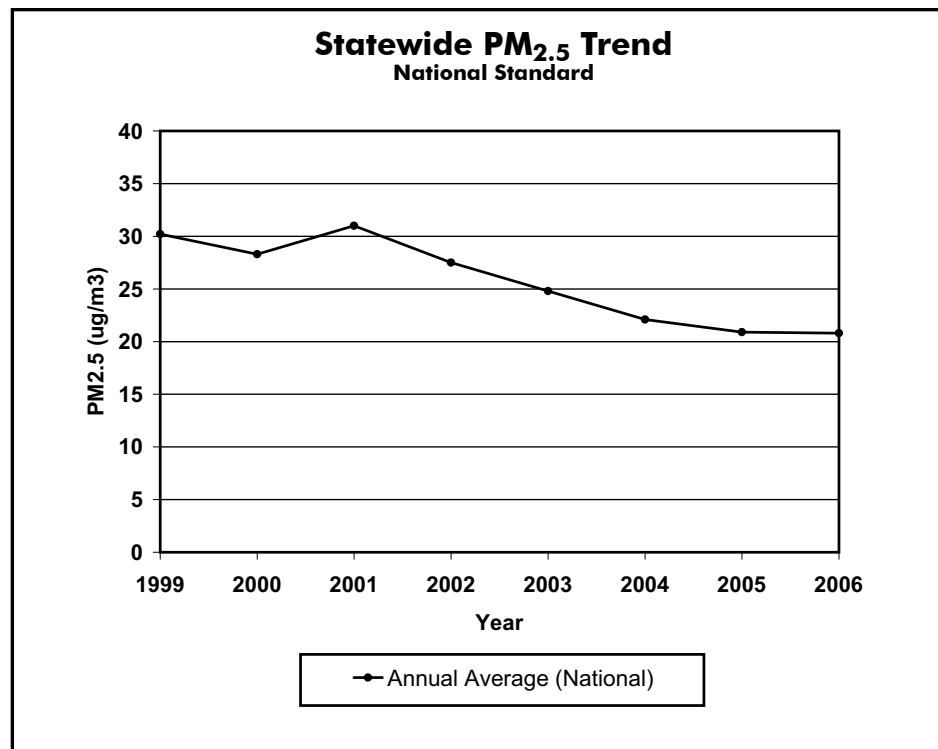


Figure 3-10

## Carbon Monoxide (CO)

### Emission Trends and Forecasts - Carbon Monoxide

Since 1975, even though VMT have continued to climb, the adoption of more stringent motor vehicle emissions standards has dropped statewide CO emissions from on-road motor vehicles by over 78 percent in 2005. With continued vehicle fleet turnover to cleaner vehicles, including super ultra low emitting vehicles (SULEVs) and zero emission vehicles (ZEVs), and the incorporation of cleaner burning fuels, CO emissions are forecast to continue decreasing through the year 2020. CO emissions from other mobile sources are also projected to decrease through 2010 as more stringent emissions standards are implemented with moderate increases expected after 2010. CO emissions from area-wide sources are expected to increase slightly due to increased waste burning and additional residential fuel combustion resulting from population increases.

The CO emissions for area-wide sources are lower than the emissions presented in the previous edition of the Almanac, due to updates to the statewide waste burning categories.

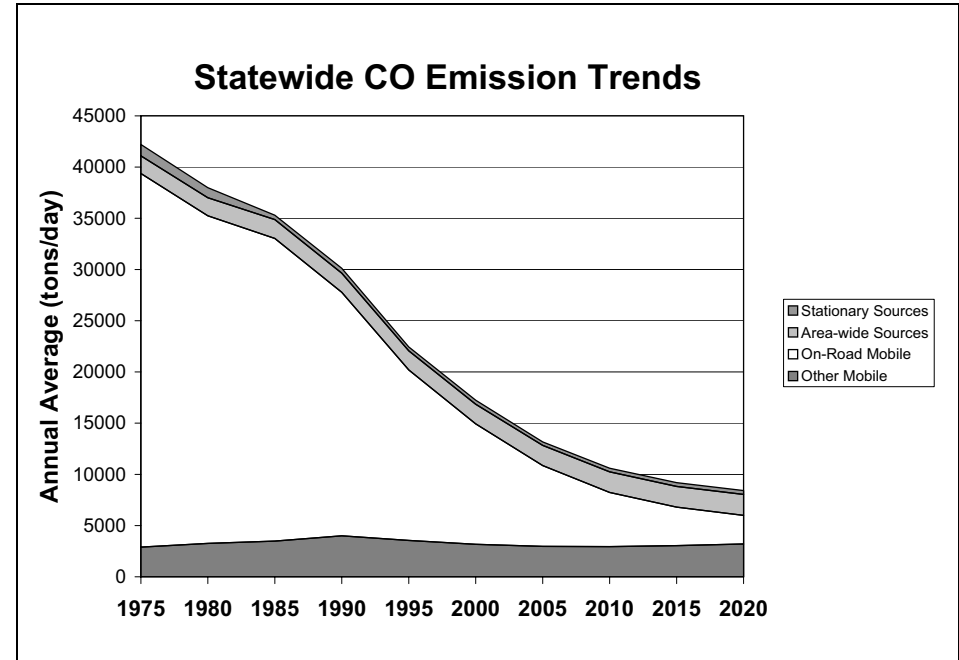


Figure 3-11

| CO Emission Trends (tons/day, annual average) |              |              |              |              |              |              |              |              |             |             |
|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|-------------|
| Emission Source                               | 1975         | 1980         | 1985         | 1990         | 1995         | 2000         | 2005         | 2010         | 2015        | 2020        |
| <b>All Sources</b>                            | <b>42207</b> | <b>37991</b> | <b>35302</b> | <b>30119</b> | <b>22439</b> | <b>17237</b> | <b>13167</b> | <b>10598</b> | <b>9188</b> | <b>8419</b> |
| <b>Stationary Sources</b>                     | 1113         | 984          | 425          | 478          | 375          | 389          | 340          | 354          | 367         | 379         |
| <b>Area-wide Sources</b>                      | 1716         | 1763         | 1847         | 1866         | 1873         | 1917         | 1965         | 2006         | 2021        | 2043        |
| <b>On-Road Mobile</b>                         | 36483        | 31987        | 29546        | 23775        | 16644        | 11762        | 7895         | 5290         | 3759        | 2793        |
| Gasoline Vehicles                             | 36342        | 31796        | 29281        | 23432        | 16339        | 11491        | 7612         | 5034         | 3553        | 2623        |
| Diesel Vehicles                               | 141          | 191          | 265          | 343          | 305          | 271          | 283          | 256          | 207         | 170         |
| <b>Other Mobile</b>                           | 2894         | 3257         | 3483         | 4001         | 3546         | 3169         | 2967         | 2947         | 3041        | 3205        |
| Gasoline Fuel                                 | 2093         | 2380         | 2660         | 3068         | 2690         | 2394         | 2219         | 2179         | 2222        | 2327        |
| Diesel Fuel                                   | 396          | 448          | 439          | 529          | 474          | 416          | 364          | 361          | 382         | 410         |
| Other Fuel                                    | 405          | 428          | 384          | 404          | 382          | 358          | 383          | 407          | 436         | 467         |

Table 3-8



## Statewide Air Quality - Carbon Monoxide

Similar to ozone, CO concentrations in all areas of California have decreased substantially over the last 20 years, despite significant growth. Statewide, the maximum peak 8-hour indicator declined about 63 percent from 1987 to 2006. California now meets all CO standards.

The introduction of cleaner fuels has helped bring the entire State into attainment. The U.S. EPA recently redesignated the South Coast as attainment, effective June 11, 2007. While cleaner fuels will have a continuing impact on CO levels, additional emission reductions will be needed in the future to keep pace with increases in population and vehicle usage. These reductions will come from continued fleet turnover, expanded use of LEVs, and measures to promote less polluting modes of transportation.

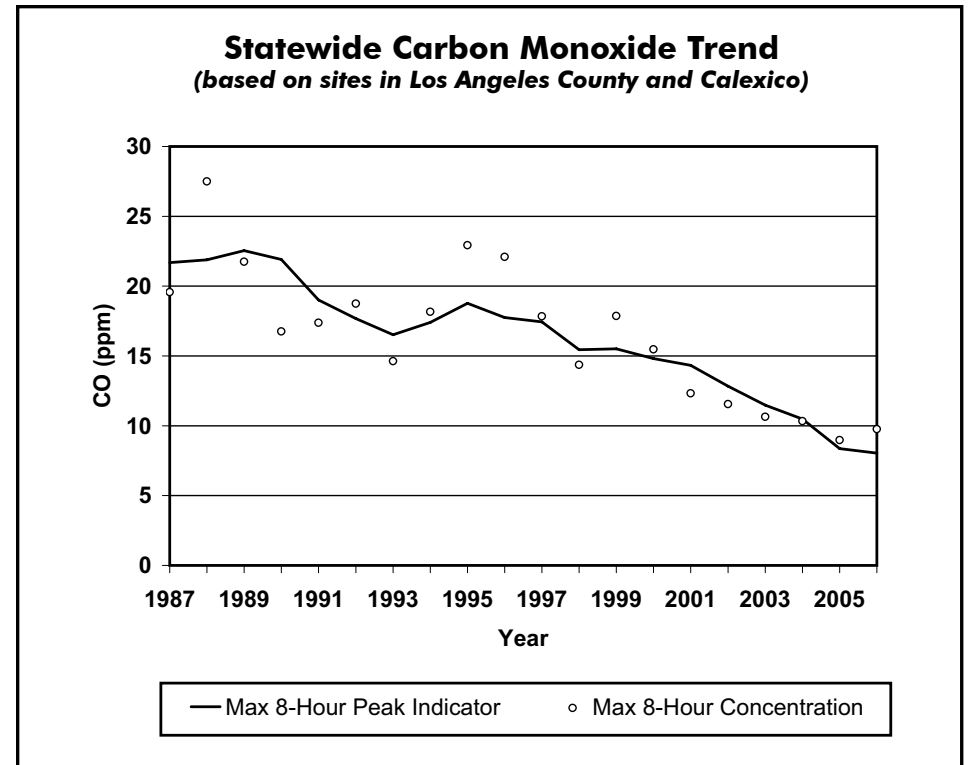


Figure 3-12

## Statewide Air Quality - Lead

The decrease in lead emissions and ambient lead concentrations over the past 32 years is California's most dramatic success story. For the purpose of understanding the progress and impact of emission controls a more exhaustive historical record is provided.

The rapid decrease in lead concentrations can be attributed primarily to phasing out the lead in gasoline. This phase-out began during the 1970s, and subsequent ARB regulations have virtually eliminated all lead from the gasoline now sold in California. All areas of the State are currently designated as attainment for the State lead standard (the U.S. EPA does not designate areas for the national lead standard). Although the ambient lead standards are no longer violated, lead emissions from stationary sources still pose "hot spot" problems in some areas. As a result, the ARB identified lead as a TAC in 1997. Additionally, the EPA is currently reviewing the national lead standards and is considering revising the standard, with the final rule expected to be published on September 1, 2008.

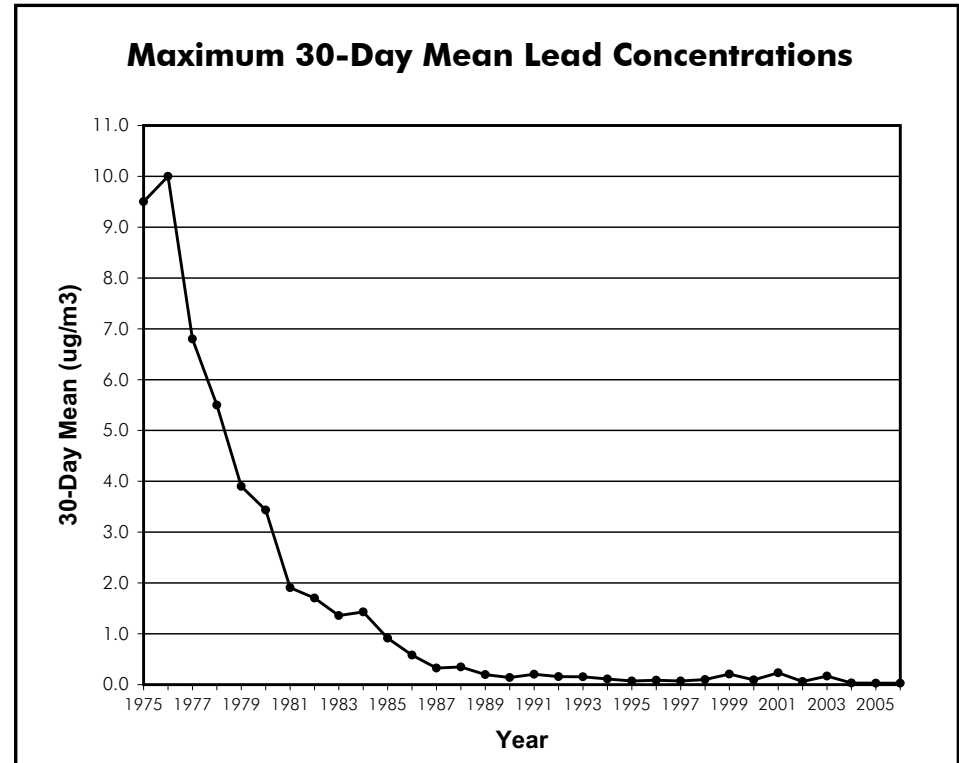


Figure 3-13

## Sulfur Dioxide

### Emission Trends and Forecasts - Oxides of Sulfur

Oxides of Sulfur (SO<sub>x</sub>) are a group of compounds of sulfur and oxygen. A major constituent of SO<sub>x</sub> is sulfur dioxide (SO<sub>2</sub>). Emissions of SO<sub>x</sub> declined tremendously in California between 1975 and 2005. Emissions in 2005 are about 77 percent less than emissions in 1975. Sulfur dioxide emissions from stationary sources decreased between 1975 and 2005 due to improved industrial source controls and switching from fuel oil to natural gas for electric generation and industrial boilers. The SO<sub>x</sub> emissions from land-based on- and off-road gasoline and diesel-fueled engines and vehicles have also decreased due to lower sulfur content in the fuel; and recent regulations adopted by the ARB will reduce the sulfur content in fuel used by commercial harbor craft such as tug boats and fishing vessels beginning in 2006. However, as shown in the table below, the SO<sub>x</sub> emissions from the “other mobile” categories are expected to increase in the future. This is due to the significant growth in shipping activities predicted for California and the high-sulfur fuels that ocean-going ships typically use. The ARB recently adopted a regulation for fuels used in ship auxiliary engines that will help offset this trend. Substantial reductions in SO<sub>x</sub> emissions will occur with implementation of this regulation. In addition, ARB is investigating other options for reversing this trend.

| SO <sub>x</sub> Emission Trends (tons/day, annual average) |             |            |            |            |            |            |            |            |            |            |
|--|-------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Emission Source  | 1975        | 1980       | 1985       | 1990       | 1995       | 2000       | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>   | <b>1277</b> | <b>953</b> | <b>529</b> | <b>504</b> | <b>294</b> | <b>285</b> | <b>295</b> | <b>323</b> | <b>382</b> | <b>462</b> |
| <b>Stationary Sources</b>                                  | 996         | 705        | 262        | 183        | 138        | 140        | 113        | 118        | 124        | 131        |
| <b>Area-wide Sources</b>                                   | 6           | 6          | 7          | 7          | 7          | 7          | 6          | 6          | 6          | 6          |
| <b>On-Road Mobile</b>                                      | 159         | 118        | 142        | 168        | 43         | 13         | 14         | 6          | 6          | 6          |
| Gasoline Vehicles  | 112         | 54         | 56         | 62         | 37         | 5          | 5          | 4          | 5          | 5          |
| Diesel Vehicles  | 47          | 64         | 85         | 106        | 7          | 7          | 9          | 1          | 1          | 1          |
| <b>Other Mobile</b>  | 116         | 124        | 118        | 146        | 105        | 126        | 162        | 193        | 245        | 319        |
| Gasoline Fuel  | 5           | 3          | 4          | 6          | 4          | 1          | 1          | 1          | 1          | 1          |
| Diesel Fuel  | 64          | 74         | 63         | 72         | 15         | 14         | 14         | 3          | 3          | 4          |
| Other Fuel   | 47          | 47         | 51         | 68         | 87         | 112        | 147        | 189        | 241        | 314        |

Table 3-9

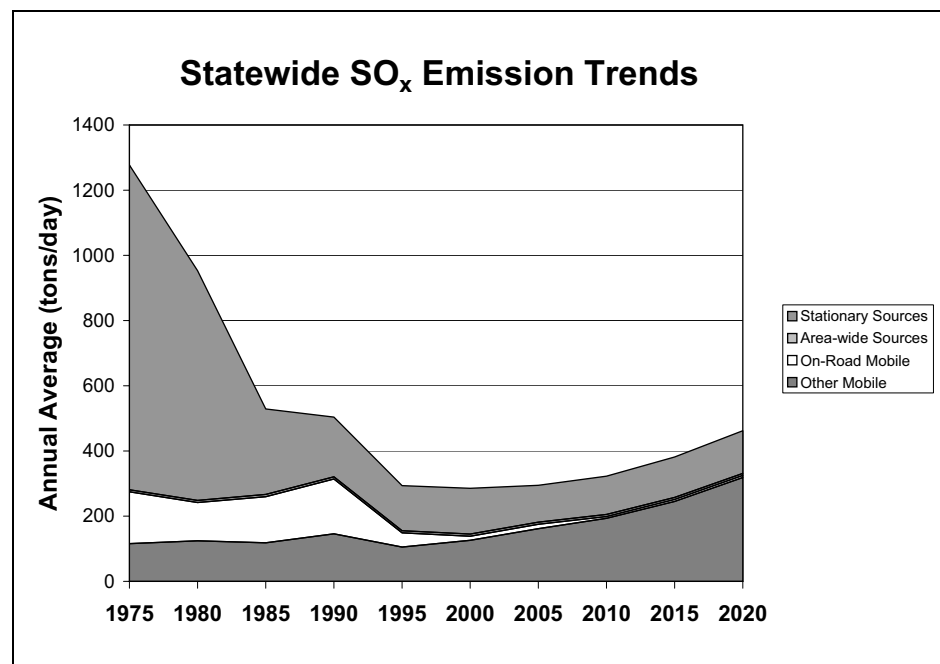


Figure 3-14

Among these options is the Goods Movement Action Plan which was recently adopted.

The SO<sub>x</sub> emissions for other mobile sources are lower from 1975 to 1985 when compared to the emissions presented in the previous edition of the Almanac. The lower emissions are due to updates to the ship backcast methodology. Also the emissions for area-wide sources are lower than in the previous edition, due to updates to the statewide burning categories.

## Nitrogen Dioxide Emission Trends and Forecasts - Oxides of Nitrogen

Nitrogen dioxide (NO<sub>2</sub>) is a colorless, tasteless gas that can cause lung damage, chronic lung disease, and respiratory infections. Nitrogen dioxide is a component of NO<sub>x</sub>, and its presence in the atmosphere can be correlated with emissions of NO<sub>x</sub>. Statewide emissions of NO<sub>x</sub> decreased by 28 percent between 1980 and 2005 and are projected to decrease by almost 36 percent from 2005 to 2020 as a result of more stringent emissions standards for stationary source combustion and motor vehicles, and cleaner burning fuels. The introduction of lower emitting vehicles will continue to reduce NO<sub>x</sub> emissions.

In the previous edition of the Almanac, the NO<sub>x</sub> emissions were lower for on-road motor vehicles from 1995 onward and lower for other mobile sources from 1990 onward. The higher values in this edition reflect the use of the EMFAC2007 and OFFROAD2007 models. Also in this edition, lower NO<sub>x</sub> values for area-wide sources after 1995 are mainly the result of updates to the statewide waste burning categories.

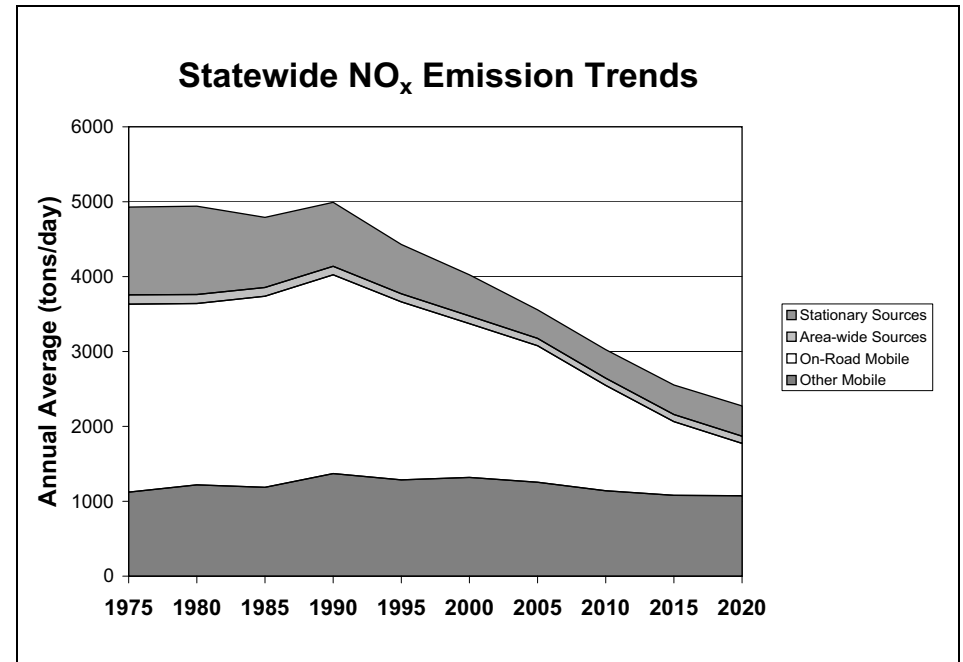


Figure 3-15

| NO <sub>x</sub> Emission Trends (tons/day, annual average) |             |             |             |             |             |             |             |             |             |             |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Emission Source  | 1975        | 1980        | 1985        | 1990        | 1995        | 2000        | 2005        | 2010        | 2015        | 2020        |
| <b>All Sources</b>   | <b>4928</b> | <b>4941</b> | <b>4791</b> | <b>4991</b> | <b>4429</b> | <b>4025</b> | <b>3556</b> | <b>3025</b> | <b>2553</b> | <b>2273</b> |
| <b>Stationary Sources</b>                                  | 1172        | 1180        | 936         | 853         | 659         | 551         | 381         | 381         | 394         | 404         |
| <b>Area-wide Sources</b>                                   | 125         | 121         | 117         | 114         | 108         | 102         | 99          | 96          | 95          | 97          |
| <b>On-Road Mobile</b>                                      | 2510        | 2421        | 2552        | 2654        | 2377        | 2053        | 1823        | 1407        | 984         | 699         |
| Gasoline Vehicles  | 2197        | 2014        | 1958        | 1839        | 1574        | 1160        | 754         | 504         | 359         | 263         |
| Diesel Vehicles  | 312         | 407         | 593         | 815         | 803         | 893         | 1069        | 904         | 625         | 435         |
| <b>Other Mobile</b>  | 1122        | 1219        | 1186        | 1370        | 1286        | 1319        | 1254        | 1140        | 1079        | 1074        |
| Gasoline Fuel  | 52          | 57          | 62          | 72          | 70          | 70          | 76          | 68          | 64          | 64          |
| Diesel Fuel  | 917         | 1002        | 954         | 1095        | 980         | 966         | 854         | 696         | 567         | 464         |
| Other Fuel   | 154         | 160         | 169         | 202         | 237         | 284         | 325         | 376         | 448         | 546         |

Table 3-10

## Statewide Air Quality - Nitrogen Dioxide

NO<sub>x</sub> emissions are a by-product of combustion from both mobile and stationary sources, and they contribute to ambient nitrogen dioxide (NO<sub>2</sub>) concentrations. Since 1987, maximum NO<sub>2</sub> concentrations have decreased over 67 percent, due primarily to the implementation of tighter controls on both mobile and stationary sources. Although many of these controls were implemented to reduce ozone, they also benefited NO<sub>2</sub>. All areas of California are currently designated as attainment for the State NO<sub>2</sub> standard and unclassified/attainment for the national NO<sub>2</sub> standard. Projections show NO<sub>x</sub> emissions will continue to decline, thereby assuring continued attainment.

ARB revised the State 1-hour and adopted a new annual NO<sub>2</sub> standard on February 22, 2007. Designations incorporating new State NO<sub>2</sub> standards are expected in 2009.

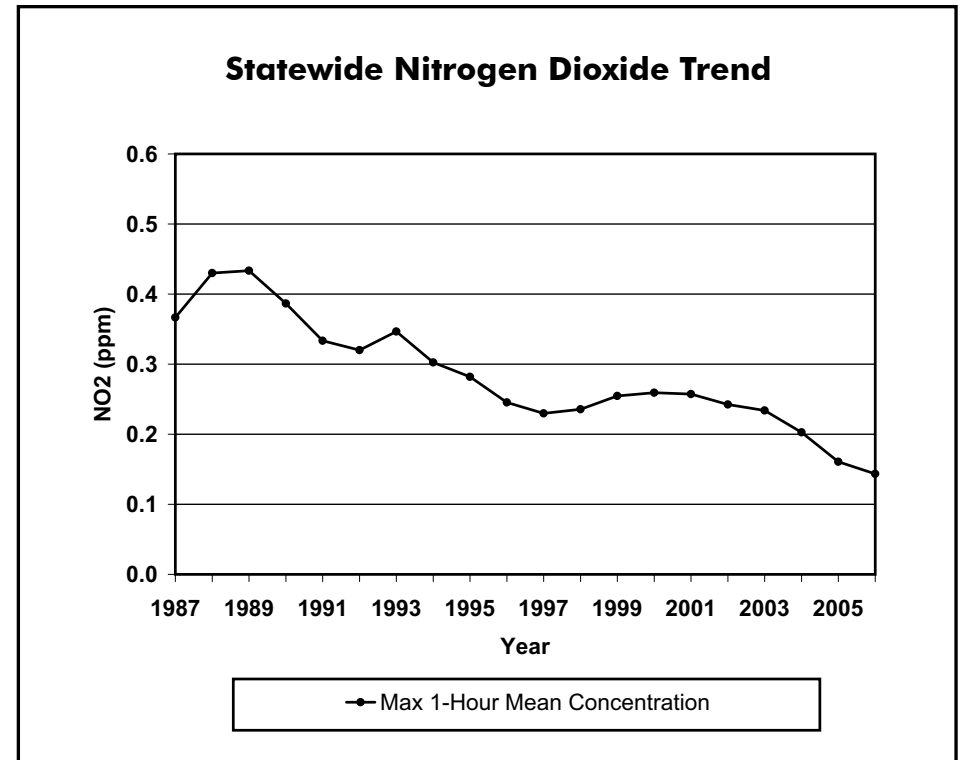


Figure 3-16

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# Chapter 4

## Air Basin Trends and Forecasts -- Criteria Pollutants

## Introduction

This chapter provides a look at emissions and air quality in California's five major air basins (data for individual counties are provided in Appendix A). Emissions data include past trends and projections of future emissions levels. These emissions data remain the same as presented in the previous edition of the Almanac and will be updated in the 2009 edition. The air quality statistics include values reflecting both the State and national ambient air quality standards. Below we will briefly discuss some of the statistics used to characterize ozone and PM air quality in this chapter.

In addition to maximum concentrations and number of days above the standards, the ozone statistics include the peak indicator and the three-year average of the 4<sup>th</sup> highest 8-hour concentration. The peak indicator represents the maximum concentration expected to be exceeded no more than once per year, on average, based on the distribution of data at a particular monitoring site. Because it is based on a robust statistical calculation using three years of data, the peak indicator is relatively stable and provides a trend indicator that is not highly influenced by year-to-year changes in weather. The 1-hour and 8-hour peak indicators are calculated from measured data and relate to State standards. In contrast, the three-year average of the 4<sup>th</sup> highest concentration is related to the national 8-hour ozone standard. (Please note that a different indicator was used for determining compliance with the national 1-hour ozone standard.) These statistics are reported for the end year of the three year period. For example, the 2006 peak indicator reflects data for the years 2004 through 2006.

The peak indicator and the three-year average of the 4<sup>th</sup> high are generally called "design values" and are the concentrations that are compared to the standard for the purpose of determining attainment status. However, values for these statistics that are included in this almanac may not satisfy data completeness requirements or the boundaries of a nonattainment area, which may differ from county or

air basin boundaries. Data conforming to the established design value requirements are available for the national 8-hour ozone standard on the web at [www.arb.ca.gov/airqualitytoday](http://www.arb.ca.gov/airqualitytoday) under "recent year's ozone air quality." Furthermore, when evaluating these statistics, keep in mind that they represent data for a three-year period.

Some of the PM statistics included in this chapter also relate to the State and national standards and differ from one another because the requirements of the standards are different. For example, there is a maximum 24-hour PM<sub>2.5</sub> concentration listed for State purposes and another for national purposes. During some years or in some areas the two numbers may differ. These differences occur because the monitors acceptable for the two standards are different. The situation is similar for the State and national annual average. Both reflect a summary statistic based on one year of data. However in this case, both the acceptable monitors and the calculation methods differ. Finally, it is important to note that air quality statistics based on a single year of data (for example, the yearly count of days above the standard) can fluctuate from year-to-year because of variations in weather. As a result, this almanac compares three-year averages when characterizing the percentage increase or decrease in days above the standard. In this case, the number of exceedance days for 1987 (which represents an average of 1985, 1986, and 1987) is then compared to the 2006 value (which represents an average of 2004, 2005, and 2006), giving a much more stable indicator of long-term progress.



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## *South Coast Air Basin*

### Introduction - Area Description

The South Coast Air Basin is California's largest metropolitan region. The area includes the southern two-thirds of Los Angeles County, all of Orange County, and the western urbanized portions of Riverside and San Bernardino counties. It covers a total of 6,480 square miles, is home to more than 43 percent of California's population, and generates about 29 percent of the State's total criteria pollutant emissions.

The South Coast Air Basin generally forms a lowland plain, bounded by the Pacific Ocean on the west and by mountains on the other three sides. In terms of air pollution potential, there are probably few areas less suited for urban development. The warm sunny weather associated with a persistent high pressure system is conducive to the formation of ozone, commonly referred to as "smog." The problem is further aggravated by the surrounding mountains, frequent low inversion heights, and stagnant air conditions. All of these factors act together to trap pollutants in the air basin.

Pollutant concentrations in parts of the South Coast Air Basin are among the highest in the nation. As a result, controlling the contributing emission sources poses a great challenge to State and local air pollution control agencies.

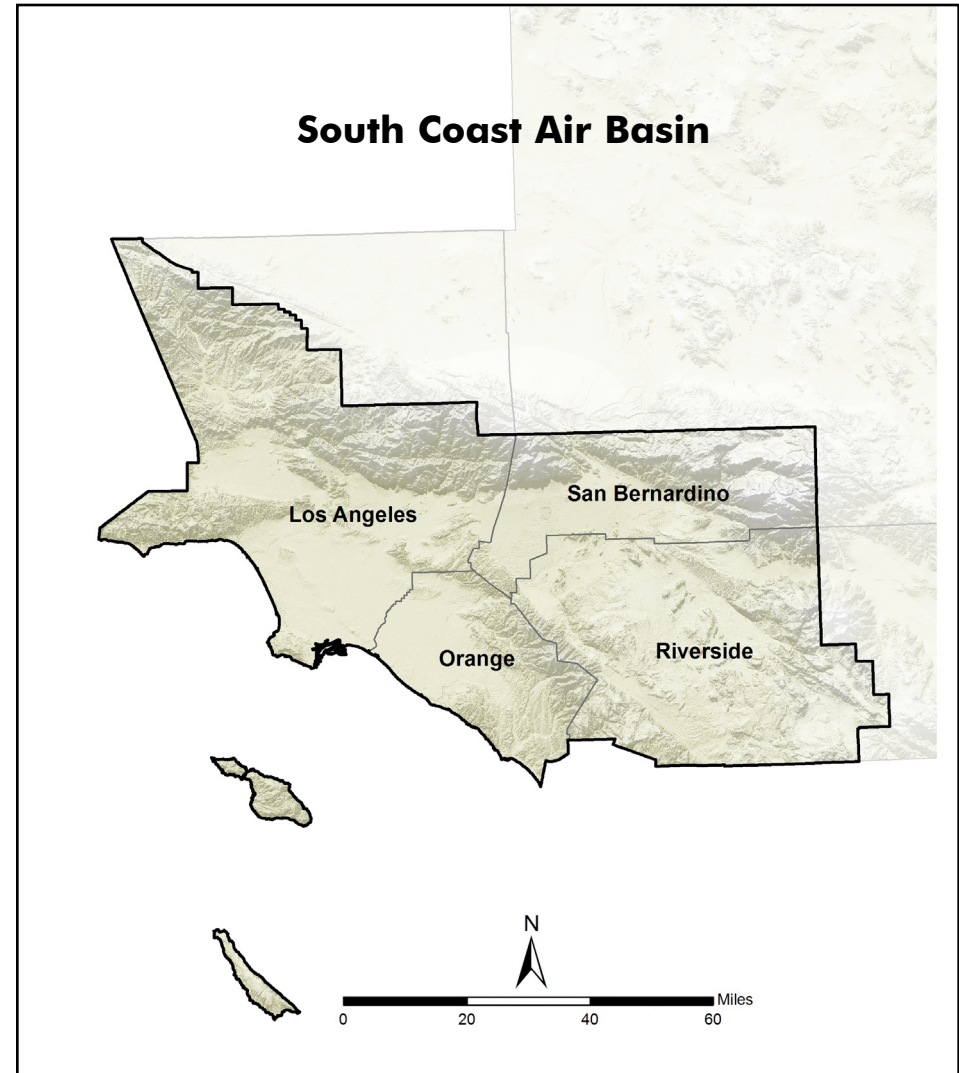


Figure 4-1

## South Coast Air Basin

### Emission Trends and Forecasts

Overall, since 1975 the emission levels for CO and the ozone precursors NO<sub>x</sub> and ROG have been decreasing in the South Coast Air Basin and are projected to continue decreasing through 2020. The decreases are predominantly due to motor vehicle controls and reductions in evaporative emissions. In the South Coast Air Basin, on-road motor vehicles are the largest contributors to CO, NO<sub>x</sub>, and ROG emissions. Other mobile sources are also significant contributors to CO and NO<sub>x</sub> emissions. The emission levels for SO<sub>x</sub> have decreased since 1975. This is mainly due to the switch from fuel oil to natural gas for electric generation and to reduced fuel sulfur content. The increase in SO<sub>x</sub> emissions from 2005 onward is due to predicted growth in shipping activities.

SIP and conformity inventory forecasts may differ from the forecasts presented in this almanac. For more information on these forecasts, please see the ARB SIP web page at [www.arb.ca.gov/planning/sip/sip.htm](http://www.arb.ca.gov/planning/sip/sip.htm).

| South Coast Air Basin Emissions (tons/day, annual average) |       |       |       |       |      |      |      |      |      |      |
|--|-------|-------|-------|-------|------|------|------|------|------|------|
| Pollutant  | 1975  | 1980  | 1985  | 1990  | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| NO <sub>x</sub>  | 1693  | 1532  | 1564  | 1561  | 1335 | 1180 | 999  | 755  | 600  | 493  |
| ROG  | 2748  | 2312  | 2246  | 1801  | 1361 | 1080 | 729  | 569  | 518  | 496  |
| PM <sub>10</sub>   | 224   | 233   | 254   | 357   | 346  | 348  | 313  | 286  | 296  | 306  |
| PM <sub>2.5</sub>  | 126   | 115   | 114   | 131   | 114  | 115  | 112  | 103  | 103  | 105  |
| SO <sub>x</sub>  | 409   | 194   | 101   | 77    | 52   | 43   | 46   | 48   | 52   | 57   |
| CO   | 16544 | 13605 | 13148 | 10750 | 7778 | 5648 | 4129 | 2950 | 2472 | 2198 |

Table 4-1

## South Coast Air Basin

### Population and VMT

Both population and the daily VMT grew from 1980 to 2005 and are projected to continue to grow at high rates in the South Coast Air Basin from 2005 to 2020. While high growth rates are often associated with corresponding increases in emissions and pollutant concentrations, aggressive emission control programs in the South Coast Air Basin have resulted in emission decreases and a continuing improvement in air quality.

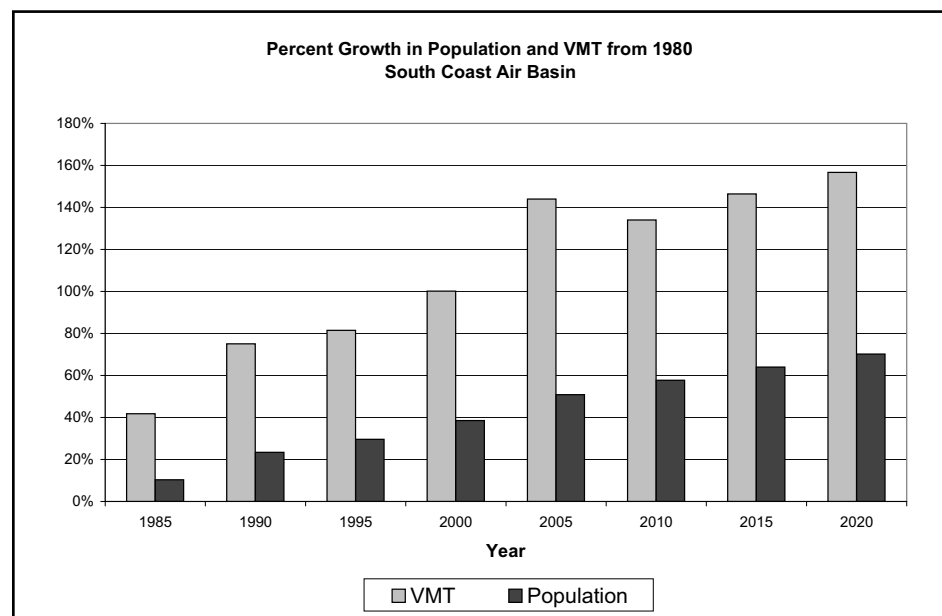


Figure 4-2

| Parameter           | 1980     | 1985     | 1990     | 1995     | 2000     | 2005     | 2010     | 2015     | 2020     |
|---------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Population          | 10604663 | 11698030 | 13083594 | 13745292 | 14687872 | 15996422 | 16727861 | 17389313 | 18050763 |
| Avg. Daily VMT/1000 | 161397   | 228818   | 282561   | 292884   | 323009   | 393767   | 377734   | 397696   | 414267   |

Table 4-2

## South Coast Air Basin

### Ozone Precursor Emission - Trends and Forecasts

Emissions of the ozone precursors NO<sub>x</sub> and ROG in the South Coast Air Basin are generally following the statewide downward trend. Motor vehicle miles traveled in the basin are increasing, but NO<sub>x</sub> and ROG emissions from on-road vehicles are dropping as more stringent vehicle emission standards have been adopted. These decreases in NO<sub>x</sub> and ROG emissions are projected to continue between 2000 and 2020, as even more stringent motor vehicle standards are implemented and as newer, lower-emitting vehicles become a larger percentage of the fleet. NO<sub>x</sub> emissions from electric utilities in the air basin have declined substantially since 1975, despite a nationwide increase in emissions from electric utilities in the same time period. These large reductions are primarily due to increased use of natural gas as the principal fuel for power plants, and control rules that limit NO<sub>x</sub> emissions.

| NO <sub>x</sub> Emission Trends (tons/day, annual average) |             |             |             |             |             |             |            |            |            |            |
|--|-------------|-------------|-------------|-------------|-------------|-------------|------------|------------|------------|------------|
| Emission Source  | 1975        | 1980        | 1985        | 1990        | 1995        | 2000        | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>   | <b>1693</b> | <b>1532</b> | <b>1564</b> | <b>1561</b> | <b>1335</b> | <b>1180</b> | <b>999</b> | <b>755</b> | <b>600</b> | <b>493</b> |
| <b>Stationary Sources</b>                                  | 306         | 265         | 229         | 181         | 130         | 112         | 60         | 55         | 51         | 51         |
| <b>Area-wide Sources</b>                                   | 60          | 54          | 49          | 42          | 35          | 30          | 27         | 23         | 22         | 23         |
| <b>On-Road Mobile</b>                                      | 998         | 880         | 955         | 953         | 831         | 692         | 586        | 400        | 285        | 204        |
| Gasoline Vehicles  | 927         | 777         | 796         | 725         | 616         | 455         | 295        | 178        | 127        | 92         |
| Diesel Vehicles  | 71          | 103         | 159         | 228         | 215         | 237         | 291        | 222        | 158        | 111        |
| <b>Other Mobile</b>  | 329         | 333         | 331         | 385         | 338         | 345         | 327        | 276        | 241        | 216        |
| Gasoline Fuel  | 27          | 27          | 29          | 32          | 28          | 29          | 28         | 24         | 22         | 21         |
| Diesel Fuel  | 268         | 271         | 267         | 314         | 265         | 266         | 241        | 194        | 155        | 123        |
| Other Fuel   | 34          | 35          | 35          | 39          | 45          | 51          | 58         | 58         | 64         | 72         |

Table 4-3

| ROG Emission Trends (tons/day, annual average) |             |             |             |             |             |             |            |            |            |            |
|--|-------------|-------------|-------------|-------------|-------------|-------------|------------|------------|------------|------------|
| Emission Source                                | 1975        | 1980        | 1985        | 1990        | 1995        | 2000        | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>                             | <b>2748</b> | <b>2312</b> | <b>2246</b> | <b>1801</b> | <b>1361</b> | <b>1080</b> | <b>729</b> | <b>569</b> | <b>518</b> | <b>496</b> |
| <b>Stationary Sources</b>                      | 599         | 494         | 509         | 455         | 298         | 259         | 101        | 100        | 105        | 110        |
| <b>Area-wide Sources</b>                       | 177         | 188         | 204         | 223         | 192         | 185         | 157        | 147        | 152        | 158        |
| <b>On-Road Mobile</b>                          | 1734        | 1382        | 1269        | 875         | 650         | 438         | 297        | 183        | 139        | 113        |
| Gasoline Vehicles                              | 1725        | 1368        | 1250        | 852         | 635         | 425         | 280        | 169        | 129        | 105        |
| Diesel Vehicles                                | 9           | 13          | 19          | 23          | 15          | 13          | 17         | 14         | 11         | 8          |
| <b>Other Mobile</b>                            | 238         | 248         | 264         | 248         | 221         | 198         | 173        | 139        | 121        | 115        |
| Gasoline Fuel                                  | 183         | 192         | 208         | 186         | 164         | 151         | 130        | 104        | 92         | 88         |
| Diesel Fuel                                    | 40          | 40          | 40          | 46          | 41          | 39          | 34         | 27         | 20         | 17         |
| Other Fuel                                     | 15          | 15          | 15          | 16          | 16          | 9           | 9          | 8          | 10         | 11         |

Table 4-4

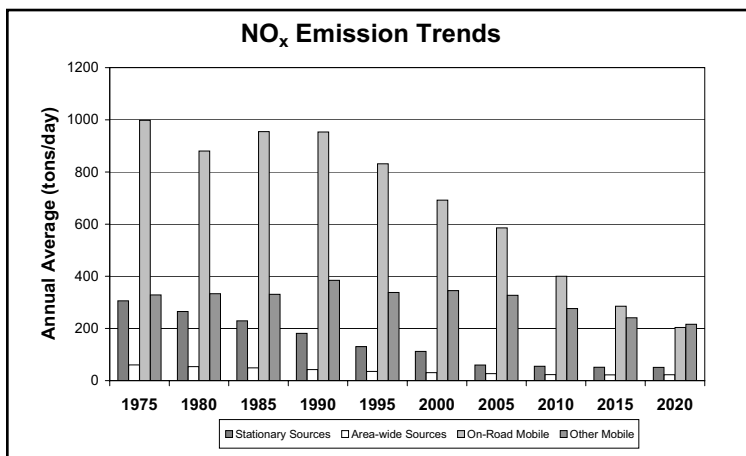


Figure 4-3

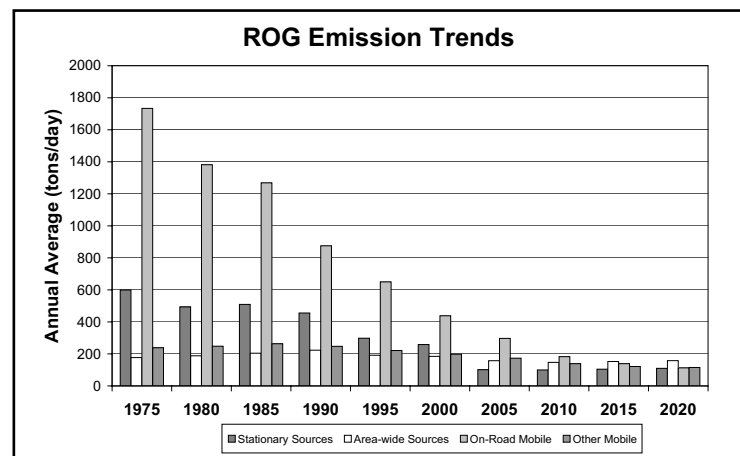


Figure 4-4

# South Coast Air Basin

## Ozone Air Quality Trend

Ozone air quality in the South Coast Air Basin has improved substantially over the last 30 years. During the 1960s, maximum 1-hour concentrations were above 0.60 ppm. Today, the maximum measured concentrations are less than one-third of that. The 2006 ozone season in the South Coast was on a par with 2005, with some statistics showing considerable decreases. The 2006 peak 8-hour indicator value was 45 percent lower than the 1987 value. The 2007 three-year average of the maximum 8-hour concentration was over 40 percent lower than 1989. The number of days above the standards has also declined dramatically, and the trend for 1-hour ozone is similar to that for 8-hour.

Although ozone has improved substantially over time, progress has leveled off during the last several years. This may be attributable to changes in the mix and reactivity of precursor emissions in the South Coast. While the basinwide trends show a slower rate of improvement during recent years, progress in some subregions of the Basin (for example, the coastal area and some of the inland valley areas) is still occurring. Continuing implementation of the aggressive emissions control measures will ensure continued progress throughout the Basin.

The ARB has identified the South Coast Air Basin as a transport contributor to several downwind areas — Mojave Desert Air Basin,

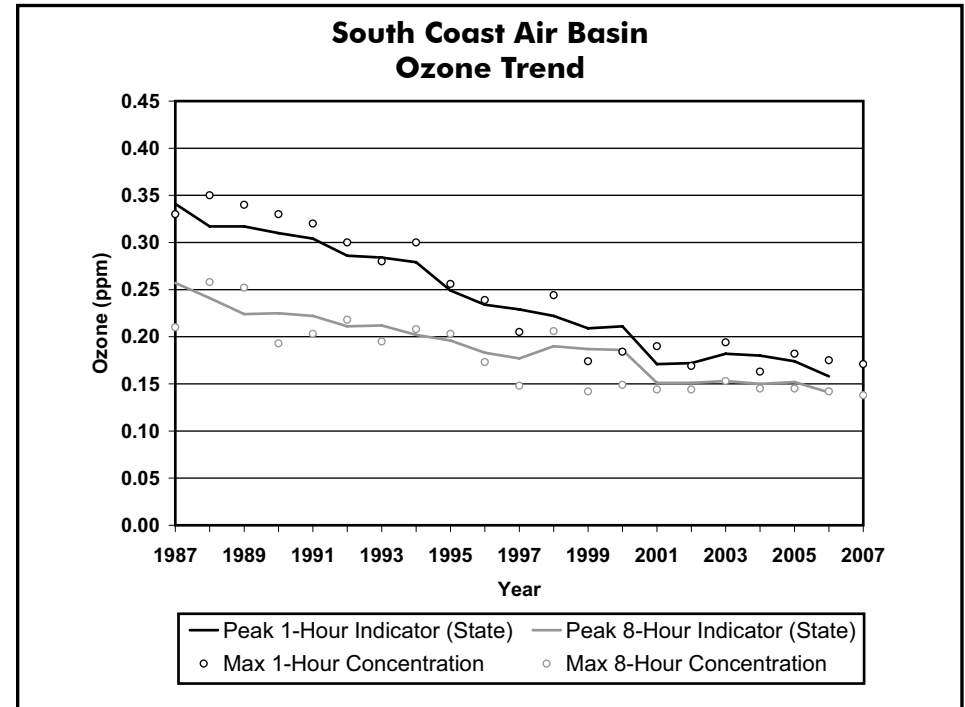


Figure 4-5  
Salton Sea Air Basin, San Diego Air Basin, and South Central Coast Air Basin. As ozone concentrations in the South Coast Air Basin decline further, the transport impact on the downwind areas should also decrease.

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  | 2007 <sup>1</sup> |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------------|
| Peak 8-Hour Indicator (State)         | 0.257 | 0.241 | 0.224 | 0.225 | 0.222 | 0.211 | 0.212 | 0.202 | 0.196 | 0.183 | 0.177 | 0.190 | 0.187 | 0.186 | 0.151 | 0.151 | 0.153 | 0.150 | 0.152 | 0.141 |                   |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.217 | 0.205 | 0.192 | 0.186 | 0.182 | 0.180 | 0.177 | 0.171 | 0.165 | 0.161 | 0.148 | 0.154 | 0.147 | 0.146 | 0.129 | 0.128 | 0.131 | 0.127 | 0.127 | 0.121 |                   |
| Peak 1-Hour Indicator (State)         | 0.341 | 0.317 | 0.317 | 0.310 | 0.304 | 0.286 | 0.284 | 0.279 | 0.249 | 0.234 | 0.229 | 0.222 | 0.209 | 0.211 | 0.171 | 0.172 | 0.182 | 0.180 | 0.174 | 0.158 |                   |
| 4th High 1-Hr. in 3 Yrs <sup>2</sup>  | 0.350 | 0.340 | 0.330 | 0.330 | 0.310 | 0.300 | 0.300 | 0.280 | 0.250 | 0.231 | 0.215 | 0.217 | 0.211 | 0.211 | 0.184 | 0.169 | 0.184 | 0.171 | 0.173 | 0.164 |                   |
| Max. 8-Hr. Concentration              | 0.210 | 0.258 | 0.252 | 0.193 | 0.203 | 0.218 | 0.195 | 0.208 | 0.203 | 0.173 | 0.148 | 0.206 | 0.142 | 0.149 | 0.144 | 0.144 | 0.153 | 0.145 | 0.145 | 0.142 | 0.138             |
| Maximum 1-Hr. Concentration           | 0.330 | 0.350 | 0.340 | 0.330 | 0.320 | 0.300 | 0.280 | 0.300 | 0.256 | 0.239 | 0.205 | 0.244 | 0.174 | 0.184 | 0.190 | 0.169 | 0.194 | 0.163 | 0.182 | 0.175 | 0.171             |
| Days Above State 8-Hr. Std.           | 198   | 215   | 221   | 192   | 188   | 199   | 205   | 176   | 173   | 165   | 175   | 139   | 146   | 147   | 154   | 147   | 153   | 152   | 138   | 130   | 127               |
| Days Above Nat. 8-Hr. Std.            | 179   | 194   | 181   | 161   | 160   | 173   | 161   | 148   | 120   | 115   | 118   | 93    | 93    | 94    | 92    | 96    | 109   | 88    | 83    | 85    | 79                |
| Days Above State 1-Hr. Std.           | 196   | 216   | 211   | 185   | 184   | 190   | 185   | 165   | 153   | 141   | 144   | 107   | 111   | 115   | 121   | 116   | 125   | 105   | 99    | 102   | 97                |

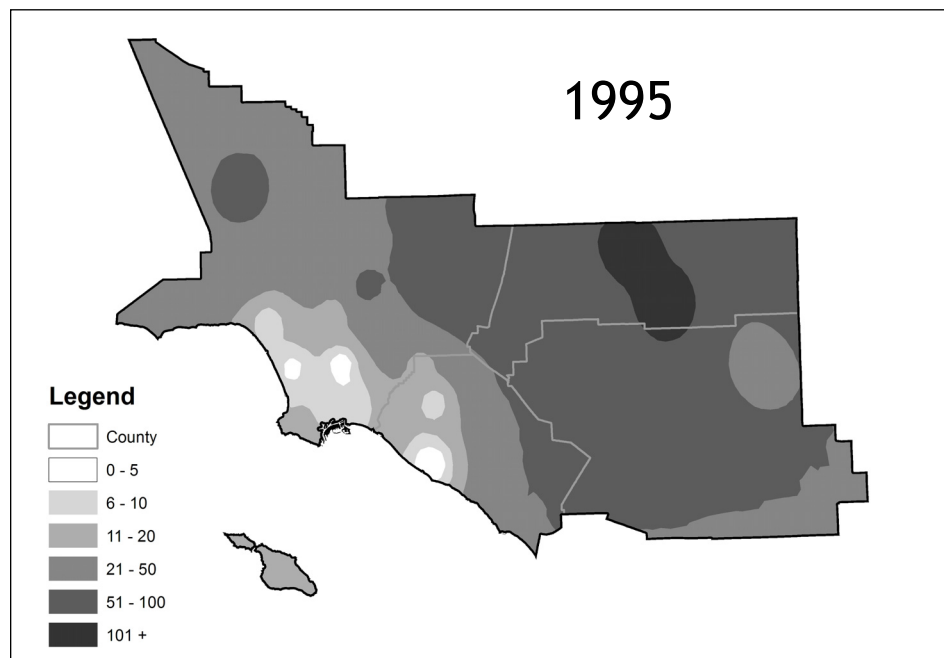
<sup>1</sup> Preliminary data for 2007 are shown here, however they are subject to change. 2006 is the last year for which complete and approved data is available, thus calculated annual statistics are not included for 2007.

<sup>2</sup> The national 1-Hour standard has been revoked. Historical 1-Hour data are provided for reference.

Table 4-5

## South Coast Air Basin

### Ozone Contour Maps - 3-year Average of National 8-Hour Exceedance Days



NOTE: Values used in these maps are for long-term sites only. Long-term sites are used to more accurately represent a trend over a period, by comparing the same or similar sites over a long period.

Figure 4-6

Another way to look at ozone air quality is to evaluate how widespread the problem is within a region. The maps on this page illustrate how the number of days exceeding the national 8-hour standard have changed across the South Coast Air Basin over the last decade. Three-year averages are used to help mitigate the impact of changes in meteorology.

Overall, the two maps show a substantial reduction in the number of exceedance days over the last 10 years. During the 1995 time period, about half of the South Coast had more than 50 exceedance days, with more than 100 days in the worst area. This is equivalent to more than three months during a year with ozone concentrations above the level of the standard. The coastal areas were cleaner than the inland areas. However, only small, isolated portions of the Basin had ten or fewer exceedance days.

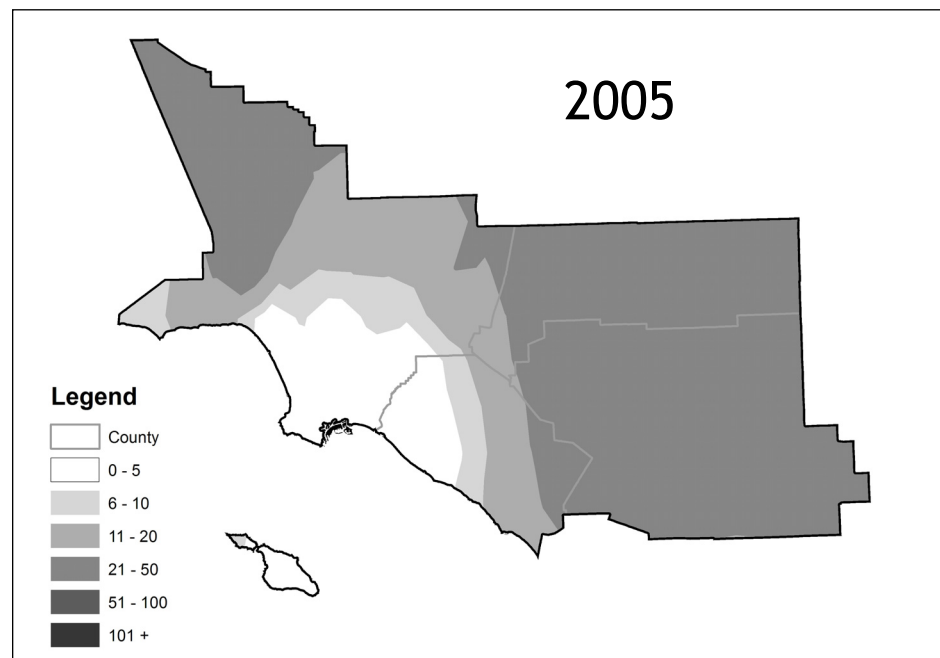


Figure 4-7

The 2005 map shows a dramatic expansion of clean areas, especially those in the range of zero to five exceedance days. These are the areas that currently meet the national standard, and they include about a third of Orange County and a fourth of Los Angeles County, where the majority of the Basin population lives and works. The areas with 6 to 10 and 11 to 20 exceedance days has also grown substantially. Ozone air quality in the inland areas is still worse than in areas nearer the coast. Even so, the areas with the highest number of exceedance days are limited to the northwestern portion of Los Angeles County and portions of Riverside and San Bernardino counties. However, despite the dramatic improvements in these areas, a large percentage of the basinwide population still experiences more than 50 exceedance days per year.

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## South Coast Air Basin Directly Emitted PM<sub>10</sub> Emission Trends and Forecasts

Direct emissions of PM<sub>10</sub> have been increasing in the South Coast Air Basin since 1975. A decrease in emissions would have been observed, if not for growth in emissions from area-wide sources, primarily fugitive dust from paved and unpaved roads, dust from construction and demolition operations, and other sources. The increase in activity of these area-wide sources reflects the increased growth and VMT in the air basin.

PM can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere from the reaction of gaseous precursors such as NO<sub>x</sub>, SO<sub>x</sub>, ROG, and ammonia (secondary PM). The PM<sub>10</sub> emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted PM<sub>10</sub> emissions contribute approximately 65 percent of the ambient PM<sub>10</sub> in the South Coast Air Basin.

| Directly Emitted PM <sub>10</sub> Emission Trends (tons/day, annual average) |            |            |            |            |            |            |            |            |            |            |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Emission Source  | 1975       | 1980       | 1985       | 1990       | 1995       | 2000       | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>   | <b>224</b> | <b>233</b> | <b>254</b> | <b>357</b> | <b>346</b> | <b>348</b> | <b>313</b> | <b>286</b> | <b>296</b> | <b>306</b> |
| <b>Stationary Sources</b>  | 61         | 45         | 33         | 50         | 45         | 50         | 51         | 22         | 23         | 25         |
| <b>Area-wide Sources</b>   | 122        | 145        | 172        | 249        | 255        | 253        | 213        | 219        | 231        | 240        |
| <b>On-Road Mobile</b>  | 18         | 20         | 25         | 32         | 25         | 24         | 27         | 25         | 24         | 24         |
| Gasoline Vehicles  | 10         | 8          | 9          | 11         | 11         | 13         | 16         | 16         | 18         | 20         |
| Diesel Vehicles  | 8          | 12         | 16         | 21         | 13         | 11         | 11         | 8          | 6          | 4          |
| <b>Other Mobile</b>  | 24         | 24         | 23         | 27         | 21         | 21         | 21         | 20         | 18         | 17         |
| Gasoline Fuel  | 2          | 3          | 3          | 4          | 4          | 4          | 4          | 5          | 6          | 7          |
| Diesel Fuel  | 19         | 19         | 18         | 21         | 15         | 15         | 14         | 11         | 8          | 5          |
| Other Fuel   | 2          | 2          | 2          | 3          | 3          | 2          | 3          | 4          | 5          | 5          |

Table 4-6

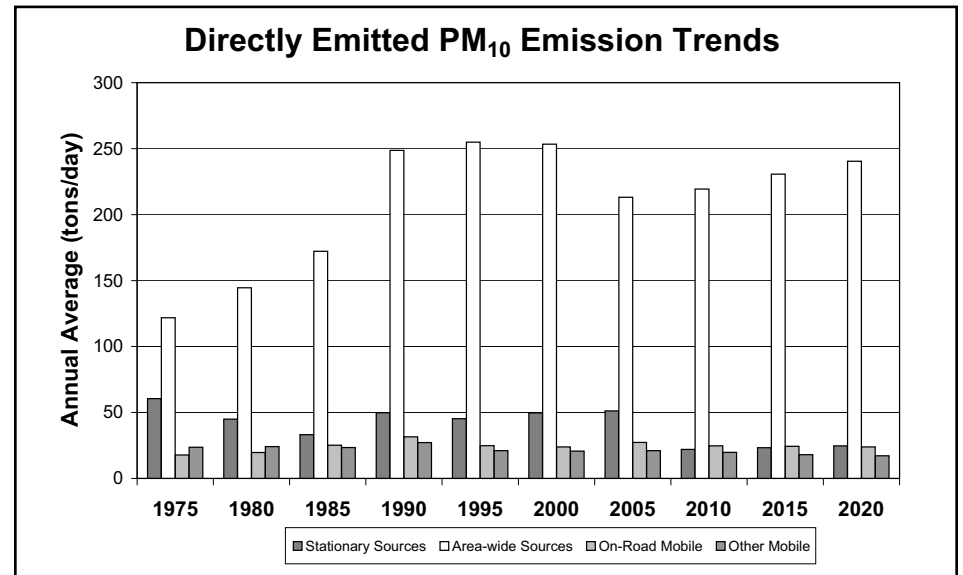


Figure 4-8



## South Coast Air Basin Directly Emitted PM<sub>2.5</sub> Emission Trends and Forecasts

Direct emissions of PM<sub>2.5</sub> have decreased slightly in the South Coast Air Basin since 1975. Stationary source emissions have been decreasing, while area-wide emissions have been increasing. A more significant decrease in emissions would have been observed, if not for growth in emissions from area-wide sources, primarily fugitive dust from paved and unpaved roads, dust from construction and demolition operations, and other sources. The increase in activity of these area-wide sources reflects the increased growth and VMT in the air basin.

PM can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO<sub>x</sub>, SO<sub>x</sub>, ROG, and ammonia. The PM<sub>2.5</sub> emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted PM<sub>2.5</sub> emissions contribute approximately 40 percent of the ambient PM<sub>2.5</sub> in the South Coast Air Basin.

| Directly Emitted PM <sub>2.5</sub> Emission Trends (tons/day, annual average) |            |            |            |            |            |            |            |            |            |            |
|---|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Emission Source   | 1975       | 1980       | 1985       | 1990       | 1995       | 2000       | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>  | <b>126</b> | <b>115</b> | <b>114</b> | <b>131</b> | <b>114</b> | <b>115</b> | <b>112</b> | <b>103</b> | <b>103</b> | <b>105</b> |
| <b>Stationary Sources</b>   | 53         | 35         | 24         | 29         | 22         | 23         | 22         | 14         | 15         | 15         |
| <b>Area-wide Sources</b>  | 38         | 43         | 49         | 52         | 54         | 56         | 51         | 53         | 56         | 58         |
| <b>On-Road Mobile</b>   | 13         | 15         | 20         | 25         | 19         | 18         | 20         | 18         | 17         | 16         |
| Gasoline Vehicles   | 6          | 5          | 5          | 6          | 7          | 8          | 10         | 10         | 12         | 13         |
| Diesel Vehicles   | 7          | 11         | 15         | 19         | 12         | 10         | 10         | 8          | 5          | 4          |
| <b>Other Mobile</b>   | 22         | 22         | 21         | 25         | 19         | 19         | 19         | 18         | 16         | 15         |
| Gasoline Fuel   | 2          | 2          | 2          | 3          | 3          | 3          | 3          | 4          | 4          | 5          |
| Diesel Fuel   | 18         | 18         | 17         | 19         | 14         | 14         | 13         | 10         | 7          | 5          |
| Other Fuel  | 2          | 2          | 2          | 2          | 3          | 2          | 3          | 4          | 5          | 5          |

Table 4-7

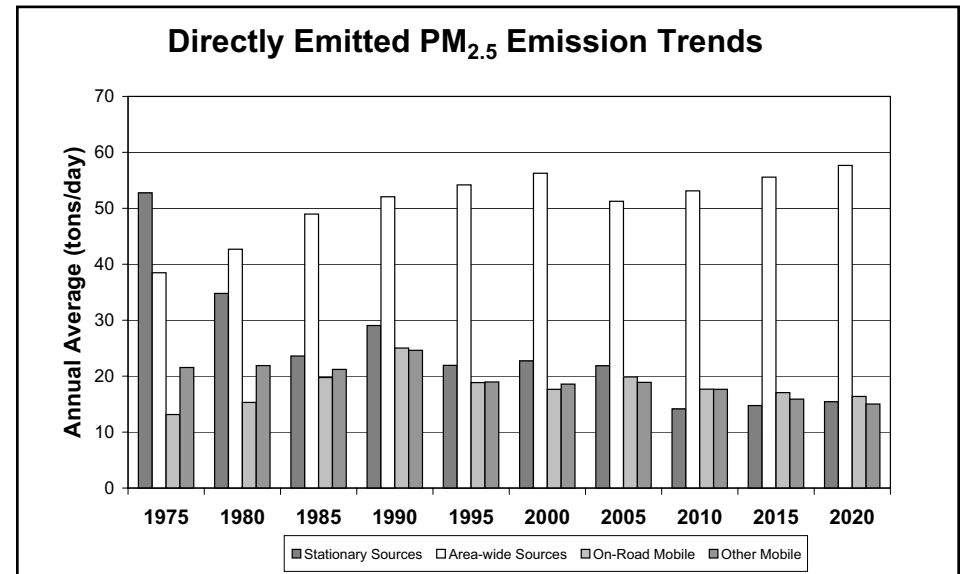


Figure 4-9

## South Coast Air Basin

### PM<sub>10</sub> Air Quality Trend

As with other pollutants, the PM<sub>10</sub> statistics also show overall improvement. During the period for which data are available, the three-year average of the annual average (State) decreased about 33 percent. Although the values in the late 1990's show some variability, this is probably due to meteorology rather than a change in emissions. Despite the overall decrease, ambient concentrations still exceed the State annual and 24-hour PM<sub>10</sub> standards. Similar to the ambient concentrations, the calculated number of days above the 24-hour PM<sub>10</sub> standards has also shown an overall drop. During 1989, there were 305 calculated days above the State standard and 34 calculated days above the national standard. By 2006, there were 241 calculated State standard exceedance days and no national standard exceedance days.

Despite these decreases, PM<sub>10</sub> continues to pose a significant problem in the South Coast Air Basin. While emission controls implemented for ozone will also benefit PM<sub>10</sub>, more controls aimed specifically at reducing PM<sub>10</sub> will be needed to reach attainment.

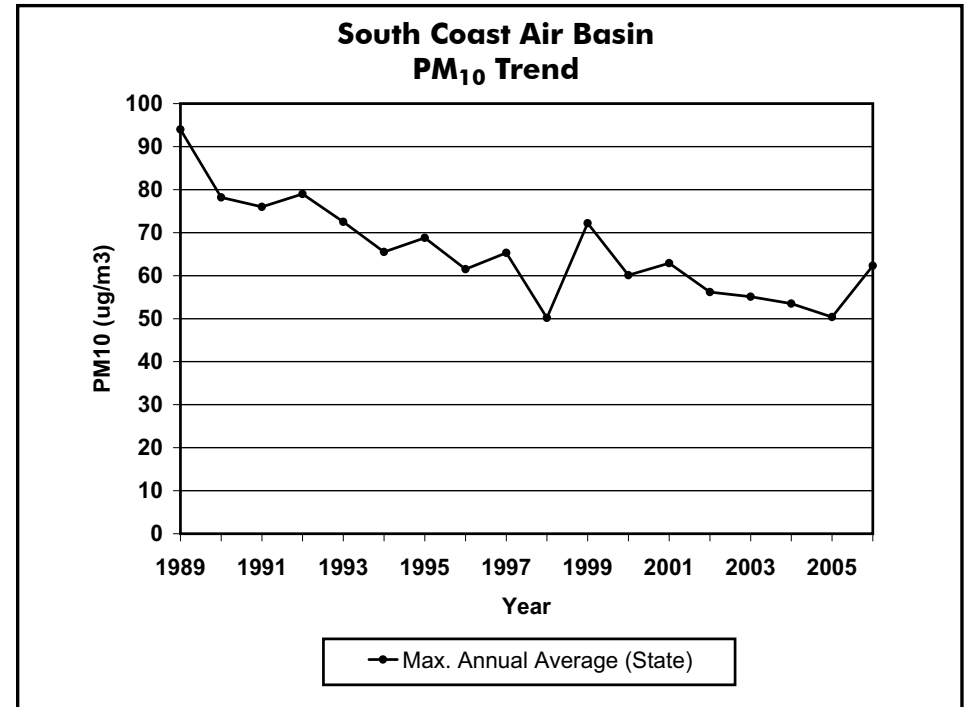


Figure 4-10

| PM <sub>10</sub> (ug/m <sup>3</sup> ) | 1987 | 1988  | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      | 287   | 271  | 475  | 179  | 649  | 231  | 161  | 219  | 162  | 208  | 116  | 183  | 139  | 219  | 126  | 159  | 133  | 131  | 135  |
| Max. 24-Hr. Concentration (Nat)       |      | 287   | 271  | 475  | 179  | 649  | 231  | 210  | 219  | 185  | 208  | 116  | 183  | 139  | 219  | 130  | 164  | 137  | 131  | 142  |
| Max. Annual Average (State)           |      |       | 94.0 | 78.2 | 76.0 | 79.0 | 72.5 | 65.5 | 68.8 | 61.5 | 65.3 | 50.2 | 72.2 | 60.1 | 62.9 | 56.2 | 55.1 | 53.5 | 50.4 | 62.3 |
| Max. Annual Average (Nat)             |      | 103.7 | 93.0 | 78.2 | 76.1 | 79.0 | 72.5 | 65.5 | 68.8 | 62.8 | 65.6 | 58.7 | 72.2 | 59.1 | 63.3 | 58.1 | 55.6 | 54.8 | 51.8 | 64.0 |
| Calc Days Above State 24-Hr Std       |      | 305   | 275  | 250  | 243  | 251  | 244  | 226  | 251  | 257  | 171  | 261  | 248  | 240  | 228  | 201  | 210  | 198  | 241  |      |
| Calc Days Above Nat 24-Hr Std         |      | 34    | 19   | 12   | 12   | 18   | 6    | 25   | 6    | 6    | 0    | 6    | 0    | 6    | 0    | 6    | 0    | 0    | 0    |      |

Table 4-8

## South Coast Air Basin

### PM<sub>2.5</sub> Air Quality Trend

Figure 4-11 shows the annual average PM<sub>2.5</sub> concentrations (national) in the South Coast Air Basin from 1999 through 2006. Overall, concentrations were relatively stable during the first three years. However, over the last five years the annual average concentrations have decreased. The State annual average concentrations also show a declining trend, although the trend looks less pronounced, due to differences in State and national monitoring methods. The 98<sup>th</sup> percentile of 24 hour PM<sub>2.5</sub> concentrations has also declined within the last eight years. The South Coast Air Basin is currently designated as nonattainment for the State and national PM<sub>2.5</sub> standards. Measures adopted as part of the upcoming PM<sub>2.5</sub> SIP, as well as programs to reduce ozone and diesel PM will help in reducing public exposure to PM<sub>2.5</sub> in this region.

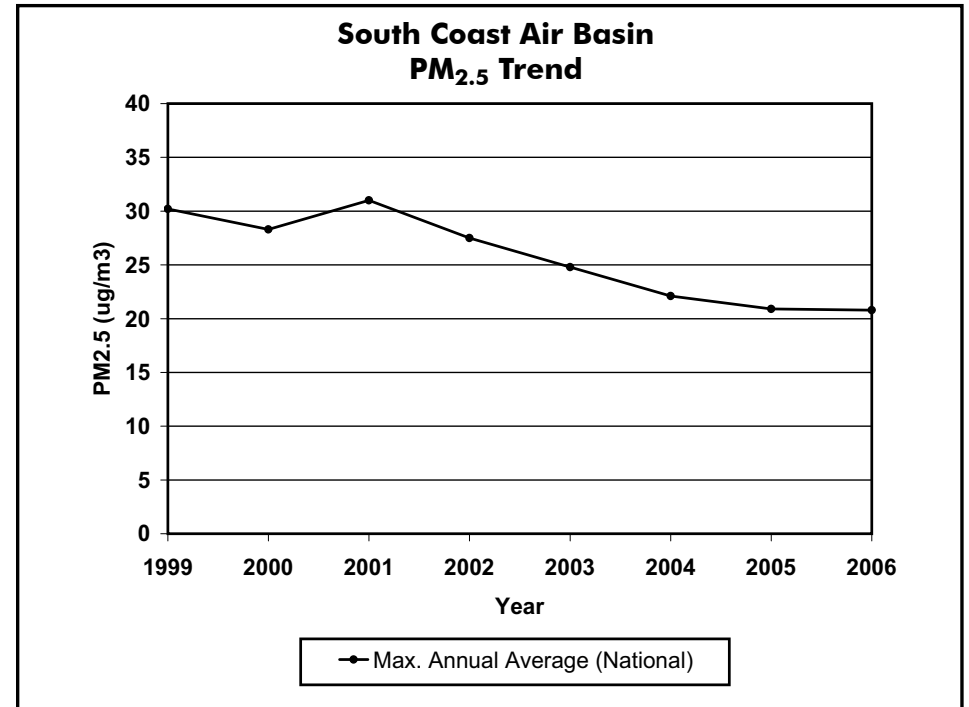


Figure 4-11

| PM <sub>2.5</sub> (ug/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999  | 2000  | 2001  | 2002 | 2003  | 2004 | 2005  | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|------|-------|------|-------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 121.4 | 119.6 | 104.0 | 82.1 | 121.2 | 93.8 | 132.6 | 72.2 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 121.4 | 119.6 | 98.0  | 82.1 | 121.2 | 93.8 | 132.6 | 72.2 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      | 85.6  | 83.0  | 74.3  | 66.3 | 76.6  | 72.4 | 58.3  | 54.4 |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |       | 24.0  | 25.0  | 25.8 | 24.8  | 16.6 | 21.0  | 16.6 |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      | 30.2  | 28.3  | 31.0  | 27.5 | 24.8  | 22.1 | 20.9  | 20.8 |

Table 4-9

## South Coast Air Basin Carbon Monoxide Emission Trends and Forecasts

Emissions of CO have been trending downward since 1975 in the South Coast Air Basin even though motor vehicle miles traveled have increased and industrial activity has grown. On-road motor vehicle controls are primarily responsible for this decline in emissions of CO. Stationary source emissions decreased during the 1970s and 1980s as a result of a decline in the manufacture of carbon black (a material used in the manufacture of tires) and steel in the South Coast Air Basin. CO emissions from other mobile sources have declined since 1990 and are projected to decline through 2010 as more stringent emission standards are adopted.

| CO Emission Trends (tons/day, annual average) |              |              |              |              |             |             |             |             |             |             |
|---|--------------|--------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Emission Source                               | 1975         | 1980         | 1985         | 1990         | 1995        | 2000        | 2005        | 2010        | 2015        | 2020        |
| <b>All Sources</b>                            | <b>16544</b> | <b>13605</b> | <b>13148</b> | <b>10750</b> | <b>7778</b> | <b>5648</b> | <b>4129</b> | <b>2950</b> | <b>2472</b> | <b>2198</b> |
| <b>Stationary Sources</b>                     | 288          | 278          | 66           | 92           | 60          | 45          | 55          | 55          | 55          | 57          |
| <b>Area-wide Sources</b>                      | 85           | 70           | 106          | 70           | 79          | 104         | 109         | 112         | 115         | 119         |
| <b>On-Road Mobile</b>                         | 14958        | 11988        | 11627        | 9103         | 6385        | 4414        | 2979        | 1818        | 1306        | 973         |
| Gasoline Vehicles                             | 14926        | 11940        | 11558        | 9013         | 6307        | 4350        | 2905        | 1756        | 1254        | 929         |
| Diesel Vehicles                               | 33           | 48           | 69           | 90           | 78          | 64          | 73          | 62          | 52          | 43          |
| <b>Other Mobile</b>                           | 1213         | 1269         | 1348         | 1485         | 1254        | 1085        | 985         | 964         | 995         | 1049        |
| Gasoline Fuel                                 | 957          | 1011         | 1090         | 1198         | 987         | 858         | 769         | 740         | 744         | 771         |
| Diesel Fuel                                   | 132          | 135          | 135          | 161          | 137         | 123         | 110         | 118         | 137         | 154         |
| Other Fuel                                    | 123          | 123          | 124          | 126          | 130         | 103         | 107         | 106         | 115         | 124         |

Table 4-10

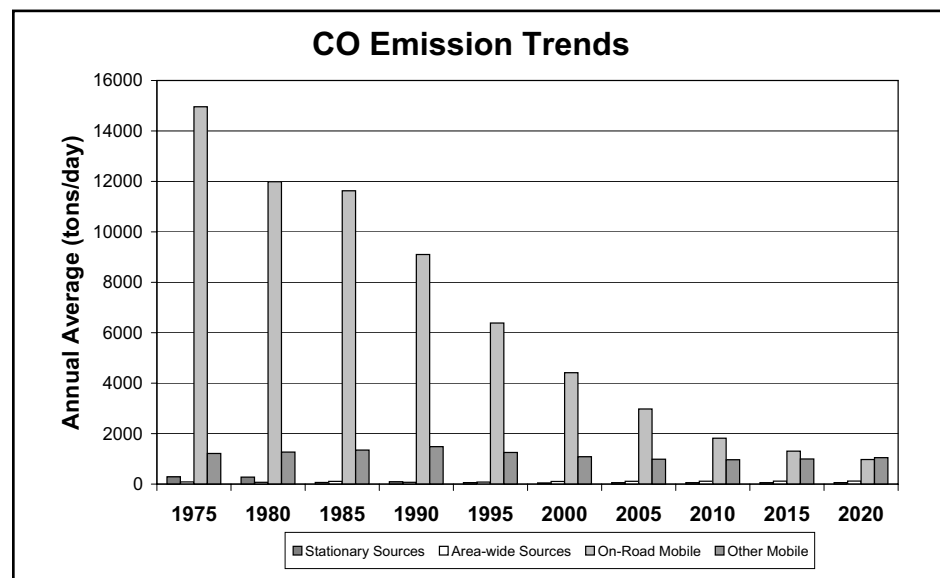


Figure 4-12

## South Coast Air Basin

### Carbon Monoxide Air Quality Trend

Carbon monoxide concentrations in the South Coast Air Basin have decreased markedly — a total decrease of more than 70 percent in the peak 8-hour indicator since 1987. The number of exceedance days has also declined. During 1987 there were 50 days above the State standard and 40 days above the national standard. However, since 2003, there were no exceedance days for either standard.

The entire South Coast Air Basin is now designated as attainment for the national CO standards effective June 11, 2007. Ongoing reductions from motor vehicle control programs should continue the downward trend in ambient CO concentrations.

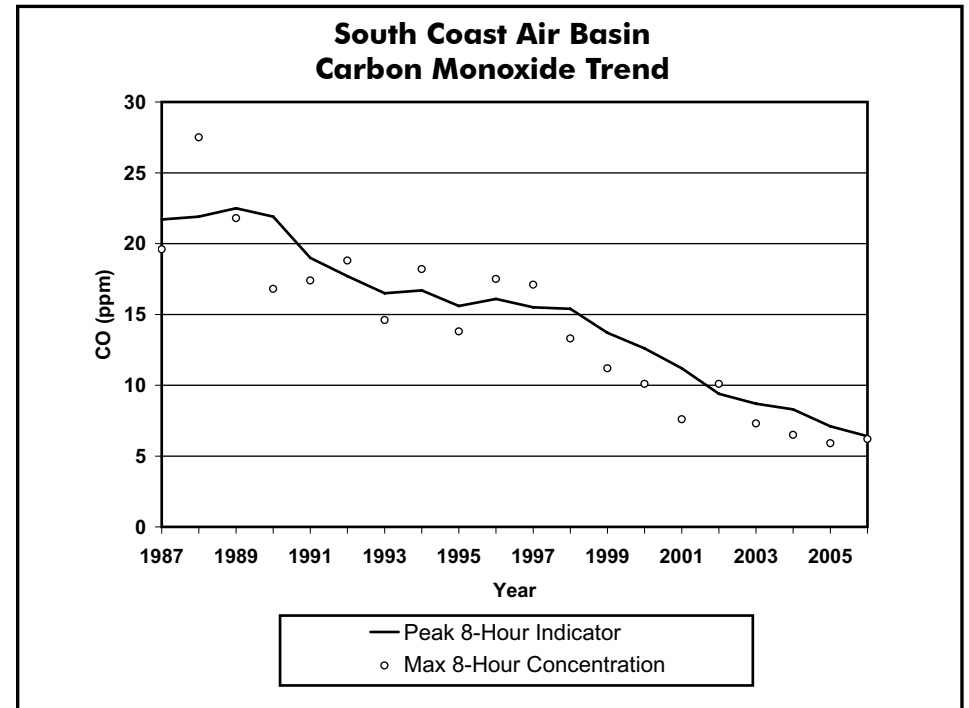


Figure 4-13

| CARBON MONOXIDE (ppm)            | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator (State)     | 21.7 | 21.9 | 22.5 | 21.9 | 19.0 | 17.7 | 16.5 | 16.7 | 15.6 | 16.1 | 15.5 | 15.4 | 13.7 | 12.6 | 11.2 | 9.4  | 8.7  | 8.3  | 7.1  | 6.4  |
| Max. 1-Hr. Concentration         | 26.0 | 32.0 | 31.0 | 24.0 | 30.0 | 28.0 | 21.0 | 24.9 | 16.8 | 22.5 | 19.2 | 17.0 | 19.0 | 13.8 | 11.7 | 15.8 | 12.2 | 10.4 | 7.4  | 8.4  |
| Max. 8-Hr. Concentration (State) | 19.6 | 27.5 | 21.8 | 16.8 | 17.4 | 18.8 | 14.6 | 18.2 | 13.8 | 17.5 | 17.1 | 13.3 | 11.2 | 10.1 | 7.6  | 10.1 | 7.3  | 6.5  | 5.9  | 6.2  |
| Days Above State 8-Hr. Std.      | 50   | 73   | 71   | 50   | 51   | 39   | 29   | 27   | 17   | 26   | 18   | 13   | 11   | 6    | 0    | 1    | 0    | 0    | 0    | 0    |
| Days Above Nat. 8-Hr. Std.       | 40   | 65   | 67   | 42   | 41   | 34   | 19   | 19   | 14   | 19   | 13   | 10   | 7    | 3    | 0    | 1    | 0    | 0    | 0    | 0    |

Table 4-11

## South Coast Air Basin

### Nitrogen Dioxide

#### Oxides of Nitrogen Emission Trends and Forecasts

Oxides of nitrogen (NO<sub>x</sub>) and nitrogen dioxide (NO<sub>2</sub>) emissions in the South Coast Air Basin have been trending downward since 1985. This decline should continue as more stringent motor vehicle and stationary source emission standards are adopted and implemented.

| NO <sub>x</sub> Emission Trends (tons/day, annual average) |             |             |             |             |             |             |            |            |            |            |
|--|-------------|-------------|-------------|-------------|-------------|-------------|------------|------------|------------|------------|
| Emission Source  | 1975        | 1980        | 1985        | 1990        | 1995        | 2000        | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>   | <b>1693</b> | <b>1532</b> | <b>1564</b> | <b>1561</b> | <b>1335</b> | <b>1180</b> | <b>999</b> | <b>755</b> | <b>600</b> | <b>493</b> |
| <b>Stationary Sources</b>                                  | 306         | 265         | 229         | 181         | 130         | 112         | 60         | 55         | 51         | 51         |
| <b>Area-wide Sources</b>                                   | 60          | 54          | 49          | 42          | 35          | 30          | 27         | 23         | 22         | 23         |
| <b>On-Road Mobile</b>                                      | 998         | 880         | 955         | 953         | 831         | 692         | 586        | 400        | 285        | 204        |
| Gasoline Vehicles  | 927         | 777         | 796         | 725         | 616         | 455         | 295        | 178        | 127        | 92         |
| Diesel Vehicles  | 71          | 103         | 159         | 228         | 215         | 237         | 291        | 222        | 158        | 111        |
| <b>Other Mobile</b>  | 329         | 333         | 331         | 385         | 338         | 345         | 327        | 276        | 241        | 216        |
| Gasoline Fuel  | 27          | 27          | 29          | 32          | 28          | 29          | 28         | 24         | 22         | 21         |
| Diesel Fuel  | 268         | 271         | 267         | 314         | 265         | 266         | 241        | 194        | 155        | 123        |
| Other Fuel   | 34          | 35          | 35          | 39          | 45          | 51          | 58         | 58         | 64         | 72         |

Table 4-12

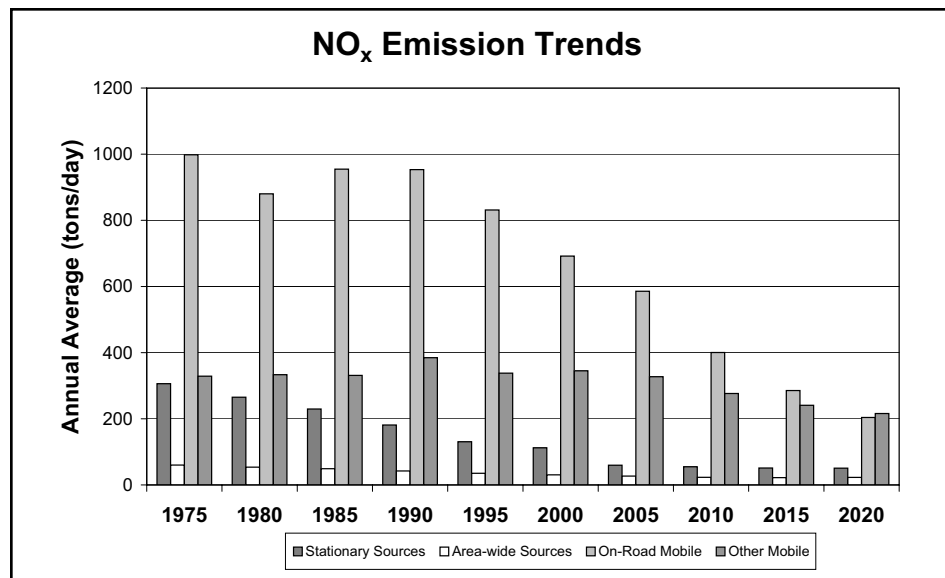


Figure 4-14

## South Coast Air Basin

### Nitrogen Dioxide Air Quality Trend

The South Coast Air Basin is one of only a few areas in California where NO<sub>2</sub> has been a problem. The South Coast Air Basin attained the State 1-hour NO<sub>2</sub> standard in 1994, bringing the entire State into attainment. The national standard has not been exceeded since 1991.

Over the last 20 years, NO<sub>2</sub> values have decreased significantly in the South Coast Air Basin. The peak 1-hour indicator for 2006 was less than half of what it was during 1987.

NO<sub>2</sub> is formed from NO<sub>x</sub> emissions, which also contribute to ozone. As a result, the majority of the future emission control measures will be implemented as part of the overall ozone control strategy. Many of these control measures will target mobile sources, which account for more than three-quarters of California's NO<sub>x</sub> emissions.

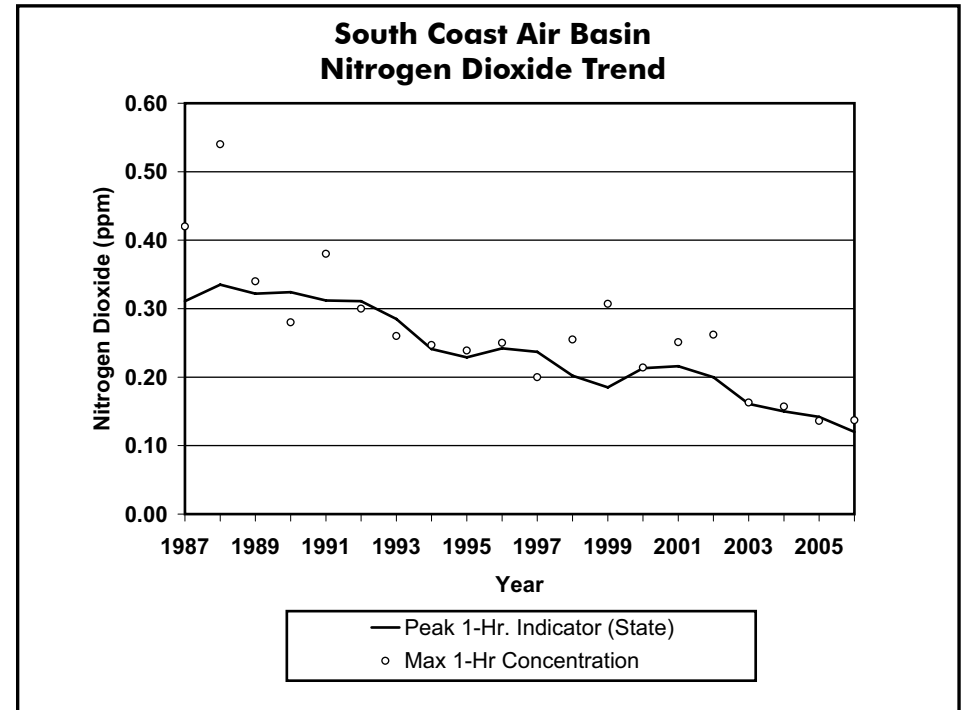


Figure 4-15

| NITROGEN DIOXIDE (ppm)       | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 1-Hr. Indicator (State) | 0.311 | 0.335 | 0.322 | 0.324 | 0.312 | 0.311 | 0.285 | 0.241 | 0.229 | 0.242 | 0.237 | 0.202 | 0.185 | 0.213 | 0.216 | 0.200 | 0.161 | 0.150 | 0.142 | 0.120 |
| Max. 1-Hr. Concentration     | 0.420 | 0.540 | 0.340 | 0.280 | 0.380 | 0.300 | 0.260 | 0.247 | 0.239 | 0.250 | 0.200 | 0.255 | 0.307 | 0.214 | 0.251 | 0.262 | 0.163 | 0.157 | 0.136 | 0.137 |
| Max. Annual Average (Nat)    | 0.055 | 0.061 | 0.057 | 0.055 | 0.055 | 0.051 | 0.050 | 0.050 | 0.046 | 0.042 | 0.043 | 0.043 | 0.051 | 0.044 | 0.041 | 0.040 | 0.035 | 0.034 | 0.031 | 0.031 |
| Max. Annual Average (State)  | 0.055 | 0.061 | 0.057 | 0.056 | 0.055 | 0.051 | 0.050 | 0.050 | 0.046 | 0.042 | 0.043 | 0.043 | 0.050 | 0.044 | 0.041 | 0.040 | 0.036 | 0.033 | 0.031 | 0.031 |

Table 4-13

## *San Francisco Bay Area Air Basin*

### Introduction - Area Description

The San Francisco Bay Area is California's second largest metropolitan area and is the focal point of northern California. The nine county area comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, the southern half of Sonoma County, and the southwestern portion of Solano County. The unifying feature of the area is the Bay itself, which is oriented north-south and covers about 400 square miles of the area's total 5,340 square miles.

About 19 percent of California's population resides in the San Francisco Bay Area, and pollution sources in the region account for about 15 percent of the total statewide criteria pollutant emissions. The climate in the San Francisco Bay Area varies from one location to the next. Along the coast, temperatures are mild year-round. However, as one moves inland, temperatures show larger diurnal and seasonal variations. Overall air quality in the San Francisco Bay Area Air Basin is better than inland areas such as the South Coast, San Joaquin Valley, and Sacramento regions. This is due to a more favorable climate, with cooler temperatures and better ventilation. However, exceedances of the State ozone and PM standards continue to occur in the San Francisco Bay Area Air Basin, and still pose challenges to State and local air pollution control agencies.

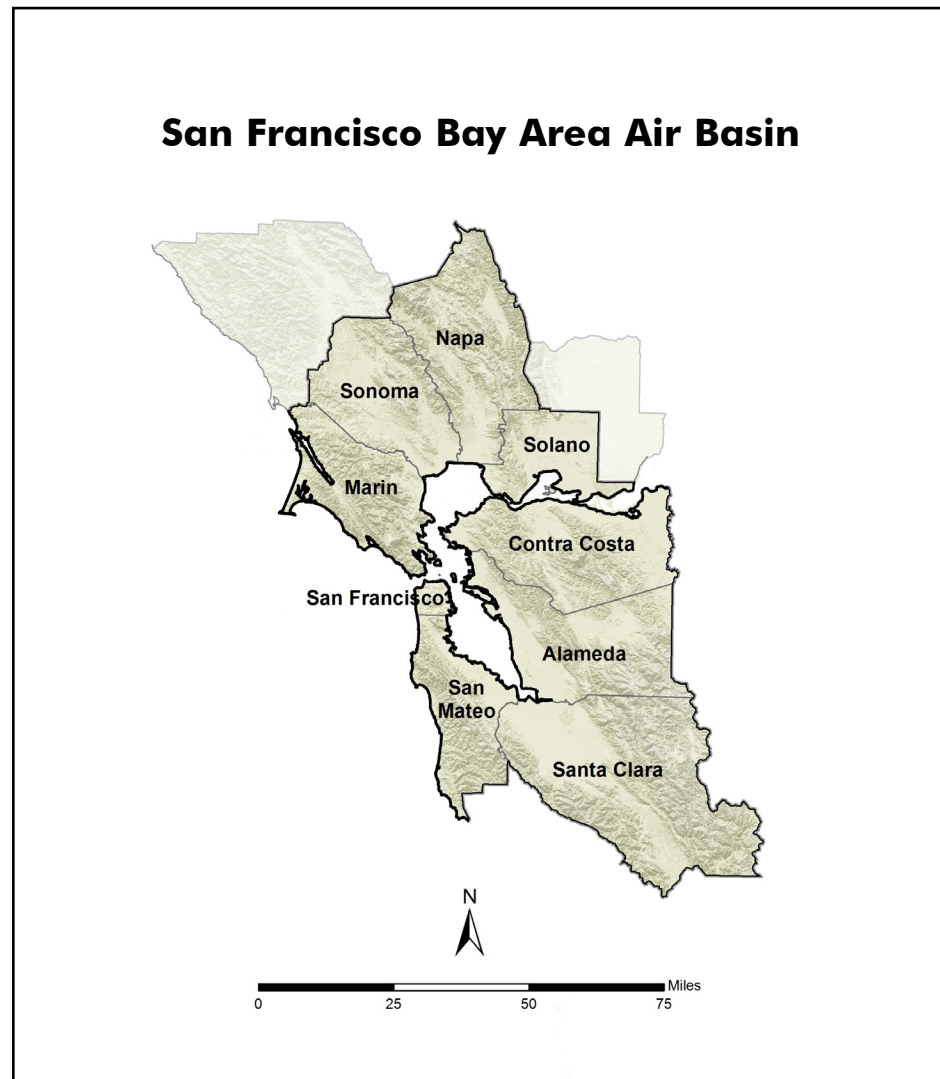


Figure 4-16



## San Francisco Bay Area Air Basin

### Emission Trends and Forecasts

The emission levels for the ozone precursors NO<sub>x</sub> and ROG have been trending downward in the San Francisco Bay Area Air Basin since 1975. CO emissions have also been trending downward since 1975. On-road motor vehicles are the largest contributors to CO, ROG, and NO<sub>x</sub> emissions in the air basin. The implementation of stricter mobile source (both on-road and other) emission standards will continue to decrease vehicle emissions in this air basin. Controls on stationary source solvent evaporation and fugitive emissions will also continue to reduce ROG emissions. The emission levels for SO<sub>x</sub> have decreased since 1975. This is mainly due to the switch from fuel oil to natural gas for electric generation and to reduced fuel sulfur content. The increase in SO<sub>x</sub> emissions from 2005 onward is due to predicted growth in shipping activities. An increase in petroleum refining emissions is also seen.

| San Francisco Bay Area Air Basin Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |      |
|---|------|------|------|------|------|------|------|------|------|------|
| Pollutant   | 1975 | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| NO <sub>x</sub>   | 943  | 918  | 821  | 797  | 720  | 622  | 496  | 423  | 348  | 301  |
| ROG   | 1430 | 1320 | 1047 | 764  | 646  | 525  | 382  | 330  | 302  | 290  |
| PM <sub>10</sub>  | 181  | 182  | 195  | 194  | 189  | 218  | 210  | 220  | 230  | 241  |
| PM <sub>2.5</sub>   | 81   | 79   | 79   | 83   | 81   | 84   | 81   | 83   | 84   | 87   |
| SO <sub>x</sub>   | 210  | 196  | 106  | 109  | 67   | 64   | 58   | 57   | 62   | 68   |
| CO  | 9075 | 8334 | 7011 | 5325 | 3917 | 2961 | 2041 | 1617 | 1363 | 1230 |

Table 4-14

## San Francisco Bay Area Air Basin

### Population and VMT

Compared with the statewide totals, population and the number of vehicle miles traveled each day grew steeply until 1990, having slowed in recent years and are projected to continue at a slower rate in the San Francisco Bay Area Air Basin through 2020. During that 40-year period, the population is projected to increase about 60 percent, from about 5.1 million in 1980 to more than eight million in 2020. During the same period, the daily VMT is projected to increase 109 percent, from 93 million miles per day in 1980 to over 194 million miles per day in 2020. While these growth rates are lower than the growth rates seen in other areas, they still represent substantial increases.

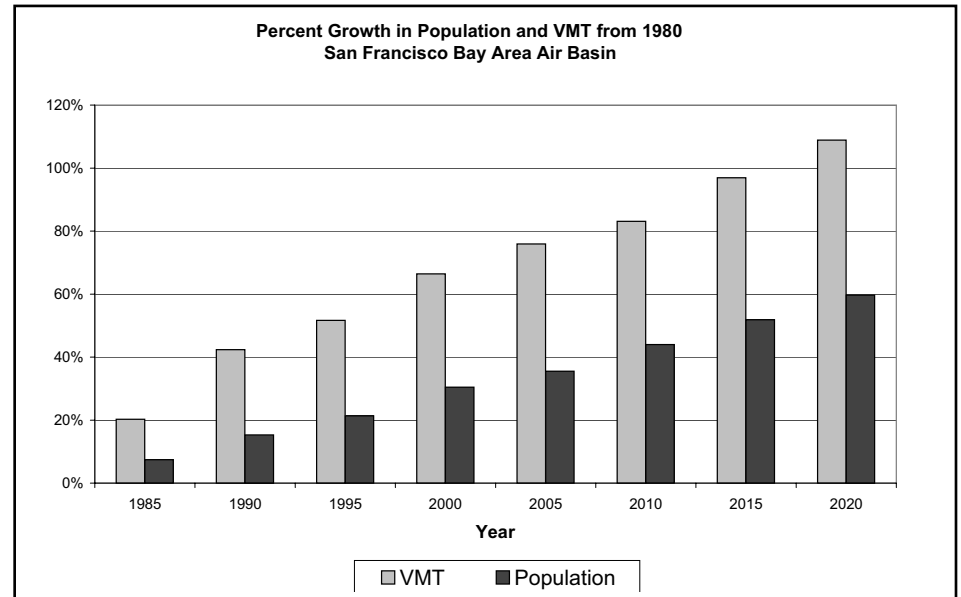


Figure 4-17

| Parameter           | 1980    | 1985    | 1990    | 1995    | 2000    | 2005    | 2010    | 2015    | 2020    |
|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Population          | 5095406 | 5473956 | 5874273 | 6182722 | 6646802 | 6904411 | 7337485 | 7736635 | 8135781 |
| Avg. Daily VMT/1000 | 93109   | 111964  | 132558  | 141224  | 154959  | 163790  | 170505  | 183332  | 194476  |

Table 4-15

## San Francisco Bay Area Air Basin

### Ozone Precursor Emission - Trends and Forecasts

Emissions of ozone precursors have decreased in the San Francisco Bay Area Air Basin since 1975 and are projected to continue declining through 2020. The Bay Area has a significant motor vehicle population, and the implementation of stricter motor vehicle controls has resulted in significant emissions reductions for NO<sub>x</sub> and ROG. Stationary source emissions of ROG have declined over the last 20 years due to new controls for oil refinery fugitive emissions and new rules for control of ROG from various industrial coatings and solvent operations.

| NO <sub>x</sub> Emission Trends (tons/day, annual average) |            |            |            |            |            |            |            |            |            |            |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Emission Source  | 1975       | 1980       | 1985       | 1990       | 1995       | 2000       | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>   | <b>943</b> | <b>918</b> | <b>821</b> | <b>797</b> | <b>720</b> | <b>622</b> | <b>496</b> | <b>423</b> | <b>348</b> | <b>301</b> |
| <b>Stationary Sources</b>                                  | 229        | 205        | 134        | 124        | 107        | 83         | 49         | 49         | 51         | 53         |
| <b>Area-wide Sources</b>                                   | 13         | 14         | 15         | 19         | 20         | 19         | 20         | 20         | 21         | 21         |
| <b>On-Road Mobile</b>                                      | 542        | 540        | 500        | 453        | 385        | 312        | 234        | 181        | 124        | 88         |
| Gasoline Vehicles  | 516        | 493        | 427        | 356        | 296        | 215        | 128        | 86         | 59         | 42         |
| Diesel Vehicles  | 26         | 47         | 73         | 97         | 89         | 98         | 106        | 94         | 64         | 46         |
| <b>Other Mobile</b>  | 159        | 159        | 172        | 201        | 208        | 207        | 194        | 174        | 153        | 138        |
| Gasoline Fuel  | 10         | 10         | 11         | 13         | 14         | 14         | 13         | 11         | 10         | 10         |
| Diesel Fuel  | 123        | 121        | 130        | 154        | 158        | 154        | 142        | 120        | 97         | 77         |
| Other Fuel   | 27         | 28         | 31         | 34         | 37         | 39         | 39         | 43         | 46         | 51         |

Table 4-16

| ROG Emission Trends (tons/day, annual average) |             |             |             |            |            |            |            |            |            |            |
|--|-------------|-------------|-------------|------------|------------|------------|------------|------------|------------|------------|
| Emission Source                                | 1975        | 1980        | 1985        | 1990       | 1995       | 2000       | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>                             | <b>1430</b> | <b>1320</b> | <b>1047</b> | <b>764</b> | <b>646</b> | <b>525</b> | <b>382</b> | <b>330</b> | <b>302</b> | <b>290</b> |
| <b>Stationary Sources</b>                      | 294         | 255         | 164         | 113        | 121        | 111        | 73         | 75         | 79         | 82         |
| <b>Area-wide Sources</b>                       | 111         | 110         | 107         | 111        | 97         | 93         | 88         | 90         | 93         | 96         |
| <b>On-Road Mobile</b>                          | 915         | 841         | 654         | 425        | 319        | 223        | 139        | 97         | 72         | 57         |
| Gasoline Vehicles                              | 912         | 836         | 647         | 417        | 314        | 218        | 133        | 92         | 68         | 54         |
| Diesel Vehicles                                | 3           | 5           | 7           | 8          | 5          | 5          | 5          | 5          | 4          | 3          |
| <b>Other Mobile</b>                            | 111         | 114         | 122         | 114        | 108        | 98         | 83         | 67         | 59         | 56         |
| Gasoline Fuel                                  | 83          | 85          | 90          | 79         | 74         | 67         | 56         | 44         | 38         | 36         |
| Diesel Fuel                                    | 18          | 17          | 19          | 22         | 24         | 22         | 20         | 16         | 12         | 10         |
| Other Fuel                                     | 11          | 12          | 13          | 13         | 11         | 9          | 7          | 8          | 9          | 10         |

Table 4-17

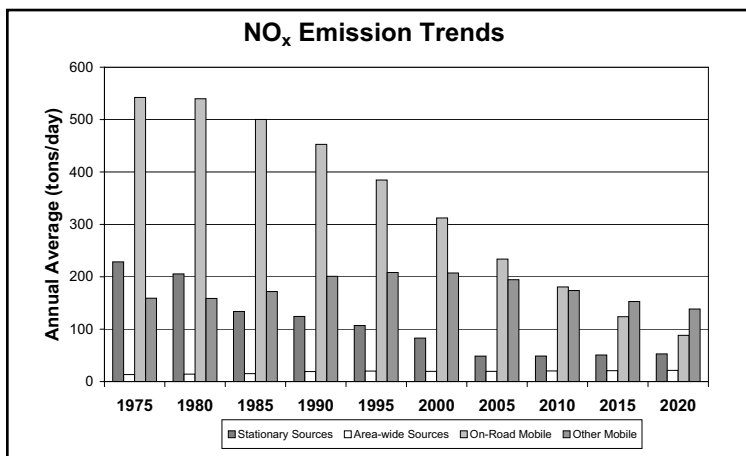


Figure 4-18

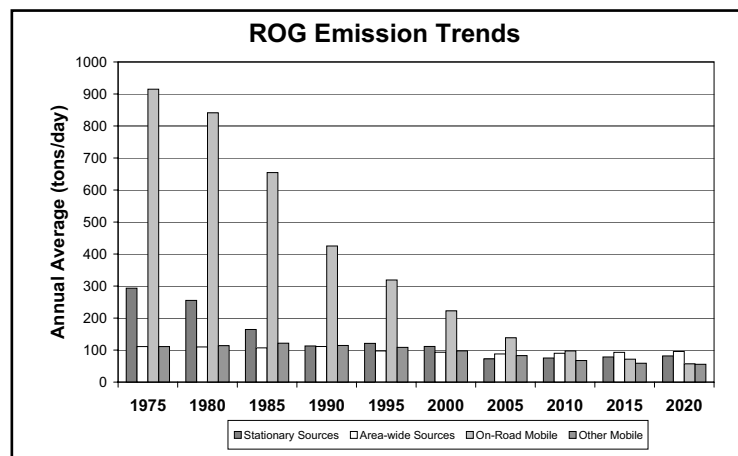


Figure 4-19

# San Francisco Bay Area Air Basin

## Ozone Air Quality Trend

Ozone concentrations in the San Francisco Bay Area are much lower than in the South Coast and San Joaquin Valley Air Basins. The peak 1-hour and 8-hour indicators have declined by nearly 19 percent during the last 20 years. The number of days when State and national standards are exceeded show a similar trend. Another indication of progress is that the Bay Area now qualifies for attainment of the currently effective national 8-hour ozone standard, although they still exceed the more stringent State 1-hour and 8-hour standards. Although the long-term trends indicate improving air quality, since 1994 the peak indicators have been relatively flat. However, it is not yet clear whether these data represent a significant change in the overall trend.

Meteorology can cause ozone and ozone precursor emissions to be transported from one air basin to another. The ARB has identified the San Francisco Bay Area Air Basin as a transport contributor to the following six areas: the Sacramento region, the Mountain Counties Air Basin, the North Central Coast Air Basin, the North Coast Air Basin, the San Joaquin Valley Air Basin, and the South Central Coast Air Basin. The amount of transport impact varies from day to day, depending in large part on meteorology. To the extent that the Bay Area continues to reduce ozone precursor emissions, the transport impact on downwind areas should also decrease.

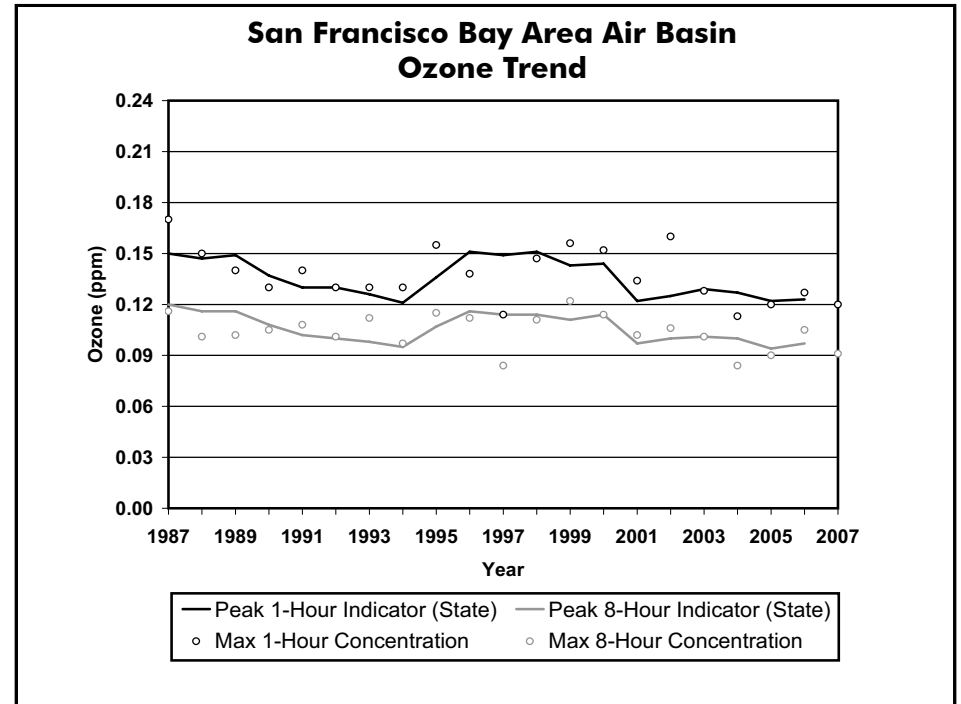


Figure 4-20

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  | 2007 <sup>1</sup> |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------------|
| Peak 8-Hour Indicator (State)         | 0.120 | 0.116 | 0.116 | 0.108 | 0.102 | 0.100 | 0.098 | 0.095 | 0.107 | 0.116 | 0.114 | 0.114 | 0.111 | 0.114 | 0.097 | 0.100 | 0.101 | 0.100 | 0.094 | 0.097 |                   |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.092 | 0.092 | 0.097 | 0.088 | 0.084 | 0.082 | 0.081 | 0.082 | 0.087 | 0.093 | 0.090 | 0.089 | 0.086 | 0.087 | 0.082 | 0.082 | 0.086 | 0.084 | 0.078 | 0.080 |                   |
| Peak 1-Hour Indicator (State)         | 0.150 | 0.147 | 0.149 | 0.137 | 0.130 | 0.130 | 0.126 | 0.121 | 0.136 | 0.151 | 0.149 | 0.151 | 0.143 | 0.144 | 0.122 | 0.125 | 0.129 | 0.127 | 0.122 | 0.123 |                   |
| 4th High 1-Hr. in 3 Yrs <sup>2</sup>  | 0.150 | 0.140 | 0.140 | 0.130 | 0.130 | 0.130 | 0.120 | 0.121 | 0.138 | 0.138 | 0.138 | 0.138 | 0.139 | 0.139 | 0.126 | 0.124 | 0.123 | 0.123 | 0.113 | 0.118 |                   |
| Max. 8-Hr. Concentration              | 0.116 | 0.101 | 0.102 | 0.105 | 0.108 | 0.101 | 0.112 | 0.097 | 0.115 | 0.112 | 0.084 | 0.111 | 0.122 | 0.114 | 0.102 | 0.106 | 0.101 | 0.084 | 0.090 | 0.105 | 0.091             |
| Maximum 1-Hr. Concentration           | 0.170 | 0.150 | 0.140 | 0.130 | 0.140 | 0.130 | 0.130 | 0.130 | 0.155 | 0.138 | 0.114 | 0.147 | 0.156 | 0.152 | 0.134 | 0.160 | 0.128 | 0.113 | 0.120 | 0.127 | 0.120             |
| Days Above State 8-Hr. Std.           | 57    | 44    | 34    | 17    | 26    | 30    | 23    | 20    | 30    | 37    | 10    | 29    | 28    | 17    | 21    | 19    | 20    | 13    | 9     | 22    | 9                 |
| Days Above Nat. 8-Hr. Std.            | 29    | 20    | 13    | 7     | 6     | 6     | 5     | 4     | 18    | 14    | 0     | 16    | 9     | 4     | 7     | 7     | 7     | 0     | 1     | 12    | 1                 |
| Days Above State 1-Hr. Std.           | 46    | 41    | 22    | 14    | 23    | 23    | 19    | 13    | 28    | 34    | 8     | 29    | 20    | 12    | 15    | 16    | 19    | 7     | 9     | 18    | 4                 |

<sup>1</sup> Preliminary data for 2007 are shown here, however they are subject to change. 2006 is the last year for which complete and approved data is available, thus calculated annual statistics are not included for 2007.

<sup>2</sup> The national 1-Hour standard has been revoked. Historical 1-Hour data are provided for reference.

Table 4-18

## San Francisco Bay Area Air Basin Directly Emitted PM<sub>10</sub> Emission Trends and Forecasts

Direct emissions of PM<sub>10</sub> increased in the San Francisco Bay Area Air Basin between 1975 and 2005 and are projected to continue increasing through 2020. This increase is due to growth in emissions from area-wide sources, primarily fugitive dust sources. Emissions of directly emitted PM<sub>10</sub> from diesel motor vehicles have been decreasing since 1990 even though population and VMT are growing, due to adoption of more stringent emission standards.

PM can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO<sub>x</sub>, SO<sub>x</sub>, ROG, and ammonia. The PM<sub>10</sub> emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted PM<sub>10</sub> emissions contribute approximately 75 percent of the ambient PM<sub>10</sub> in the San Francisco Bay Area Air Basin.

| Directly Emitted PM <sub>10</sub> Emission Trends (tons/day, annual average) |            |            |            |            |            |            |            |            |            |            |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Emission Source  | 1975       | 1980       | 1985       | 1990       | 1995       | 2000       | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>   | <b>181</b> | <b>182</b> | <b>195</b> | <b>194</b> | <b>189</b> | <b>218</b> | <b>210</b> | <b>220</b> | <b>230</b> | <b>241</b> |
| <b>Stationary Sources</b>  | 38         | 26         | 23         | 20         | 21         | 19         | 15         | 16         | 17         | 17         |
| <b>Area-wide Sources</b>   | 123        | 134        | 148        | 146        | 145        | 177        | 174        | 184        | 195        | 205        |
| <b>On-Road Mobile</b>  | 7          | 9          | 11         | 12         | 10         | 10         | 10         | 10         | 10         | 10         |
| Gasoline Vehicles  | 5          | 5          | 5          | 5          | 5          | 6          | 6          | 7          | 8          | 8          |
| Diesel Vehicles  | 2          | 4          | 6          | 8          | 5          | 4          | 3          | 3          | 2          | 1          |
| <b>Other Mobile</b>  | 13         | 13         | 14         | 16         | 13         | 12         | 11         | 10         | 9          | 8          |
| Gasoline Fuel  | 1          | 1          | 1          | 2          | 2          | 2          | 2          | 2          | 2          | 3          |
| Diesel Fuel  | 8          | 8          | 9          | 11         | 9          | 9          | 8          | 7          | 5          | 3          |
| Other Fuel   | 3          | 3          | 4          | 4          | 3          | 2          | 1          | 2          | 2          | 2          |

Table 4-19

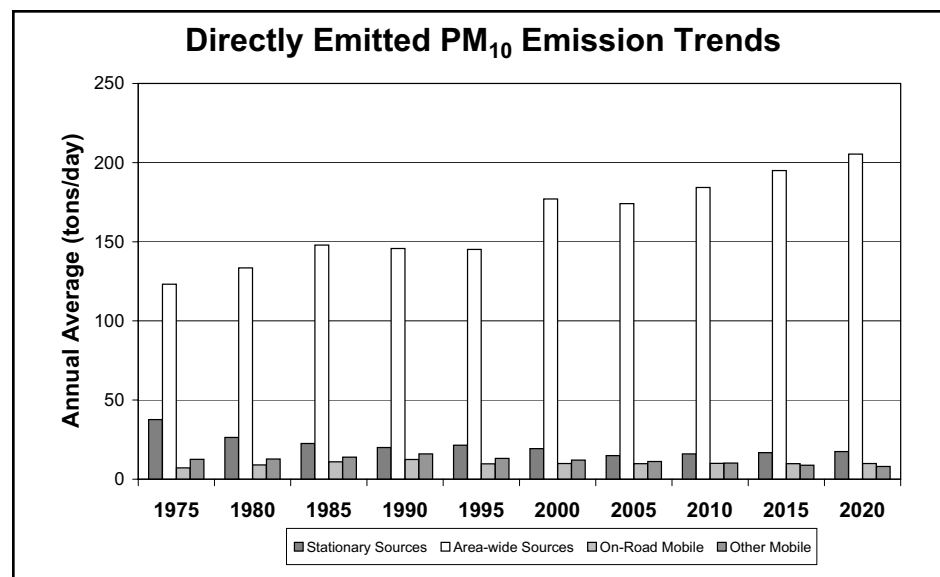


Figure 4-21

# San Francisco Bay Area Air Basin

## Directly Emitted PM<sub>2.5</sub> Emission Trends and Forecasts

Direct emissions of PM<sub>2.5</sub> remained relatively constant in the San Francisco Bay Area Air Basin between 1975 and 2005 and are projected to increase slightly through 2020. Emissions from stationary sources declined slightly, while area-wide sources increased. This increase in area-wide sources is primarily due to growth in fugitive dust sources. Emissions of directly emitted PM<sub>2.5</sub> from diesel motor vehicles have been decreasing since 1990 even though population and VMT are growing, due to adoption of more stringent emission standards.

PM can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO<sub>x</sub>, SO<sub>x</sub>, ROG, and ammonia. The PM<sub>2.5</sub> emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted PM<sub>2.5</sub> emissions contribute approximately 60 percent of the ambient PM<sub>2.5</sub> in the San Francisco Bay Area Air Basin.

| Directly Emitted PM <sub>2.5</sub> Emission Trends (tons/day, annual average) |      |      |      |      |      |      |      |      |      |      |
|---|------|------|------|------|------|------|------|------|------|------|
| Emission Source   | 1975 | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| <b>All Sources</b>  | 81   | 79   | 79   | 83   | 81   | 84   | 81   | 83   | 84   | 87   |
| <b>Stationary Sources</b>   | 26   | 20   | 14   | 12   | 15   | 14   | 11   | 12   | 13   | 13   |
| <b>Area-wide Sources</b>  | 38   | 41   | 44   | 47   | 47   | 51   | 53   | 55   | 57   | 60   |
| <b>On-Road Mobile</b>   | 5    | 7    | 8    | 10   | 7    | 7    | 7    | 7    | 7    | 7    |
| Gasoline Vehicles   | 3    | 3    | 2    | 3    | 3    | 3    | 4    | 4    | 5    | 5    |
| Diesel Vehicles   | 2    | 4    | 6    | 7    | 4    | 4    | 3    | 3    | 2    | 1    |
| <b>Other Mobile</b>   | 12   | 12   | 13   | 15   | 12   | 11   | 10   | 9    | 8    | 7    |
| Gasoline Fuel   | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 2    | 2    | 2    |
| Diesel Fuel   | 8    | 8    | 8    | 10   | 8    | 8    | 7    | 6    | 4    | 3    |
| Other Fuel  | 3    | 3    | 3    | 4    | 3    | 2    | 1    | 2    | 2    | 2    |

Table 4-20

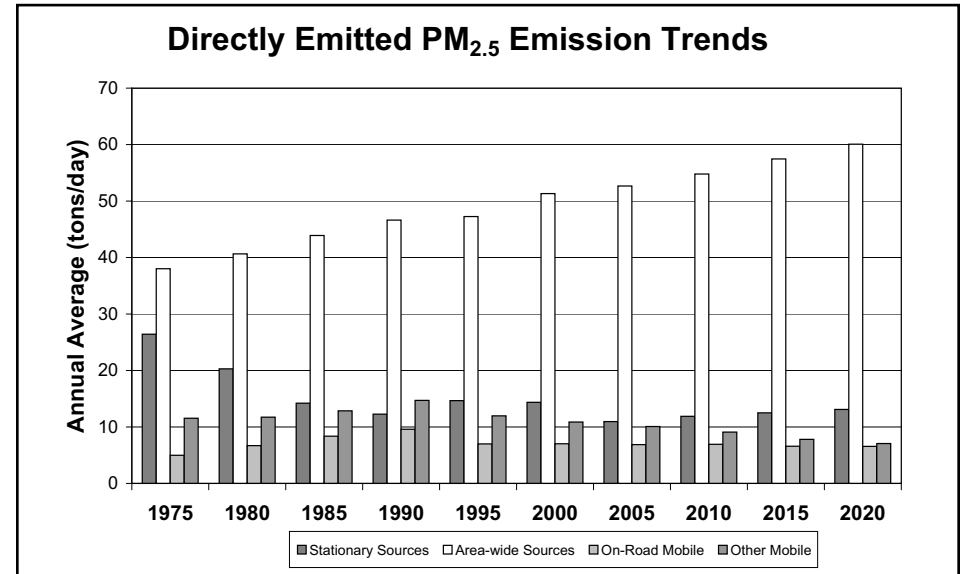


Figure 4-22

## San Francisco Bay Area Air Basin

### PM<sub>10</sub> Air Quality Trend

As with other pollutants, the PM<sub>10</sub> statistics also show overall improvement. During the period for which data are available, the three-year average of the annual average (State) decreased by 23 percent.

Calculated exceedance days for the State 24-hour standard dropped from a high of 76 days during 1989 to 23 days during 2005 and then rose to 77 in 2006. The national 24-hour standard was last exceeded in 1991. Because many of the same sources contribute to both ozone and PM<sub>10</sub>, future ozone precursor emission controls should help ensure continued PM<sub>10</sub> improvements.

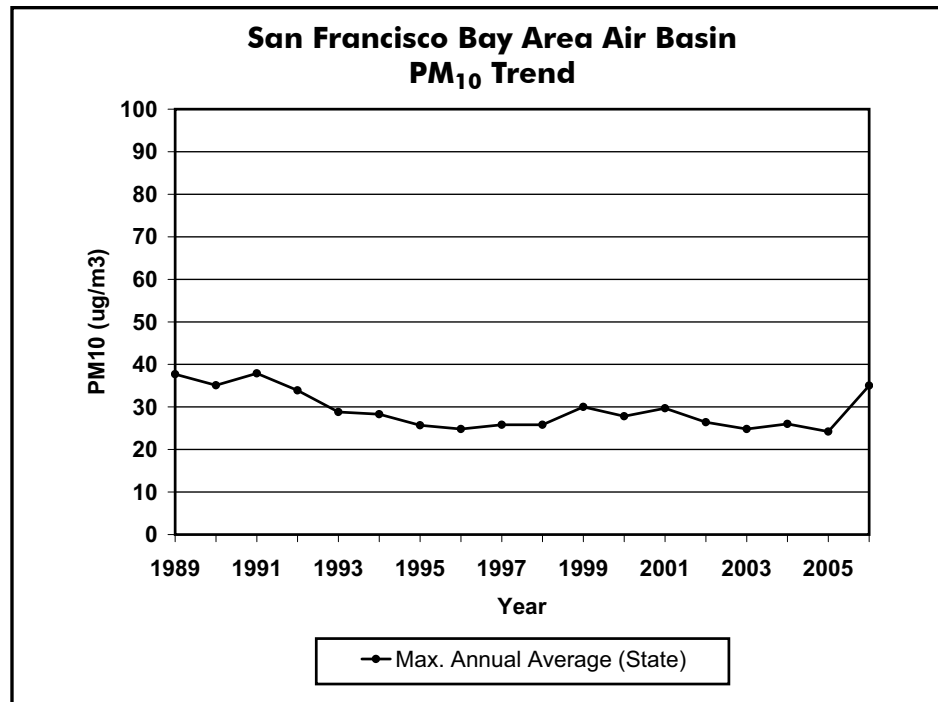


Figure 4-23

| PM <sub>10</sub> (ug/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      | 146  | 147  | 165  | 155  | 112  | 93   | 97   | 74   | 76   | 85   | 100  | 117  | 80   | 114  | 84   | 60   | 65   | 81   | 106  |
| Max. 24-Hr. Concentration (Nat)       |      | 146  | 150  | 165  | 155  | 112  | 101  | 97   | 75   | 77   | 95   | 92   | 119  | 76   | 109  | 80   | 58   | 63   | 78   | 104  |
| Max. Annual Average (State)           |      |      | 37.7 | 35.1 | 37.9 | 33.9 | 28.8 | 28.3 | 25.7 | 24.8 | 25.8 | 25.8 | 30.0 | 27.8 | 29.7 | 26.4 | 24.8 | 26.0 | 24.2 | 35.0 |
| Max. Annual Average (Nat)             |      | 33.8 | 40.8 | 35.2 | 38.3 | 33.7 | 28.8 | 28.6 | 28.4 | 24.9 | 25.8 | 25.1 | 28.7 | 26.8 | 28.9 | 30.6 | 24.2 | 25.3 | 23.5 | 34.1 |
| Calc Days Above State 24-Hr Std       |      |      | 76   | 70   | 91   | 53   | 37   | 36   | 24   | 12   | 18   | 18   | 37   | 42   | 48   | 24   | 18   | 25   | 23   | 77   |
| Calc Days Above Nat 24-Hr Std         |      |      | 0    | 6    | 3    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

Table 4-21

## San Francisco Bay Area Air Basin

### PM<sub>2.5</sub> Air Quality Trend

Annual average PM<sub>2.5</sub> concentrations (national) in the San Francisco Bay Area decreased in the last eight years. The State annual average concentration trend however, remained relatively constant during the last seven years, due to differences in State and national monitoring methods. The 98<sup>th</sup> percentile of 24-hour PM<sub>2.5</sub> concentrations also declined during the last eight-year period. Similar to PM<sub>10</sub>, year-to-year changes in meteorology can mask the impacts of emission control programs. Measures adopted as part of SB 656, as well as programs to reduce ozone and diesel PM will help in reducing public exposure to PM<sub>2.5</sub> in this region.

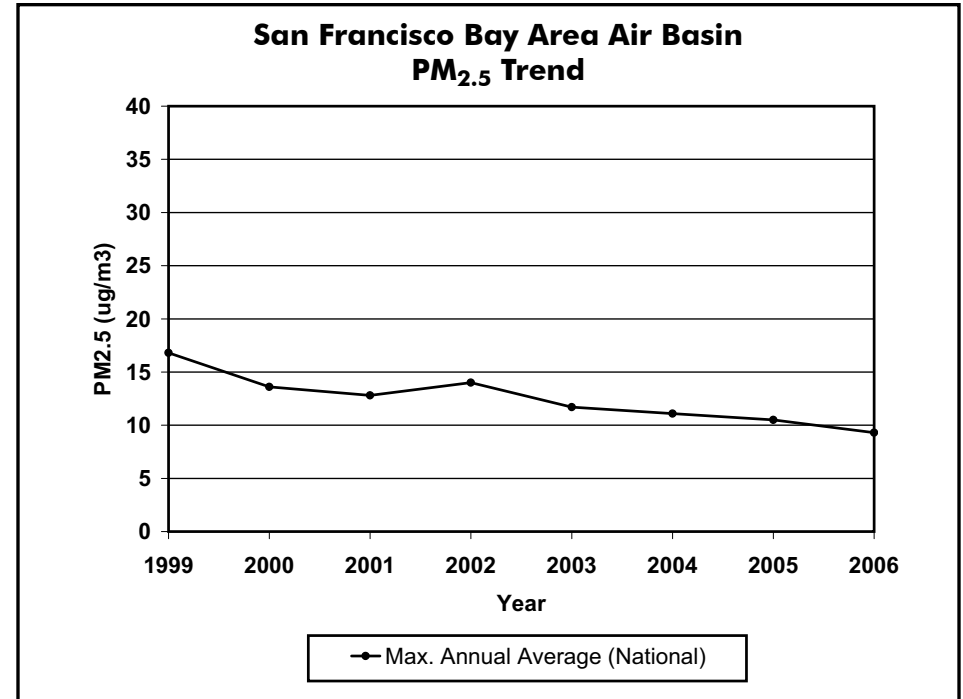


Figure 4-24

| PM <sub>2.5</sub> (ug/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001  | 2002 | 2003 | 2004 | 2005 | 2006 |      |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 90.5 | 67.2 | 107.5 | 84.5 | 56.1 | 73.7 | 55.6 | 75.3 |      |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 90.5 | 67.2 | 107.5 | 76.7 | 56.1 | 73.7 | 54.6 | 75.3 |      |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      | 63.2 | 55.3 | 57.1  | 57.5 | 37.4 | 42.7 | 41.2 | 42.8 |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 11.6  | 12.9 | 14.0 | 11.7 | 12.7 | 11.8 | 12.4 |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      | 16.8 | 13.6 | 12.8  | 14.0 | 11.7 | 11.1 | 10.5 | 9.3  |      |

Table 4-22

## San Francisco Bay Area Air Basin Carbon Monoxide Emission Trends and Forecasts

Emissions of CO have been declining in the San Francisco Bay Area Air Basin since 1975. Motor vehicles and other mobile sources are the largest sources of CO emissions in the air basin. Emissions from motor vehicles have been declining, with the introduction of new automotive emission controls, despite increases in VMT. Commercial and industrial fuel combustion and electric generation contribute a significant portion of the stationary source CO emissions. Area-wide CO emissions are primarily from residential fuel combustion (including wood), waste burning, and fires.

| CO Emission Trends (tons/day, annual average) |             |             |             |             |             |             |             |             |             |             |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Emission Source                               | 1975        | 1980        | 1985        | 1990        | 1995        | 2000        | 2005        | 2010        | 2015        | 2020        |
| <b>All Sources</b>                            | <b>9075</b> | <b>8334</b> | <b>7011</b> | <b>5325</b> | <b>3917</b> | <b>2961</b> | <b>2041</b> | <b>1617</b> | <b>1363</b> | <b>1230</b> |
| <b>Stationary Sources</b>                     | 46          | 55          | 73          | 65          | 62          | 50          | 38          | 38          | 40          | 42          |
| <b>Area-wide Sources</b>                      | 126         | 135         | 143         | 160         | 163         | 169         | 178         | 182         | 188         | 194         |
| <b>On-Road Mobile</b>                         | 8391        | 7615        | 6209        | 4446        | 3077        | 2203        | 1338        | 914         | 631         | 460         |
| Gasoline Vehicles                             | 8381        | 7597        | 6182        | 4414        | 3050        | 2177        | 1312        | 889         | 611         | 444         |
| Diesel Vehicles                               | 9           | 18          | 27          | 32          | 27          | 26          | 25          | 25          | 20          | 16          |
| <b>Other Mobile</b>                           | 511         | 529         | 586         | 654         | 615         | 539         | 488         | 484         | 504         | 533         |
| Gasoline Fuel                                 | 401         | 416         | 463         | 512         | 472         | 410         | 364         | 351         | 359         | 376         |
| Diesel Fuel                                   | 57          | 57          | 64          | 79          | 82          | 71          | 62          | 62          | 67          | 73          |
| Other Fuel                                    | 53          | 56          | 59          | 62          | 62          | 59          | 61          | 70          | 77          | 85          |

Table 4-23

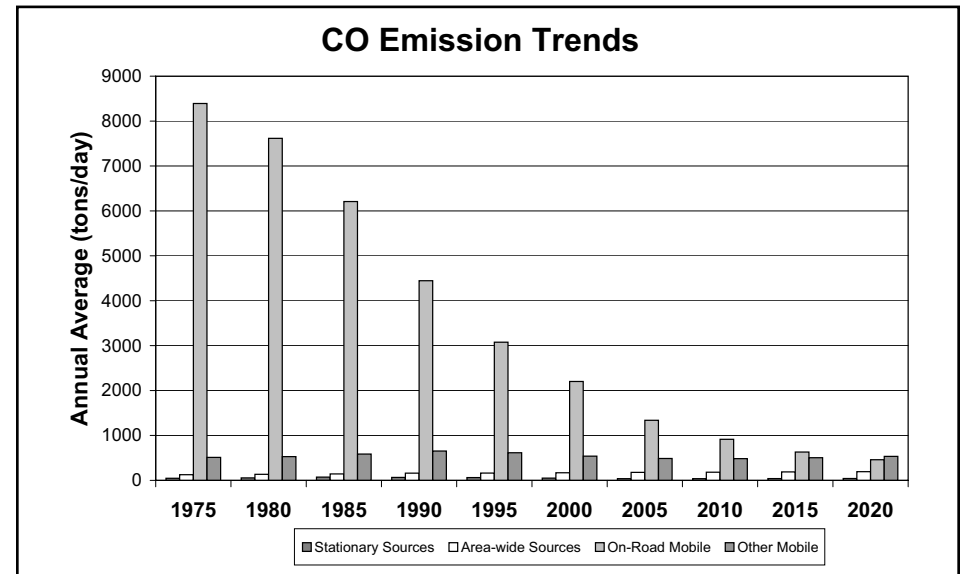


Figure 4-25



# San Francisco Bay Area Air Basin

## Carbon Monoxide Air Quality Trend

Similar to other areas of the State, CO concentrations in the San Francisco Bay Area Air Basin have declined substantially over the last 20 years. The peak 8-hour indicator value during 2006 is 26 percent of what it was during 1987 and is now well below the level of the standards. In fact, neither the State nor the national standards have been exceeded in this area since 1991.

Much of the decline in ambient CO concentrations can be attributed to the introduction of clean fuels and newer, cleaner motor vehicles. The San Francisco Bay Area Air Basin is currently designated as attainment for both the State and national CO standards. Based on emission projections, the area is expected to maintain its attainment status in the coming years.

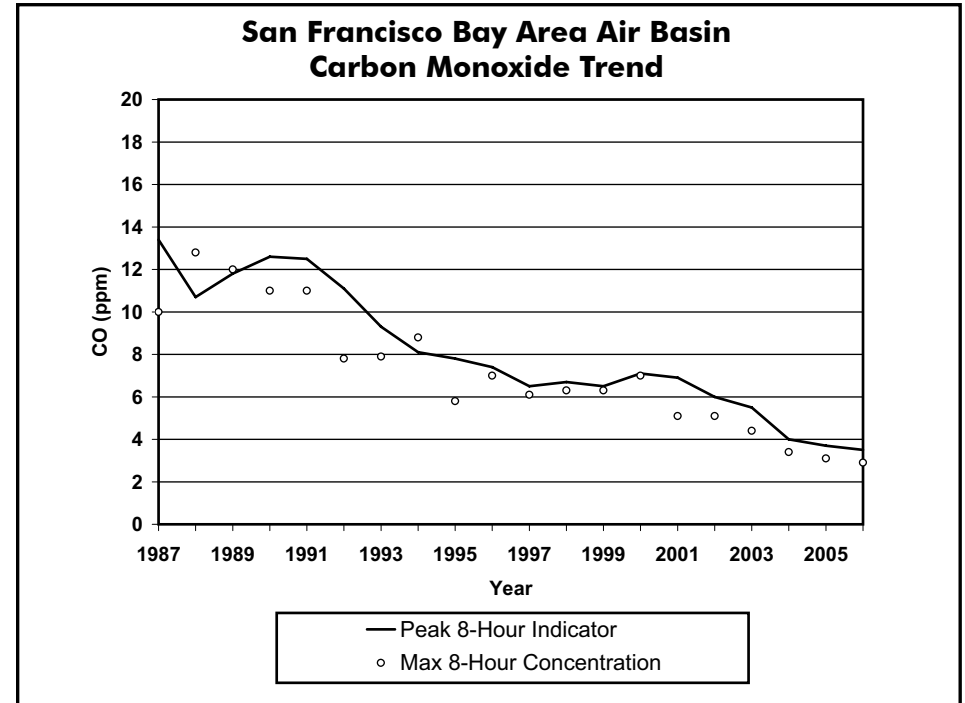


Figure 4-26

| CARBON MONOXIDE (ppm)            | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator (State)     | 13.4 | 10.7 | 11.8 | 12.6 | 12.5 | 11.1 | 9.3  | 8.1  | 7.8  | 7.4  | 6.5  | 6.7  | 6.5  | 7.1  | 6.9  | 6.0  | 5.5  | 4.0  | 3.7  | 3.5  |
| Max. 1-Hr. Concentration         | 17.0 | 15.0 | 19.0 | 18.0 | 15.0 | 12.0 | 14.0 | 12.0 | 10.1 | 8.8  | 10.7 | 8.7  | 9.0  | 9.8  | 7.6  | 7.7  | 8.6  | 4.8  | 4.5  | 5.5  |
| Max. 8-Hr. Concentration (State) | 10.0 | 12.8 | 12.0 | 11.0 | 11.0 | 7.8  | 7.9  | 8.8  | 5.8  | 7.0  | 6.1  | 6.3  | 6.3  | 7.0  | 5.1  | 5.1  | 4.4  | 3.4  | 3.1  | 2.9  |
| Days Above State 8-Hr. Std.      | 2    | 4    | 10   | 4    | 5    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Days Above Nat. 8-Hr. Std.       | 1    | 4    | 9    | 2    | 4    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

Table 4-24

## San Francisco Bay Area Air Basin Nitrogen Dioxide

### Oxides of Nitrogen Emission Trends and Forecasts

Emissions of NO<sub>x</sub> and NO<sub>2</sub> have decreased in the San Francisco Bay Area Air Basin since 1975 and are projected to continue declining through 2020. The Bay Area has a significant motor vehicle population, and the implementation of stricter motor vehicle controls has resulted in significant emissions reductions for NO<sub>x</sub>.

| NO <sub>x</sub> Emission Trends (tons/day, annual average) |            |            |            |            |            |            |            |            |            |            |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Emission Source  | 1975       | 1980       | 1985       | 1990       | 1995       | 2000       | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>   | <b>943</b> | <b>918</b> | <b>821</b> | <b>797</b> | <b>720</b> | <b>622</b> | <b>496</b> | <b>423</b> | <b>348</b> | <b>301</b> |
| <b>Stationary Sources</b>                                  | 229        | 205        | 134        | 124        | 107        | 83         | 49         | 49         | 51         | 53         |
| <b>Area-wide Sources</b>                                   | 13         | 14         | 15         | 19         | 20         | 19         | 20         | 20         | 21         | 21         |
| <b>On-Road Mobile</b>                                      | 542        | 540        | 500        | 453        | 385        | 312        | 234        | 181        | 124        | 88         |
| Gasoline Vehicles  | 516        | 493        | 427        | 356        | 296        | 215        | 128        | 86         | 59         | 42         |
| Diesel Vehicles  | 26         | 47         | 73         | 97         | 89         | 98         | 106        | 94         | 64         | 46         |
| <b>Other Mobile</b>  | 159        | 159        | 172        | 201        | 208        | 207        | 194        | 174        | 153        | 138        |
| Gasoline Fuel  | 10         | 10         | 11         | 13         | 14         | 14         | 13         | 11         | 10         | 10         |
| Diesel Fuel  | 123        | 121        | 130        | 154        | 158        | 154        | 142        | 120        | 97         | 77         |
| Other Fuel   | 27         | 28         | 31         | 34         | 37         | 39         | 39         | 43         | 46         | 51         |

Table 4-25

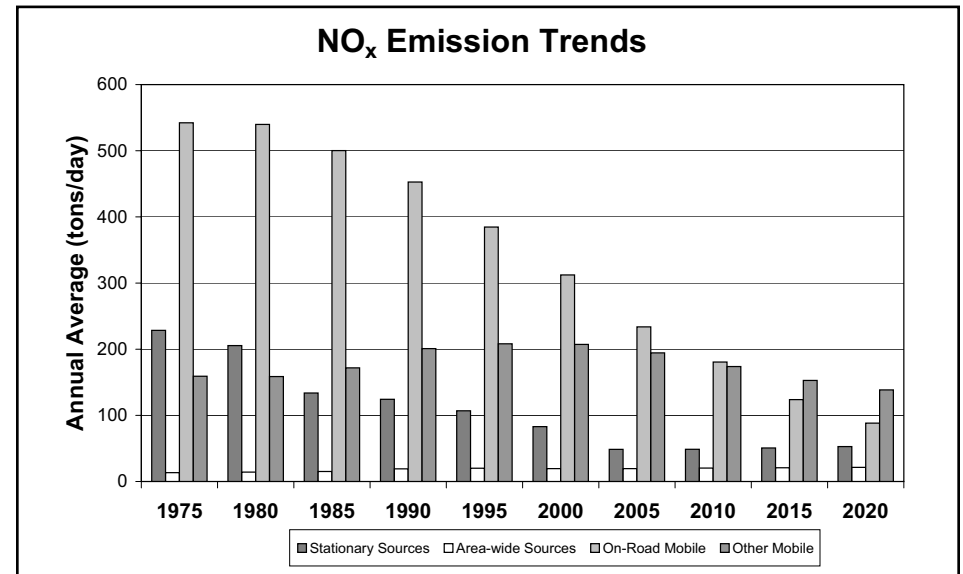


Figure 4-27

# San Francisco Bay Area Air Basin

## Nitrogen Dioxide Air Quality Trend

The San Francisco Bay Area has attained both the State and national NO<sub>2</sub> standards for more than 20 years. During this time-period, there have been no concentrations that exceeded the level of the State 1-hour or the national annual standard. Ambient concentrations continue to be well below the level of both standards. The peak 1-hour indicator has declined by 58 percent in the San Francisco Bay Area since 1987. This downward trend is expected to continue.

NO<sub>2</sub> is formed from NO<sub>x</sub> emissions, which also contribute to ozone. As a result, the majority of the future emission control measures will be implemented as part of the overall ozone control strategy. Many of these control measures will target mobile sources, which account for more than three-quarters of California's NO<sub>x</sub> emissions.

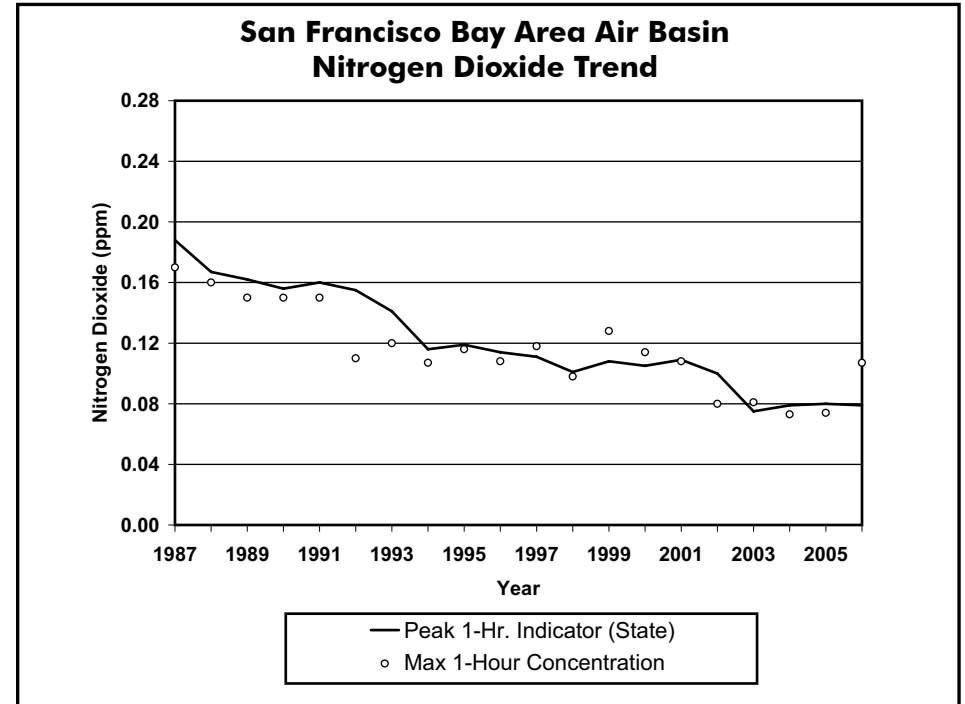


Figure 4-28

| NITROGEN DIOXIDE (ppm)       | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 1-Hr. Indicator (State) | 0.188 | 0.167 | 0.162 | 0.156 | 0.160 | 0.155 | 0.141 | 0.116 | 0.119 | 0.114 | 0.111 | 0.101 | 0.108 | 0.105 | 0.109 | 0.100 | 0.075 | 0.079 | 0.080 | 0.079 |
| Max. 1-Hr. Concentration     | 0.170 | 0.160 | 0.150 | 0.150 | 0.150 | 0.110 | 0.120 | 0.107 | 0.116 | 0.108 | 0.118 | 0.098 | 0.128 | 0.114 | 0.108 | 0.080 | 0.081 | 0.073 | 0.074 | 0.107 |
| Max. Annual Average (Nat)    | 0.031 | 0.032 | 0.032 | 0.030 | 0.031 | 0.027 | 0.027 | 0.028 | 0.027 | 0.025 | 0.025 | 0.025 | 0.026 | 0.025 | 0.024 | 0.019 | 0.018 | 0.017 | 0.019 | 0.018 |
| Max. Annual Average (State)  | 0.031 | 0.032 | 0.032 | 0.030 | 0.031 | 0.027 | 0.027 | 0.028 | 0.027 | 0.025 | 0.025 | 0.025 | 0.026 | 0.025 | 0.024 | 0.019 | 0.018 | 0.017 | 0.019 | 0.016 |

Table 4-26

## *San Joaquin Valley Air Basin*

### Introduction - Area Description

The San Joaquin Valley Air Basin occupies the southern two-thirds of California's Central Valley. The eight-county area comprises Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare counties and the western portion of Kern County. The Valley covers nearly 23,490 square miles. With very few exceptions, the San Joaquin Valley is flat, with most of the area lying below 1,000 feet in elevation and most of the population living below 500 feet. The Valley floor slopes downward from east to west, and the San Joaquin River winds its way along the western side from south to north.

Similar to other inland areas, the San Joaquin Valley has cool wet winters and hot dry summers. Generally, the temperature increases and rainfall decreases from north to south.

In contrast to other California areas, air quality in the San Joaquin Valley is not dominated by emissions from one large urban area. Instead, there are a number of moderately sized urban areas spread along the main axis of the Valley. This wide distribution of emissions complicates the challenge faced by air quality control agencies. Overall, about 10 percent of California's population lives in the San Joaquin Valley, and pollution sources in the region account for about 13 percent of the total statewide criteria pollutant emissions.

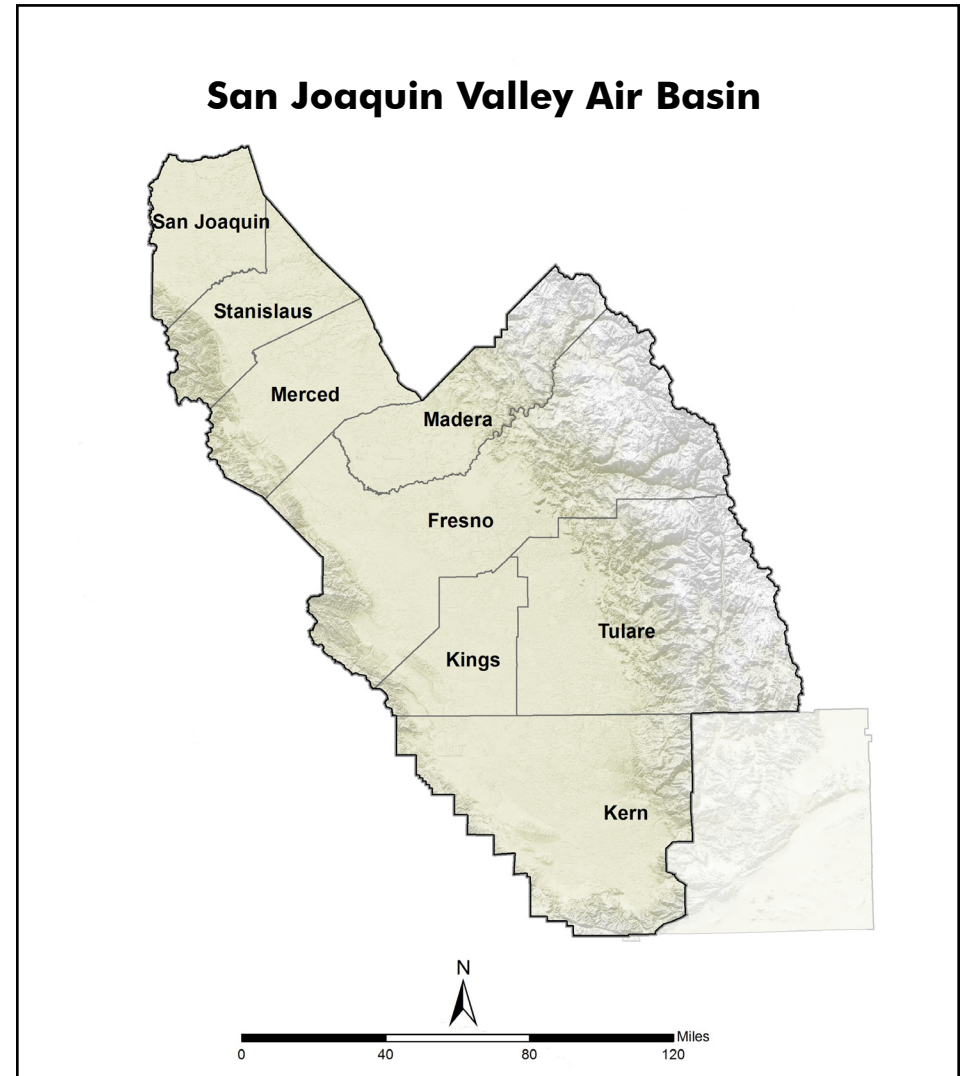


Figure 4-29

## San Joaquin Valley Air Basin Emission Trends and Forecasts

The emission levels in the San Joaquin Valley Air Basin have been decreasing since 1990 with the exception of PM<sub>10</sub>, which has remained relatively unchanged. The decreases are predominantly due to motor vehicle controls and reductions in evaporative and fugitive emissions. On-road motor vehicles are the largest contributors to CO emissions in the San Joaquin Valley. On-road motor vehicles, other mobile sources, and stationary sources are all significant contributors to NO<sub>x</sub> emissions. A significant portion of the stationary source ROG emissions is fugitive emissions from the extensive oil and gas production operations in the lower San Joaquin Valley. PM<sub>10</sub> emissions are mostly fugitive dust from paved and unpaved roads, agricultural operations, and waste burning. The emission levels for SO<sub>x</sub> have decreased since 1975. This is mainly due to the switch from fuel oil to natural gas for electric generation and to reduced fuel sulfur content. The SO<sub>x</sub> emissions increase slightly after 2010. This increase is seen mainly in the industrial fuel combustion categories.

| San Joaquin Valley Air Basin Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |      |
|---|------|------|------|------|------|------|------|------|------|------|
| Pollutant   | 1975 | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| NO <sub>x</sub>   | 700  | 839  | 831  | 844  | 750  | 672  | 616  | 549  | 431  | 349  |
| ROG   | 1102 | 1176 | 1026 | 617  | 486  | 432  | 381  | 357  | 344  | 343  |
| PM <sub>10</sub>  | 287  | 284  | 287  | 346  | 336  | 339  | 297  | 293  | 294  | 300  |
| PM <sub>2.5</sub>   | 126  | 118  | 114  | 123  | 114  | 114  | 106  | 102  | 99   | 99   |
| SO <sub>x</sub>   | 299  | 272  | 129  | 100  | 33   | 37   | 26   | 25   | 27   | 29   |
| CO  | 3564 | 3514 | 3241 | 3020 | 2404 | 1966 | 1538 | 1285 | 1101 | 1001 |

Table 4-27

## San Joaquin Valley Air Basin Population and VMT

Compared to California's other urban areas, the population and number of vehicle miles traveled each day in the San Joaquin Valley Air Basin has grown and is projected to grow at a much faster rate than most other areas of the State. The population is projected to increase about 144 percent, from nearly two million in 1980 to nearly five million in 2020. During the same period, the daily VMT is projected to increase by 312 percent, from nearly 33 million miles per day in 1980 to over 129 million miles per day in 2020. These growth rates are much higher than the growth rates in other areas.

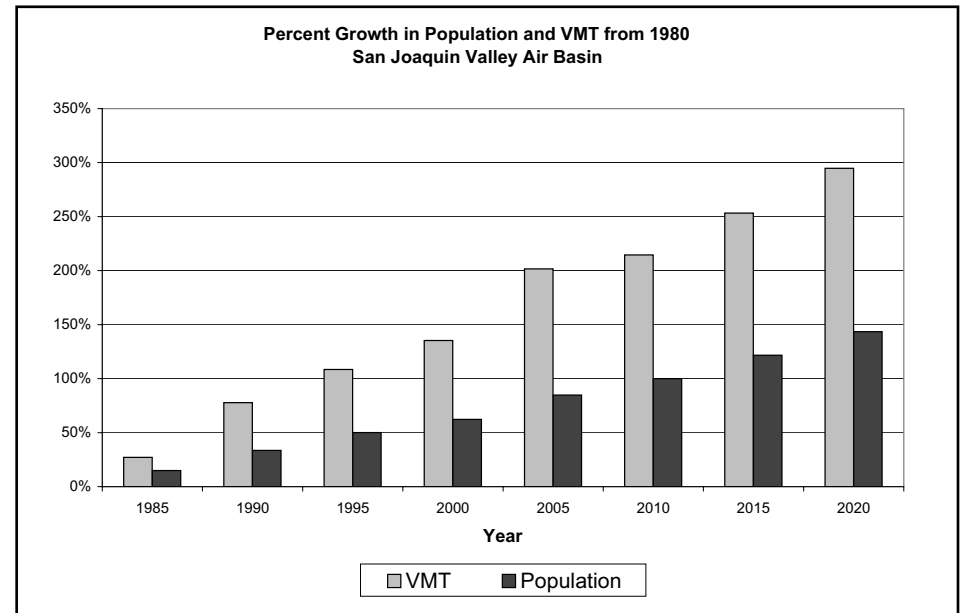


Figure 4-30

| Parameter           | 1980    | 1985    | 1990    | 1995    | 2000    | 2005    | 2010    | 2015    | 2020    |
|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Population          | 1979840 | 2275776 | 2645311 | 2972667 | 3212615 | 3658320 | 3959518 | 4389922 | 4820322 |
| Avg. Daily VMT/1000 | 32804   | 41697   | 58326   | 68389   | 77176   | 98950   | 103176  | 115884  | 129484  |

Table 4-28

## San Joaquin Valley Air Basin

### Ozone Precursor Emission - Trends and Forecasts

Emissions of the ozone precursors NO<sub>x</sub> and ROG are decreasing in the San Joaquin Valley Air Basin. Both stationary source and motor vehicle NO<sub>x</sub> emissions have been reduced by the adoption of more stringent emission standards. Stricter standards have reduced ROG emissions from motor vehicles since 1980, even though VMT have been increasing. Stationary and area-wide sources of ROG include petroleum production operations and the use of solvents. Stricter emission standards and new controls have reduced the ROG emissions from these sources.

| NO <sub>x</sub> Emission Trends (tons/day, annual average) |            |            |            |            |            |            |            |            |            |            |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Emission Source  | 1975       | 1980       | 1985       | 1990       | 1995       | 2000       | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>   | <b>700</b> | <b>839</b> | <b>831</b> | <b>844</b> | <b>750</b> | <b>672</b> | <b>616</b> | <b>549</b> | <b>431</b> | <b>349</b> |
| <b>Stationary Sources</b>                                  | 246        | 328        | 321        | 267        | 197        | 135        | 104        | 104        | 107        | 108        |
| <b>Area-wide Sources</b>                                   | 21         | 21         | 21         | 20         | 19         | 19         | 18         | 18         | 17         | 17         |
| <b>On-Road Mobile</b>                                      | 245        | 261        | 293        | 344        | 344        | 339        | 339        | 298        | 204        | 140        |
| Gasoline Vehicles  | 158        | 158        | 152        | 160        | 150        | 117        | 77         | 55         | 39         | 29         |
| Diesel Vehicles  | 87         | 103        | 141        | 184        | 194        | 221        | 262        | 243        | 165        | 111        |
| <b>Other Mobile</b>  | 189        | 230        | 196        | 214        | 190        | 179        | 155        | 129        | 104        | 84         |
| Gasoline Fuel  | 4          | 5          | 5          | 6          | 6          | 6          | 6          | 6          | 6          | 6          |
| Diesel Fuel  | 180        | 220        | 188        | 204        | 181        | 169        | 143        | 117        | 92         | 72         |
| Other Fuel   | 4          | 5          | 4          | 4          | 4          | 5          | 5          | 6          | 6          | 7          |

Table 4-29

| ROG Emission Trends (tons/day, annual average) |             |             |             |            |            |            |            |            |            |            |
|--|-------------|-------------|-------------|------------|------------|------------|------------|------------|------------|------------|
| Emission Source                                | 1975        | 1980        | 1985        | 1990       | 1995       | 2000       | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>                             | <b>1102</b> | <b>1176</b> | <b>1026</b> | <b>617</b> | <b>486</b> | <b>432</b> | <b>381</b> | <b>357</b> | <b>344</b> | <b>343</b> |
| <b>Stationary Sources</b>                      | 632         | 701         | 568         | 185        | 92         | 88         | 77         | 80         | 83         | 86         |
| <b>Area-wide Sources</b>                       | 120         | 127         | 134         | 141        | 149        | 146        | 147        | 152        | 161        | 171        |
| <b>On-Road Mobile</b>                          | 285         | 271         | 250         | 216        | 174        | 131        | 95         | 72         | 53         | 41         |
| Gasoline Vehicles                              | 274         | 257         | 231         | 193        | 158        | 114        | 78         | 55         | 40         | 32         |
| Diesel Vehicles                                | 11          | 14          | 18          | 23         | 16         | 17         | 17         | 17         | 13         | 9          |
| <b>Other Mobile</b>                            | 64          | 78          | 74          | 75         | 71         | 67         | 63         | 54         | 48         | 46         |
| Gasoline Fuel                                  | 31          | 39          | 43          | 42         | 40         | 38         | 36         | 32         | 30         | 30         |
| Diesel Fuel                                    | 24          | 30          | 25          | 28         | 26         | 23         | 19         | 15         | 11         | 8          |
| Other Fuel                                     | 9           | 9           | 6           | 6          | 5          | 6          | 7          | 7          | 7          | 7          |

Table 4-30

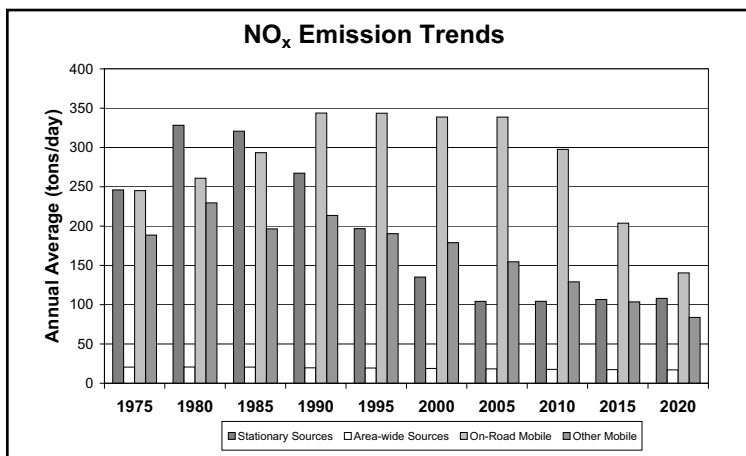


Figure 4-31

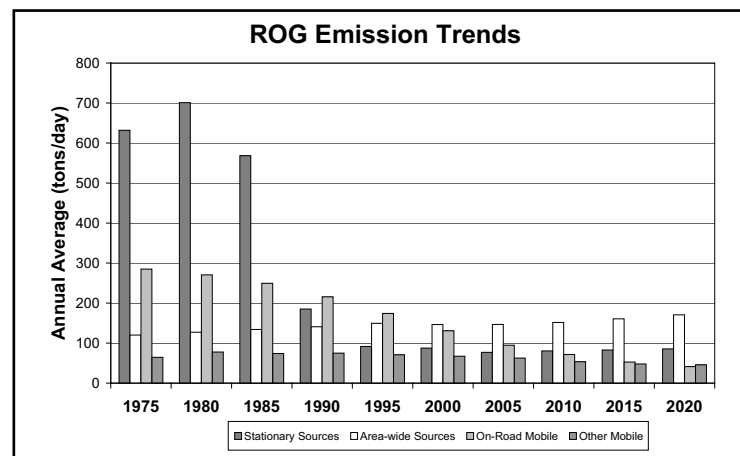


Figure 4-32

# San Joaquin Valley Air Basin

## Ozone Air Quality Trend

The ozone problem in the San Joaquin Valley ranks among the most severe in the State. Looking at ozone air quality from a historical perspective is challenging because of the lack of long-term monitors prior to 1990. Furthermore, monitoring did not include the sites in the worst portions of the basin until 1990. For this reason we are using 1990 as the beginning year to characterize trends.

Similar to other areas of the State, exceedance days have declined at a faster rate than peak levels. Peak levels declined by ten percent while the number of State and national 8-hour exceedance days declined by 38 percent and 35 percent respectively. Most of this progress has occurred since 2003. However, the number of exceedance days in 2006 and 2007 were among the lowest in this 18 year period.

The ARB has identified the San Joaquin Valley Air Basin as both a contributor and a receptor for ozone transport. The Valley is a transport contributor to the Sacramento region, the Great Basin Valleys Air Basin, the Mountain Counties Air Basin, the Mojave Desert Air Basin, the North Central Coast Air Basin, and the South Central Coast Air Basin. In contrast, the San Joaquin Valley Air Basin is a receptor area for ozone transported from the Sacramento region and the San Francisco Bay Area Air Basin.

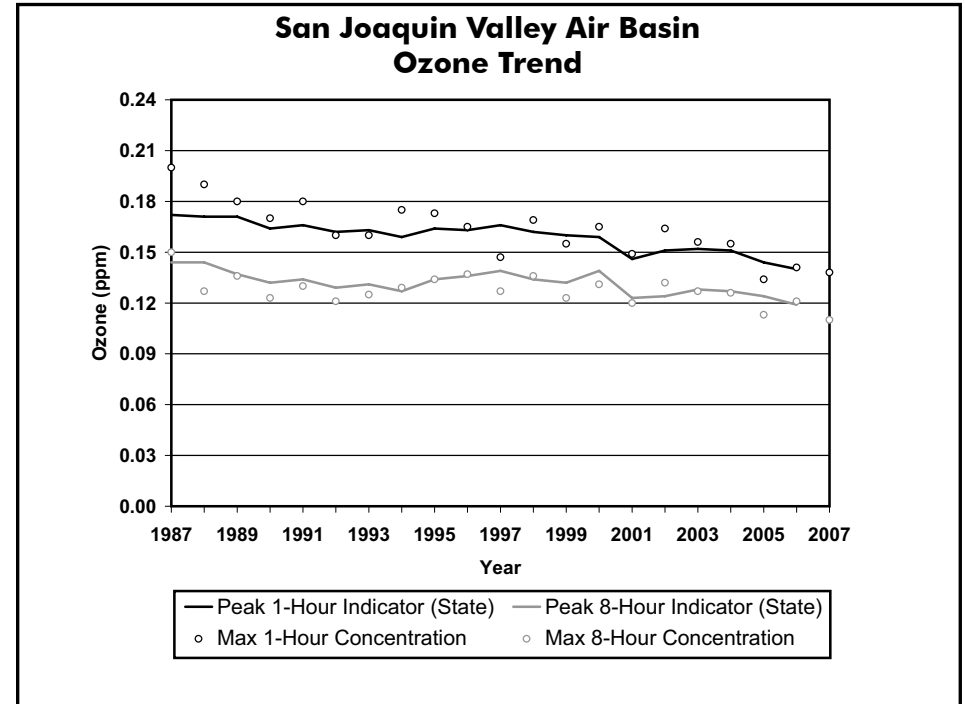


Figure 4-33

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  | 2007 <sup>1</sup> |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------------|
| Peak 8-Hour Indicator (State)         | 0.144 | 0.144 | 0.137 | 0.132 | 0.134 | 0.129 | 0.131 | 0.127 | 0.134 | 0.136 | 0.139 | 0.134 | 0.132 | 0.139 | 0.123 | 0.124 | 0.128 | 0.127 | 0.124 | 0.119 |                   |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.118 | 0.121 | 0.116 | 0.112 | 0.118 | 0.115 | 0.112 | 0.111 | 0.119 | 0.119 | 0.115 | 0.115 | 0.113 | 0.111 | 0.109 | 0.115 | 0.115 | 0.116 | 0.113 | 0.110 |                   |
| Peak 1-Hour Indicator (State)         | 0.172 | 0.171 | 0.171 | 0.164 | 0.166 | 0.162 | 0.163 | 0.159 | 0.164 | 0.163 | 0.166 | 0.162 | 0.160 | 0.159 | 0.146 | 0.151 | 0.152 | 0.151 | 0.144 | 0.140 |                   |
| 4th High 1-Hr. in 3 Yrs <sup>2</sup>  | 0.170 | 0.170 | 0.180 | 0.170 | 0.160 | 0.160 | 0.160 | 0.160 | 0.164 | 0.165 | 0.164 | 0.161 | 0.161 | 0.161 | 0.146 | 0.151 | 0.151 | 0.151 | 0.149 | 0.135 |                   |
| Max. 8-Hr. Concentration              | 0.150 | 0.127 | 0.136 | 0.123 | 0.130 | 0.121 | 0.125 | 0.129 | 0.134 | 0.137 | 0.127 | 0.136 | 0.123 | 0.131 | 0.120 | 0.132 | 0.127 | 0.126 | 0.113 | 0.121 | 0.110             |
| Maximum 1-Hr. Concentration           | 0.200 | 0.190 | 0.180 | 0.170 | 0.180 | 0.160 | 0.160 | 0.175 | 0.173 | 0.165 | 0.147 | 0.169 | 0.155 | 0.165 | 0.149 | 0.164 | 0.156 | 0.155 | 0.134 | 0.141 | 0.138             |
| Days Above State 8-Hr. Std.           | 189   | 200   | 182   | 179   | 167   | 169   | 174   | 166   | 163   | 164   | 169   | 127   | 175   | 158   | 192   | 181   | 172   | 167   | 124   | 141   | 138               |
| Days Above Nat. 8-Hr. Std.            | 148   | 140   | 133   | 104   | 121   | 119   | 103   | 108   | 109   | 114   | 95    | 84    | 117   | 103   | 109   | 125   | 134   | 109   | 72    | 86    | 65                |
| Days Above State 1-Hr. Std.           | 156   | 156   | 148   | 131   | 133   | 127   | 125   | 118   | 124   | 120   | 110   | 90    | 123   | 114   | 123   | 127   | 137   | 106   | 83    | 90    | 69                |

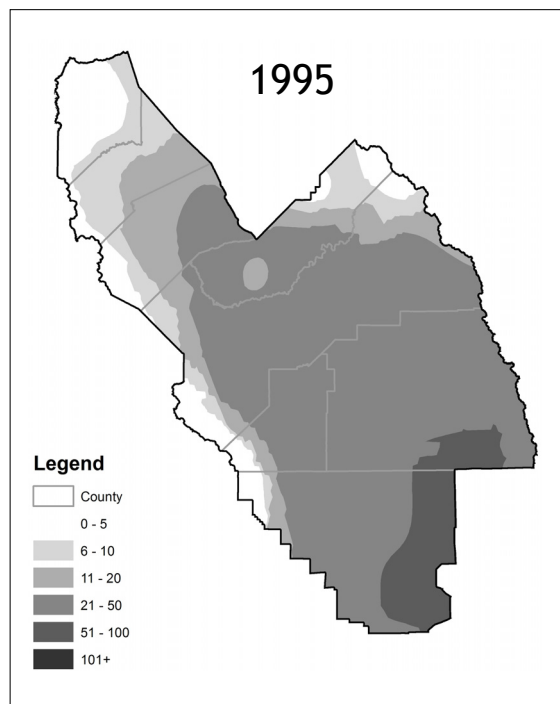
<sup>1</sup> Preliminary data for 2007 are shown here, however they are subject to change. 2006 is the last year for which complete and approved data is available, thus calculated annual statistics are not included for 2007.

<sup>2</sup> The national 1-Hour standard has been revoked. Historical 1-Hour data are provided for reference.

Table 4-31

## San Joaquin Valley Air Basin

### Ozone Contour Maps - 3-year Average of National 8-Hour Exceedance Days



NOTE: Values used in these maps are for long-term sites only. Long-term sites are used to more accurately represent a trend over a period, by comparing the same or similar sites over a long period.

Figure 4-34

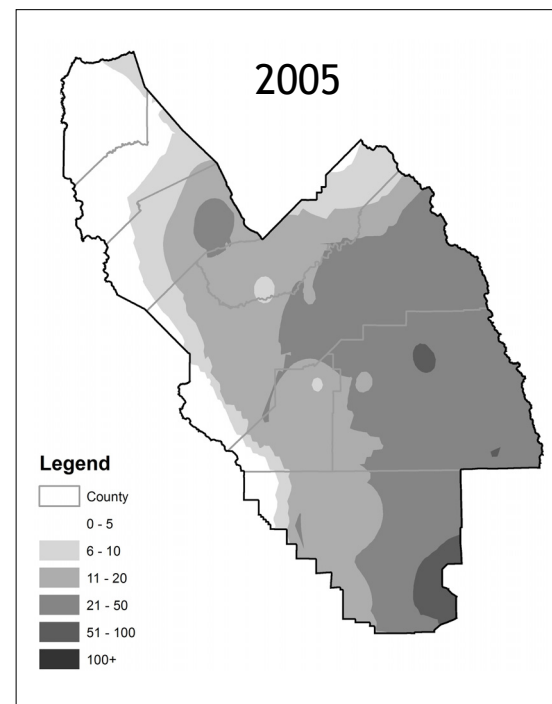


Figure 4-35

Another way to look at ozone air quality is to evaluate how widespread the problem is within the air basin, using data for all sites. The maps on this page illustrate the reduction in days exceeding the national 8-hour standard over the last decade throughout the basin. The use of three-year averages helps to mitigate the changes in meteorology.

Similar to the South Coast, the two maps show a substantial reduction in the number of exceedance days over the last ten years. During the 1995 time period, more than half of the San Joaquin Valley had between 21 and 50 exceedance days. The worst site had about 90 days, which is equivalent to about three months during a year with ozone concentrations above the level of the standard. Areas in the northern San Joaquin Valley were cleaner than areas in the central and southern

Valley. However, only a relatively small portion of the Basin averaged ten or fewer exceedance days.

The 2005 map shows a dramatic expansion of cleaner areas. Most of San Joaquin and Stanislaus counties now meet the national 8-hour ozone standard. Much of the rest of the Valley experiences an average of only 6 to 20 exceedance days per year. Areas with more than 20 exceedance days are now generally limited to the eastern portion of the central and southern San Joaquin Valley. While the extent of these areas is much smaller than the 1995 timeframe, the areas of poor ozone air quality are also the most heavily populated. Even though these areas still pose a challenge, the worst sites show an average reduction in exceedance days of more than 35 percent over the last decade.



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## San Joaquin Valley Air Basin Directly Emitted PM<sub>10</sub> Emission Trends and Forecasts

Direct emissions of PM<sub>10</sub> have remained relatively unchanged between 1975 and 2005 and are projected to remain unchanged through 2020. PM<sub>10</sub> emissions in the San Joaquin Valley are dominated by emissions from area-wide sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, dust from farming operations, waste burning, and residential fuel combustion (including wood).

PM can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO<sub>x</sub>, SO<sub>x</sub>, ROG, and ammonia. The PM<sub>10</sub> emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted PM<sub>10</sub> emissions contribute approximately 75 percent of the ambient PM<sub>10</sub> in the San Joaquin Valley Air Basin.

| Directly Emitted PM <sub>10</sub> Emission Trends (tons/day, annual average) |            |            |            |            |            |            |            |            |            |            |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Emission Source  | 1975       | 1980       | 1985       | 1990       | 1995       | 2000       | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>   | <b>287</b> | <b>284</b> | <b>287</b> | <b>346</b> | <b>336</b> | <b>339</b> | <b>297</b> | <b>293</b> | <b>294</b> | <b>300</b> |
| <b>Stationary Sources</b>  | 58         | 42         | 34         | 27         | 26         | 27         | 25         | 24         | 25         | 26         |
| <b>Area-wide Sources</b>   | 204        | 213        | 222        | 281        | 282        | 285        | 246        | 246        | 250        | 258        |
| <b>On-Road Mobile</b>  | 12         | 14         | 18         | 23         | 17         | 15         | 15         | 14         | 11         | 10         |
| Gasoline Vehicles  | 2          | 2          | 2          | 2          | 3          | 3          | 4          | 5          | 5          | 6          |
| Diesel Vehicles  | 10         | 12         | 16         | 21         | 14         | 12         | 11         | 9          | 6          | 4          |
| <b>Other Mobile</b>  | 13         | 16         | 14         | 15         | 11         | 11         | 10         | 9          | 7          | 6          |
| Gasoline Fuel  | 0          | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 2          | 2          |
| Diesel Fuel  | 12         | 15         | 12         | 13         | 10         | 9          | 8          | 6          | 4          | 3          |
| Other Fuel   | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 2          | 2          | 2          |

Table 4-32

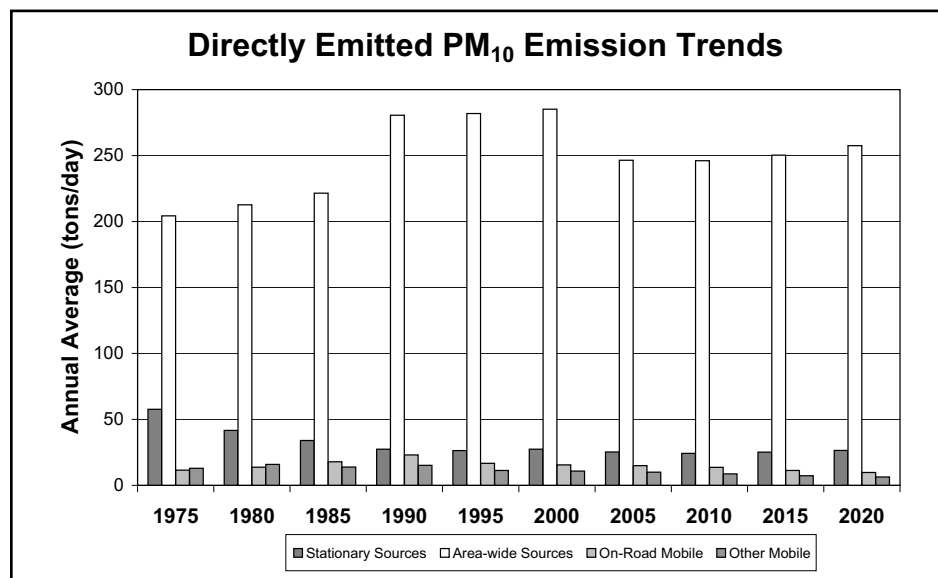


Figure 4-36

# San Joaquin Valley Air Basin

## Directly Emitted PM<sub>2.5</sub> Emission Trends and Forecasts

Direct emissions of PM<sub>2.5</sub> decreased from 1975 to 2005 and are projected to continue decreasing through 2020. PM<sub>2.5</sub> emissions in the San Joaquin Valley are dominated by emissions from area-wide sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, dust from farming operations, waste burning, and residential fuel combustion (including wood).

PM can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO<sub>x</sub>, SO<sub>x</sub>, ROG, and ammonia. The PM<sub>2.5</sub> emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted PM<sub>2.5</sub> emissions contribute approximately 60 percent of the ambient PM<sub>2.5</sub> in the San Joaquin Valley Air Basin.

| Directly Emitted PM <sub>2.5</sub> Emission Trends (tons/day, annual average) |            |            |            |            |            |            |            |            |           |           |
|---|------------|------------|------------|------------|------------|------------|------------|------------|-----------|-----------|
| Emission Source   | 1975       | 1980       | 1985       | 1990       | 1995       | 2000       | 2005       | 2010       | 2015      | 2020      |
| <b>All Sources</b>  | <b>126</b> | <b>118</b> | <b>114</b> | <b>123</b> | <b>114</b> | <b>114</b> | <b>106</b> | <b>102</b> | <b>99</b> | <b>99</b> |
| <b>Stationary Sources</b>   | 46         | 32         | 24         | 18         | 18         | 18         | 17         | 17         | 18        | 19        |
| <b>Area-wide Sources</b>  | 57         | 59         | 61         | 72         | 72         | 73         | 67         | 66         | 66        | 68        |
| <b>On-Road Mobile</b>   | 10         | 12         | 16         | 20         | 14         | 13         | 12         | 11         | 9         | 7         |
| Gasoline Vehicles   | 1          | 1          | 1          | 1          | 2          | 2          | 2          | 3          | 3         | 3         |
| Diesel Vehicles   | 9          | 11         | 15         | 19         | 13         | 11         | 10         | 8          | 5         | 4         |
| <b>Other Mobile</b>   | 12         | 15         | 13         | 14         | 10         | 10         | 9          | 8          | 7         | 6         |
| Gasoline Fuel   | 0          | 0          | 1          | 1          | 1          | 1          | 1          | 1          | 1         | 1         |
| Diesel Fuel   | 11         | 13         | 11         | 12         | 9          | 8          | 7          | 5          | 4         | 2         |
| Other Fuel  | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 2          | 2         | 2         |

Table 4-33

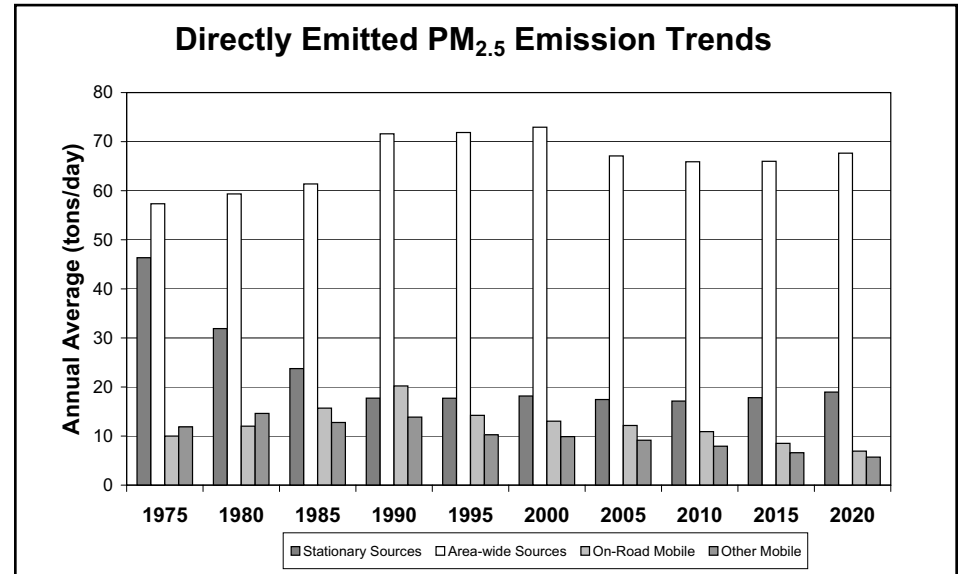


Figure 4-37

## San Joaquin Valley Air Basin

### PM<sub>10</sub> Air Quality Trend

The available PM<sub>10</sub> data show some variation during the trend period, but overall, there has been a downward trend. The low values for the annual average in 1988 and 1989 are due to the limited number of monitors with complete data for these years during the startup of the PM monitoring network. The period between 1990 and 2006 provides a better indication of trends. Over this period, the three-year average of the annual average (State) shows a decrease of 32 percent. The calculated number of days exceeding the State and national 24-hour standards also shows a decrease. There were 292 calculated State standard exceedance days and 31 calculated national standard exceedance days during 1990. During 2006, there were 167 calculated State standard exceedance days and 13 national standard exceedance days.

Although PM<sub>10</sub> air quality has improved overall in the San Joaquin Valley Air Basin, values overall are highly variable. The variability appears to be a result of meteorology, while the overall downward trend is consistent with a change in emissions. While, based on the ambient data, the San Joaquin Valley now attains the national PM<sub>10</sub> standards, it will still be a number of years before this area reaches attainment of the more stringent State standards.

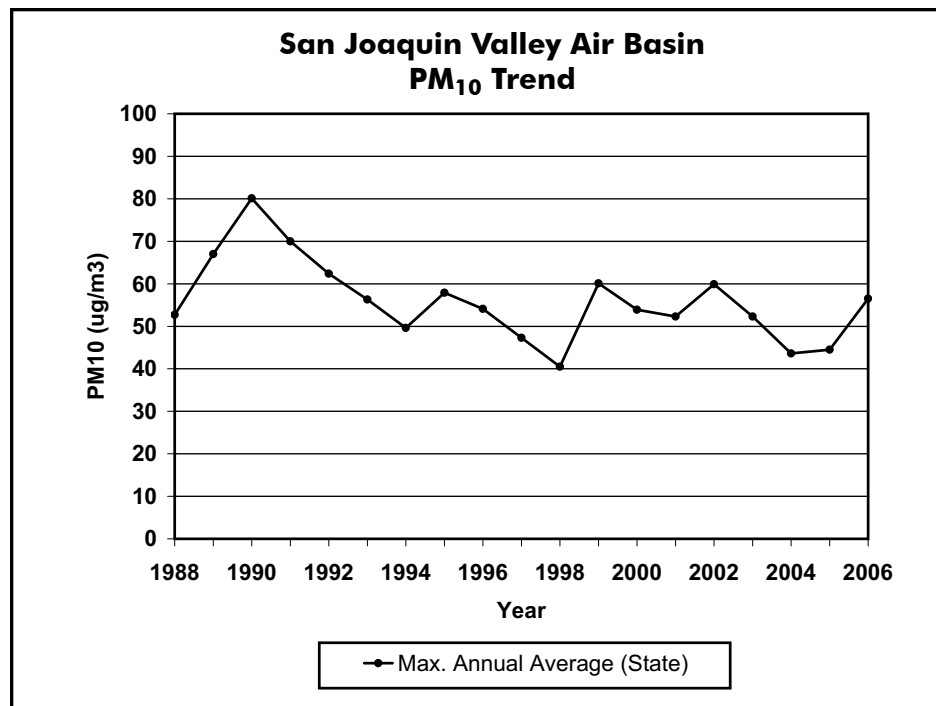


Figure 4-38

| PM <sub>10</sub> (ug/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      | 206  | 237  | 439  | 279  | 186  | 239  | 192  | 279  | 153  | 199  | 167  | 186  | 153  | 221  | 194  | 150  | 219  | 137  | 255  |
| Max. 24-Hr. Concentration (Nat)       |      | 206  | 237  | 439  | 279  | 186  | 239  | 192  | 279  | 153  | 228  | 160  | 183  | 145  | 212  | 189  | 150  | 217  | 131  | 304  |
| Max. Annual Average (State)           |      | 52.7 | 67.0 | 80.1 | 70.0 | 62.4 | 56.3 | 49.6 | 57.9 | 54.1 | 47.3 | 40.5 | 60.1 | 53.9 | 52.3 | 59.9 | 52.3 | 43.6 | 44.5 | 56.5 |
| Max. Annual Average (Nat)             |      | 74.3 | 79.3 | 79.3 | 76.3 | 62.9 | 56.9 | 50.1 | 58.2 | 52.0 | 48.2 | 52.5 | 59.5 | 53.1 | 57.4 | 59.2 | 52.4 | 47.9 | 44.3 | 55.4 |
| Calc Days Above State 24-Hr Std       |      | 159  | 208  | 292  | 225  | 246  | 183  | 166  | 184  | 204  | 107  | 102  | 182  | 196  | 168  | 256  | 167  | 113  | 146  | 167  |
| Calc Days Above Nat 24-Hr Std         |      | 0    | 29   | 31   | 18   | 18   | 20   | 6    | 12   | 0    | 6    | 6    | 8    | 0    | 14   | 6    | 0    | 7    | 0    | 13   |

NOTE: 13 National standard exceedance days due to exceptional events such as high wind days.

Table 4-34

# San Joaquin Valley Air Basin

## PM<sub>2.5</sub> Air Quality Trend

Annual average (national) PM<sub>2.5</sub> concentrations in the San Joaquin Valley Air Basin show a definite downward trend from 1999 through 2006. The State annual average concentrations remained relatively constant from 1999 through 2006, with a slight drop in 2003. The differences in trends are due to differences in State and national monitoring methods. The 98<sup>th</sup> percentile of 24-hour PM<sub>2.5</sub> concentrations also declined during this period. Similar to PM<sub>10</sub>, year-to-year changes in meteorology can mask the impacts of emission control programs. The San Joaquin Valley Air Basin is currently designated as nonattainment for the State and national PM<sub>2.5</sub> standards. Measures adopted as part of the upcoming PM<sub>2.5</sub> SIP, as well as programs to reduce ozone and diesel PM will help in reducing public exposure to PM<sub>2.5</sub> in this region.

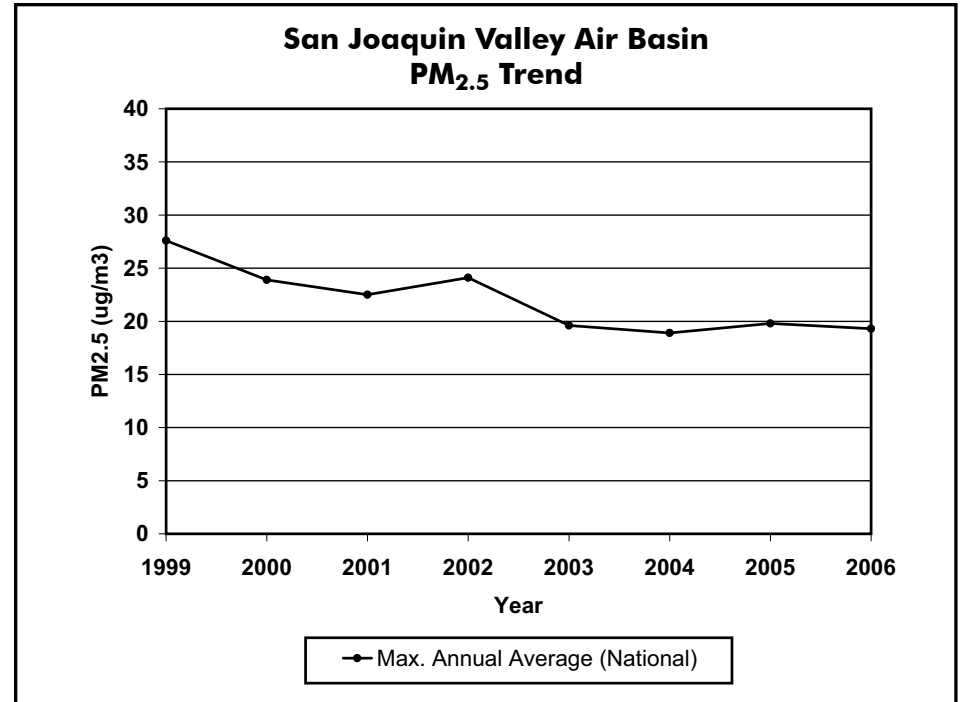


Figure 4-39

| PM <sub>2.5</sub> (ug/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999  | 2000  | 2001  | 2002  | 2003 | 2004 | 2005  | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|------|------|-------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 136.0 | 160.0 | 154.7 | 104.3 | 84.5 | 77.0 | 102.1 | 88.1 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 136.0 | 160.0 | 154.7 | 90.7  | 67.8 | 71.0 | 92.5  | 87.0 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      | 120.0 | 103.0 | 96.0  | 80.4  | 56.0 | 61.5 | 74.9  | 64.7 |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      | 23.4  | 23.9  | 20.8  | 24.1  | 24.8 | 18.2 | 22.4  | 21.6 |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      | 27.6  | 23.9  | 22.5  | 24.1  | 19.6 | 18.9 | 19.8  | 19.3 |

Table 4-35

## San Joaquin Valley Air Basin Carbon Monoxide Emission Trends and Forecasts

Emissions of CO decreased between 1975 and 2005 and are projected to continue decreasing through 2020. Motor vehicles are by far the largest source of CO emissions. Emissions from motor vehicles have been declining since 1975, despite increases in VMT, with the introduction of new automotive emission controls and fleet turnover.

| CO Emission Trends (tons/day, annual average) |             |             |             |             |             |             |             |             |             |             |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Emission Source                               | 1975        | 1980        | 1985        | 1990        | 1995        | 2000        | 2005        | 2010        | 2015        | 2020        |
| <b>All Sources</b>                            | <b>3564</b> | <b>3514</b> | <b>3241</b> | <b>3020</b> | <b>2404</b> | <b>1966</b> | <b>1538</b> | <b>1285</b> | <b>1101</b> | <b>1001</b> |
| <b>Stationary Sources</b>                     | 188         | 160         | 62          | 76          | 63          | 55          | 53          | 55          | 56          | 57          |
| <b>Area-wide Sources</b>                      | 261         | 266         | 272         | 275         | 270         | 269         | 269         | 268         | 268         | 269         |
| <b>On-Road Mobile</b>                         | 2767        | 2664        | 2516        | 2241        | 1676        | 1285        | 877         | 629         | 443         | 331         |
| Gasoline Vehicles                             | 2726        | 2613        | 2449        | 2156        | 1597        | 1209        | 801         | 556         | 387         | 286         |
| Diesel Vehicles                               | 41          | 51          | 67          | 85          | 79          | 76          | 75          | 72          | 56          | 45          |
| <b>Other Mobile</b>                           | 348         | 424         | 391         | 428         | 395         | 357         | 339         | 334         | 334         | 345         |
| Gasoline Fuel                                 | 160         | 213         | 221         | 256         | 236         | 211         | 197         | 194         | 193         | 200         |
| Diesel Fuel                                   | 80          | 101         | 91          | 104         | 93          | 77          | 63          | 56          | 53          | 53          |
| Other Fuel                                    | 109         | 111         | 78          | 69          | 67          | 70          | 79          | 84          | 88          | 92          |

Table 4-36

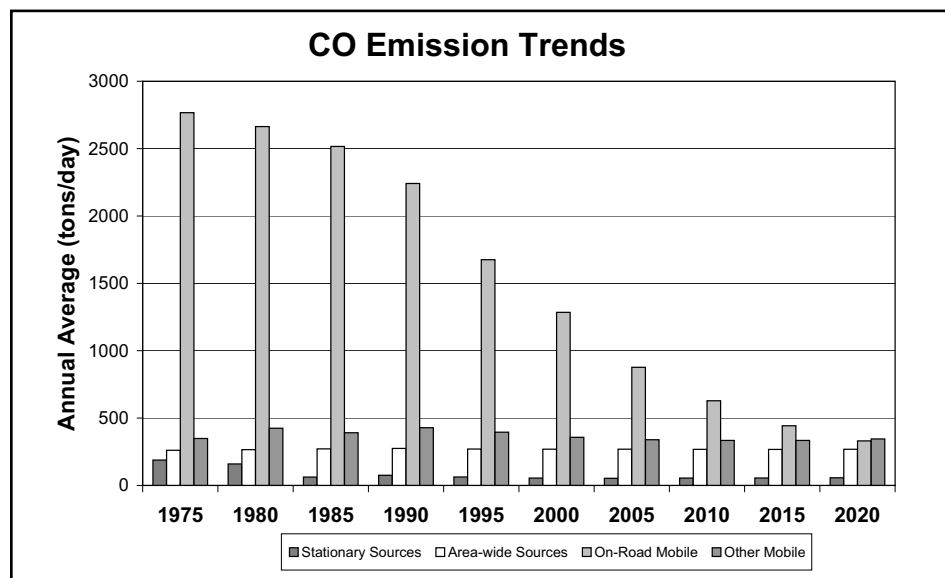


Figure 4-40

# San Joaquin Valley Air Basin

## Carbon Monoxide Air Quality Trend

CO concentrations show a fairly consistent downward trend from 1987 through 2006. The peak 8-hour indicator for 2006 is over 75 percent lower than that for 1987. Measured concentrations in the San Joaquin Valley Air Basin have not exceeded the national CO standards since 1991, and concentrations have not exceeded the State standards for the last 10 years. Much of the decline in ambient CO concentrations can be attributed to the introduction of clean fuels and newer, cleaner motor vehicles.

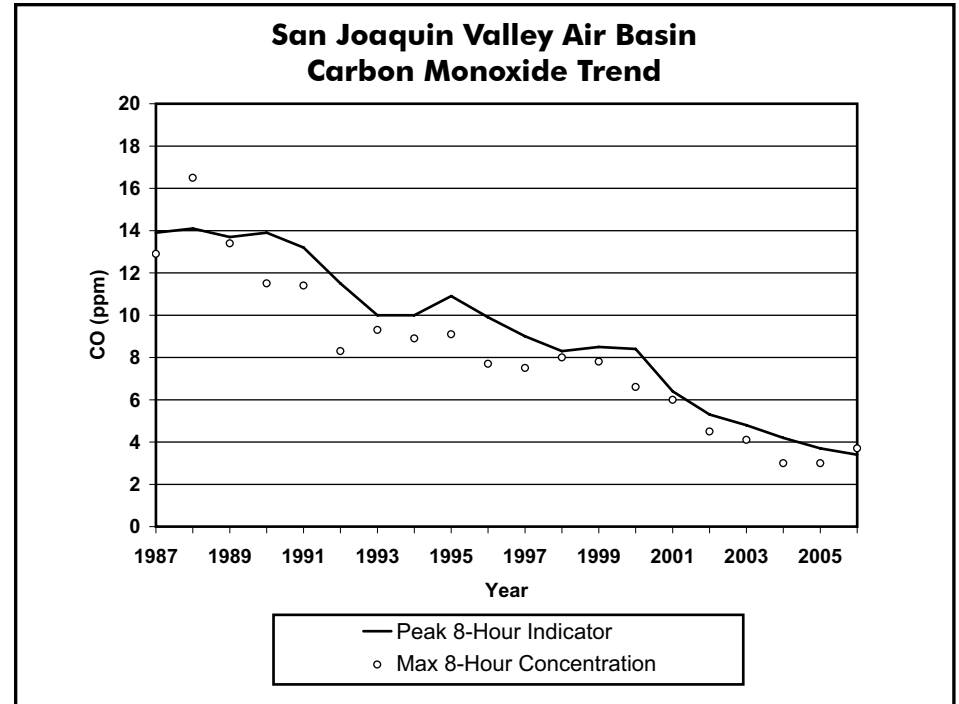


Figure 4-41

| CARBON MONOXIDE (ppm)            | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator (State)     | 13.9 | 14.1 | 13.7 | 13.9 | 13.2 | 11.5 | 10.0 | 10.0 | 10.9 | 9.9  | 9.0  | 8.3  | 8.5  | 8.4  | 6.4  | 5.3  | 4.8  | 4.2  | 3.7  | 3.4  |
| Max. 1-Hr. Concentration         | 16.0 | 19.0 | 23.0 | 17.0 | 19.0 | 13.0 | 13.0 | 15.0 | 12.0 | 11.0 | 9.9  | 10.3 | 11.9 | 10.1 | 8.4  | 6.1  | 5.8  | 4.6  | 4.3  | 6.9  |
| Max. 8-Hr. Concentration (State) | 12.9 | 16.5 | 13.4 | 11.5 | 11.4 | 8.3  | 9.3  | 8.9  | 9.1  | 7.7  | 7.5  | 8.0  | 7.8  | 6.6  | 6.0  | 4.5  | 4.1  | 3.0  | 3.0  | 3.7  |
| Days Above State 8-Hr. Std.      | 4    | 5    | 24   | 10   | 3    | 0    | 2    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Days Above Nat. 8-Hr. Std.       | 4    | 6    | 18   | 9    | 3    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

Table 4-37

# San Joaquin Valley Air Basin Nitrogen Dioxide

## Oxides of Nitrogen Emission Trends and Forecasts

Emissions of NO<sub>x</sub> and NO<sub>2</sub> increased between 1975 and 1990. Since 1990, however, emissions decreased and are projected to continue declining in the San Joaquin Valley Air Basin. Both stationary source and motor vehicle NO<sub>x</sub> emissions have been reduced by the adoption of more stringent emission standards.

| NO <sub>x</sub> Emission Trends (tons/day, annual average) |            |            |            |            |            |            |            |            |            |            |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Emission Source  | 1975       | 1980       | 1985       | 1990       | 1995       | 2000       | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>   | <b>700</b> | <b>839</b> | <b>831</b> | <b>844</b> | <b>750</b> | <b>672</b> | <b>616</b> | <b>549</b> | <b>431</b> | <b>349</b> |
| <b>Stationary Sources</b>                                  | 246        | 328        | 321        | 267        | 197        | 135        | 104        | 104        | 107        | 108        |
| <b>Area-wide Sources</b>                                   | 21         | 21         | 21         | 20         | 19         | 19         | 18         | 18         | 17         | 17         |
| <b>On-Road Mobile</b>                                      | 245        | 261        | 293        | 344        | 344        | 339        | 339        | 298        | 204        | 140        |
| Gasoline Vehicles  | 158        | 158        | 152        | 160        | 150        | 117        | 77         | 55         | 39         | 29         |
| Diesel Vehicles  | 87         | 103        | 141        | 184        | 194        | 221        | 262        | 243        | 165        | 111        |
| <b>Other Mobile</b>  | 189        | 230        | 196        | 214        | 190        | 179        | 155        | 129        | 104        | 84         |
| Gasoline Fuel  | 4          | 5          | 5          | 6          | 6          | 6          | 6          | 6          | 6          | 6          |
| Diesel Fuel  | 180        | 220        | 188        | 204        | 181        | 169        | 143        | 117        | 92         | 72         |
| Other Fuel   | 4          | 5          | 4          | 4          | 4          | 5          | 5          | 6          | 6          | 7          |

Table 4-38

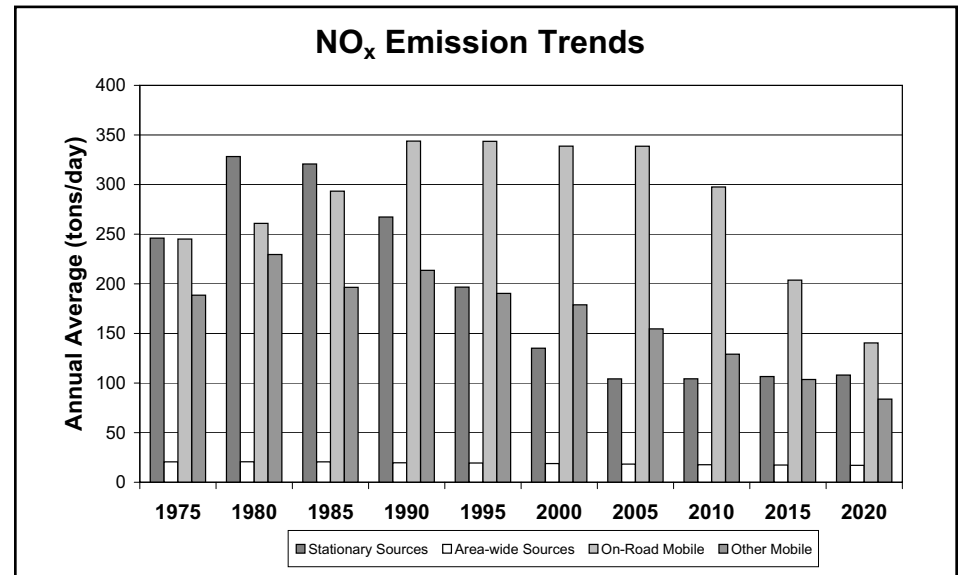


Figure 4-42



# San Joaquin Valley Air Basin

## Nitrogen Dioxide Air Quality Trend

The San Joaquin Valley has attained both the State and national NO<sub>2</sub> standards for more than 20 years. During this time-period, there have been no concentrations that exceeded the level of the State 1-hour or the national annual standard. Ambient concentrations continue to be well below the level of both standards. From 1987 through 1989, ambient levels increased somewhat, but have decreased substantially since 1990. The peak 1-hour indicator has declined by more than 46 percent since 1990. This downward trend is expected to continue.

NO<sub>2</sub> is formed from NO<sub>x</sub> emissions, which also contribute to ozone. As a result, the majority of the future emission control measures will be implemented as part of the overall ozone control strategy. Many of these control measures will target mobile sources, which account for more than three-quarters of California's NO<sub>x</sub> emissions.

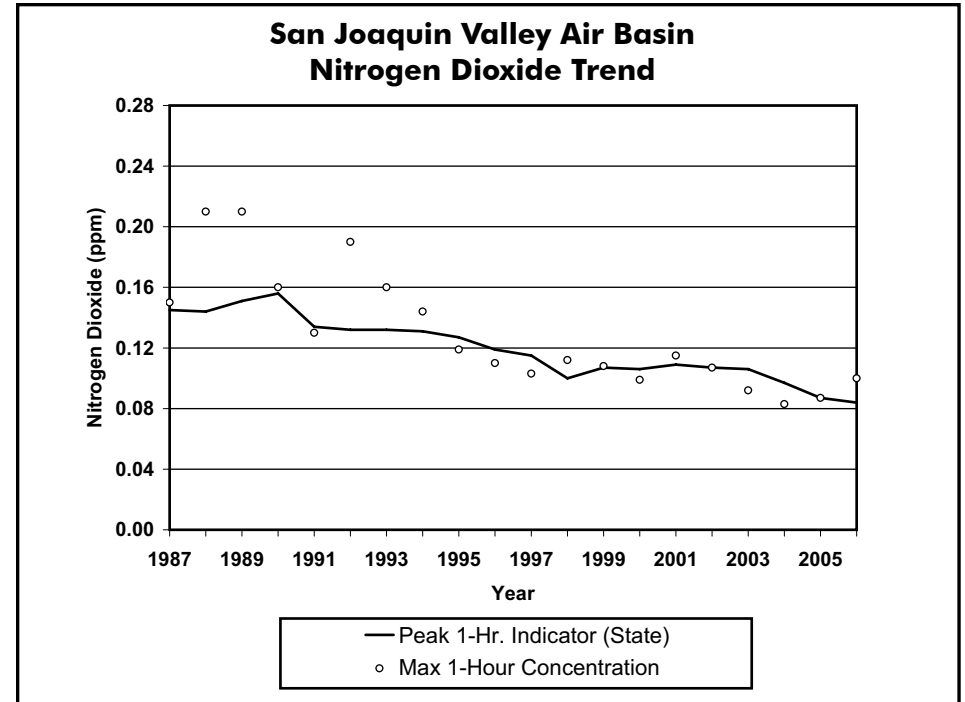


Figure 4-43

| NITROGEN DIOXIDE (ppm)       | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 1-Hr. Indicator (State) | 0.145 | 0.144 | 0.151 | 0.156 | 0.134 | 0.132 | 0.132 | 0.131 | 0.127 | 0.119 | 0.115 | 0.100 | 0.107 | 0.106 | 0.109 | 0.107 | 0.106 | 0.097 | 0.087 | 0.084 |
| Max. 1-Hr. Concentration     | 0.150 | 0.210 | 0.210 | 0.160 | 0.130 | 0.190 | 0.160 | 0.144 | 0.119 | 0.110 | 0.103 | 0.112 | 0.108 | 0.099 | 0.115 | 0.107 | 0.092 | 0.083 | 0.087 | 0.100 |
| Max. Annual Average (Nat)    | 0.030 | 0.032 | 0.033 | 0.031 | 0.030 | 0.027 | 0.027 | 0.024 | 0.029 | 0.029 | 0.024 | 0.024 | 0.027 | 0.024 | 0.022 | 0.024 | 0.023 | 0.019 | 0.021 | 0.021 |
| Max. Annual Average (State)  | 0.030 | 0.033 | 0.033 | 0.032 | 0.030 | 0.027 | 0.024 | 0.024 | 0.029 | 0.029 | 0.024 | 0.023 | 0.027 | 0.024 | 0.022 | 0.024 | 0.020 | 0.018 | 0.021 | 0.021 |

Table 4-39

## *San Diego Air Basin*

### Introduction - Area Description

The San Diego Air Basin lies in the southwest corner of California and comprises all of San Diego County. However, the population and emissions are concentrated mainly in the western portion of the County. The air basin covers 4,200 square miles, includes about eight percent of the State's population, and produces about seven percent of the State's criteria pollutant emissions. Because of its southerly location and proximity to the ocean, much of the San Diego Air Basin has a relatively mild climate. Higher temperatures and seasonal variations are experienced further inland.

Air quality in the San Diego Air Basin is impacted not only by local emissions, but also by pollutants transported from other areas -- in particular, ozone and ozone precursor emissions transported from the South Coast Air Basin and Mexico. Although the impact of transport is particularly important on days with high ozone concentrations, transported pollutants and emissions cannot be attributed entirely for the ozone problem in the San Diego area. Studies show that emissions from the San Diego Air Basin are sufficient, on their own, to cause ozone violations.

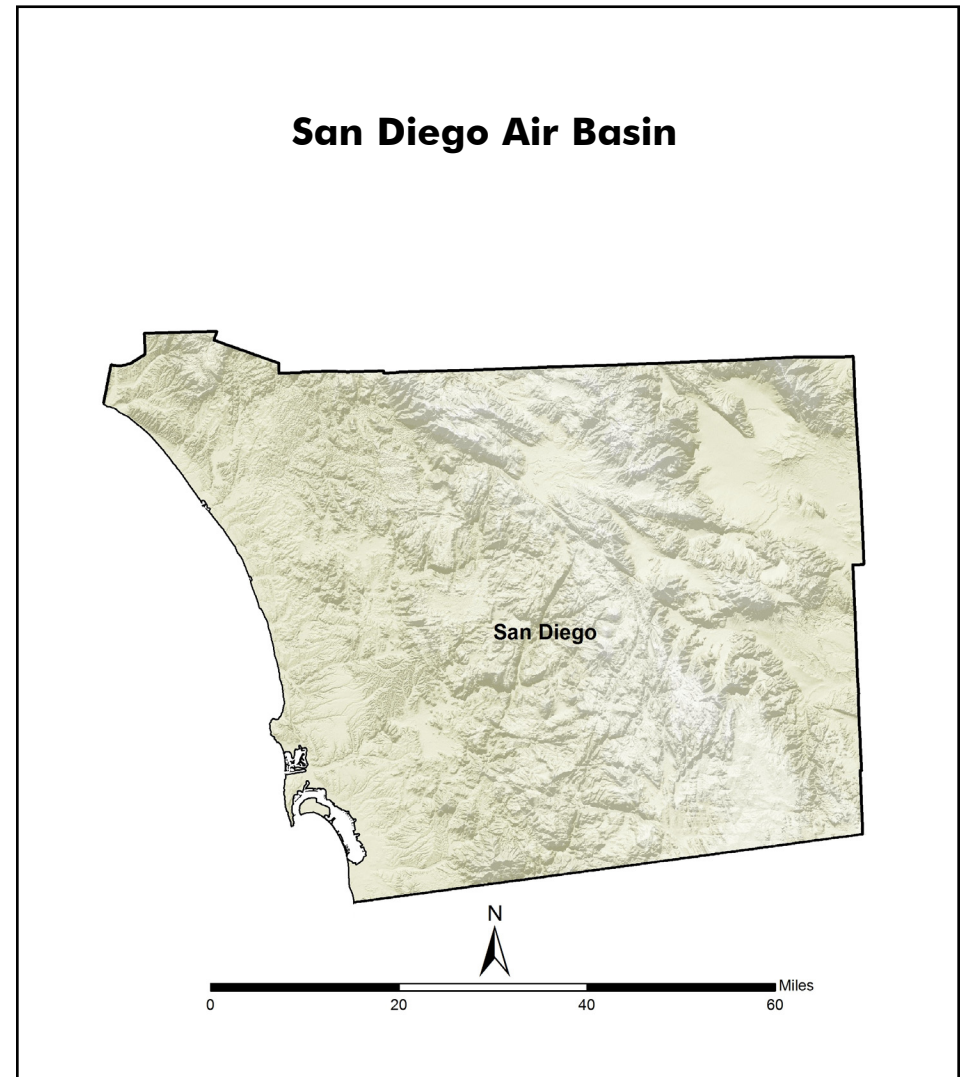


Figure 4-44

## San Diego Air Basin

### Emission Trends and Forecasts

Emissions of NO<sub>x</sub>, ROG, PM<sub>10</sub>, and CO in the San Diego Air Basin have been following the declining statewide trends since 1975. These trends are largely due to motor vehicle controls and reductions in evaporative emissions. Mobile sources (both on-road and other) are by far the largest contributors to NO<sub>x</sub>, ROG, and CO emissions in the San Diego Air Basin. The majority of the PM<sub>10</sub> emissions are from area-wide sources. The emission levels for SO<sub>x</sub> have also followed the statewide trends since 1975. The SO<sub>x</sub> emissions are forecasted to increase in future years due to predicted growth in shipping activities.

| San Diego Air Basin Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |      |
|--|------|------|------|------|------|------|------|------|------|------|
| Pollutant  | 1975 | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| NO <sub>x</sub>  | 284  | 268  | 271  | 305  | 268  | 232  | 193  | 160  | 129  | 111  |
| ROG  | 448  | 436  | 401  | 333  | 261  | 213  | 172  | 151  | 141  | 138  |
| PM <sub>10</sub>   | 69   | 77   | 86   | 104  | 99   | 107  | 116  | 121  | 127  | 134  |
| PM <sub>2.5</sub>  | 27   | 28   | 25   | 30   | 29   | 31   | 31   | 32   | 33   | 35   |
| SO <sub>x</sub>  | 45   | 47   | 20   | 24   | 8    | 4    | 4    | 5    | 7    | 11   |
| CO   | 3389 | 3066 | 2897 | 2517 | 1787 | 1333 | 955  | 753  | 630  | 564  |

Table 4-40

## San Diego Air Basin

### Population and VMT

Population in the San Diego Air Basin during the 1980-2020 period is projected to nearly double, from almost 1.9 million in 1980 to over 3.6 million in 2020. During this same time period, the number of vehicle miles traveled each day is projected to triple, from over 32 million miles per day in 1980 to nearly 97 million miles per day in 2020. As in other parts of California, overall air quality in the San Diego Air Basin has improved, despite high growth rates, indicating the benefits of cleaner technologies.

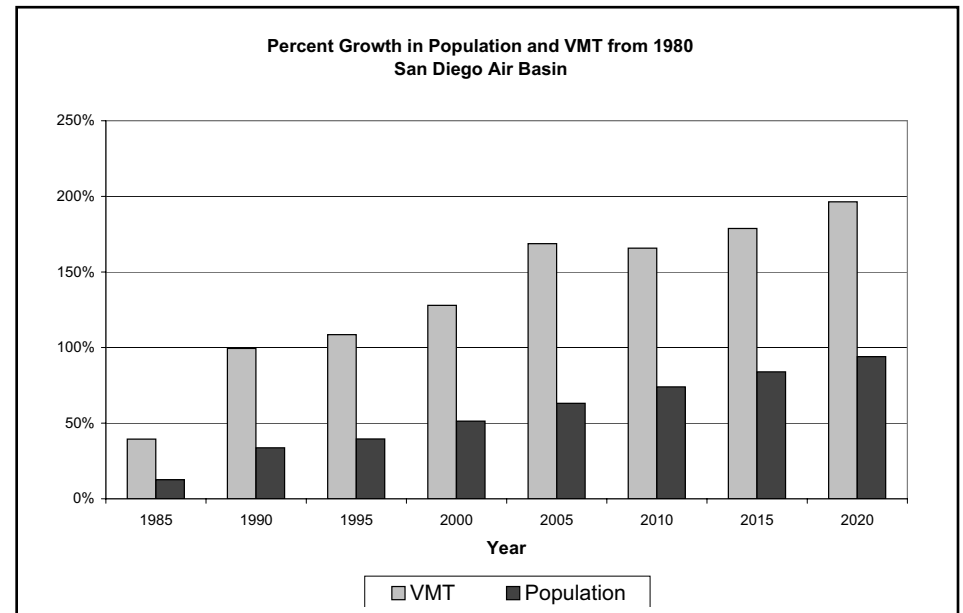


Figure 4-45

| Parameter           | 1980    | 1985    | 1990    | 1995    | 2000    | 2005    | 2010    | 2015    | 2020    |
|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Population          | 1873300 | 2109300 | 2504897 | 2615201 | 2836158 | 3057000 | 3258951 | 3446262 | 3633572 |
| Avg. Daily VMT/1000 | 32722   | 45636   | 65250   | 68235   | 74567   | 87944   | 86948   | 91223   | 96987   |

Table 4-41

## San Diego Air Basin

### Ozone Precursor Emission - Trends and Forecasts

Emissions of the ozone precursor NO<sub>x</sub> increase between 1975 and 1990 and decrease thereafter. ROG emissions have been decreasing overall since 1975. These decreases are mostly due to decreased emissions from motor vehicles, brought about by stricter motor vehicle emission standards. Stationary and area-wide source emissions of ROG have remained mostly unchanged over the last 20 years, with stricter emission standards offsetting industrial and population growth.

| NO <sub>x</sub> Emission Trends (tons/day, annual average) |            |            |            |            |            |            |            |            |            |            |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Emission Source  | 1975       | 1980       | 1985       | 1990       | 1995       | 2000       | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>   | <b>284</b> | <b>268</b> | <b>271</b> | <b>305</b> | <b>268</b> | <b>232</b> | <b>193</b> | <b>160</b> | <b>129</b> | <b>111</b> |
| <b>Stationary Sources</b>                                  | 48         | 32         | 17         | 19         | 16         | 14         | 9          | 10         | 10         | 10         |
| <b>Area-wide Sources</b>                                   | 2          | 3          | 3          | 3          | 3          | 3          | 3          | 3          | 3          | 3          |
| <b>On-Road Mobile</b>                                      | 186        | 176        | 187        | 203        | 178        | 146        | 113        | 88         | 64         | 48         |
| Gasoline Vehicles  | 172        | 159        | 160        | 165        | 141        | 104        | 64         | 45         | 32         | 24         |
| Diesel Vehicles  | 13         | 17         | 26         | 38         | 37         | 42         | 50         | 43         | 31         | 24         |
| <b>Other Mobile</b>  | 48         | 58         | 65         | 80         | 70         | 70         | 68         | 60         | 53         | 50         |
| Gasoline Fuel  | 3          | 4          | 5          | 6          | 6          | 6          | 7          | 6          | 6          | 6          |
| Diesel Fuel  | 38         | 47         | 52         | 65         | 55         | 54         | 49         | 41         | 32         | 25         |
| Other Fuel   | 7          | 8          | 8          | 9          | 9          | 11         | 12         | 13         | 15         | 20         |

Table 4-42

| ROG Emission Trends (tons/day, annual average) |            |            |            |            |            |            |            |            |            |            |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Emission Source                                | 1975       | 1980       | 1985       | 1990       | 1995       | 2000       | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>                             | <b>448</b> | <b>436</b> | <b>401</b> | <b>333</b> | <b>261</b> | <b>213</b> | <b>172</b> | <b>151</b> | <b>141</b> | <b>138</b> |
| <b>Stationary Sources</b>                      | 28         | 44         | 42         | 38         | 32         | 31         | 32         | 34         | 36         | 39         |
| <b>Area-wide Sources</b>                       | 32         | 37         | 41         | 44         | 39         | 39         | 36         | 37         | 38         | 40         |
| <b>On-Road Mobile</b>                          | 351        | 310        | 268        | 200        | 142        | 96         | 63         | 45         | 34         | 29         |
| Gasoline Vehicles                              | 350        | 308        | 265        | 196        | 139        | 93         | 60         | 42         | 32         | 27         |
| Diesel Vehicles                                | 2          | 2          | 3          | 4          | 3          | 3          | 3          | 3          | 2          | 2          |
| <b>Other Mobile</b>                            | 37         | 43         | 50         | 52         | 49         | 46         | 42         | 35         | 32         | 30         |
| Gasoline Fuel                                  | 28         | 33         | 39         | 39         | 36         | 35         | 31         | 26         | 24         | 23         |
| Diesel Fuel                                    | 5          | 7          | 8          | 10         | 9          | 8          | 7          | 6          | 4          | 3          |
| Other Fuel                                     | 3          | 3          | 3          | 3          | 3          | 4          | 4          | 4          | 4          | 4          |

Table 4-43

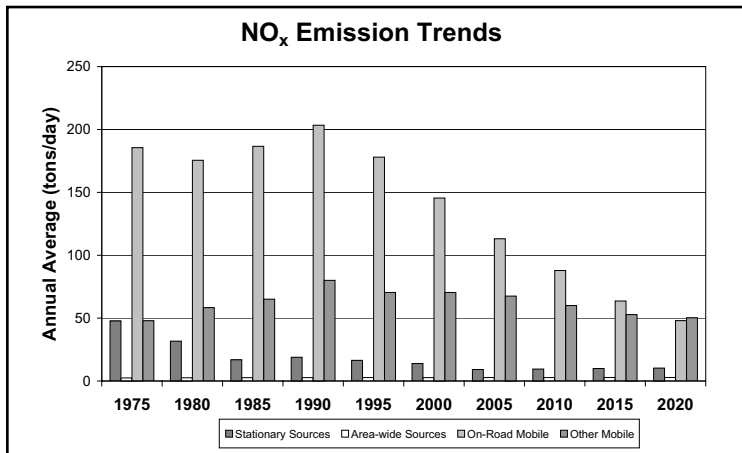


Figure 4-46

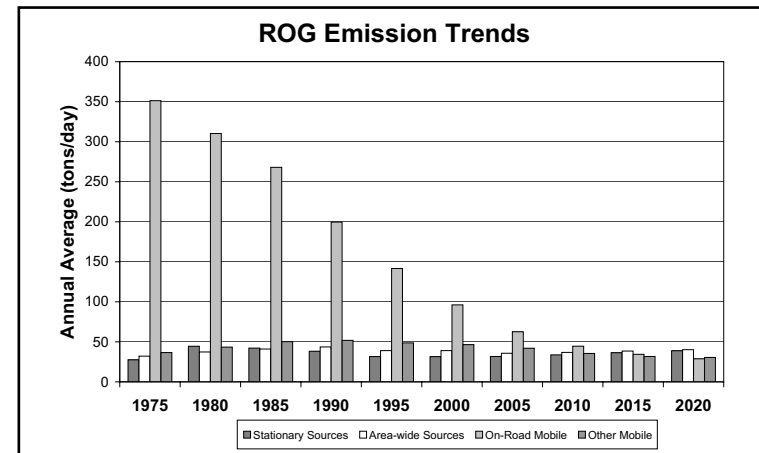


Figure 4-47

# San Diego Air Basin

## Ozone Air Quality Trend

Both the peak indicator and the number of days above the State and national ozone standards have decreased substantially over the last 20 years. The peak 8-hour ozone indicator shows an overall decline of 31 percent from 1987 to 2006. The number of State and national 8-hour standard exceedance days has dropped even more. There were 160 State 8-hour standard exceedance days during 1987 compared with 50 during 2007. This represents a decrease of about 69 percent in the three-year average of the State standard exceedance days. During 1987, there were 99 national 8-hour standard exceedance days compared with 7 during 2007. San Diego is expected to attain the current national 8-hour standard by the year 2009.

The San Diego Air Basin is the only one of the five major air basins the ARB has not identified as a transport contributor to a downwind area. The San Diego area is, however, a transport receptor. While it is clear that additional local emission controls will be needed to reach attainment of the ozone standards in the San Diego area, because of transport, future air quality in this area will also be affected by emission controls and growth in the South Coast Air Basin and, to some extent, Mexico.

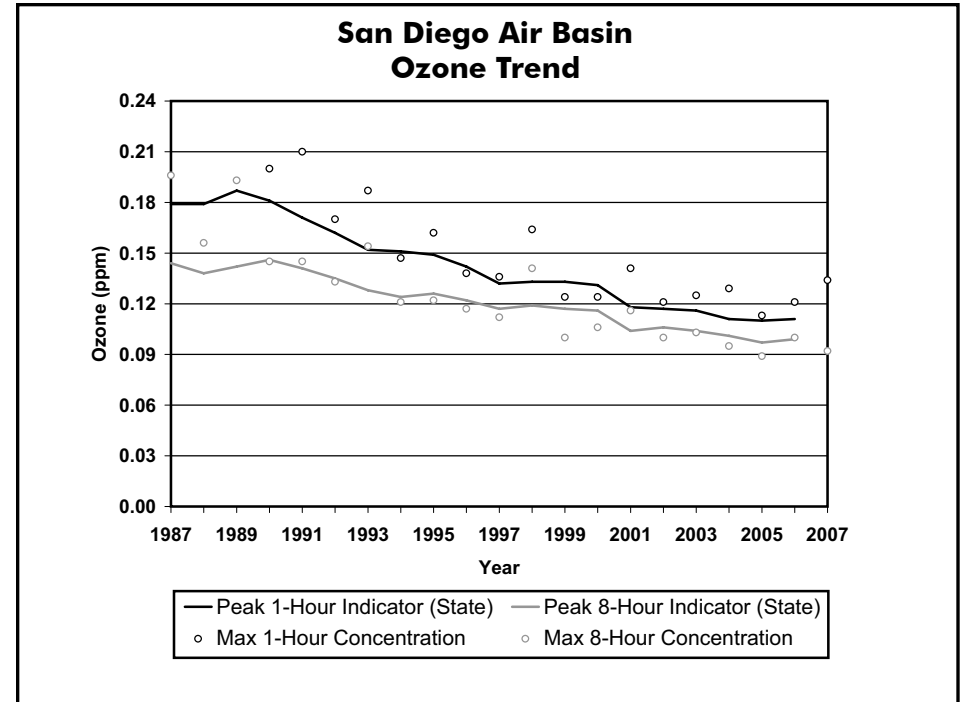


Figure 4-48

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  | 2007 <sup>1</sup> |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------------|
| Peak 8-Hour Indicator (State)         | 0.144 | 0.138 | 0.142 | 0.146 | 0.141 | 0.135 | 0.128 | 0.124 | 0.126 | 0.122 | 0.117 | 0.119 | 0.117 | 0.116 | 0.104 | 0.106 | 0.104 | 0.101 | 0.097 | 0.099 |                   |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.124 | 0.121 | 0.125 | 0.129 | 0.125 | 0.118 | 0.112 | 0.109 | 0.108 | 0.104 | 0.099 | 0.102 | 0.099 | 0.100 | 0.094 | 0.095 | 0.093 | 0.089 | 0.086 | 0.088 |                   |
| Peak 1-Hour Indicator (State)         | 0.179 | 0.179 | 0.187 | 0.181 | 0.171 | 0.162 | 0.152 | 0.151 | 0.149 | 0.142 | 0.132 | 0.133 | 0.133 | 0.131 | 0.118 | 0.117 | 0.116 | 0.111 | 0.110 | 0.111 |                   |
| 4th High 1-Hr. in 3 Yrs <sup>2</sup>  | 0.180 | 0.180 | 0.190 | 0.190 | 0.170 | 0.170 | 0.154 | 0.150 | 0.146 | 0.141 | 0.137 | 0.133 | 0.131 | 0.130 | 0.118 | 0.118 | 0.118 | 0.115 | 0.112 | 0.113 |                   |
| Max. 8-Hr. Concentration              | 0.196 | 0.156 | 0.193 | 0.145 | 0.145 | 0.133 | 0.154 | 0.121 | 0.122 | 0.117 | 0.112 | 0.141 | 0.100 | 0.106 | 0.116 | 0.100 | 0.103 | 0.095 | 0.089 | 0.100 | 0.092             |
| Maximum 1-Hr. Concentration           | 0.290 | 0.250 | 0.250 | 0.200 | 0.210 | 0.170 | 0.187 | 0.147 | 0.162 | 0.138 | 0.136 | 0.164 | 0.124 | 0.124 | 0.141 | 0.121 | 0.125 | 0.129 | 0.113 | 0.121 | 0.134             |
| Days Above State 8-Hr. Std.           | 160   | 189   | 189   | 167   | 144   | 133   | 127   | 122   | 127   | 89    | 73    | 88    | 74    | 75    | 64    | 56    | 59    | 43    | 51    | 68    | 50                |
| Days Above Nat. 8-Hr. Std.            | 99    | 119   | 122   | 96    | 67    | 66    | 58    | 46    | 48    | 31    | 16    | 35    | 17    | 16    | 17    | 13    | 6     | 8     | 5     | 14    | 7                 |
| Days Above State 1-Hr. Std.           | 127   | 160   | 159   | 139   | 106   | 97    | 90    | 79    | 96    | 51    | 43    | 54    | 27    | 24    | 29    | 15    | 24    | 12    | 16    | 23    | 21                |

<sup>1</sup> Preliminary data for 2007 are shown here, however they are subject to change. 2006 is the last year for which complete and approved data is available, thus calculated annual statistics are not included for 2007.

<sup>2</sup> The national 1-Hour standard has been revoked. Historical 1-Hour data are provided for reference.

Table 4-44

## San Diego Air Basin Directly Emitted PM<sub>10</sub> Emission Trends and Forecasts

Direct emissions of PM<sub>10</sub> are projected to almost double in the San Diego Air Basin between 1975 and 2020. This increase is due to growth in emissions from area-wide sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, dust from construction and demolition operations, and particulates from residential fuel combustion (including wood). The growth in these area-wide sources is primarily due to population growth and increases in VMT.

PM can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO<sub>x</sub>, SO<sub>x</sub>, ROG, and ammonia. The PM<sub>10</sub> emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted PM<sub>10</sub> emissions contribute approximately 70 percent of the ambient PM<sub>10</sub> in the San Diego Air Basin.

| Directly Emitted PM <sub>10</sub> Emission Trends (tons/day, annual average) |           |           |           |            |           |            |            |            |            |            |
|--|-----------|-----------|-----------|------------|-----------|------------|------------|------------|------------|------------|
| Emission Source  | 1975      | 1980      | 1985      | 1990       | 1995      | 2000       | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>   | <b>69</b> | <b>77</b> | <b>86</b> | <b>104</b> | <b>99</b> | <b>107</b> | <b>116</b> | <b>121</b> | <b>127</b> | <b>134</b> |
| <b>Stationary Sources</b>  | 18        | 13        | 7         | 8          | 9         | 8          | 10         | 11         | 12         | 13         |
| <b>Area-wide Sources</b>   | 43        | 55        | 68        | 82         | 79        | 87         | 94         | 99         | 104        | 110        |
| <b>On-Road Mobile</b>  | 3         | 4         | 5         | 6          | 5         | 5          | 6          | 5          | 5          | 5          |
| Gasoline Vehicles  | 2         | 2         | 2         | 3          | 3         | 3          | 4          | 4          | 4          | 5          |
| Diesel Vehicles  | 1         | 2         | 3         | 4          | 2         | 2          | 2          | 2          | 1          | 1          |
| <b>Other Mobile</b>  | 5         | 6         | 7         | 8          | 6         | 6          | 6          | 6          | 6          | 6          |
| Gasoline Fuel  | 0         | 0         | 1         | 1          | 1         | 1          | 1          | 1          | 1          | 2          |
| Diesel Fuel  | 3         | 3         | 4         | 5          | 3         | 3          | 3          | 2          | 2          | 1          |
| Other Fuel   | 2         | 2         | 2         | 2          | 2         | 2          | 2          | 3          | 3          | 3          |

Table 4-45

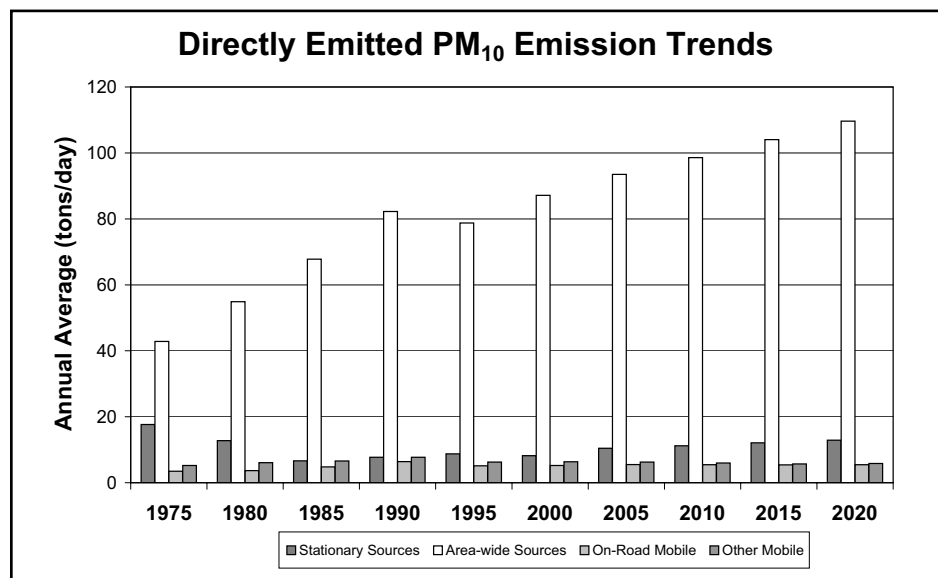


Figure 4-49

## San Diego Air Basin Directly Emitted PM<sub>2.5</sub> Emission Trends and Forecasts

Direct emissions of PM<sub>2.5</sub> increased steadily in the San Diego Air Basin between 1975 and 2005 and are projected to continue increasing through 2020. This increase is due to growth in emissions from area-wide sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, dust from construction and demolition operations, and particulates from residential fuel combustion (including wood). The growth in these area-wide sources is primarily due to population growth and increases in VMT.

PM can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO<sub>x</sub>, SO<sub>x</sub>, ROG, and ammonia. The PM<sub>2.5</sub> emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted PM<sub>2.5</sub> emissions contribute approximately 50 percent of the ambient PM<sub>2.5</sub> in the San Diego Air Basin.

| Directly Emitted PM <sub>2.5</sub> Emission Trends (tons/day, annual average) |           |           |           |           |           |           |           |           |           |           |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Emission Source   | 1975      | 1980      | 1985      | 1990      | 1995      | 2000      | 2005      | 2010      | 2015      | 2020      |
| <b>All Sources</b>  | <b>27</b> | <b>28</b> | <b>25</b> | <b>30</b> | <b>29</b> | <b>31</b> | <b>31</b> | <b>32</b> | <b>33</b> | <b>35</b> |
| <b>Stationary Sources</b>   | 12        | 10        | 4         | 4         | 6         | 6         | 6         | 6         | 7         | 7         |
| <b>Area-wide Sources</b>  | 8         | 10        | 12        | 14        | 14        | 15        | 16        | 17        | 18        | 19        |
| <b>On-Road Mobile</b>   | 3         | 3         | 4         | 5         | 4         | 4         | 4         | 4         | 4         | 4         |
| Gasoline Vehicles   | 1         | 1         | 1         | 2         | 2         | 2         | 2         | 2         | 3         | 3         |
| Diesel Vehicles   | 1         | 2         | 3         | 3         | 2         | 2         | 2         | 1         | 1         | 1         |
| <b>Other Mobile</b>   | 5         | 6         | 6         | 7         | 6         | 6         | 6         | 5         | 5         | 5         |
| Gasoline Fuel   | 0         | 0         | 0         | 1         | 1         | 1         | 1         | 1         | 1         | 1         |
| Diesel Fuel   | 3         | 3         | 4         | 4         | 3         | 3         | 3         | 2         | 1         | 1         |
| Other Fuel  | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 3         | 3         |

Table 4-46

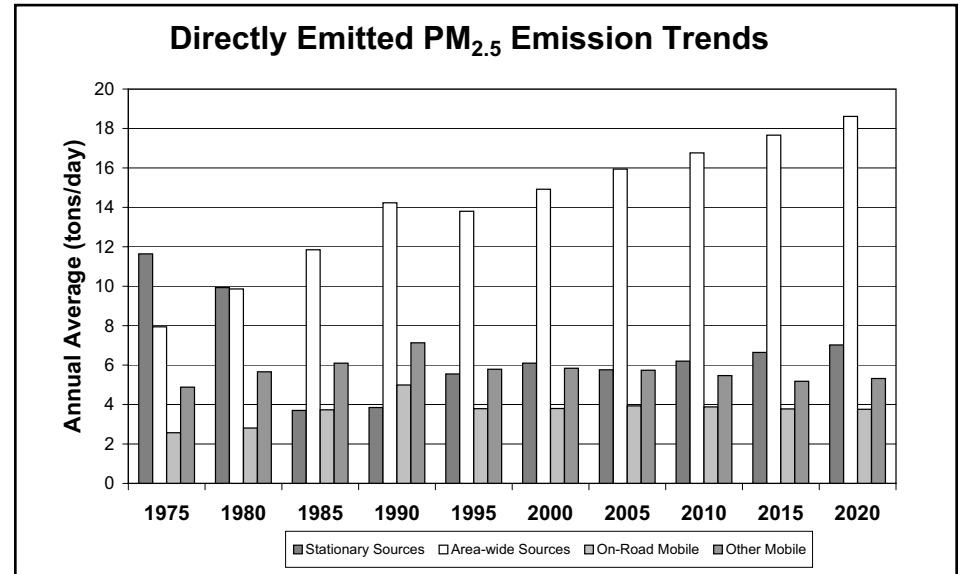


Figure 4-50

## San Diego Air Basin PM<sub>10</sub> Air Quality Trend

PM<sub>10</sub> concentrations in the San Diego Air Basin have changed little during the years for which reliable data are available. The annual average for 2006 exceeds the State annual standard and in previous years has been higher than the 1989 value. In 2005 it briefly dropped below what it had been in any previous year, before returning to a normal level in 2006. The previous apparent lack of progress was, in part, a result of monitoring that began at a new site in 1993, which measured higher concentrations. The maximum 24-hour concentrations exceed the State standards. The highest maximum 24-hour concentration of 289 ug/m<sup>3</sup> occurred in 2003, and was due to severe wildfires that occurred in Southern California during October.

During 1989, there were 114 calculated State standard exceedance days, compared with 159 during 2006. During 2006, there were no calculated days over the 24-hour national standard. There is a substantial amount of variability from year-to-year in the 24-hour statistics. This variability is a reflection of meteorology, the 1-in-6-day sampling schedule, and changes in monitoring location. Although ambient PM<sub>10</sub> concentrations in the San Diego Air Basin are not as high as in some other areas of the State, additional emission controls will be needed to bring this area into attainment with the State standards.

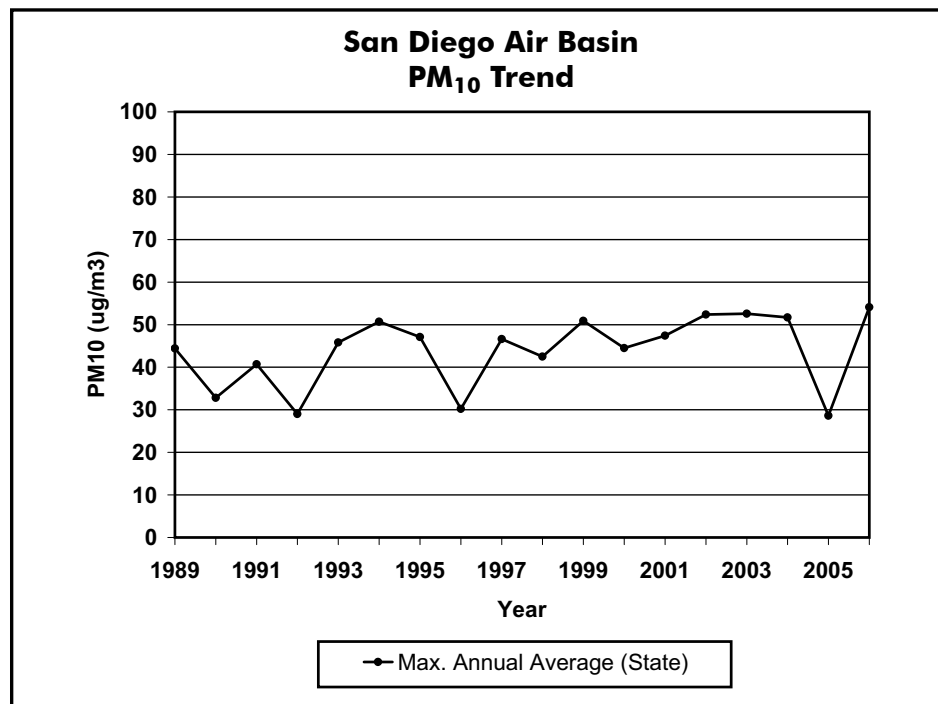


Figure 4-51

| PM <sub>10</sub> (ug/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      | 80   | 90   | 115  | 81   | 67   | 159  | 129  | 121  | 93   | 125  | 89   | 119  | 136  | 106  | 131  | 289  | 138  | 154  | 134  |
| Max. 24-Hr. Concentration (Nat)       |      | 80   | 90   | 115  | 81   | 67   | 159  | 129  | 121  | 93   | 125  | 89   | 121  | 139  | 107  | 130  | 280  | 137  | 155  | 133  |
| Max. Annual Average (State)           |      |      | 44.4 | 32.8 | 40.7 | 29.0 | 45.8 | 50.7 | 47.1 | 30.2 | 46.6 | 42.5 | 50.9 | 44.5 | 47.4 | 52.4 | 52.6 | 51.7 | 28.6 | 54.1 |
| Max. Annual Average (Nat)             |      | 40.0 | 43.8 | 37.6 | 36.4 | 35.9 | 45.9 | 50.7 | 46.8 | 38.5 | 46.6 | 42.5 | 52.2 | 45.2 | 49.1 | 54.9 | 52.1 | 51.2 | 49.8 | 53.7 |
| Calc Days Above State 24-Hr Std       |      |      | 114  | 38   | 84   | 12   | 134  | 134  | 122  | 12   | 125  | 107  | 124  | 109  | 129  | 173  | 151  | 175  | 13   | 159  |
| Calc Days Above Nat 24-Hr Std         |      | 0    | 0    | 0    | 0    | 0    | 6    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 6    | 0    | 0    | 0    |

Table 4-47



## San Diego Air Basin

### PM<sub>2.5</sub> Air Quality Trend

Annual average PM<sub>2.5</sub> concentrations (national) in the San Diego Air Basin have declined during the period of 1999 through 2006. The State annual average concentrations also decreased within this period. The highest maximum 24-hour concentration of 239 ug/m<sup>3</sup> occurred in 2003, and was due to severe wildfires that occurred in Southern California during October. The 98<sup>th</sup> percentile of 24-hour PM<sub>2.5</sub> concentrations showed substantial variability within this period, a reflection of changes in meteorology and the influence of the 2003 wildfires. Measures adopted as part of SB 656, as well as programs to reduce ozone and diesel PM should help in reducing public exposure to PM<sub>2.5</sub> in this region.

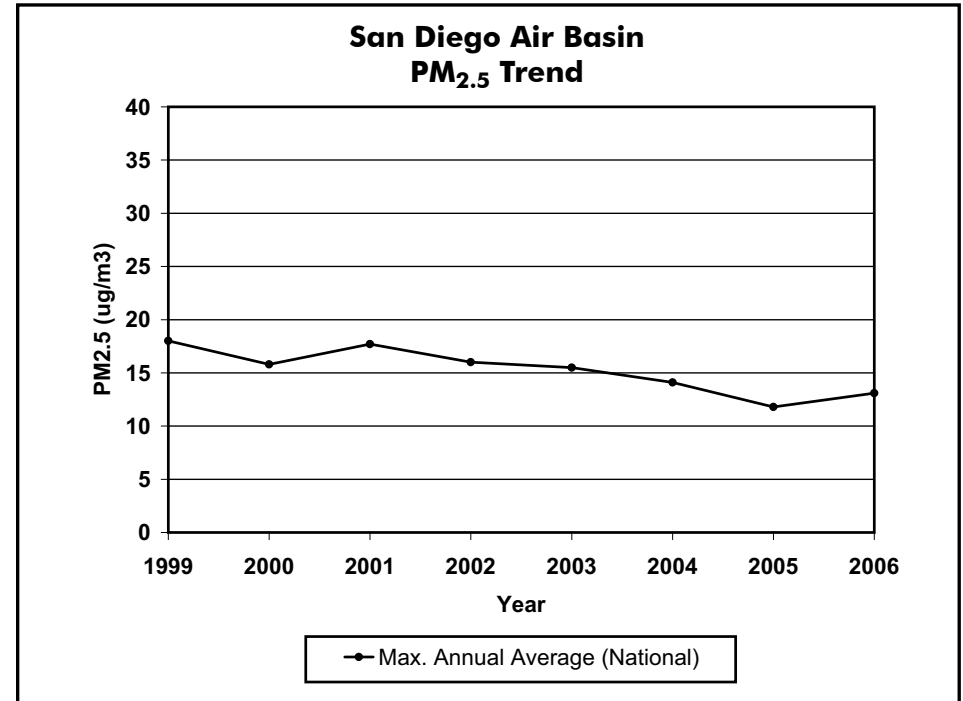


Figure 4-52

| PM <sub>2.5</sub> (ug/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003  | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 64.3 | 66.3 | 60.0 | 53.6 | 239.2 | 67.3 | 44.1 | 63.3 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 64.3 | 66.3 | 60.0 | 53.6 | 239.2 | 67.3 | 44.1 | 63.3 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      | 45.1 | 48.7 | 40.8 | 39.3 | 46.9  | 37.4 | 30.2 | 28.4 |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 15.5 | 14.4  | 14.1 |      | 13.1 |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      | 18.0 | 15.8 | 17.7 | 16.0 | 15.5  | 14.1 | 11.8 | 13.1 |

Table 4-48

## San Diego Air Basin Carbon Monoxide Emission Trends and Forecasts

CO emissions in the San Diego Air Basin mirror the decreasing state-wide trend from 1975 to 2020, even though the VMT are increasing. This is yet another example of how California's motor vehicle control program is having a positive impact on CO emissions.

| CO Emission Trends (tons/day, annual average) |             |             |             |             |             |             |            |            |            |            |
|---|-------------|-------------|-------------|-------------|-------------|-------------|------------|------------|------------|------------|
| Emission Source                               | 1975        | 1980        | 1985        | 1990        | 1995        | 2000        | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>                            | <b>3389</b> | <b>3066</b> | <b>2897</b> | <b>2517</b> | <b>1787</b> | <b>1333</b> | <b>955</b> | <b>753</b> | <b>630</b> | <b>564</b> |
| <b>Stationary Sources</b>                     | 30          | 29          | 28          | 27          | 26          | 40          | 27         | 26         | 25         | 25         |
| <b>Area-wide Sources</b>                      | 23          | 25          | 27          | 29          | 27          | 28          | 28         | 28         | 29         | 30         |
| <b>On-Road Mobile</b>                         | 3169        | 2799        | 2586        | 2145        | 1448        | 1007        | 657        | 456        | 327        | 251        |
| Gasoline Vehicles                             | 3164        | 2792        | 2574        | 2130        | 1434        | 994         | 643        | 444        | 317        | 242        |
| Diesel Vehicles                               | 6           | 8           | 11          | 16          | 14          | 14          | 14         | 13         | 10         | 9          |
| <b>Other Mobile</b>                           | 167         | 213         | 256         | 316         | 286         | 259         | 243        | 243        | 248        | 258        |
| Gasoline Fuel                                 | 126         | 165         | 207         | 255         | 231         | 207         | 194        | 193        | 197        | 206        |
| Diesel Fuel                                   | 17          | 23          | 25          | 34          | 29          | 26          | 22         | 22         | 22         | 23         |
| Other Fuel                                    | 24          | 26          | 24          | 27          | 26          | 26          | 27         | 28         | 28         | 29         |

Table 4-49

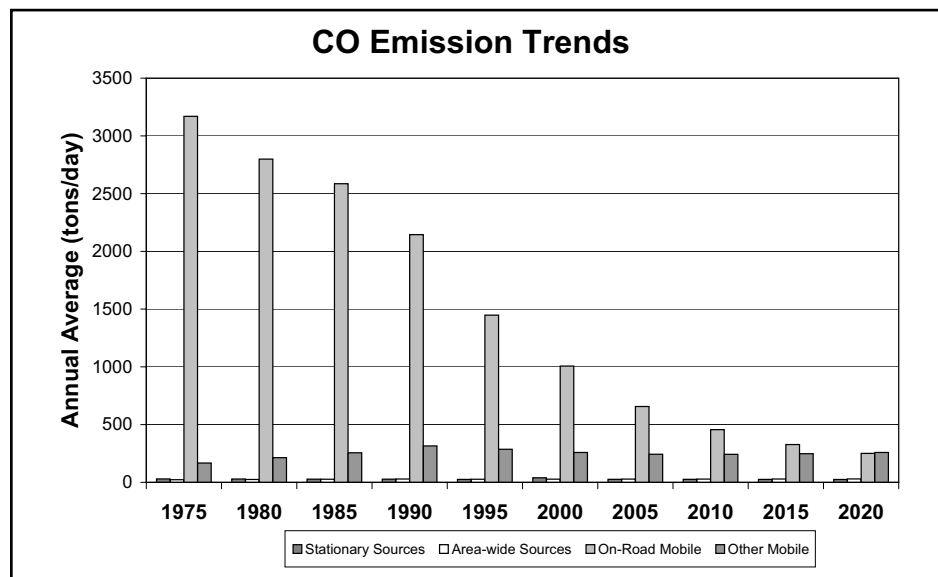


Figure 4-53

# San Diego Air Basin

## Carbon Monoxide Air Quality Trend

The peak 8-hour indicator for CO in the San Diego Air Basin decreased substantially over the trend period: an almost 64 percent decrease from 1987 to 2006. As a result of these decreases, the national CO standards had not been exceeded in the San Diego Air Basin since 1989. However, in 2003 the CO standards were exceeded due to extensive wildfires that impacted air quality throughout Southern California. This exceedance does not impact San Diego's attainment status, because it qualifies as an exceptional event.

With existing and anticipated motor vehicle and clean fuels regulations, ambient CO concentrations should continue to decline. This should be sufficient to maintain a healthful level of CO in this area.

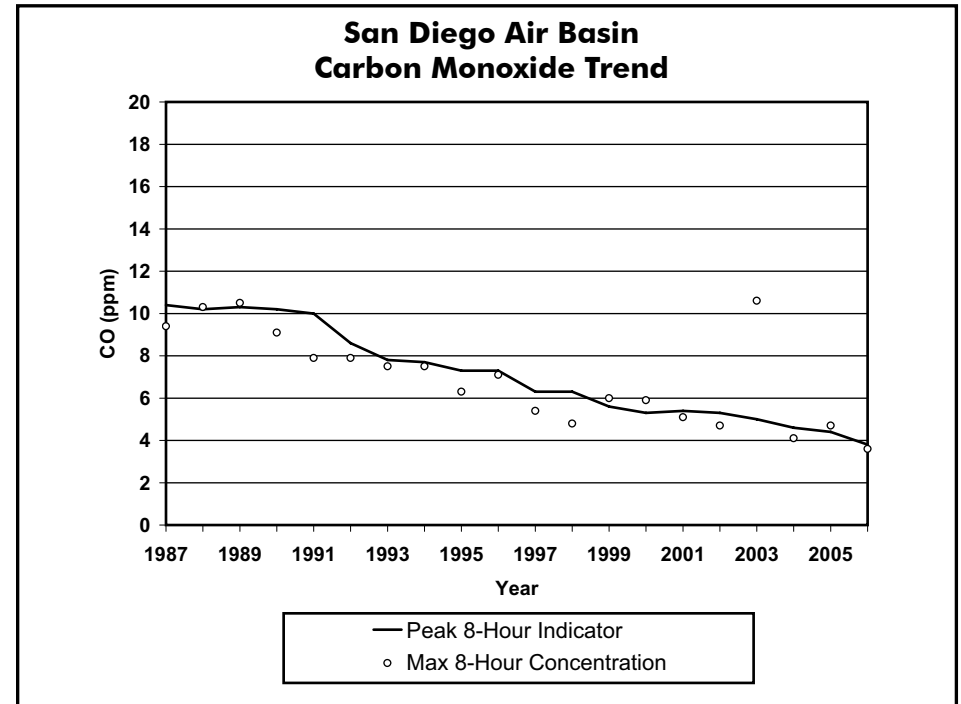


Figure 4-54

| CARBON MONOXIDE (ppm)            | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator (State)     | 10.4 | 10.2 | 10.3 | 10.2 | 10.0 | 8.6  | 7.8  | 7.7  | 7.3  | 7.3  | 6.3  | 6.3  | 5.6  | 5.3  | 5.4  | 5.3  | 5.0  | 4.6  | 4.4  | 3.8  |
| Max. 1-Hr. Concentration         | 14.0 | 17.0 | 17.0 | 18.0 | 14.0 | 14.0 | 11.4 | 11.0 | 9.9  | 12.4 | 9.3  | 10.2 | 9.9  | 9.3  | 8.5  | 8.5  | 12.7 | 6.9  | 7.9  | 10.8 |
| Max. 8-Hr. Concentration (State) | 9.4  | 10.3 | 10.5 | 9.1  | 7.9  | 7.9  | 7.5  | 7.5  | 6.3  | 7.1  | 5.4  | 4.8  | 6.0  | 5.9  | 5.1  | 4.7  | 10.6 | 4.1  | 4.7  | 3.6  |
| Days Above State 8-Hr. Std.      | 1    | 5    | 6    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    |
| Days Above Nat. 8-Hr. Std.       | 0    | 2    | 5    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    |

Table 4-50

# San Diego Air Basin Nitrogen Dioxide

## Oxides of Nitrogen Emission Trends and Forecasts

NO<sub>x</sub> and NO<sub>2</sub> emissions in the San Diego Air Basin follow the declining statewide trend from 1990 to 2020. The continued adoption of more stringent motor vehicle and stationary source emission standards should continue to reduce NO<sub>2</sub> emissions.

| NO <sub>x</sub> Emission Trends (tons/day, annual average) |            |            |            |            |            |            |            |            |            |            |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Emission Source  | 1975       | 1980       | 1985       | 1990       | 1995       | 2000       | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>   | <b>284</b> | <b>268</b> | <b>271</b> | <b>305</b> | <b>268</b> | <b>232</b> | <b>193</b> | <b>160</b> | <b>129</b> | <b>111</b> |
| <b>Stationary Sources</b>                                  | 48         | 32         | 17         | 19         | 16         | 14         | 9          | 10         | 10         | 10         |
| <b>Area-wide Sources</b>                                   | 2          | 3          | 3          | 3          | 3          | 3          | 3          | 3          | 3          | 3          |
| <b>On-Road Mobile</b>                                      | 186        | 176        | 187        | 203        | 178        | 146        | 113        | 88         | 64         | 48         |
| Gasoline Vehicles  | 172        | 159        | 160        | 165        | 141        | 104        | 64         | 45         | 32         | 24         |
| Diesel Vehicles  | 13         | 17         | 26         | 38         | 37         | 42         | 50         | 43         | 31         | 24         |
| <b>Other Mobile</b>  | 48         | 58         | 65         | 80         | 70         | 70         | 68         | 60         | 53         | 50         |
| Gasoline Fuel  | 3          | 4          | 5          | 6          | 6          | 6          | 7          | 6          | 6          | 6          |
| Diesel Fuel  | 38         | 47         | 52         | 65         | 55         | 54         | 49         | 41         | 32         | 25         |
| Other Fuel   | 7          | 8          | 8          | 9          | 9          | 11         | 12         | 13         | 15         | 20         |

Table 4-51

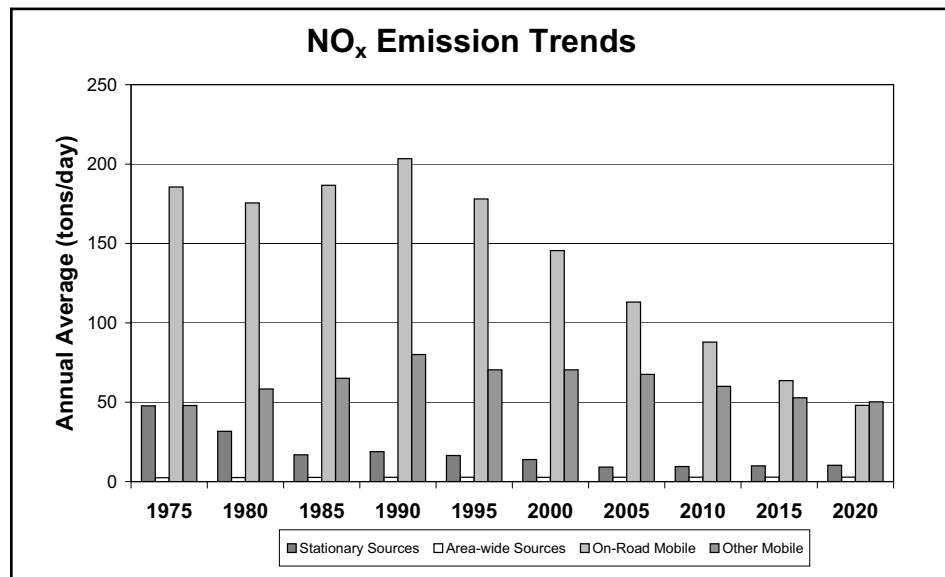


Figure 4-55

# San Diego Air Basin

## Nitrogen Dioxide Air Quality Trend

The San Diego Air Basin attains both the State and national NO<sub>2</sub> standards. Since 1990 ambient concentrations have been well below the levels of both the State and national standards. Data show that the peak 1-hour indicator decreased nearly 47 percent from 1987 to 2006.

Because NO<sub>x</sub> emissions contribute to ozone, as well as to NO<sub>2</sub>, many of the ozone control measures help reduce ambient NO<sub>2</sub> concentrations. Furthermore, NO<sub>x</sub> emission controls are a critical part of the ozone control strategy. As a result, these controls should ensure continued attainment of the State and national NO<sub>2</sub> standards.

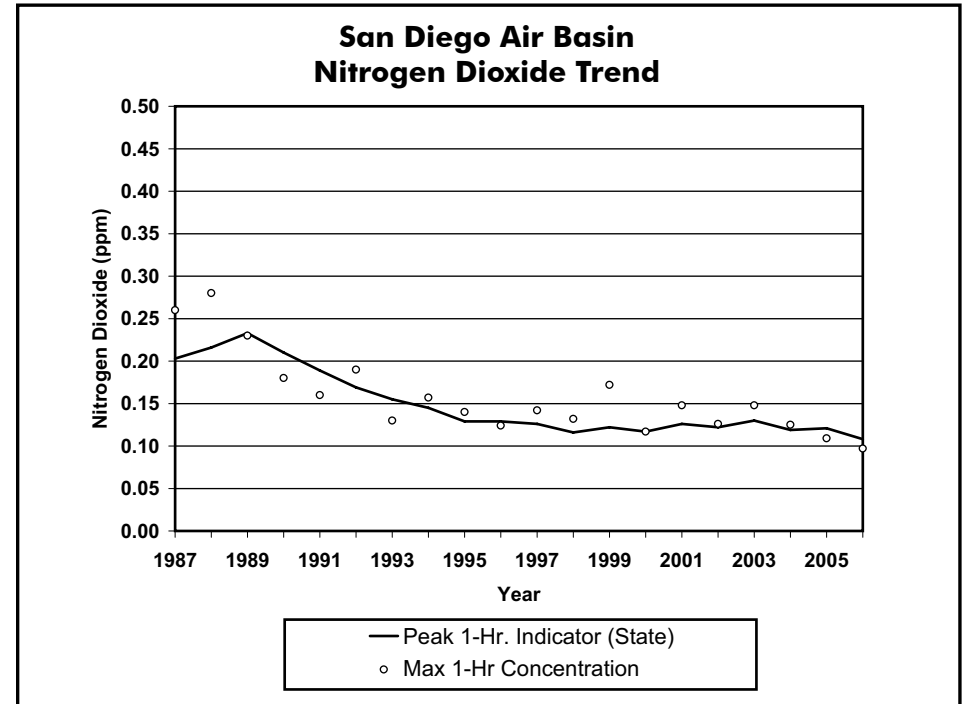


Figure 4-56

| NITROGEN DIOXIDE (ppm)       | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 1-Hr. Indicator (State) | 0.203 | 0.216 | 0.233 | 0.210 | 0.189 | 0.169 | 0.155 | 0.145 | 0.129 | 0.129 | 0.126 | 0.116 | 0.122 | 0.117 | 0.126 | 0.122 | 0.130 | 0.119 | 0.121 | 0.108 |
| Max. 1-Hr. Concentration     | 0.260 | 0.280 | 0.230 | 0.180 | 0.160 | 0.190 | 0.130 | 0.157 | 0.140 | 0.124 | 0.142 | 0.132 | 0.172 | 0.117 | 0.148 | 0.126 | 0.148 | 0.125 | 0.109 | 0.097 |
| Max. Annual Average (Nat)    | 0.032 | 0.035 | 0.031 | 0.029 | 0.029 | 0.027 | 0.023 | 0.024 | 0.026 | 0.022 | 0.024 | 0.023 | 0.026 | 0.024 | 0.022 | 0.022 | 0.021 | 0.023 | 0.024 | 0.024 |
| Max. Annual Average (State)  | 0.032 | 0.035 | 0.031 | 0.029 | 0.029 | 0.027 | 0.023 | 0.024 | 0.026 | 0.022 | 0.024 | 0.023 | 0.026 | 0.024 | 0.022 | 0.022 | 0.021 | 0.023 | 0.018 | 0.024 |

Table 4-52

## Sacramento Valley Air Basin

### Introduction - Area Description

The Sacramento Valley Air Basin is home to California's capital. Located in the northern portion of the Central Valley, the Sacramento Valley Air Basin includes Butte, Colusa, Glenn, Sacramento, Shasta, Sutter, Tehama, Yolo, and Yuba counties, the western urbanized portion of Placer County, and the northeastern portion of Solano County. The Sacramento Valley Air Basin occupies 14,994 square miles and has a population of more than two million people.

Because of its inland location, the climate of the Sacramento Valley Air Basin is more extreme than that of the San Francisco Bay Area or South Coast air basins. The winters are generally cool and wet, while the summers are hot and dry.

Emissions from the urbanized portion of the basin (Sacramento, Yolo, Solano, and Placer Counties) dominate the emission inventory for the Sacramento Valley Air Basin, and on-road motor vehicles are the primary source of emissions in the metropolitan area. While pollutant concentrations have generally declined over the years, additional emission reductions will be needed to attain the State and national ambient air quality standards in this air basin.

Note: The Sacramento Metropolitan Nonattainment Area includes the southern part of the Air Basin, as well as the western portion of El Dorado County and the western portion of Placer County.

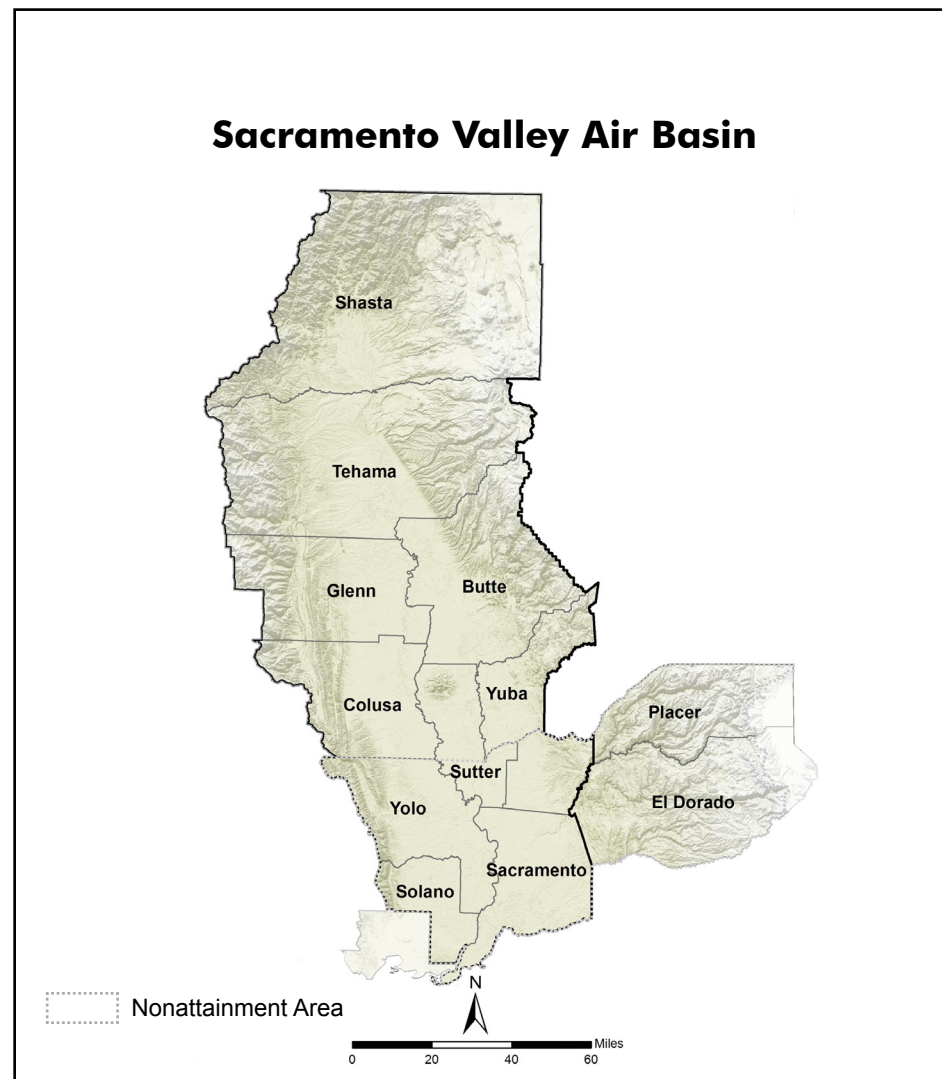


Figure 4-57

## Sacramento Valley Air Basin Emission Trends and Forecasts

The emission levels in the Sacramento Valley Air Basin are trending downward from 1990 to 2020 for NO<sub>x</sub>, and downward from 1975 to 2020 for ROG and CO. The decreases in NO<sub>x</sub>, ROG, and CO are largely due to motor vehicle controls and reductions in evaporative emissions. Mobile sources are by far the largest contributors to NO<sub>x</sub>, ROG, and CO emissions in the Sacramento Valley Air Basin. PM<sub>10</sub> and PM<sub>2.5</sub> emissions are increasing from 1975 to 2020. The emission levels for SO<sub>x</sub> have declined after 1990. Most of the reduction in SO<sub>x</sub> emissions is seen for on-road motor vehicles and other mobile sources.

| Sacramento Valley Air Basin Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |      |
|--|------|------|------|------|------|------|------|------|------|------|
| Pollutant  | 1975 | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| NO <sub>x</sub>  | 335  | 351  | 342  | 382  | 354  | 318  | 290  | 250  | 200  | 164  |
| ROG  | 461  | 447  | 415  | 362  | 301  | 243  | 207  | 183  | 170  | 165  |
| PM <sub>10</sub>   | 199  | 206  | 213  | 226  | 215  | 222  | 227  | 232  | 237  | 242  |
| PM <sub>2.5</sub>  | 73   | 71   | 73   | 81   | 73   | 74   | 73   | 74   | 75   | 76   |
| SO <sub>x</sub>  | 25   | 23   | 26   | 30   | 9    | 6    | 5    | 4    | 4    | 4    |
| CO   | 3116 | 3113 | 2899 | 2573 | 1935 | 1520 | 1223 | 1032 | 908  | 835  |

Table 4-53

## Sacramento Valley Air Basin Population and VMT

Between 1980 and 2020, population in the Sacramento Valley Air Basin is projected to grow at a higher rate than the statewide average—a 140 percent increase compared with an 84 percent increase statewide. Population is projected to grow from 15 million in 1980 to 36 million in 2020. During this same period, the increase in the number of vehicle miles traveled each day is projected to be higher than the overall statewide value: a 200 percent increase in the Sacramento Valley Air Basin. VMT are projected to increase from about 30 million miles in 1980 to nearly 90 million miles in 2020.

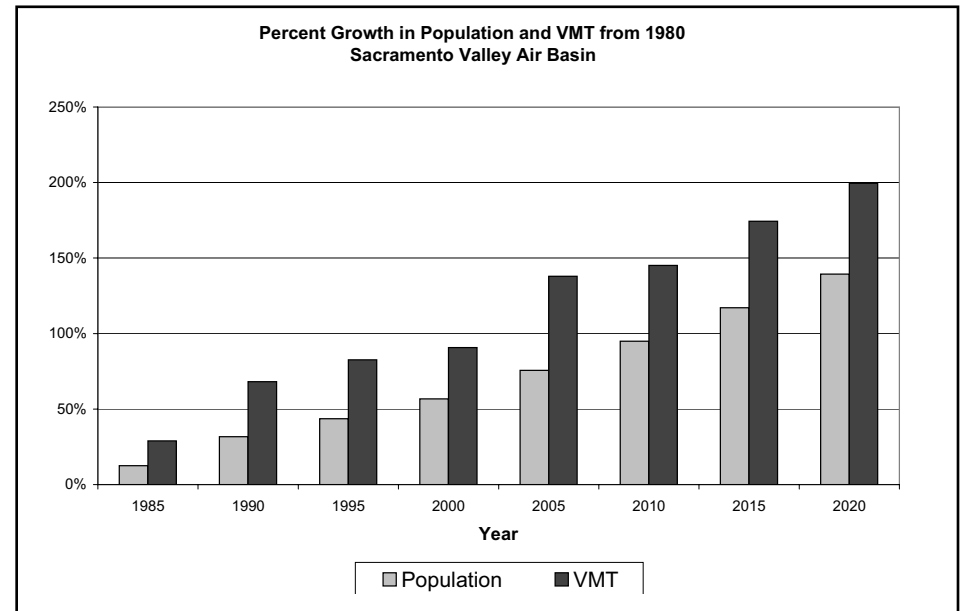


Figure 4-58

| Parameter           | 1980    | 1985    | 1990    | 1995    | 2000    | 2005    | 2010    | 2015    | 2020    |
|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Population          | 1500924 | 1688217 | 1977544 | 2155490 | 2353225 | 2636019 | 2925202 | 3259235 | 3593262 |
| Avg. Daily VMT/1000 | 30025   | 38728   | 50471   | 54826   | 57268   | 71433   | 73601   | 82374   | 89914   |

Table 4-54

## Sacramento Valley Air Basin

### Ozone Precursor Emission - Trends and Forecasts

Emissions of NO<sub>x</sub> decreased from 1990 to 2005 and are projected to continue decreasing from 2005 to 2020. On-road motor vehicles and other mobile sources are by far the largest contributors to NO<sub>x</sub> emissions. More stringent mobile source emission standards and cleaner burning fuels have largely contributed to the decline in NO<sub>x</sub> emissions. ROG emissions have been decreasing for the last 30 years due to more stringent motor vehicle standards and new rules for control of ROG from various industrial coating and solvent operations.

| NO <sub>x</sub> Emission Trends (tons/day, annual average) |            |            |            |            |            |            |            |            |            |            |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Emission Source  | 1975       | 1980       | 1985       | 1990       | 1995       | 2000       | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>   | <b>335</b> | <b>351</b> | <b>342</b> | <b>382</b> | <b>354</b> | <b>318</b> | <b>290</b> | <b>250</b> | <b>200</b> | <b>164</b> |
| <b>Stationary Sources</b>                                  | 38         | 32         | 31         | 45         | 46         | 42         | 38         | 39         | 39         | 38         |
| <b>Area-wide Sources</b>                                   | 9          | 9          | 9          | 10         | 9          | 9          | 9          | 9          | 9          | 9          |
| <b>On-Road Mobile</b>                                      | 186        | 194        | 202        | 215        | 196        | 167        | 154        | 127        | 88         | 62         |
| Gasoline Vehicles  | 156        | 158        | 151        | 144        | 123        | 88         | 59         | 42         | 30         | 22         |
| Diesel Vehicles  | 30         | 35         | 51         | 72         | 74         | 79         | 96         | 85         | 58         | 40         |
| <b>Other Mobile</b>  | 102        | 116        | 100        | 112        | 102        | 100        | 88         | 75         | 64         | 54         |
| Gasoline Fuel  | 3          | 4          | 5          | 6          | 5          | 5          | 7          | 7          | 7          | 6          |
| Diesel Fuel  | 96         | 108        | 92         | 103        | 93         | 90         | 77         | 64         | 53         | 43         |
| Other Fuel   | 3          | 4          | 4          | 3          | 4          | 5          | 4          | 4          | 4          | 5          |

Table 4-55

| ROG Emission Trends (tons/day, annual average) |            |            |            |            |            |            |            |            |            |            |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Emission Source                                | 1975       | 1980       | 1985       | 1990       | 1995       | 2000       | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>                             | <b>461</b> | <b>447</b> | <b>415</b> | <b>362</b> | <b>301</b> | <b>243</b> | <b>207</b> | <b>183</b> | <b>170</b> | <b>165</b> |
| <b>Stationary Sources</b>                      | 72         | 50         | 52         | 49         | 41         | 30         | 31         | 32         | 35         | 37         |
| <b>Area-wide Sources</b>                       | 58         | 65         | 63         | 70         | 67         | 65         | 61         | 62         | 64         | 66         |
| <b>On-Road Mobile</b>                          | 289        | 279        | 244        | 185        | 137        | 94         | 67         | 49         | 36         | 29         |
| Gasoline Vehicles                              | 285        | 274        | 238        | 177        | 132        | 89         | 61         | 43         | 32         | 26         |
| Diesel Vehicles                                | 4          | 5          | 6          | 8          | 6          | 5          | 6          | 6          | 4          | 3          |
| <b>Other Mobile</b>                            | 42         | 53         | 55         | 58         | 55         | 53         | 47         | 40         | 35         | 33         |
| Gasoline Fuel                                  | 29         | 36         | 41         | 43         | 40         | 39         | 35         | 30         | 27         | 26         |
| Diesel Fuel                                    | 12         | 14         | 12         | 14         | 13         | 12         | 11         | 8          | 6          | 5          |
| Other Fuel                                     | 1          | 3          | 2          | 2          | 2          | 2          | 2          | 2          | 2          | 2          |

Table 4-56

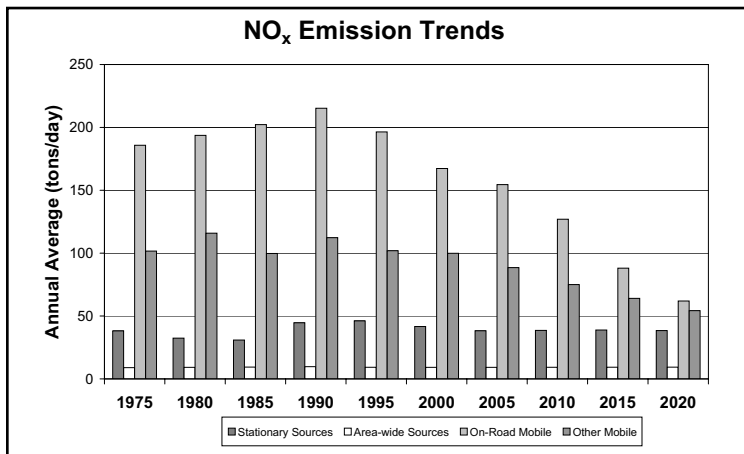


Figure 4-59

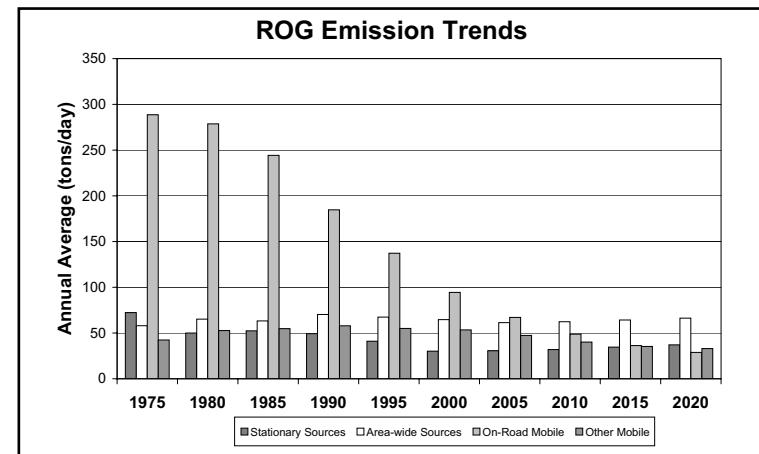


Figure 4-60



# Sacramento Valley Air Basin

## Ozone Air Quality Trend

Peak ozone values in the Sacramento Valley Air Basin have not declined as quickly over the last several years as they have in other urban areas. The peak 8-hour indicator remained fairly constant from 1987 to 1990. Since 1990, the peak 8-hour indicator has decreased slightly, and the overall decline for the 20-year period is almost 13 percent. Looking at the number of days above the State and national standards, the trend is much more variable. However, the number of 8-hour exceedance days has declined by more than 50 percent since 1988.

Similar to the San Joaquin Valley, the Sacramento Metropolitan area, which includes the urbanized portion of the Southern Sacramento Valley Air Basin, along with the urbanized portions of El Dorado and Placer Counties in the Mountain Counties Air Basin, is identified as both a transport contributor and receptor. The region is a transport contributor to the Mountain Counties, Upper Sacramento Valley, San Joaquin Valley, and San Francisco Bay Area air basins and is a receptor area for the San Francisco Bay Area and San Joaquin Valley air basins.

The data for the Sacramento Metropolitan Area, on the following page, reflects the portion of the region that is nonattainment for the national ozone standards.

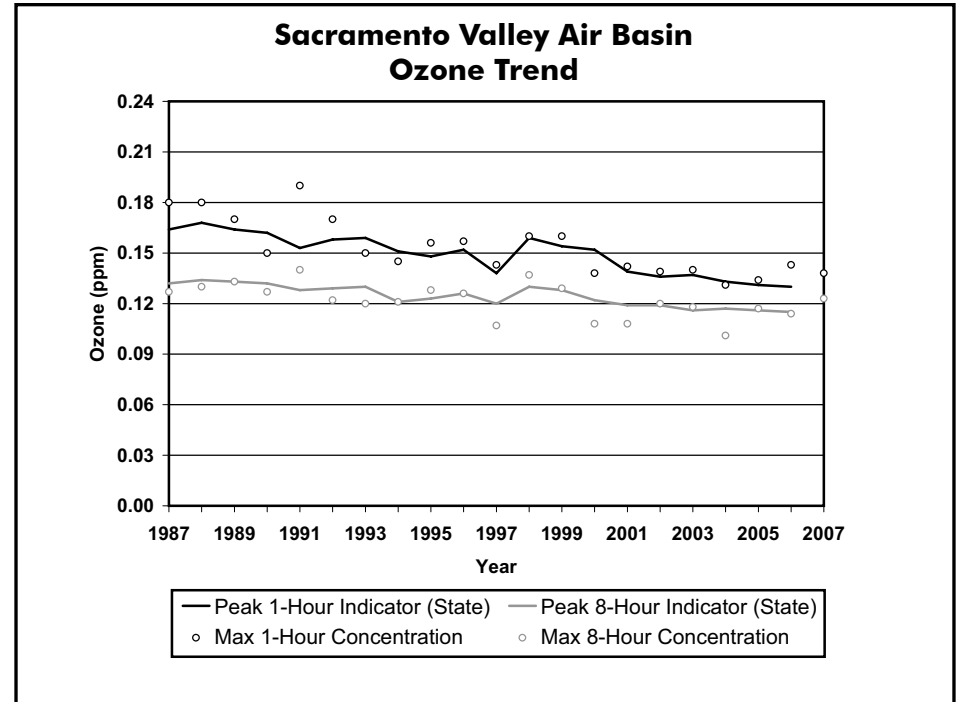


Figure 4-61

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  | 2007 <sup>1</sup> |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------------|
| Peak 8-Hour Indicator (State)         | 0.132 | 0.134 | 0.133 | 0.132 | 0.128 | 0.129 | 0.130 | 0.121 | 0.123 | 0.126 | 0.120 | 0.130 | 0.128 | 0.122 | 0.119 | 0.119 | 0.116 | 0.117 | 0.116 | 0.115 |                   |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.114 | 0.114 | 0.114 | 0.107 | 0.105 | 0.105 | 0.110 | 0.104 | 0.106 | 0.106 | 0.097 | 0.095 | 0.101 | 0.105 | 0.101 | 0.101 | 0.100 | 0.097 | 0.097 | 0.097 |                   |
| Peak 1-Hour Indicator (State)         | 0.164 | 0.168 | 0.164 | 0.162 | 0.153 | 0.158 | 0.159 | 0.151 | 0.148 | 0.152 | 0.138 | 0.159 | 0.154 | 0.152 | 0.139 | 0.136 | 0.137 | 0.133 | 0.131 | 0.130 |                   |
| 4th High 1-Hr. in 3 Yrs <sup>2</sup>  | 0.160 | 0.160 | 0.160 | 0.160 | 0.150 | 0.160 | 0.150 | 0.142 | 0.145 | 0.145 | 0.143 | 0.149 | 0.149 | 0.149 | 0.138 | 0.134 | 0.138 | 0.138 | 0.138 | 0.131 | 0.134             |
| Max. 8-Hr. Concentration              | 0.127 | 0.130 | 0.133 | 0.127 | 0.140 | 0.122 | 0.120 | 0.121 | 0.128 | 0.126 | 0.107 | 0.137 | 0.129 | 0.108 | 0.108 | 0.120 | 0.118 | 0.101 | 0.117 | 0.114 | 0.123             |
| Maximum 1-Hr. Concentration           | 0.180 | 0.180 | 0.170 | 0.150 | 0.190 | 0.170 | 0.150 | 0.145 | 0.156 | 0.157 | 0.143 | 0.160 | 0.160 | 0.138 | 0.142 | 0.139 | 0.140 | 0.131 | 0.134 | 0.143 | 0.138             |
| Days Above State 8-Hr. Std.           | 136   | 125   | 99    | 104   | 111   | 107   | 61    | 113   | 86    | 103   | 60    | 97    | 111   | 81    | 84    | 95    | 92    | 87    | 62    | 88    | 61                |
| Days Above Nat. 8-Hr. Std.            | 73    | 68    | 37    | 44    | 60    | 56    | 22    | 48    | 40    | 44    | 15    | 60    | 43    | 35    | 37    | 34    | 40    | 20    | 25    | 39    | 10                |
| Days Above State 1-Hr. Std.           | 94    | 98    | 68    | 50    | 68    | 74    | 34    | 60    | 50    | 58    | 25    | 62    | 59    | 41    | 44    | 46    | 51    | 29    | 33    | 44    | 15                |

<sup>1</sup> Preliminary data for 2007 are shown here, however they are subject to change. 2006 is the last year for which complete and approved data is available, thus calculated annual statistics are not included for 2007.

<sup>2</sup> The national 1-Hour standard has been revoked. Historical 1-Hour data are provided for reference.

Table 4-57

*Sacramento Metropolitan Area<sup>1</sup>***Ozone Air Quality Table**

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  | 2007 <sup>1</sup> |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------------|
| Peak 8-Hour Indicator (State)         | 0.132 | 0.134 | 0.133 | 0.132 | 0.128 | 0.129 | 0.130 | 0.121 | 0.123 | 0.126 | 0.120 | 0.130 | 0.128 | 0.126 | 0.119 | 0.124 | 0.127 | 0.126 | 0.116 | 0.115 |                   |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.114 | 0.114 | 0.114 | 0.107 | 0.105 | 0.105 | 0.110 | 0.104 | 0.106 | 0.106 | 0.099 | 0.103 | 0.103 | 0.107 | 0.104 | 0.106 | 0.107 | 0.102 | 0.097 | 0.097 |                   |
| Peak 1-Hour Indicator (State)         | 0.164 | 0.168 | 0.163 | 0.162 | 0.153 | 0.158 | 0.159 | 0.151 | 0.148 | 0.152 | 0.140 | 0.159 | 0.154 | 0.152 | 0.139 | 0.142 | 0.146 | 0.143 | 0.131 | 0.130 |                   |
| 4th High 1-Hr. in 3 Yrs <sup>2</sup>  | 0.160 | 0.160 | 0.160 | 0.160 | 0.150 | 0.160 | 0.150 | 0.142 | 0.145 | 0.145 | 0.145 | 0.149 | 0.149 | 0.149 | 0.144 | 0.148 | 0.148 | 0.145 | 0.139 | 0.134 |                   |
| Max. 8-Hr. Concentration              | 0.127 | 0.138 | 0.133 | 0.127 | 0.140 | 0.122 | 0.120 | 0.121 | 0.128 | 0.126 | 0.107 | 0.137 | 0.129 | 0.113 | 0.109 | 0.137 | 0.122 | 0.102 | 0.117 | 0.116 | 0.123             |
| Maximum 1-Hr. Concentration           | 0.180 | 0.180 | 0.170 | 0.150 | 0.190 | 0.170 | 0.150 | 0.145 | 0.156 | 0.157 | 0.145 | 0.163 | 0.160 | 0.138 | 0.148 | 0.156 | 0.145 | 0.118 | 0.134 | 0.143 | 0.138             |
| Days Above State 8-Hr. Std.           | 121   | 125   | 114   | 99    | 102   | 113   | 61    | 103   | 80    | 96    | 62    | 72    | 108   | 78    | 88    | 106   | 94    | 81    | 69    | 92    | 64                |
| Days Above Nat. 8-Hr. Std.            | 65    | 72    | 53    | 43    | 57    | 55    | 24    | 42    | 42    | 48    | 19    | 34    | 48    | 37    | 41    | 47    | 43    | 25    | 35    | 42    | 16                |
| Days Above State 1-Hr. Std.           | 86    | 99    | 74    | 47    | 65    | 76    | 36    | 54    | 52    | 57    | 25    | 49    | 56    | 45    | 51    | 59    | 53    | 35    | 43    | 50    | 16                |

<sup>1</sup> The Sacramento Metropolitan Area includes urbanized portions of the Sacramento Valley Air Basin (Sacramento, Yolo, Placer, and Solano Counties, and part of Sutter County) and all of El Dorado and Placer Counties in the Mountain Counties Air Basin.

<sup>2</sup> Preliminary data for 2007 are shown here, however they are subject to change. 2006 is the last year for which complete and approved data is available, thus calculated annual statistics are not included for 2007.

Table 4-58

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## Sacramento Valley Air Basin Directly Emitted PM<sub>10</sub> Emission Trends and Forecasts

Direct emissions of PM<sub>10</sub> increased in the Sacramento Valley Air Basin between 1975 and 2005 and are projected to continue increasing through 2020. Emissions are dominated by contributions from area-wide sources, primarily fugitive dust from paved and unpaved roads, dust from farming operations, fugitive dust from construction and demolition, and particulates from residential fuel combustion. Emissions of directly emitted PM<sub>10</sub> from mobile sources and stationary sources in the Sacramento Valley Air Basin have remained relatively steady.

PM can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO<sub>x</sub>, SO<sub>x</sub>, ROG, and ammonia. The PM<sub>10</sub> emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted PM<sub>10</sub> emissions contribute approximately 75 percent of the ambient PM<sub>10</sub> in the Sacramento Valley Air Basin.

| Directly Emitted PM <sub>10</sub> Emission Trends (tons/day, annual average) |            |            |            |            |            |            |            |            |            |            |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Emission Source  | 1975       | 1980       | 1985       | 1990       | 1995       | 2000       | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>   | <b>199</b> | <b>206</b> | <b>213</b> | <b>226</b> | <b>215</b> | <b>222</b> | <b>227</b> | <b>232</b> | <b>237</b> | <b>242</b> |
| <b>Stationary Sources</b>  | 25         | 20         | 18         | 22         | 17         | 18         | 17         | 18         | 20         | 21         |
| <b>Area-wide Sources</b>   | 163        | 173        | 181        | 187        | 185        | 192        | 197        | 202        | 208        | 212        |
| <b>On-Road Mobile</b>  | 5          | 6          | 7          | 9          | 7          | 6          | 6          | 6          | 6          | 5          |
| Gasoline Vehicles  | 2          | 1          | 2          | 2          | 2          | 2          | 3          | 3          | 4          | 4          |
| Diesel Vehicles  | 3          | 4          | 6          | 7          | 5          | 4          | 4          | 3          | 2          | 1          |
| <b>Other Mobile</b>  | 7          | 8          | 7          | 8          | 6          | 6          | 6          | 5          | 5          | 4          |
| Gasoline Fuel  | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 2          | 2          | 2          |
| Diesel Fuel  | 6          | 7          | 6          | 7          | 5          | 4          | 4          | 3          | 2          | 2          |
| Other Fuel   | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |

Table 4-59

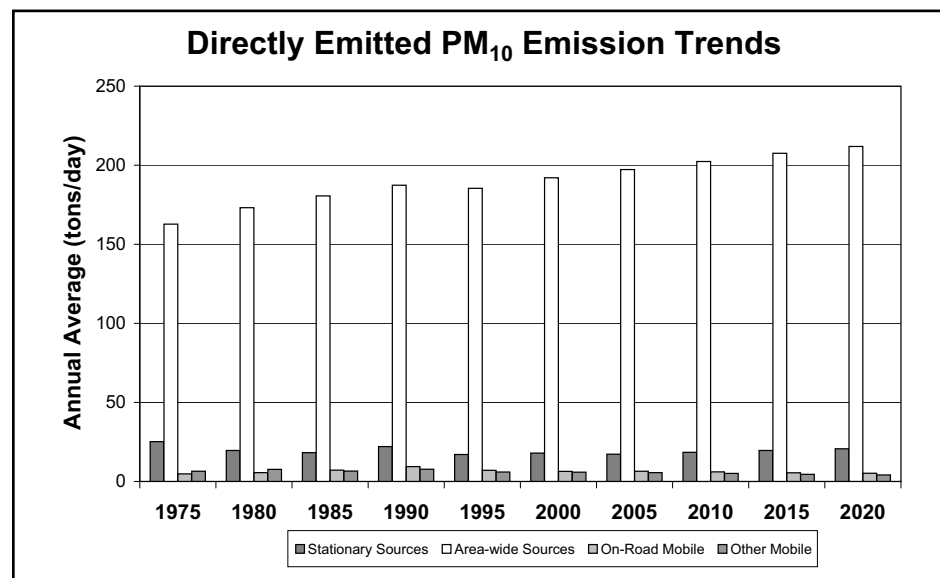


Figure 4-62

## Sacramento Valley Air Basin Directly Emitted PM<sub>2.5</sub> Emission Trends and Forecasts

Direct emissions of PM<sub>2.5</sub> have remained relatively steady in the Sacramento Valley Air Basin between 1975 and 2005 and are projected to increase slightly through 2020. Emissions are dominated by contributions from area-wide sources, primarily fugitive dust from paved and unpaved roads, fugitive dust from construction and demolition, particulates from residential fuel combustion, and waste burning. Emissions of directly emitted PM<sub>2.5</sub> from mobile sources and stationary sources in the Sacramento Valley Air Basin have remained relatively steady.

PM can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO<sub>x</sub>, SO<sub>x</sub>, ROG, and ammonia. The PM<sub>2.5</sub> emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted PM<sub>2.5</sub> emissions contribute approximately 70 percent of the ambient PM<sub>2.5</sub> in the Sacramento Valley Air Basin.

| Directly Emitted PM <sub>2.5</sub> Emission Trends (tons/day, annual average) |           |           |           |           |           |           |           |           |           |           |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Emission Source   | 1975      | 1980      | 1985      | 1990      | 1995      | 2000      | 2005      | 2010      | 2015      | 2020      |
| <b>All Sources</b>  | <b>73</b> | <b>71</b> | <b>73</b> | <b>81</b> | <b>73</b> | <b>74</b> | <b>73</b> | <b>74</b> | <b>75</b> | <b>76</b> |
| <b>Stationary Sources</b>   | 18        | 12        | 11        | 13        | 10        | 10        | 10        | 11        | 11        | 12        |
| <b>Area-wide Sources</b>  | 45        | 48        | 50        | 52        | 52        | 53        | 54        | 55        | 56        | 57        |
| <b>On-Road Mobile</b>   | 4         | 5         | 6         | 8         | 6         | 5         | 5         | 5         | 4         | 4         |
| Gasoline Vehicles   | 1         | 1         | 1         | 1         | 1         | 1         | 2         | 2         | 2         | 2         |
| Diesel Vehicles   | 3         | 4         | 5         | 7         | 5         | 4         | 3         | 3         | 2         | 1         |
| <b>Other Mobile</b>   | 6         | 7         | 6         | 7         | 5         | 5         | 5         | 4         | 4         | 3         |
| Gasoline Fuel   | 0         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 2         | 2         |
| Diesel Fuel   | 5         | 6         | 5         | 6         | 4         | 4         | 4         | 3         | 2         | 1         |
| Other Fuel  | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         |

Table 4-60

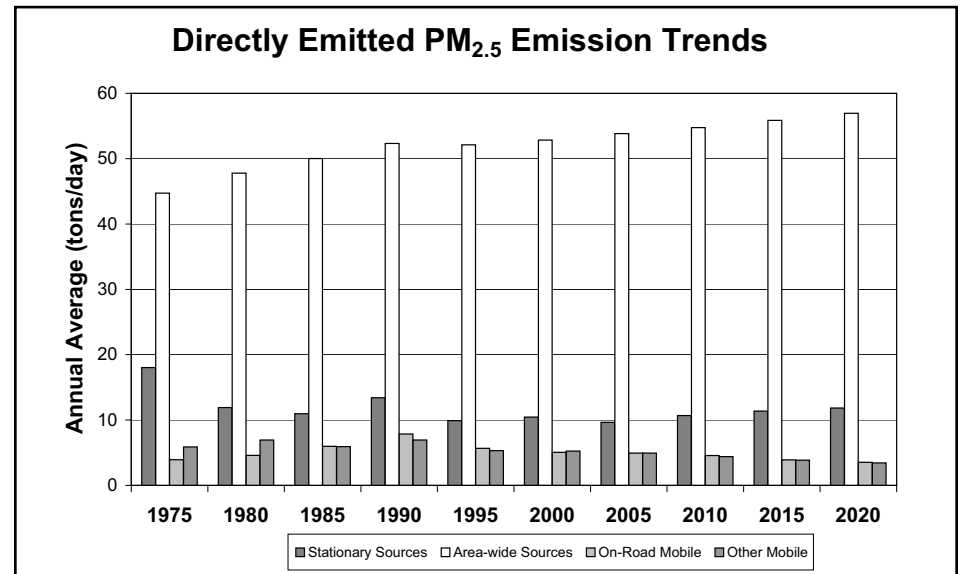


Figure 4-63

## Sacramento Valley Air Basin

### PM<sub>10</sub> Air Quality Trend

The annual average (State) PM<sub>10</sub> concentration in the Sacramento Valley Air Basin shows a fairly steady decline over the trend period, with some variability over the last several years. The three-year average of the annual average (State) shows a decrease of 23 percent from 1991 to 2006. The three-year average of calculated days over the State 24-hour standard decreased by 33 percent from 1991 to 2006. Because many of the sources that contribute to ozone also contribute to PM<sub>10</sub>, future ozone emission controls should improve PM<sub>10</sub> air quality.

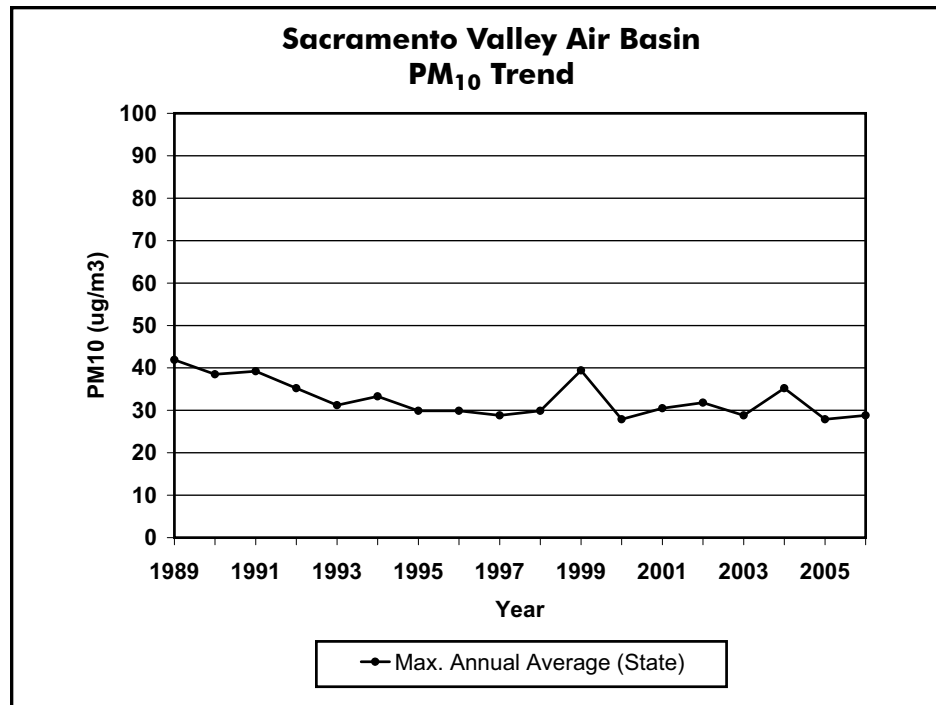


Figure 4-64

| PM <sub>10</sub> (ug/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      | 100  | 147  | 153  | 136  | 111  | 113  | 154  | 145  | 98   | 126  | 130  | 179  | 90   | 112  | 96   | 123  | 171  | 109  | 111  |
| Max. 24-Hr. Concentration (Nat)       |      | 100  | 147  | 153  | 136  | 111  | 113  | 204  | 287  | 98   | 126  | 130  | 275  | 109  | 123  | 145  | 89   | 169  | 110  | 160  |
| Max. Annual Average (State)           |      |      | 41.9 | 38.5 | 39.2 | 35.2 | 31.2 | 33.3 | 29.9 | 29.9 | 28.8 | 29.9 | 39.4 | 27.9 | 30.5 | 31.8 | 28.8 | 35.2 | 27.9 | 28.8 |
| Max. Annual Average (Nat)             |      | 51.2 | 46.0 | 51.9 | 46.4 | 42.3 | 36.9 | 34.5 | 40.7 | 32.6 | 28.6 | 29.0 | 38.4 | 27.9 | 30.2 | 30.9 | 28.4 | 34.5 | 27.2 | 37.8 |
| Calc Days Above State 24-Hr Std       |      |      | 82   | 74   | 104  | 70   | 63   | 36   | 57   | 44   | 22   | 60   | 64   | 43   | 50   | 41   | 31   | 80   | 42   | 53   |
| Calc Days Above Nat 24-Hr Std         |      |      | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 7    | 0    | 0    | 0    | 0    | 6    | 0    | 0    |

Table 4-61

## Sacramento Valley Air Basin

### PM<sub>2.5</sub> Air Quality Trend

Overall, annual average (national) PM<sub>2.5</sub> concentrations in the Sacramento Valley Air Basin decreased slightly during 1999 through 2006. The State annual average concentrations also show a declining trend, although the trends looks less pronounced, due to differences in State and national monitoring methods. The 98<sup>th</sup> percentile of 24-hour PM<sub>2.5</sub> concentrations also declined during this nine-year period. Similar to PM<sub>10</sub>, year-to-year changes in meteorology can mask the impacts of emission control programs. Measures adopted as part of SB 656, as well as programs to reduce ozone and diesel PM will help in reducing public exposure to PM<sub>2.5</sub> in this region.

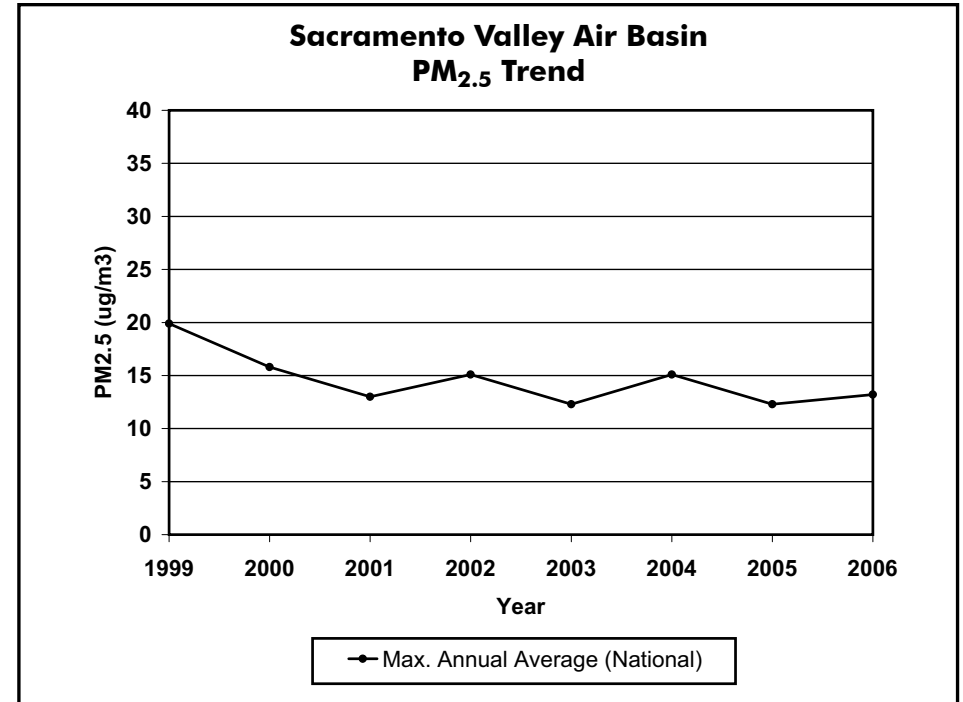


Figure 4-65

| PM <sub>2.5</sub> (ug/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999  | 2000  | 2001  | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      | 96.0 | 108.0 | 123.1 | 128.2 | 96.1 | 73.2 | 76.3 | 82.7 | 78.6 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      | 96.0 | 108.0 | 98.0  | 78.0  | 91.0 | 65.0 | 65.0 | 80.0 | 78.0 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      | 96.0 | 84.0  | 81.0  | 56.0  | 63.0 | 43.0 | 54.0 | 54.0 | 59.0 |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      | 17.5 | 15.8  | 11.9  | 15.1  | 15.9 | 16.5 | 13.8 | 15.2 |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      | 19.9 | 15.8  | 13.0  | 15.1  | 12.3 | 15.1 | 12.3 | 13.2 |      |

Table 4-62

## Sacramento Valley Air Basin Carbon Monoxide Emission Trends and Forecasts

Emissions of CO declined in the Sacramento Valley Air Basin between 1975 and 2005 and are projected to decrease through 2020. Motor vehicles are the largest source of CO emissions. With the introduction of new automotive emission controls to meet more stringent emission standards, motor vehicle CO emissions have been declining since 1975, despite increases in VMT. Stationary and area-wide source CO emissions have remained relatively steady since 1990, with additional emission controls offsetting growth.

| CO Emission Trends (tons/day, annual average) |             |             |             |             |             |             |             |             |            |            |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|------------|
| Emission Source                               | 1975        | 1980        | 1985        | 1990        | 1995        | 2000        | 2005        | 2010        | 2015       | 2020       |
| <b>All Sources</b>                            | <b>3116</b> | <b>3113</b> | <b>2899</b> | <b>2573</b> | <b>1935</b> | <b>1520</b> | <b>1223</b> | <b>1032</b> | <b>908</b> | <b>835</b> |
| <b>Stationary Sources</b>                     | 27          | 28          | 15          | 50          | 38          | 40          | 49          | 51          | 53         | 55         |
| <b>Area-wide Sources</b>                      | 252         | 265         | 275         | 286         | 283         | 282         | 284         | 286         | 289        | 293        |
| <b>On-Road Mobile</b>                         | 2638        | 2568        | 2342        | 1915        | 1318        | 927         | 635         | 445         | 312        | 229        |
| Gasoline Vehicles                             | 2624        | 2551        | 2319        | 1885        | 1290        | 902         | 608         | 420         | 292        | 213        |
| Diesel Vehicles                               | 13          | 17          | 23          | 31          | 28          | 26          | 26          | 25          | 20         | 16         |
| <b>Other Mobile</b>                           | 200         | 253         | 267         | 323         | 296         | 270         | 255         | 251         | 254        | 258        |
| Gasoline Fuel                                 | 145         | 186         | 209         | 257         | 235         | 212         | 200         | 197         | 199        | 202        |
| Diesel Fuel                                   | 37          | 44          | 39          | 47          | 43          | 38          | 33          | 31          | 30         | 30         |
| Other Fuel                                    | 18          | 23          | 19          | 19          | 19          | 20          | 22          | 23          | 25         | 25         |

Table 4-63

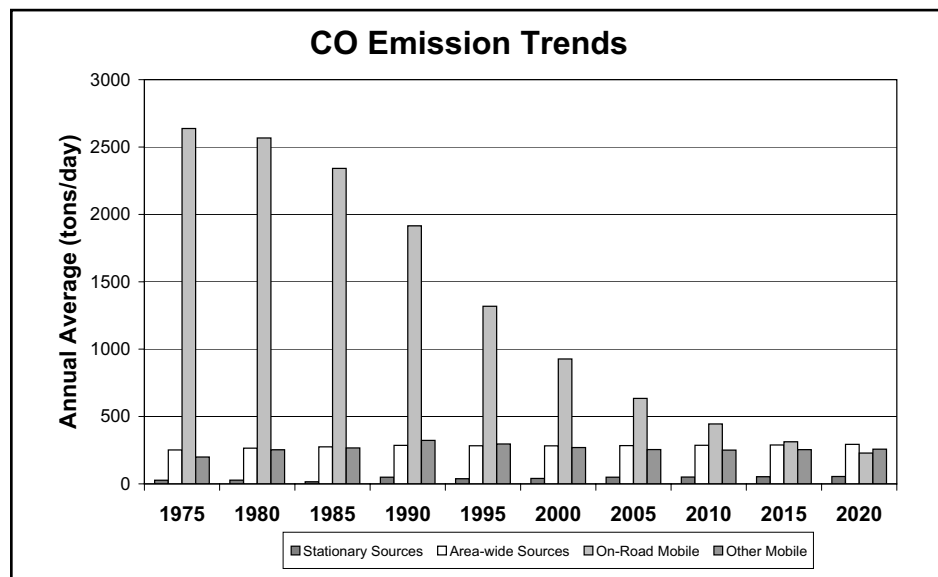


Figure 4-66



# Sacramento Valley Air Basin

## Carbon Monoxide Air Quality Trend

The trend of the peak 8-hour indicator for CO for the Sacramento Valley Air Basin was relatively flat from 1987 to 1991, with some year-to-year variability that was probably caused by meteorology. Since 1991, indicator values have decreased substantially. The 2006 value was 71 percent lower than the 1991 value. The national CO standards have not been exceeded since 1991, and the State standards were last exceeded in 1993. Much of the decline in ambient CO concentrations is attributable to the introduction of cleaner fuels and newer, cleaner motor vehicles. These controls will help keep the area in attainment for both the State and national CO standards.

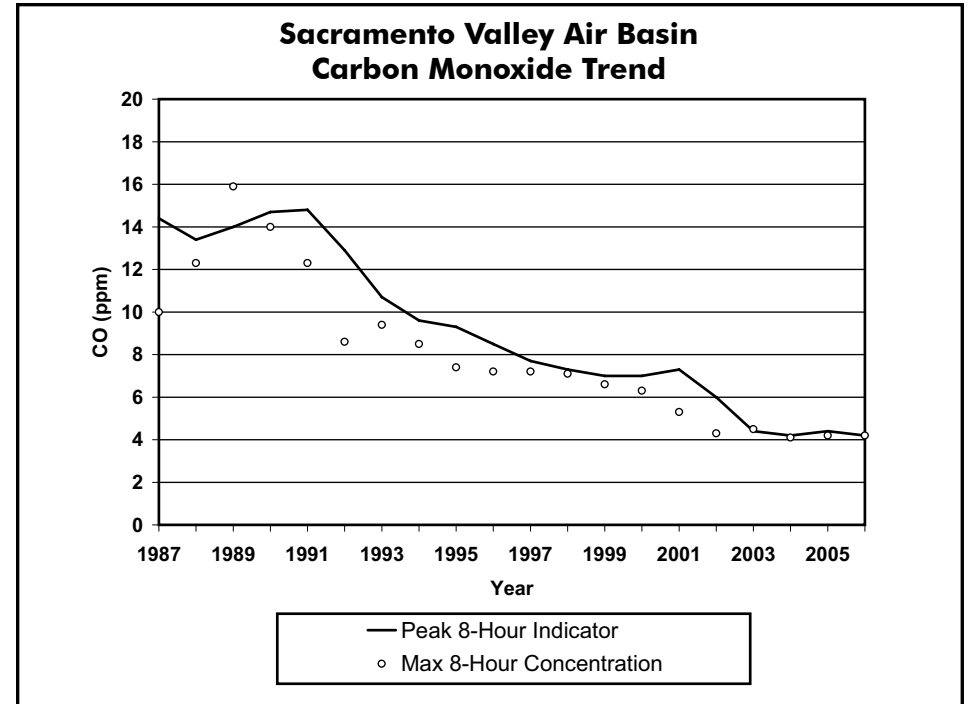


Figure 4-67

| CARBON MONOXIDE (ppm)            | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator (State)     | 14.4 | 13.4 | 14.0 | 14.7 | 14.8 | 12.9 | 10.7 | 9.6  | 9.3  | 8.5  | 7.7  | 7.3  | 7.0  | 7.0  | 7.3  | 6.0  | 4.4  | 4.2  | 4.4  | 4.2  |
| Max. 1-Hr. Concentration         | 15.0 | 17.0 | 18.0 | 17.0 | 15.0 | 14.0 | 12.0 | 10.8 | 9.8  | 8.7  | 9.5  | 7.9  | 7.7  | 10.0 | 17.2 | 7.8  | 8.5  | 7.3  | 8.0  | 7.5  |
| Max. 8-Hr. Concentration (State) | 10.0 | 12.3 | 15.9 | 14.0 | 12.3 | 8.6  | 9.4  | 8.5  | 7.4  | 7.2  | 7.2  | 7.1  | 6.6  | 6.3  | 5.3  | 4.3  | 4.5  | 4.1  | 4.2  | 4.2  |
| Days Above State 8-Hr. Std.      | 5    | 12   | 22   | 14   | 9    | 0    | 2    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Days Above Nat. 8-Hr. Std.       | 3    | 9    | 22   | 12   | 6    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

Table 4-64

## Sacramento Valley Air Basin

### Nitrogen Dioxide

#### Oxides of Nitrogen Emission Trends and Forecasts

Emissions of NO<sub>x</sub> show a steady decrease from 1990 to 2020. On-road motor vehicles and other mobile sources are by far the largest contributors to NO<sub>x</sub> emissions. More stringent mobile source emission standards and cleaner burning fuels have largely contributed to the decline in NO<sub>x</sub> emissions.

| NO <sub>x</sub> Emission Trends (tons/day, annual average) |            |            |            |            |            |            |            |            |            |            |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Emission Source  | 1975       | 1980       | 1985       | 1990       | 1995       | 2000       | 2005       | 2010       | 2015       | 2020       |
| <b>All Sources</b>   | <b>335</b> | <b>351</b> | <b>342</b> | <b>382</b> | <b>354</b> | <b>318</b> | <b>290</b> | <b>250</b> | <b>200</b> | <b>164</b> |
| <b>Stationary Sources</b>                                  | 38         | 32         | 31         | 45         | 46         | 42         | 38         | 39         | 39         | 38         |
| <b>Area-wide Sources</b>                                   | 9          | 9          | 9          | 10         | 9          | 9          | 9          | 9          | 9          | 9          |
| <b>On-Road Mobile</b>                                      | 186        | 194        | 202        | 215        | 196        | 167        | 154        | 127        | 88         | 62         |
| Gasoline Vehicles  | 156        | 158        | 151        | 144        | 123        | 88         | 59         | 42         | 30         | 22         |
| Diesel Vehicles  | 30         | 35         | 51         | 72         | 74         | 79         | 96         | 85         | 58         | 40         |
| <b>Other Mobile</b>  | 102        | 116        | 100        | 112        | 102        | 100        | 88         | 75         | 64         | 54         |
| Gasoline Fuel  | 3          | 4          | 5          | 6          | 5          | 5          | 7          | 7          | 7          | 6          |
| Diesel Fuel  | 96         | 108        | 92         | 103        | 93         | 90         | 77         | 64         | 53         | 43         |
| Other Fuel   | 3          | 4          | 4          | 3          | 4          | 5          | 4          | 4          | 4          | 5          |

Table 4-65

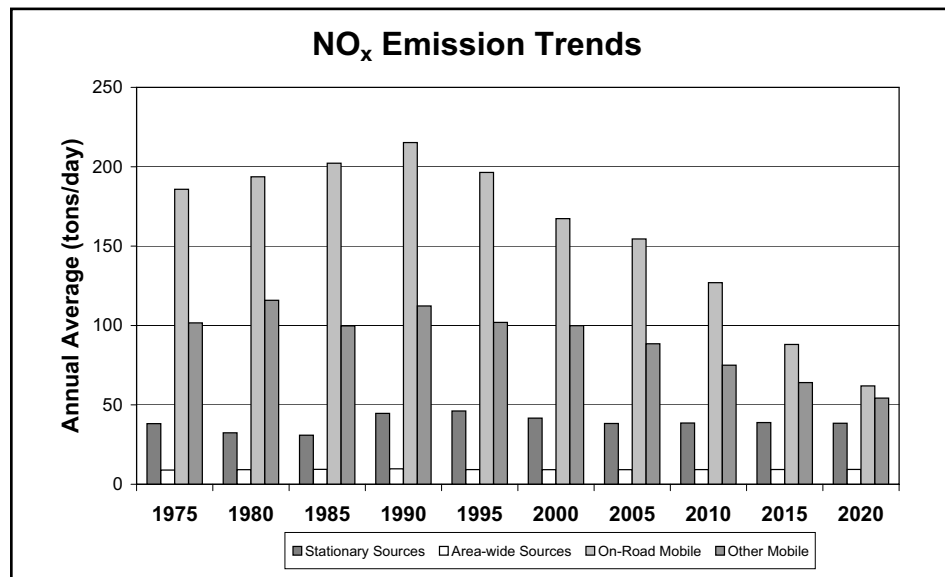


Figure 4-68

# Sacramento Valley Air Basin

## Nitrogen Dioxide Air Quality Trend

The Sacramento Valley Air Basin has attained both the State and national NO<sub>2</sub> standards for more than 20 years. The peak 1-hour indicator increased from 1987 through 1993, but has declined by 39 percent since 1993. There is more variability in maximum 1-hour concentrations as compared to other areas. This variability may be due to changes in emission sources and may also reflect year-to-year changes in meteorology. However, ambient concentrations are well below the level of the two standards, and a decline in NO<sub>2</sub> concentrations is expected in the coming years.

NO<sub>2</sub> is formed from NO<sub>x</sub> emissions, which also contribute to ozone. As a result, the majority of the future emission control measures will be implemented as part of the overall ozone control strategy. Many of these control measures will target mobile sources, which account for more than three-quarters of California's NO<sub>x</sub> emissions.

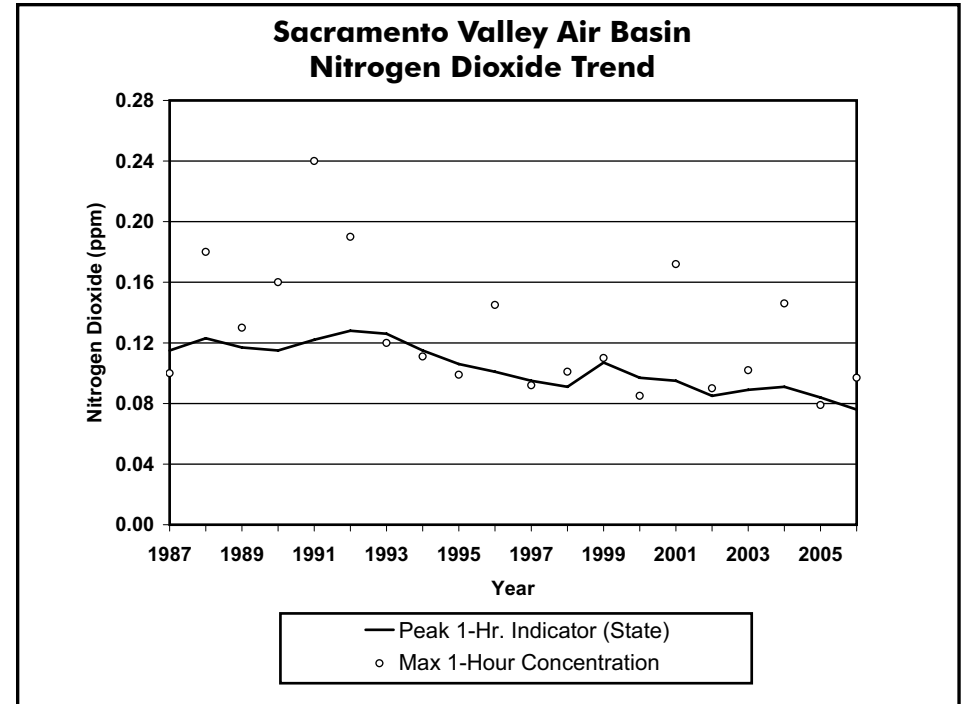


Figure 4-69

| NITROGEN DIOXIDE (ppm)       | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 1-Hr. Indicator (State) | 0.115 | 0.123 | 0.117 | 0.115 | 0.122 | 0.128 | 0.126 | 0.115 | 0.106 | 0.101 | 0.095 | 0.091 | 0.107 | 0.097 | 0.095 | 0.085 | 0.089 | 0.091 | 0.084 | 0.076 |
| Max. 1-Hr. Concentration     | 0.100 | 0.180 | 0.130 | 0.160 | 0.240 | 0.190 | 0.120 | 0.111 | 0.099 | 0.145 | 0.092 | 0.101 | 0.110 | 0.085 | 0.172 | 0.090 | 0.102 | 0.146 | 0.079 | 0.097 |
| Max. Annual Average (Nat)    | 0.022 | 0.025 | 0.021 | 0.023 | 0.024 | 0.021 | 0.022 | 0.022 | 0.022 | 0.022 | 0.019 | 0.021 | 0.021 | 0.019 | 0.019 | 0.020 | 0.018 | 0.017 | 0.016 | 0.016 |
| Max. Annual Average (State)  | 0.022 | 0.024 | 0.020 | 0.023 | 0.024 | 0.021 | 0.017 | 0.022 | 0.022 | 0.022 | 0.019 | 0.020 | 0.021 | 0.019 | 0.019 | 0.020 | 0.015 | 0.017 | 0.016 | 0.016 |

Table 4-66

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# Chapter 5

## Toxic Air Contaminant Emissions, Air Quality, and Health Risk

## Introduction

This chapter presents a summary of the emissions and air quality data available for selected toxic air contaminants, or TACs. The Health and Safety Code defines a TAC as an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health. There are almost 200 compounds that have been designated as TACs in California. Some of these TACs are groups of compounds which contain many individual substances (e.g., copper compounds, polycyclic aromatic compounds). The summary information includes available data for the ten TACs posing the greatest known health risk in California, based primarily on ambient air quality data. These TACs are acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, *para*-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (diesel PM). Besides the ten selected TACs, dioxins are also considered to pose substantial health risk, and a brief discussion on dioxins is presented in this introduction.

Chapter 5 is organized in three major sections. The introduction provides an overview of emission and air quality information on TACs. The second section provides summaries of statewide emissions, annual average concentrations (calculated as an average of the monthly means), and estimated health risks for the ten selected TACs. The third section provides similar information for California's five most populous air basins: the South Coast, the San Francisco Bay Area, the San Joaquin Valley, the San Diego, and the Sacramento Valley air basins. Tables of concentration and health risk data for the ten TACs at the state, air basin, and site levels are presented in Appendix C.

It is important to note that the summarized data reflect a spatial average, and ambient concentrations and health risks for individual locations may be higher or lower. In addition, the information presented here reflect the ten TACs that pose the most substantial health risk, based on data collected only at sites operated by the ARB. There may

be other TACs that pose a substantial risk, but for which sufficient data are not available, or which have not been identified as a concern. Additional information on interpreting air quality data for TACs can be found in Chapter 1.

***Sources of Toxic Air Contaminant Emissions in California.*** Similar to the criteria pollutants, TACs are emitted from stationary sources, area-wide sources, and mobile sources. The stationary source emissions inventory was developed by the ARB in cooperation with affected industries and the air pollution control and air quality management districts (districts) as part of AB 2588, the Air Toxics Hot Spots Information and Assessment Act of 1987 (Hot Spots Program). The ARB developed the emission estimates for area-wide sources and mobile sources.

Emissions of the selected TACs are reported on a statewide basis and for the ten highest-emitting counties in California. Emissions are also included for the five most populous air basins. In general, the inventory base year is 2006. Note, however, that the stationary source emissions inventory uses the best available information for the emission source, although the data may not have been specifically collected for 2006. Also, please note that these emissions data are the same as presented in the previous edition of the Almanac and will be updated in the 2009 edition.

***Air Quality Monitoring for Toxic Air Contaminants.*** The ARB maintains a statewide air quality monitoring network for TACs. The network was originally designed to measure selected substances in the ambient air to determine if levels were sufficiently high to be of concern. As a result of this monitoring, the ARB has determined atmospheric concentrations for over 60 individual substances. As shown in Figure 5-1, the ARB currently maintains a network of 17 air quality monitoring stations, measuring ambient concentrations of 64 substances.

TAC samples are generally collected once every 12 days, throughout the year. This results in 20,000 to 35,000 individual TAC measurements annually. The TAC data are typically sampled, analyzed, and reported as 24-hour averages. These 24-hour averages provide the basis for the annual average concentrations. The annual average concentrations are then used to support statewide risk assessment.

The TAC air quality trends included in this chapter are based on ambient data collected during 1990 through 2006 except for diesel PM which currently has no widely accepted monitoring method. The ARB has made some estimates of ambient diesel PM concentrations in 1998 based on receptor modeling techniques. These estimates are currently being reviewed to reflect control measures that are outlined in the Diesel Reduction Plan.

To minimize the influences of extreme weather on the trends, three-year statewide average concentrations were used to assess changes in individual TACs over time. The trend is determined by comparing the resulting averages from the beginning and end of the monitoring periods. For about half of the ten TACs, the baseline average concentration is for 1990-1992, and the current average concentration is for 2004-2006. However, acetaldehyde and formaldehyde data collected prior to 1996 are underestimated, so their respective baseline average concentration is for 1996-1998. For hexavalent chromium and *para*-dichlorobenzene, monitoring data were available starting in 1992 and 1991, respectively, so their baseline averages are for 1992-1994 and 1991-1993. Carbon tetrachloride data from February 2004 though 2006 are not available because of a problem with the laboratory standard. Therefore, carbon tetrachloride's baseline average is for 1990-1991 (1992 average was invalid), and the current average concentration is for 2001-2003.

**Statewide Health Risk and Community Health.** In the Almanac, health risk is presented on a pollutant-by-pollutant basis as well as on a cumulative basis with a focus on cancer risk. The risk for an individual TAC is calculated by multiplying its unit risk factor with its annual average concentration. The unit risk factor is expressed as the probability, or risk, of contracting cancer as a result of constant exposure to an ambient concentration of one microgram per cubic

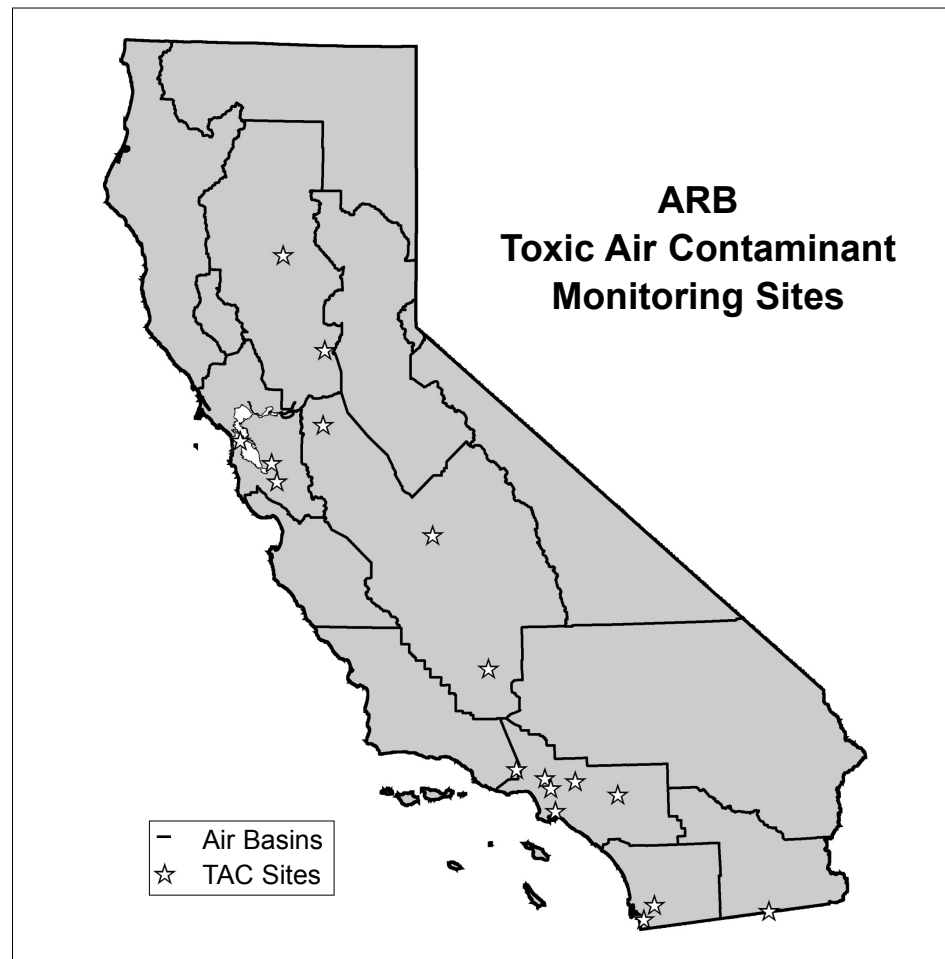


Figure 5-1

meter for 70 years. It reflects only the inhalation pathway. The risk is expressed as the risk of contracting cancer (or excess cancer cases) per million people exposed over a 70-year period. Table 5-1 lists the unit risk factor and limit of detection (LOD) for each of the ten TACs presented in this almanac. The LOD is the lowest concentration of a substance that can be reliably measured, and measurements below the LOD are assumed to be one-half of the LOD.

The TAC monitoring network is designed to provide air quality data in support of general population exposures. Therefore, the data do not

provide information on localized impacts, often referred to as near-source or neighborhood exposures. Localized impacts may involve exposure to different TACs with higher or lower concentrations than those represented by the ambient air monitoring data.

The ARB participated in several studies to address localized impacts and community health issues. For example, during October 1999, ARB initiated a monitoring and evaluation study in the Barrio Logan and Logan Heights neighborhoods of San Diego. In addition, ARB has conducted monitoring in five other communities in support of the community health program as required by the Children's Environmental Health Protection Program (SB 25). Efforts such as these will supplement our existing statewide TAC monitoring network, which was designed for regional rather than neighborhood assessments. Information on these and other studies is available at [www.arb.ca.gov/ch/programs/sb25/sb25.htm](http://www.arb.ca.gov/ch/programs/sb25/sb25.htm).

**Monitoring for Dioxins.** Dioxins and furans, collectively referred to as dioxins, are a group of chemicals with similar structures and chemical properties. When found in the environment, dioxins are usually a mixture of these chemicals. Dioxins are byproducts of various industrial and combustion activities, and they can be emitted from vehicles, waste incineration, chemical manufacturing plants, and forest fires. Once released into the environment, dioxins are highly persistent and can accumulate in the tissues of animals and humans.

Dioxins enter the body through direct inhalation or can accumulate in the body from eating dioxins-contaminated vegetation or animals that have eaten such vegetation. Many studies have shown that dioxins can cause cancer and other health problems including birth defects and liver damage.

The ARB has identified dioxins as a TAC, and the U.S. EPA has listed them as hazardous air pollutants. In 1990, the ARB adopted a control measure to reduce emissions of dioxins from medical waste incinerators by 99 percent. At the time, medical waste incinerators were one of the largest known air sources of dioxins in California. As a result of

| Toxic Air Contaminant Unit Risk Factors |                          |                       |
|---|--------------------------|-----------------------|
| Toxic Air Contaminant                   | Unit Risk/Million People | Detection Limit (ppb) |
| Acetaldehyde                            | 2.7                      | 0.10                  |
| Benzene                                 | 29                       | 0.05                  |
| 1,3-Butadiene                           | 170                      | 0.04                  |
| Carbon Tetrachloride                    | 42                       | 0.02                  |
| Chromium, Hexavalent                    | 150,000                  | 0.06 <sup>2</sup>     |
| <i>para</i> -Dichlorobenzene            | 11                       | 0.30                  |
| Formaldehyde                            | 6                        | 0.10                  |
| Methylene Chloride                      | 1                        | 0.10                  |
| Perchloroethylene                       | 5.9                      | 0.01                  |
| Diesel Particulate Matter               | 300 <sup>3</sup>         | N/A                   |

1 The unit risk represents the number of excess cancer cases per million people per microgram per cubic meter TAC concentration over a 70-year, lifetime exposure.

2 The hexavalent chromium detection limit units are in nanograms per cubic meter.

3 A diesel particulate matter unit risk value of 300 is used as a reasonable estimate in the "Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles" (ARB, October 2000).

Table 5-1

the control measure, the number of medical incinerators in the State dropped sharply, from about 150 to less than 10.

In order to provide information on ambient levels of dioxins and dioxin-like compounds, the ARB has developed the California Ambient Dioxin Air Monitoring Program (CADAMP). This program is modeled, in part, after the U.S. EPA's National Dioxin Air Monitoring Network (NDAMN) to ensure the data from the two networks can be used interchangeably. The two networks use the same sampling and analytical techniques; however, CADAMP focuses on dioxins sampling in urban areas while NDAMN emphasizes rural areas nationwide. Ten sampling sites were deployed in CADAMP, five in the San Francisco Bay Area, four in the South Coast Air Basin, and one in Sacramento. Several of the CADAMP sites are also part of the ARB's Children's Environmental Health Protection Program (SB 25). The monitoring period was from December 2001 to August 2006. The dioxin monitor-



ing data can be found at [www.arb.ca.gov/pub/dioxin/cadamp.php](http://www.arb.ca.gov/pub/dioxin/cadamp.php). General information on ARB's dioxins program is available at [www.arb.ca.gov/toxics/dioxins/dioxins.htm](http://www.arb.ca.gov/toxics/dioxins/dioxins.htm).

**Statewide TAC Emissions and Ambient Health Risks.** Table 5-2 provides a summary of the Statewide emissions for the top 10 TACs. Figure 5-2 provides a graphical presentation of the Statewide ambient

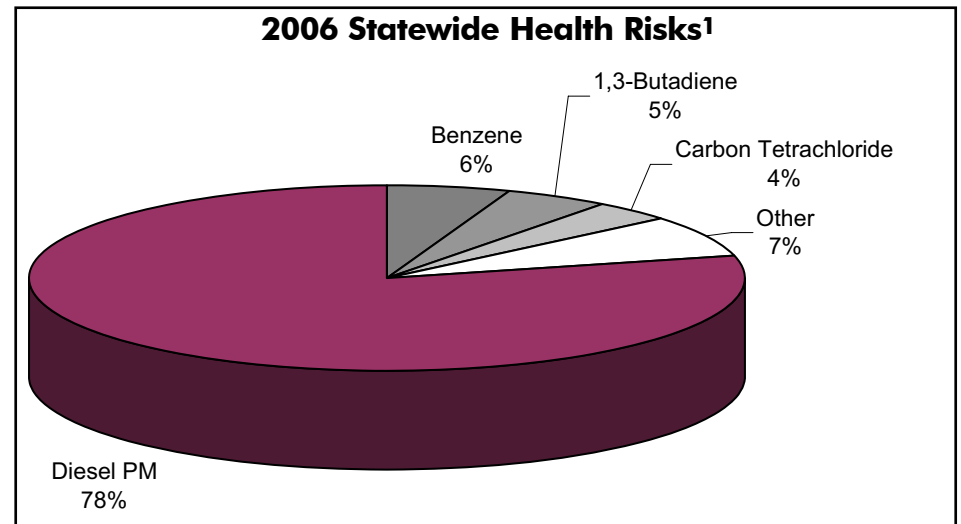
health risks for 2006. Data for Diesel PM reflect 2000 and for carbon tetrachloride reflect 2003.

**Additional Information.** Additional emissions and air quality data for the ten TACs in this almanac, as well as many other TACs, may be found by accessing the ARB website at [www.arb.ca.gov/html/aeq&m.htm](http://www.arb.ca.gov/html/aeq&m.htm). The web data are updated periodically, as new information becomes available. More detailed information on the health effects of these compounds, as well as other TACs, can be found in an ARB report entitled: "Update to the Toxic Air Contaminant List" dated December 1999. This report can be obtained by accessing the newer ARB website at [www.arb.ca.gov/toxics/id/id.htm](http://www.arb.ca.gov/toxics/id/id.htm).

### 2006 Statewide TAC Emissions

| TAC                          | tons/year |
|------------------------------|-----------|
| Acetaldehyde                 | 10,023    |
| Benzene                      | 12,060    |
| 1,3-Butadiene                | 3,589     |
| Carbon tetrachloride         | 2         |
| Chromium, hexavalent         | 1         |
| <i>para</i> -Dichlorobenzene | 1,469     |
| Formaldehyde                 | 23,154    |
| Methylene chloride           | 6,527     |
| Perchloroethylene            | 4,865     |
| Diesel PM                    | 42,326    |

Table 5-2



<sup>1</sup> Data for Diesel PM reflect 2000; carbon tetrachloride reflect 2003; "Other" only includes acetaldehyde, formaldehyde, *para*-dichlorobenzene, hexavalent chromium, perchloroethylene, and methylene chloride.

Figure 5-2

## Acetaldehyde

### 2006 Statewide Emission Inventory

Acetaldehyde is a federal hazardous air pollutant (HAP). The ARB identified acetaldehyde as a TAC in April 1993 under AB 2728. This bill required the ARB to identify all federal HAPs as TACs. In California, acetaldehyde is identified as a carcinogen. This compound also causes chronic non-cancer toxicity in the respiratory system.

Acetaldehyde is both directly emitted into the atmosphere and formed in the atmosphere as a result of photochemical oxidation. Sources of acetaldehyde include emissions from combustion processes such as exhaust from mobile sources and fuel combustion from stationary internal combustion engines, boilers, and process heaters. In California, photochemical oxidation is the largest source of acetaldehyde concentrations in the ambient air. Approximately 32 percent of the statewide acetaldehyde emissions can be attributed to on-road motor vehicles, with an additional 50 percent attributed to other mobile sources such as construction and mining equipment, aircraft, recreational boats, and agricultural equipment. Area-wide sources of emissions, which contribute 16 percent of the statewide acetaldehyde emissions, include the burning of wood in residential fireplaces and wood stoves. Stationary sources contribute two percent of the statewide acetaldehyde emissions. The primary stationary sources are from fuel combustion from the petroleum industry.

| Acetaldehyde              |              |               |
|---------------------------|--------------|---------------|
| Emissions Source          | tons/year    | Percent State |
| <b>Stationary Sources</b> | 163          | 2%            |
| <b>Area-wide Sources</b>  | 1653         | 16%           |
| <b>On-Road Mobile</b>     | 3159         | 32%           |
| Gasoline Vehicles         | 919          | 9%            |
| Diesel Vehicles           | 2240         | 22%           |
| <b>Other Mobile</b>       | 5049         | 50%           |
| Gasoline Fuel             | 911          | 9%            |
| Diesel Fuel               | 3534         | 35%           |
| Other Fuel                | 604          | 6%            |
| <b>Natural Sources</b>    | 0            | 0%            |
| <b>Total Statewide</b>    | <b>10023</b> | <b>100%</b>   |

Table 5-3

## 2006 Top Ten Counties - Acetaldehyde

The top ten counties account for approximately 47 percent of the statewide acetaldehyde emissions. The South Coast Air Basin has three of the top ten counties: South Coast portion of Los Angeles County (13 percent of the emissions of acetaldehyde statewide), Orange County (four percent), and South Coast portion of San Bernardino County (three percent). Collectively, approximately 23 percent of statewide acetaldehyde emissions occur in the South Coast Air Basin. San Diego County accounts for approximately six percent. The six other counties in the top ten for acetaldehyde emissions are: Kern (San Joaquin Valley portion), San Bernardino (Mojave Desert portion), Alameda, Fresno, Santa Clara, and San Joaquin. These six counties account for approximately 17 percent of statewide acetaldehyde emissions.

| Acetaldehyde   |                        |           |         |
|----------------|------------------------|-----------|---------|
| County         | Air Basin              | tons/year | Percent |
| Los Angeles    | South Coast            | 1343      | 13%     |
| San Diego      | San Diego              | 589       | 6%      |
| Orange         | South Coast            | 420       | 4%      |
| Kern           | San Joaquin Valley     | 393       | 4%      |
| San Bernardino | Mojave Desert          | 387       | 4%      |
| Alameda        | San Francisco Bay Area | 381       | 4%      |
| Fresno         | San Joaquin Valley     | 351       | 3%      |
| Santa Clara    | San Francisco Bay Area | 298       | 3%      |
| San Bernardino | South Coast            | 290       | 3%      |
| San Joaquin    | San Joaquin Valley     | 286       | 3%      |

Table 5-4

## Acetaldehyde

### Statewide Air Quality and Health Risk

The ARB routinely monitors for outdoor levels of acetaldehyde in its statewide air toxics monitoring network. Figure 5-3 presents a trend graph of acetaldehyde for the years 1990 through 2006. The graph shows a general decrease in acetaldehyde levels from 1990-1998 with some year-to-year fluctuations. There was a sharp drop in acetaldehyde levels during 1995 and a corresponding increase the following year. Levels between 1998 and 2006 have shown little variation.

Although concentration and health risk data are available from 1990 to 2006, the data prior to 1996 are lower than expected because the ARB collected ambient samples using a method that underestimated the actual concentrations. A method change in 1996 corrected this bias; however, the ARB was unable to develop a correction factor for the earlier data. The data prior to 1996 are included here because it is certain that at least the reported amount was present. However, the data prior to 1996 are not directly comparable to data collected during the later years.

The acetaldehyde trend is based on monitoring data. To minimize the influences of weather on the trend, three-year average statewide concentrations are used to assess the change over time. Although acetaldehyde data were collected beginning in 1990, as noted above, data prior to 1996 were unreliable. Therefore, the period 1996-1998 was used as the baseline average for comparison to 2004-2006. The result shows a one percent increase in acetaldehyde concentration and health risk.

Health risk is based on the annual average concentration and represents the estimated number of excess cancer cases per million people exposed to the specified concentration for 70 years. During 2006, there were an estimated five excess cancer cases per million people due to acetaldehyde. On an individual basis, the health risks from acetaldehyde are much lower than they are for some of the other

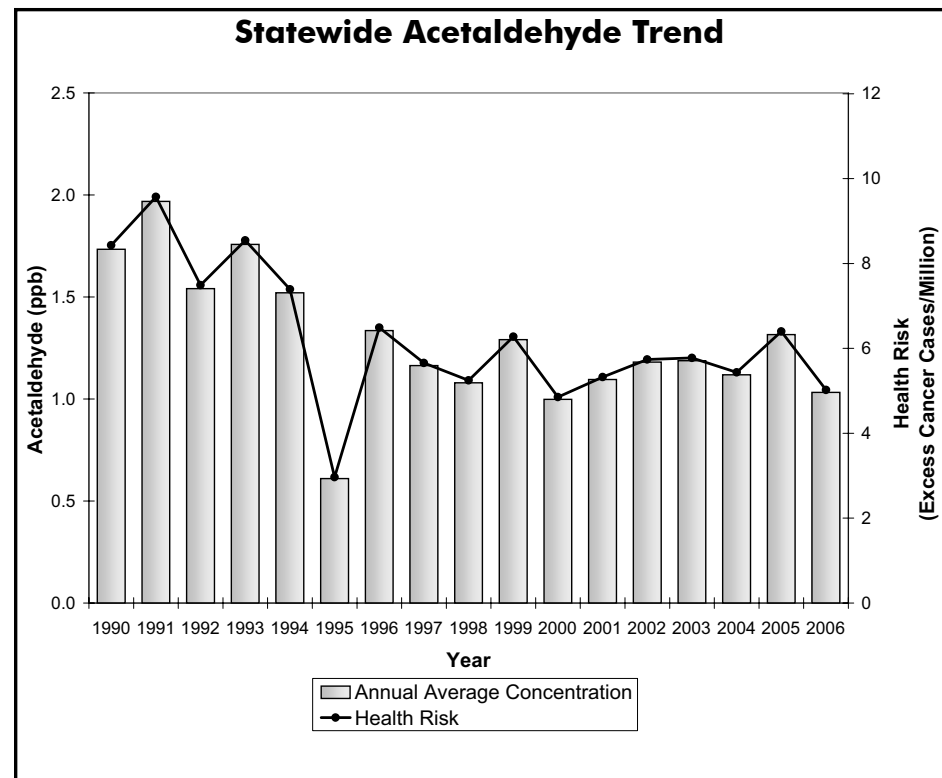


Figure 5-3

TACs. Among the ten compounds presented in this almanac, the health risk from acetaldehyde ranks eighth.

It is important to note that the health risk due to acetaldehyde is not spread evenly throughout the State. This is common for almost all pollutants. The data reflect statewide averages, and do not consider local impacts. Therefore, some Californians may be exposed to near-source, or “hot spot” concentrations of acetaldehyde which are above the statewide annual average concentration. “Hot spot” exposure may increase the potential cancer risk to individuals living near large combustion sources. Information collected under AB 2588 (the Hot

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Spots Program) will be used to help determine the priority and need for control of sources of acetaldehyde.

Another factor to consider is that the statewide averages reflect ambient outdoor concentrations. In general, acetaldehyde concentrations are higher indoors than outdoors, due in part to the abundance of combustion sources, such as cigarettes, fireplaces, and woodstoves.

Acetaldehyde is directly emitted from combustion sources and also occurs in the environment as a result of the photochemical oxidation of reactive organic gases (ROG). Over the years, stringent emission standards for newer vehicles have resulted in steady declines in directly emitted acetaldehyde due to vehicular emissions. However, its secondary formation can be hard to quantify, and can contribute to fluctuations in ambient levels of acetaldehyde.

## *Benzene*

### 2006 Statewide Emission Inventory

Benzene is highly carcinogenic and occurs throughout California. The ARB identified benzene as a TAC in January 1985 under California's TAC program (AB 1807). In addition to being a carcinogen, benzene also has non-cancer health impacts. Brief inhalation exposure to high concentrations can cause central nervous system depression. Acute effects include central nervous system symptoms of nausea, tremors, drowsiness, dizziness, headache, intoxication, and unconsciousness.

Current estimates show that approximately 88 percent of the benzene emitted in California comes from motor vehicles, including evaporative leakage and unburned fuel exhaust. The predominant sources of total benzene emissions in the atmosphere are gasoline fugitive emissions and gasoline motor vehicle exhaust. Approximately 50 percent of the statewide benzene emissions can be attributed to on-road motor vehicles, with an additional 38 percent attributed to other mobile sources such as recreational boats, off-road recreational vehicles, and lawn and garden equipment. Currently, the benzene content of gasoline is less than one percent. Some of the benzene in the fuel is emitted from vehicles as unburned fuel. Benzene is also formed as a partial combustion product of larger aromatic fuel components. Industry-related stationary sources contribute ten percent and area-wide sources contribute one percent of the statewide benzene emissions. The primary stationary sources of reported benzene emissions are crude petroleum and natural gas mining, petroleum refining, and electric generation. The primary area-wide sources include residential combustion of various types such as cooking and water heating. The primary natural sources are petroleum seeps that form where oil or natural gas emerge from subsurface sources to the ground or water surface.

| <b>Benzene</b>            |                  |                      |
|---------------------------|------------------|----------------------|
| <b>Emissions Source</b>   | <b>tons/year</b> | <b>Percent State</b> |
| <b>Stationary Sources</b> | 1231             | 10%                  |
| <b>Area-wide Sources</b>  | 122              | 1%                   |
| <b>On-Road Mobile</b>     | 6036             | 50%                  |
| <b>Gasoline Vehicles</b>  | 5426             | 45%                  |
| <b>Diesel Vehicles</b>    | 609              | 5%                   |
| <b>Other Mobile</b>       | 4625             | 38%                  |
| <b>Gasoline Fuel</b>      | 3360             | 28%                  |
| <b>Diesel Fuel</b>        | 962              | 8%                   |
| <b>Other Fuel</b>         | 304              | 3%                   |
| <b>Natural Sources</b>    | 46               | <1%                  |
| <b>Total Statewide</b>    | <b>12060</b>     | <b>100%</b>          |

Table 5-5

## 2006 Top Ten Counties - Benzene

The top ten counties account for approximately 51 percent of the statewide benzene emissions. The South Coast Air Basin has four of the top ten counties emitting benzene, representing 30 percent of statewide benzene emissions. San Diego contributes seven percent. Two counties in the San Francisco Air Basin contribute approximately seven percent: Santa Clara County (three percent) and Alameda County (three percent). The three other counties in the top ten for benzene emissions are: Kern (San Joaquin portion), San Bernardino (Mojave Desert portion), and Sacramento. These counties account for approximately 12 percent of statewide benzene emissions.

| Benzene        |                        |           |         |
|----------------|------------------------|-----------|---------|
| County         | Air Basin              | tons/year | Percent |
| Los Angeles    | South Coast            | 2143      | 18%     |
| San Diego      | San Diego              | 869       | 7%      |
| Orange         | South Coast            | 683       | 6%      |
| Kern           | San Joaquin Valley     | 655       | 5%      |
| San Bernardino | Mojave Desert          | 425       | 4%      |
| San Bernardino | South Coast            | 400       | 3%      |
| Santa Clara    | San Francisco Bay Area | 395       | 3%      |
| Alameda        | San Francisco Bay Area | 389       | 3%      |
| Riverside      | South Coast            | 353       | 3%      |
| Sacramento     | Sacramento Valley      | 325       | 3%      |

Table 5-6

## Benzene

### Statewide Air Quality and Health Risk

The ARB routinely monitors for outdoor levels of benzene in its statewide air toxics monitoring network. Figure 5-4 shows the annual average statewide benzene concentrations and the associated health risk from benzene alone. Ambient levels have shown generally steady improvement since 1990. To examine the trend in benzene while minimizing the influences of weather on the trend, the statewide average benzene concentration for 1990-1992 was compared to that for 2004-2006. The result is a 79 percent decrease in both concentration and health risk.

Health risk is based on the annual average concentration and represents the estimated number of excess cancer cases per million people exposed to the specified concentration level over a 70-year lifetime. From these data, it is apparent that benzene poses a substantial health risk. Based on the statewide averages, benzene ranks second highest among the ten TACs presented in this almanac. During 2006, there was an estimated risk of 38 excess cancer cases per million people due to benzene. However, as with all air pollutants, the health risk is not spread evenly throughout the State. In general, ambient benzene concentrations and associated health risks tend to be higher in the more urbanized areas.

It is important to note that the ambient benzene concentrations have been corrected to provide a consistent long-term data record. Prior to 1999, the ARB analyzed samples using a single-point calibration of the gas chromatograph analyzers. While this method was approved by the U.S. EPA, it resulted in low concentrations being under-reported. Beginning January 1, 1999, new and more sophisticated computer software allowed the ARB to switch to a 3-point calibration of the analyzers. This improved measurement technique more accurately characterizes the ambient benzene levels, especially at low concentrations. However, concentrations measured using the 3-point calibration method are higher than those measured with the single-point calibration method. A year long study showed that the two measurement

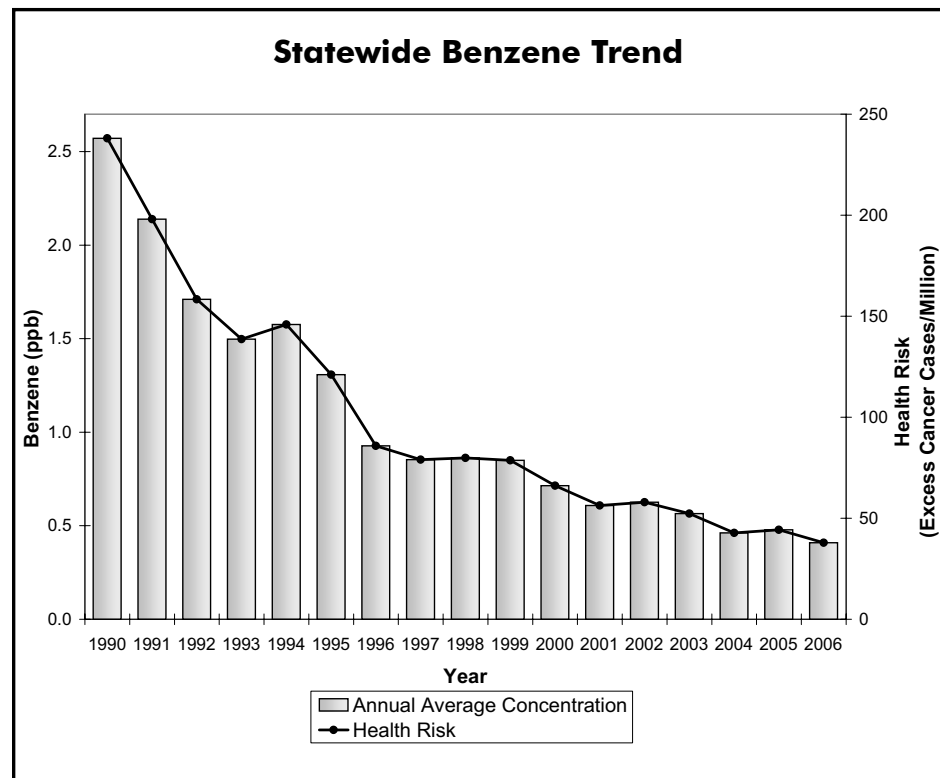


Figure 5-4

methods were highly correlated, and the ARB was able to develop a predictive relationship between the two. To avoid discontinuity in the trend data, the pre-1999 benzene data shown in Figure 5-4 have been adjusted according to these predictive equations, and they now reflect the results that would have been produced using the 3-point calibration method. Information about the specific study process and adjustment equations can be found on the “Laboratory Standard Operating Procedures for Ambient Air” page on the ARB website at [www.arb.ca.gov/aaqm/sop/summary/summary.htm](http://www.arb.ca.gov/aaqm/sop/summary/summary.htm).



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The ARB started to use a gas chromatography/mass spectrometry (GC/MS) based method to analyze benzene in 2001 to fulfill a lower detection limit requirement for the SB25 and Neighborhood Assessment Programs. The new method is also in line with the new U.S. EPA Urban Air Toxic Program being developed nationally. Measurements do not change substantially by using the GC/MS method, so no adjustment is needed to prior years' data.

Although the health risk from benzene is still substantial, emissions have been reduced significantly over the last decade, and will be reduced further in California through a progression of regulatory measures and control technologies. The LEV regulations have resulted in a significant reduction in exhaust and evaporative hydrocarbon emissions, including benzene. As the fleet turns over and new LEV technology vehicles are introduced into the fleet, emission reductions will continue. In 1996, the California Phase II Reformulated Gasoline Program was implemented statewide. Fuel reformulation has led to a substantial decrease in the level of benzene from gasoline and vehicle exhaust emissions. Since motor vehicles continue to be the major source of benzene in the State, future efforts to improve fuel formulations, reduce vehicle exhaust emissions, and promote less polluting modes of transportation will likely continue to help reduce benzene emissions.

## *1,3-Butadiene*

### 2006 Statewide Emission Inventory

The ARB identified 1,3-butadiene as a TAC in 1992. In California, 1,3-butadiene has been identified as a carcinogen. In addition, 1,3-butadiene vapors are mildly irritating to the eyes and mucous membranes and cause neurological effects at very high levels.

Most of the emissions of 1,3-butadiene are from incomplete combustion of gasoline and diesel fuels. Mobile sources account for approximately 64 percent of the total statewide emissions. Vehicles that are not equipped with functioning exhaust catalysts emit greater amounts of 1,3-butadiene than vehicles with functioning catalysts. Approximately 34 percent of the statewide 1,3-butadiene emissions can be attributed to on-road motor vehicles, with an additional 30 percent attributed to other mobile sources such as recreational boats, off-road recreational vehicles, and aircraft. Area-wide sources such as agricultural waste burning and open burning associated with forest management contribute approximately ten percent. Stationary sources contribute less than one percent of the statewide 1,3-butadiene emissions. The primary stationary sources with reported 1,3-butadiene emissions include petroleum refining, manufacturing of synthetics and man-made materials, and oil and gas extraction. The primary natural sources of 1,3-butadiene emissions are wildfires.

| <b>1,3-Butadiene</b>      |                  |                      |
|---------------------------|------------------|----------------------|
| <b>Emissions Source</b>   | <b>tons/year</b> | <b>Percent State</b> |
| <b>Stationary Sources</b> | 15               | <1%                  |
| <b>Area-wide Sources</b>  | 358              | 10%                  |
| <b>On-Road Mobile</b>     | 1209             | 34%                  |
| <b>Gasoline Vehicles</b>  | 1151             | 32%                  |
| <b>Diesel Vehicles</b>    | 58               | 2%                   |
| <b>Other Mobile</b>       | 1070             | 30%                  |
| <b>Gasoline Fuel</b>      | 774              | 22%                  |
| <b>Diesel Fuel</b>        | 91               | 3%                   |
| <b>Other Fuel</b>         | 205              | 6%                   |
| <b>Natural Sources</b>    | 937              | 26%                  |
| <b>Total Statewide</b>    | <b>3589</b>      | <b>100%</b>          |

Table 5-7

## 2006 Top Ten Counties - 1,3-Butadiene Emissions

The top ten counties account for approximately 44 percent of the statewide 1,3-butadiene emissions. Emission sources in the South Coast Air Basin contribute approximately 19 percent of the statewide total: Los Angeles County (12 percent), Orange County (four percent), and South Coast portion of San Bernardino County (three percent). San Diego County accounts for approximately seven percent. Two counties in the San Joaquin Valley Air Basin contribute seven percent of the 1,3-butadiene: Tulare County (four percent) and Fresno County (three percent). The other counties in the top ten account for 11 percent: San Bernardino (Mojave Desert portion), Tuolumne, Siskiyou and Trinity.

| 1,3-Butadiene  |                    |           |         |
|----------------|--------------------|-----------|---------|
| County         | Air Basin          | tons/year | Percent |
| Los Angeles    | South Coast        | 437       | 12%     |
| San Diego      | San Diego          | 241       | 7%      |
| Tulare         | San Joaquin Valley | 156       | 4%      |
| Orange         | South Coast        | 135       | 4%      |
| San Bernardino | South Coast        | 110       | 3%      |
| San Bernardino | Mojave Desert      | 109       | 3%      |
| Fresno         | San Joaquin Valley | 108       | 3%      |
| Tuolumne       | Mountain Counties  | 99        | 3%      |
| Siskiyou       | Northeast Plateau  | 98        | 3%      |
| Trinity        | North Coast        | 87        | 2%      |

Table 5-8

## 1,3-Butadiene

### Statewide Air Quality and Health Risk

The ARB routinely monitors for outdoor levels of 1,3-butadiene in its statewide air toxics monitoring network. Figure 5-5 shows the annual average statewide 1,3-butadiene concentrations and the associated health risk from this TAC alone since 1990. The data show a general downward trend, with some variability. To examine the trend in 1,3-butadiene while minimizing the influences of weather, the statewide average 1,3-butadiene concentration for 1990-1992 was compared to that for 2004-2006. The result is a 70 percent decrease in both concentration and health risk. Despite this substantial drop, the health risk from this compound remains relatively high. In 2006, there was an estimated risk of 32 excess cancer cases per million people. Of the ten compounds presented in this almanac, the average statewide health risk from 1,3-butadiene ranks third. Again, it is important to note that the data shown here reflect statewide averages. They do not consider local impacts, which may be higher or lower.

Similar to benzene, the ARB analyzed 1,3-butadiene samples using a single-point calibration of the gas chromatograph analyzers prior to 1999. While this method was approved by the U.S. EPA, it resulted in low concentrations being under-reported. Beginning January 1, 1999, new and more sophisticated computer software allowed the ARB to switch to a 3-point calibration of the analyzers. This improved measurement technique more accurately characterizes the ambient 1,3-butadiene, especially at low concentrations. However, concentrations measured using the 3-point calibration method are higher than those measured with the single-point calibration method. A year-long ARB study showed that the two measurement methods were highly correlated, and the ARB was able to develop a predictive relationship between them. To avoid discontinuity in the trend data, the pre-1999 1,3-butadiene data shown in Figure 5-5 have been adjusted according to these predictive equations and now reflect the results that would have been produced using the 3-point

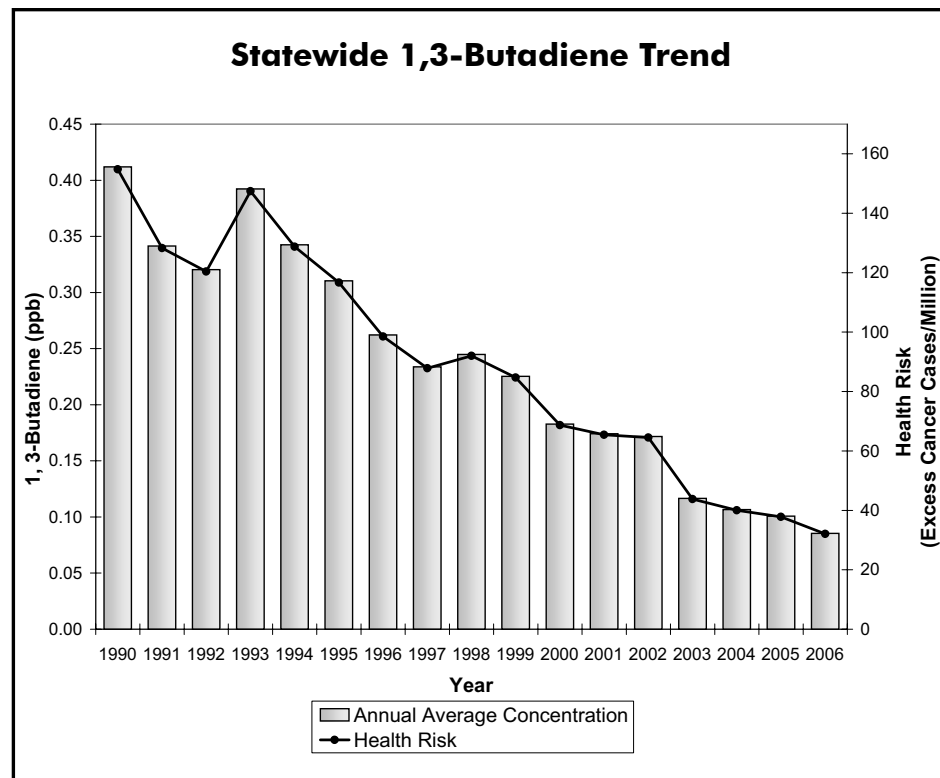


Figure 5-5

calibration method. Information about the specific study process and adjustment equations can be found on the “Laboratory Standard Operating Procedures for Ambient Air” page on the ARB website at [www.arb.ca.gov/aaqm/sop/summary/summary.htm](http://www.arb.ca.gov/aaqm/sop/summary/summary.htm).

Similar to benzene, the ARB started to use a GC/MS based method to analyze 1,3-butadiene in 2001. This change in method fulfilled a lower detection limit requirement for the SB 25 and Neighborhood Assessment Programs. The new method is also in line with the new U.S. EPA Urban Air Toxic Program being developed nationally.

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Measurements do not change substantially by using the GC/MS method, so no adjustment is needed to prior years' data.

In California, the majority of 1,3-butadiene emissions are from incomplete combustion of gasoline and diesel fuels. The ARB adopted LEV/Clean Fuels regulations in 1990 and the Phase II reformulated gasoline regulations were implemented in 1996. The LEV regulations are expected to continue to reduce 1,3-butadiene emissions from cars and light-duty trucks as the fleet turns over and new LEVs are introduced into the fleet.

## Carbon Tetrachloride

### 2006 Statewide Emission Inventory

The ARB identified carbon tetrachloride as a TAC in 1987 under California's TAC program (AB 1807). In California, carbon tetrachloride has been identified as a carcinogen. Carbon tetrachloride is also a central nervous system depressant and mild eye and respiratory tract irritant.

The primary stationary sources reporting emissions of carbon tetrachloride include chemical and allied product manufacturers and petroleum refineries. In the past, carbon tetrachloride was used for dry cleaning and as a grain-fumigant. Usage for these purposes is no longer allowed in the United States. Carbon tetrachloride has not been registered for pesticidal use in California since 1987. Also, the use of carbon tetrachloride in products to be used indoors has been discontinued in the United States. The statewide emissions of carbon tetrachloride are small (about 1.96 tons per year), and background concentrations account for most of the health risk.

| Carbon Tetrachloride      |             |               |
|---------------------------|-------------|---------------|
| Emissions Source          | tons/year   | Percent State |
| <b>Stationary Sources</b> | <b>1.96</b> | <b>100%</b>   |
| <b>Area-wide Sources</b>  | <b>0</b>    | <b>0%</b>     |
| <b>On-Road Mobile</b>     | <b>0</b>    | <b>0%</b>     |
| <b>Gasoline Vehicles</b>  | <b>0</b>    | <b>0%</b>     |
| <b>Diesel Vehicles</b>    | <b>0</b>    | <b>0%</b>     |
| <b>Other Mobile</b>       | <b>0</b>    | <b>0%</b>     |
| <b>Gasoline Fuel</b>      | <b>0</b>    | <b>0%</b>     |
| <b>Diesel Fuel</b>        | <b>0</b>    | <b>0%</b>     |
| <b>Other Fuel</b>         | <b>0</b>    | <b>0%</b>     |
| <b>Natural Sources</b>    | <b>0</b>    | <b>0%</b>     |
| <b>Total Statewide</b>    | <b>1.96</b> | <b>100%</b>   |

Table 5-9

## 2006 Top Ten Counties - Carbon Tetrachloride

The top two counties account for 75 percent of the statewide carbon tetrachloride emissions. Contra Costa County (San Francisco Bay Area Air Basin) accounts for approximately 47 percent, and Orange County accounts for approximately 28 percent of the emissions of carbon tetrachloride statewide. Although the percentages for these counties are high, the emissions are very small (one ton or less per year in each county). The eight other counties in the top ten contribute approximately 25 percent of statewide carbon tetrachloride emissions.

| <b>Carbon Tetrachloride</b> |                        |                  |                |
|-----------------------------|------------------------|------------------|----------------|
| <b>County</b>               | <b>Air Basin</b>       | <b>tons/year</b> | <b>Percent</b> |
| Contra Costa                | San Francisco Bay Area | 1                | 47%            |
| Orange                      | South Coast            | 1                | 28%            |
| San Diego                   | San Diego              | <1               | 5%             |
| Riverside                   | South Coast            | <1               | 4%             |
| Los Angeles                 | South Coast            | <1               | 4%             |
| San Bernardino              | South Coast            | <1               | 3%             |
| Ventura                     | South Central Coast    | <1               | 3%             |
| Sacramento                  | Sacramento Valley      | <1               | 3%             |
| San Bernardino              | Mojave Desert          | <1               | 2%             |
| Kern                        | Mojave Desert          | <1               | 1%             |

Table 5-10

## Carbon Tetrachloride

### Statewide Air Quality and Health Risk

The ARB routinely monitors for outdoor levels of carbon tetrachloride in its statewide air toxics monitoring network. Figure 5-6 shows the annual average statewide concentrations and the associated health risk from carbon tetrachloride alone. As with a number of other TACs, there are several years of incomplete data for carbon tetrachloride. The annual average concentration is available only if there is a full year of data. Based on the available data, the ambient concentrations and health risk dropped between 1990 and 1996, and then there was a substantial increase in values for 1998, followed by levels which stayed fairly constant between 2000 and 2003. Carbon tetrachloride data from February 2004 through 2006 are not available because of a problem with the laboratory standard.

To examine the trend in carbon tetrachloride while minimizing the influences of weather on the trend, the statewide average carbon tetrachloride concentration for 1990-1991 (1992 average was invalid) was compared to that for 2001-2003. The result is a 30 percent decrease in both concentration and health risk. Health risk is based on the annual average concentration and represents the estimated number of excess cancer cases per million people exposed to the specified concentration for 70 years. In 2003, there was an estimated risk of 25 excess cancer cases per million people. The health risk of this TAC ranks fourth among the ten compounds presented in this almanac.

Unlike many of the other TACs, carbon tetrachloride is emitted primarily by sources other than motor vehicles, and there are virtually no emissions within California. However, because carbon tetrachloride persists in the atmosphere for many years (the estimated atmospheric lifetime is 50 years), background concentrations still pose a health risk.

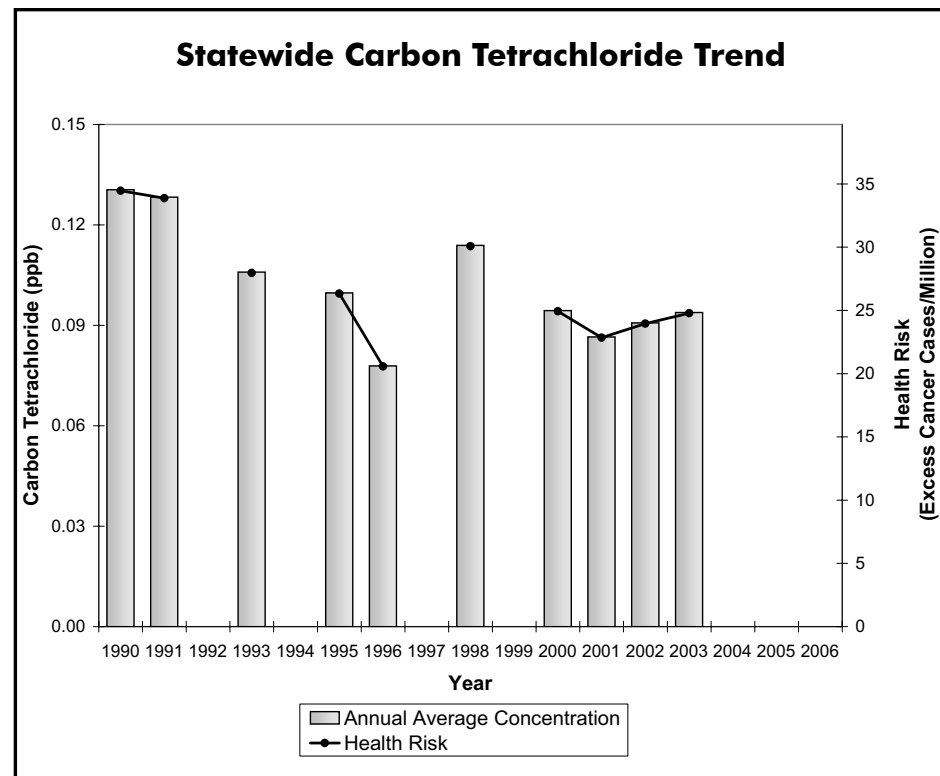


Figure 5-6



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## *Chromium, Hexavalent*

### 2006 Statewide Emission Inventory

Hexavalent chromium was identified as a TAC in 1986 under California's TAC program (AB 1807, Tanner, 1983). In California, hexavalent chromium has been identified as a carcinogen. There is epidemiological evidence that exposure to inhaled hexavalent chromium may result in lung cancer. The principal acute effects of hexavalent chromium are renal toxicity, gastrointestinal hemorrhage, and intravascular hemolysis.

Chrome plating is no longer the primary source of hexavalent chromium emissions in the State. Hexavalent chromium emissions from plating have declined significantly from previous editions of the almanac due to many platers switching to the use of trivalent chromium in place of hexavalent chromium. Chromic acid anodizing is another industrial metal finishing process which uses hexavalent chromium. A third source of hexavalent chromium emissions is the firebrick lining of glass furnaces. In California, stationary sources are estimated to emit about 0.22 ton per year of hexavalent chromium. Emissions from these sources were obtained from facilities under the Air Toxics Hot Spots Act of 1987. This act required facilities to estimate toxics emissions, including hexavalent chromium. Approximately 0.15 tons of hexavalent chromium are emitted by gasoline motor vehicles. Other mobile sources such as trains and ships contribute approximately 0.77 tons of hexavalent chromium annually.

| <b>Chromium, Hexavalent</b> |                  |                      |
|-----------------------------|------------------|----------------------|
| <b>Emissions Source</b>     | <b>tons/year</b> | <b>Percent State</b> |
| <b>Stationary Sources</b>   | 0.22             | 19%                  |
| <b>Area-wide Sources</b>    | 0.01             | 1%                   |
| <b>On-Road Mobile</b>       | 0.16             | 14%                  |
| <b>Gasoline Vehicles</b>    | 0.15             | 13%                  |
| <b>Diesel Vehicles</b>      | < .01            | 1%                   |
| <b>Other Mobile</b>         | 0.77             | 67%                  |
| <b>Gasoline Fuel</b>        | < .01            | <1%                  |
| <b>Diesel Fuel</b>          | < .01            | <1%                  |
| <b>Other Fuel</b>           | 0.77             | 67%                  |
| <b>Natural Sources</b>      | 0                | 0%                   |
| <b>Total Statewide</b>      | <b>1.16</b>      | <b>100%</b>          |

Table 5-11

## 2006 Top Ten Counties - Chromium, Hexavalent

Four counties account for approximately 61 percent of the statewide hexavalent chromium emissions: Mojave Desert portion of Kern County (25 percent), San Diego County (20 percent), Kings (11 percent), and South Coast portion of Los Angeles (six percent). The six other counties in the top ten for hexavalent chromium emissions are: Imperial, Fresno, Los Angeles (Mojave Desert portion), Ventura, Kern (San Joaquin Valley portion), and Solano (San Francisco Bay Area portion). These six counties account for approximately 17 percent of statewide hexavalent chromium emissions.

| <b>Chromium, Hexavalent</b> |                        |                  |                |
|-----------------------------|------------------------|------------------|----------------|
| <b>County</b>               | <b>Air Basin</b>       | <b>tons/year</b> | <b>Percent</b> |
| Kern                        | Mojave Desert          | 0.29             | 25%            |
| San Diego                   | San Diego              | 0.23             | 20%            |
| Kings                       | San Joaquin Valley     | 0.12             | 11%            |
| Los Angeles                 | South Coast            | 0.07             | 6%             |
| Imperial                    | Salton Sea             | 0.06             | 5%             |
| Fresno                      | San Joaquin Valley     | 0.04             | 4%             |
| Los Angeles                 | Mojave Desert          | 0.03             | 3%             |
| Ventura                     | South Central Coast    | 0.03             | 2%             |
| Kern                        | San Joaquin Valley     | 0.02             | 2%             |
| Solano                      | San Francisco Bay Area | 0.02             | 2%             |

Table 5-12

## Chromium, Hexavalent

### Statewide Air Quality and Health Risk

The ARB routinely monitors for outdoor levels of hexavalent chromium in its statewide air toxics monitoring network. Chromium exists primarily in hexavalent and trivalent forms. Hexavalent chromium has been identified as a TAC and has been found to be much more reactive and much more toxic than trivalent chromium.

Fuel combustion from mobile sources is the largest source of hexavalent chromium emissions. Combustion from stationary sources is also a large source of emissions. Examples of other sources of hexavalent chromium emissions include chrome plating, chromic acid anodizing, and thermal spraying. In the past, compounds containing hexavalent chromium, such as sodium dichromate or lead chromate, were added to cooling tower water to control corrosion in the towers and associated heat exchangers. Hexavalent chromium was also used in motor vehicle and mobile equipment coatings.

ARB has adopted several control measures to reduce emissions or prohibit use of this very potent TAC. In 1988, ARB adopted the chrome plating Airborne Toxics Control Measure (ATCM). This ATCM reduced hexavalent chromium emissions from chrome plating and chromic acid anodizing operations by well over 90 percent, with the largest facilities reducing emissions by over 99 percent. This ATCM was amended in 2006 to further reduce emissions from all chrome plating and anodizing operations. In 1989, ARB adopted a measure that prohibited the use of hexavalent chromium compounds in cooling towers. ARB has also adopted a measure to prohibit use of hexavalent chromium in motor vehicle and mobile equipment coatings, and a measure that substantially reduces hexavalent chromium emissions from thermal spraying operations.

Statewide annual averages and health risk estimates for hexavalent chromium are available for 1992 through 2006. Prior to 1992, a different measurement method was used. With this method, some of the

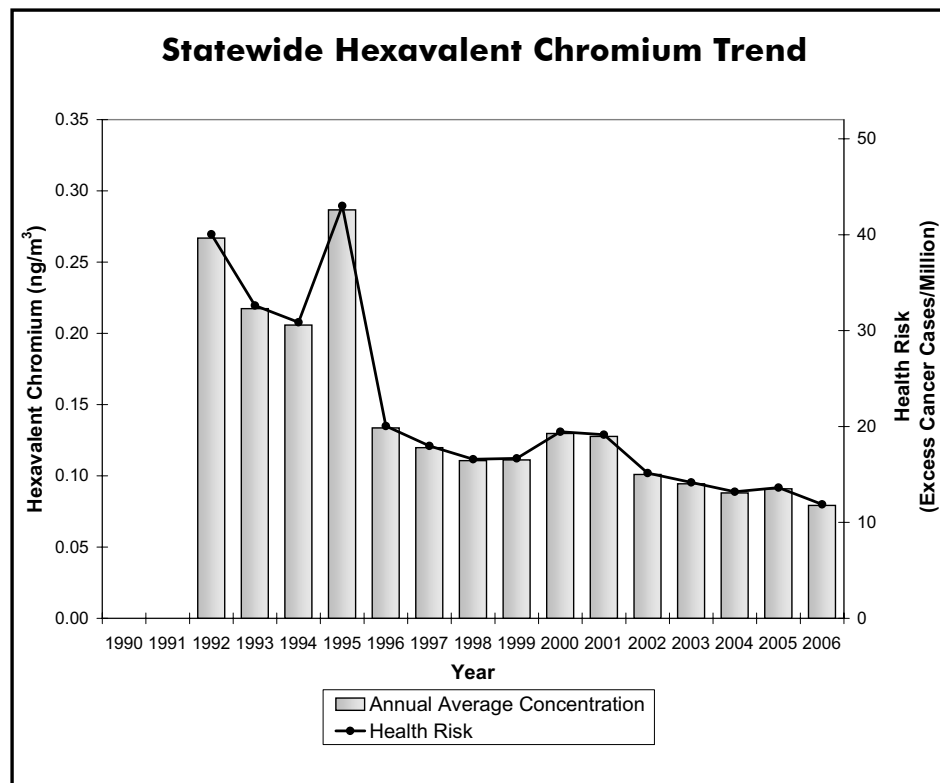


Figure 5-7

hexavalent chromium was transformed into trivalent chromium on the collection filter. As a result, the hexavalent chromium concentrations were unreliable, and these data are not included in this almanac. Since 1992, the method to analyze hexavalent chromium has been improved to prevent the transformation from occurring.

The statewide annual average concentrations and associated health risks are shown in Figure 5-7. Both show a general downward trend, with the exception of 1995. The high 1995 value is driven in part by an extremely high annual average for the Burbank site in the South Coast Air Basin. However, a number of other sites also had higher

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concentrations in 1995 than in other years. Between 1996 and 2005, values show significant improvement, except for slight elevated values in 2000 and 2001.

The significant reduction in hexavalent chromium coincided with the complete implementation of the chrome plating and the chromate-treated cooling tower control measures. The measures were so effective that they resulted in a very high percentage of the measured values being below the LOD. From 1998 through 2001, the lowest level that could reliably be measured was 0.2 nanograms per cubic meter ( $\text{ng}/\text{m}^3$ ). In calculating an annual average, values below  $0.2 \text{ ng}/\text{m}^3$  are assumed equal to  $0.1 \text{ ng}/\text{m}^3$ , which is half the LOD. This approach applies to all other TACs when their measurements are below their respective LODs. Starting on January 1, 2002, hexavalent chromium is being analyzed by compositing quarterly samples by site. Although the new method decreases the number of samples, it increases the sensitivity of the instrument by lowering the lowest concentration that can be reliably measured from  $0.2 \text{ ng}/\text{m}^3$  to  $0.06 \text{ ng}/\text{m}^3$ . Using the new method, measurements will sometimes fall below the LOD, and the half detection limit approach is applied to those measurements.

To examine the trend in hexavalent chromium while minimizing the influences of weather on the trend, the average hexavalent chromium concentration for 1992-1994 was compared to that for 2004-2006. The result is a 61 percent decrease in both concentration and health risk. Health risk is based on the annual average concentration and represents the estimated risk of excess cancer cases per million people exposed over a 70-year lifetime at the specified concentration level. In 2006, there were an estimated 12 excess cancer cases per million people. Based on data for the ten TACs presented in this almanac, hexavalent chromium ranks sixth in terms of ambient health risk. It is important to note that since hexavalent chromium exposure and health impacts usually occur on a neighborhood scale, actual health risk can be higher in some areas than the statewide average, and lower in other areas.

*para-Dichlorobenzene***2006 Statewide Emission Inventory**

The ARB identified *para*-dichlorobenzene as a TAC in April 1993 under AB 2728. This bill required the ARB to identify, by regulation, all federal hazardous air pollutants as TACs. In California, *para*-dichlorobenzene has been identified as a carcinogen. In addition to the carcinogenic impact, long-term inhalation exposure may affect the liver, skin, and central nervous system in humans.

The primary area-wide sources that have reported emissions of *para*-dichlorobenzene include consumer products such as non-aerosol insect repellants and solid/gel air fresheners. These sources contribute nearly all of the statewide *para*-dichlorobenzene emissions.

| <i>para</i> -Dichlorobenzene |             |               |
|------------------------------|-------------|---------------|
| Emissions Source             | tons/year   | Percent State |
| <b>Stationary Sources</b>    | 2           | <1%           |
| <b>Area-wide Sources</b>     | 1467        | 100%          |
| <b>On-Road Mobile</b>        | 0           | 0%            |
| <b>Gasoline Vehicles</b>     | 0           | 0%            |
| <b>Diesel Vehicles</b>       | 0           | 0%            |
| <b>Other Mobile</b>          | 0           | 0%            |
| <b>Gasoline Fuel</b>         | 0           | 0%            |
| <b>Diesel Fuel</b>           | 0           | 0%            |
| <b>Other Fuel</b>            | 0           | 0%            |
| <b>Natural Sources</b>       | 0           | 0%            |
| <b>Total Statewide</b>       | <b>1469</b> | <b>100%</b>   |

Table 5-13

## 2006 Top Ten Counties - *para*-Dichlorobenzene

The top ten counties account for approximately 69 percent of the statewide *para*-dichlorobenzene emissions. The South Coast Air Basin has four of the top ten counties, representing 42 percent of statewide *para*-dichlorobenzene emissions. San Diego County contributes approximately eight percent. Three counties in the San Francisco Bay Area Air Basin contribute approximately 12 percent: Santa Clara County (five percent), Alameda County (four percent), and Contra Costa County (three percent). The other two counties in the top ten are: Sacramento (four percent) and Fresno (two percent).

| <i>para</i> -Dichlorobenzene |                        |           |         |
|------------------------------|------------------------|-----------|---------|
| County                       | Air Basin              | tons/year | Percent |
| Los Angeles                  | South Coast            | 383       | 26%     |
| San Diego                    | San Diego              | 122       | 8%      |
| Orange                       | South Coast            | 121       | 8%      |
| Santa Clara                  | San Francisco Bay Area | 71        | 5%      |
| Alameda                      | San Francisco Bay Area | 61        | 4%      |
| San Bernardino               | South Coast            | 60        | 4%      |
| Riverside                    | South Coast            | 59        | 4%      |
| Sacramento                   | Sacramento Valley      | 55        | 4%      |
| Contra Costa                 | San Francisco Bay Area | 40        | 3%      |
| Fresno                       | San Joaquin Valley     | 36        | 2%      |

Table 5-14

## *para*-Dichlorobenzene Statewide Air Quality and Health Risk

The ARB routinely monitors for outdoor levels of *para*-dichlorobenzene in its statewide air toxics monitoring network. Statewide annual average concentrations and health risk estimates are available for 1991 through 2006, with the exception of 1998 and 1999. No summary data are available for these years because of problems with laboratory equipment and associated data reliability. The trend graph for *para*-dichlorobenzene, shown in Figure 5-8, shows values fairly constant throughout 1991 to 1997, with slightly lower values in 1994 and 1996. Following a drop in 2000, there was an upturn in 2001 through 2002, and *para*-dichlorobenzene levels have shown very little variation between 2002 and 2006.

The increase in *para*-dichlorobenzene was likely due to a mechanism that ARB's Monitoring and Laboratory Division used for estimating very low concentrations. In 2001, the lowest level of *para*-dichlorobenzene that could be reliably measured was changed from 0.2 to 0.3 parts per billion (ppb). This change resulted in a higher percentage of *para*-dichlorobenzene samples not detectable because most samples were at less than 0.3 ppb.

In calculating an annual average, values below 0.3 ppb are assumed equal to 0.15 ppb, which is one-half of the LOD. This approach applies to all other TACs when their measurements are below the LOD. It is a good estimate for some TACs, however, it is uncertain for *para*-dichlorobenzene due to the large number of samples that were lower than the LOD.

To examine the trend in *para*-dichlorobenzene, the statewide average concentration for 1991-1993 was compared to that for 2004-2006. The result is a 10 percent increase in both the concentration and health risk. Health risk is based on the annual average concentration and represents the estimated number of excess cancer cases per million people exposed to the specified concentration for 70 years. During

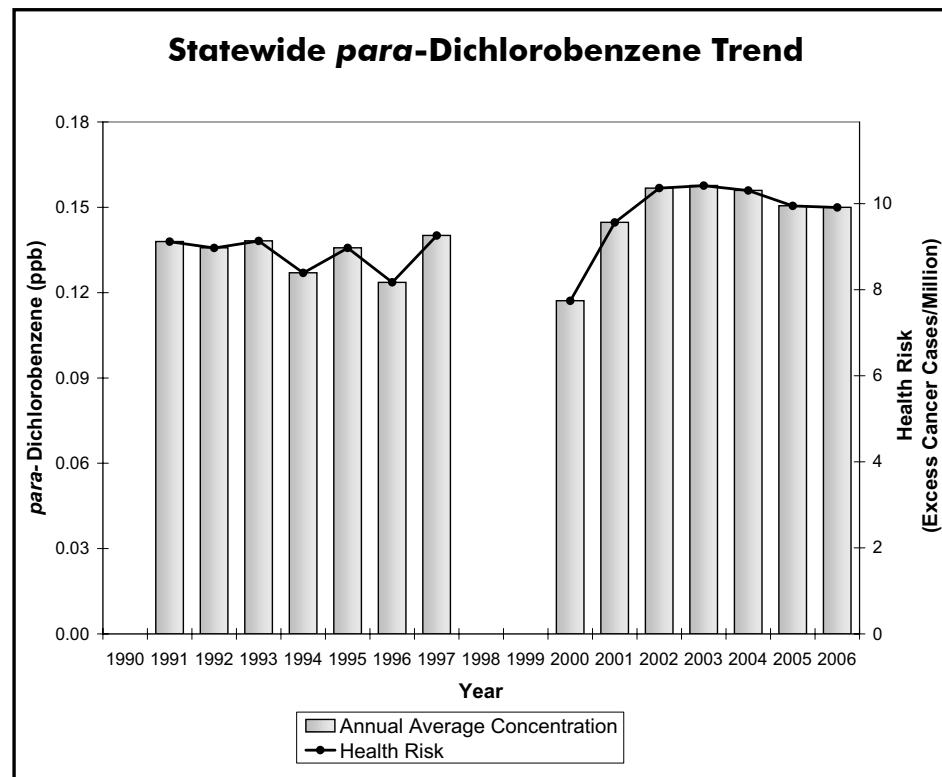


Figure 5-8

2006, there was an estimated risk of 10 excess cancer cases per million people from this compound alone. Based on this, *para*-dichlorobenzene ranks seventh out of the ten compounds presented in this almanac. However, it is important to note that annual average concentration and health risk for *para*-dichlorobenzene are heavily influenced by its LOD.

The ARB adopted an ATCM in 2004 to prohibit the use of *para*-dichlorobenzene in solid air fresheners and toilet/urinal care products. The ATCM required the phase-out of *para*-dichlorobenzene from these products by December 31, 2005, with a complete ban



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on the sale of the products by December 31, 2006. An emission reduction of 2.72 tons per day of *para*-dichlorobenzene was expected. Besides reducing emissions and improving air quality inside buildings and the surrounding area, the ATCM is also expected to reduce *para*-dichlorobenzene emissions from water treatment facilities processing wastewater from toilets and urinals, and therefore reduce the ambient concentration of *para*-dichlorobenzene.

## Formaldehyde

### 2006 Statewide Emission Inventory

The ARB identified formaldehyde as a TAC in 1992 under California's TAC program (AB 1807, Tanner, 1983). In California, formaldehyde has been identified as a carcinogen. Chronic exposure is associated with respiratory symptoms and eye, nose, and throat irritation.

Formaldehyde is both directly emitted into the atmosphere and formed in the atmosphere as a result of photochemical oxidation. Photochemical oxidation is the largest source of formaldehyde concentrations in California ambient air. Directly emitted formaldehyde is a product of incomplete combustion. One of the primary sources of directly-emitted formaldehyde is vehicular exhaust. Formaldehyde is used in resins, can be found in many consumer products as an antimicrobial agent, and is also used in fumigants and soil disinfectants. About 84 percent of direct formaldehyde emissions are estimated to come from the combustion of fossil fuels from mobile sources. Approximately 33 percent of the total statewide formaldehyde emissions can be attributed to on-road motor vehicles, with an additional 51 percent attributed to other mobile sources such as aircraft, recreational boats, and construction and mining equipment. Area-wide sources contribute approximately nine percent and stationary sources contribute approximately eight percent of the statewide formaldehyde emissions in California. The primary area-wide sources of formaldehyde emissions include wood burning in residential fireplaces and wood stoves.

| Formaldehyde              |              |               |
|---------------------------|--------------|---------------|
| Emissions Source          | tons/year    | Percent State |
| <b>Stationary Sources</b> | 1875         | 8%            |
| <b>Area-wide Sources</b>  | 2005         | 9%            |
| <b>On-Road Mobile</b>     | 7534         | 33%           |
| Gasoline Vehicles         | 3052         | 13%           |
| Diesel Vehicles           | 4483         | 19%           |
| <b>Other Mobile</b>       | 11739        | 51%           |
| Gasoline Fuel             | 2779         | 12%           |
| Diesel Fuel               | 7073         | 31%           |
| Other Fuel                | 1887         | 8%            |
| <b>Natural Sources</b>    | 0            | 0%            |
| <b>Total Statewide</b>    | <b>23154</b> | <b>100%</b>   |

Table 5-15

## 2006 Top Ten Counties - Formaldehyde

The top ten counties account for approximately 50 percent of the statewide formaldehyde emissions. The South Coast Air Basin has three of the top ten counties emitting formaldehyde, representing 24 percent of statewide formaldehyde emissions. The seven other counties in the top ten for formaldehyde emissions are: San Diego, Kern (San Joaquin Valley portion), San Bernardino (Mojave Desert portion), Alameda, Fresno, Santa Clara, and San Joaquin. These seven counties account for approximately 29 percent of statewide formaldehyde emissions.

| Formaldehyde   |                        |           |         |
|----------------|------------------------|-----------|---------|
| County         | Air Basin              | tons/year | Percent |
| Los Angeles    | South Coast            | 3350      | 14%     |
| San Diego      | San Diego              | 1426      | 6%      |
| Kern           | San Joaquin Valley     | 1392      | 6%      |
| Orange         | South Coast            | 1064      | 5%      |
| San Bernardino | Mojave Desert          | 915       | 4%      |
| Alameda        | San Francisco Bay Area | 816       | 4%      |
| Fresno         | San Joaquin Valley     | 746       | 3%      |
| Santa Clara    | San Francisco Bay Area | 682       | 3%      |
| San Bernardino | South Coast            | 669       | 3%      |
| San Joaquin    | San Joaquin Valley     | 617       | 3%      |

Table 5-16

## Formaldehyde

### Statewide Air Quality and Health Risk

The ARB routinely monitors for outdoor levels of formaldehyde in its statewide air toxics monitoring network. Its statewide annual average concentrations and associated health risk are available for 1990 through 2006. However, values prior to 1996 are uncertain because the data were based on a method that underestimated the actual concentrations. A method change in 1996 corrected this problem, but a correction factor could not be developed for the earlier data. While the data prior to the method change are included here for completeness, they are not directly comparable to data collected during the later years. The trend graph for formaldehyde, shown in Figure 5-9, shows a great deal of variability with little trend since the mid-nineties.

To examine the trend in formaldehyde using available data while minimizing the influences of weather on the trend, the statewide average concentration for 1996-1998 was compared to that for 2004-2006 (since formaldehyde data prior to 1996 are not reliable). There is a two percent decrease in both concentration and health risk. Health risk is based on the annual average concentration and represents the estimated number of excess cancer cases per million people exposed to the specified concentration for 70 years. During 2006, there was an estimated risk of 20 excess cancer cases per million people from formaldehyde alone. Based on data for all ten TACs presented in this almanac, formaldehyde ranks fifth in terms of health risk.

Although formaldehyde is emitted by both stationary and mobile sources, mobile sources are, by far, the largest contributors. The ARB adopted the Low Emissions/Clean Fuels Regulations in 1990, and these regulations are expected to continue to reduce formaldehyde emissions from cars and light-duty trucks. Formaldehyde, similar to acetaldehyde, can also be formed in the environment due to reactions of pollutants in the air. This secondary contribution is hard to quantify and can also contribute to fluctuations observed in the ambient

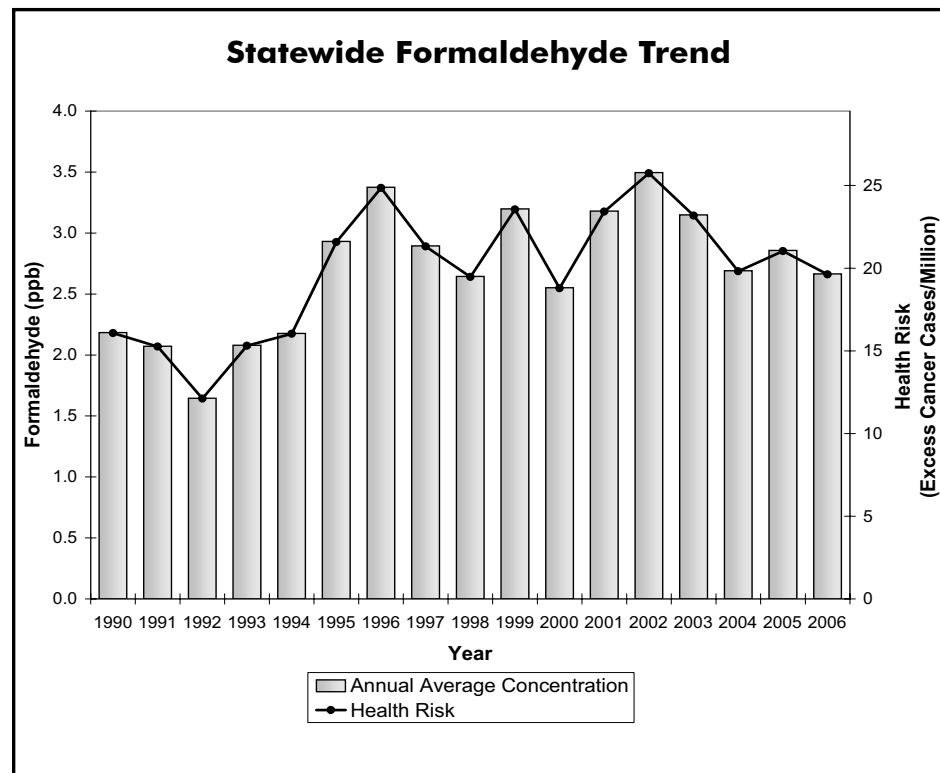


Figure 5-9  
levels of formaldehyde.

Formaldehyde also poses a problem for indoor air quality, and its concentrations indoors are generally higher than outdoor levels. This is because many building materials, consumer products, and fabrics emit formaldehyde. As a result, indoor formaldehyde levels are expected to remain higher than outdoor levels because of new materials brought into homes, as a consequence of remodeling or purchasing new furnishings. Other indoor combustion sources such as wood and gas stoves, kerosene heaters, and cigarettes also contribute to indoor formaldehyde levels, although intermittently.

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On April 26, 2007, the ARB adopted an ATCM to reduce formaldehyde emissions from three composite wood products: hardwood plywood, particleboard, and medium density fiberboard. Composite wood is a general term for wood-based panels made from wood pieces, particles or fibers bonded together with a resin. Based on the average emissions of existing composite wood products, the adopted ATCM would reduce emissions of formaldehyde by about 20 percent in Phase 1 (2009) or about 180 tons per year. In Phase 2 (2011-2012), a 57 percent reduction in formaldehyde emissions or 500 tons per year would be achieved. Because the ATCM would reduce indoor formaldehyde exposures, substantial benefits would be realized by buyers of new homes as well as those with existing homes due to reduced emissions from remodeling projects and new furniture. The Phase 1 standards would reduce the number of formaldehyde-related childhood exposure cancer cases by 3 to 9, and the lifetime exposure cancer cases by 12 to 35 per million. In Phase 2, childhood exposure cancer cases would be reduced by 9 to 26, and lifetime exposure cancer cases by 35 to 97 per million.

## *Methylene Chloride*

### 2006 Statewide Emission Inventory

The ARB identified methylene chloride as a TAC in 1987 under California's TAC program. In California, methylene chloride has been identified as a carcinogen. In addition, chronic exposure can lead to bone marrow, hepatic, and renal toxicity.

Methylene chloride is used as a solvent, a blowing and cleaning agent in the manufacture of polyurethane foam and plastic fabrication, and as a solvent in paint stripping operations. Paint removers account for the largest use of methylene chloride in California, where methylene chloride is the main ingredient in many paint stripping formulations. Plastic product manufacturers, manufacturers of synthetics, and aircraft and parts manufacturers are stationary sources reporting emissions of methylene chloride. These sources contribute approximately 45 percent of the statewide methylene chloride emissions. Area-wide sources contribute approximately 55 percent.

| <b>Methylene Chloride</b> |                  |                      |
|---------------------------|------------------|----------------------|
| <b>Emissions Source</b>   | <b>tons/year</b> | <b>Percent State</b> |
| <b>Stationary Sources</b> | <b>2927</b>      | <b>45%</b>           |
| <b>Area-wide Sources</b>  | <b>3599</b>      | <b>55%</b>           |
| <b>On-Road Mobile</b>     | <b>0</b>         | <b>0%</b>            |
| <b>Gasoline Vehicles</b>  | <b>0</b>         | <b>0%</b>            |
| <b>Diesel Vehicles</b>    | <b>0</b>         | <b>0%</b>            |
| <b>Other Mobile</b>       | <b>0</b>         | <b>0%</b>            |
| <b>Gasoline Fuel</b>      | <b>0</b>         | <b>0%</b>            |
| <b>Diesel Fuel</b>        | <b>0</b>         | <b>0%</b>            |
| <b>Other Fuel</b>         | <b>0</b>         | <b>0%</b>            |
| <b>Natural Sources</b>    | <b>0</b>         | <b>0%</b>            |
| <b>Total Statewide</b>    | <b>6527</b>      | <b>100%</b>          |

Table 5-17

## 2006 Top Ten Counties - Methylene Chloride

The top ten counties account for approximately 74 percent of the statewide methylene chloride emissions. The South Coast Air Basin has four of the top ten counties emitting methylene chloride, representing 54 percent of statewide methylene chloride emissions. Three counties in the San Francisco Bay Area Air Basin contribute approximately nine percent: Santa Clara County (four percent), Alameda County (three percent) and Contra Costa (two percent). The three other counties in the top ten for methylene chloride emissions are: San Diego, Sacramento, and Ventura. Together, these three counties account for approximately 11 percent of statewide methylene chloride emissions.

| <b>Methylene Chloride</b> |                        |                  |                |
|---------------------------|------------------------|------------------|----------------|
| <b>County</b>             | <b>Air Basin</b>       | <b>tons/year</b> | <b>Percent</b> |
| Los Angeles               | South Coast            | 2078             | 32%            |
| Orange                    | South Coast            | 938              | 14%            |
| San Diego                 | San Diego              | 367              | 6%             |
| San Bernardino            | South Coast            | 271              | 4%             |
| Santa Clara               | San Francisco Bay Area | 265              | 4%             |
| Riverside                 | South Coast            | 226              | 3%             |
| Alameda                   | San Francisco Bay Area | 216              | 3%             |
| Sacramento                | Sacramento Valley      | 182              | 3%             |
| Ventura                   | South Central Coast    | 161              | 2%             |
| Contra Costa              | San Francisco Bay Area | 123              | 2%             |

Table 5-18

## Methylene Chloride

### Statewide Air Quality and Health Risk

The ARB routinely monitors for outdoor levels of methylene chloride in its statewide air toxics monitoring network. The trend graph in Figure 5-10 shows an overall downward trend with some variability, particularly during the early years. The drop in 2001 was substantial, and a slight downward trend continued between 2002 and 2006. To examine the trend in methylene chloride while minimizing the influences of weather on the trend, the statewide average methylene chloride concentration for 1990-1992 was compared to that for 2004-2006. The result is a 63 percent decrease in both concentration and health risk.

Health risk is based on the annual average concentration and represents the estimated number of excess cancer cases per million people exposed to the specified concentration for 70 years. During 2006, there was an estimated risk from methylene chloride of less than one excess cancer case per million people. Of the ten compounds presented in this almanac, methylene chloride presents the lowest health risk, on a statewide basis. However, any level of risk is a concern from a public health standpoint.

In California, paint removers account for the largest use of methylene chloride, which is the primary ingredient in paint stripping formulations used for industrial, commercial, military, and domestic applications. The use of methylene chloride in consumer and automotive products has been significantly reduced through aggressive regulations adopted by the ARB. These regulations have reduced ambient concentrations and health risks.

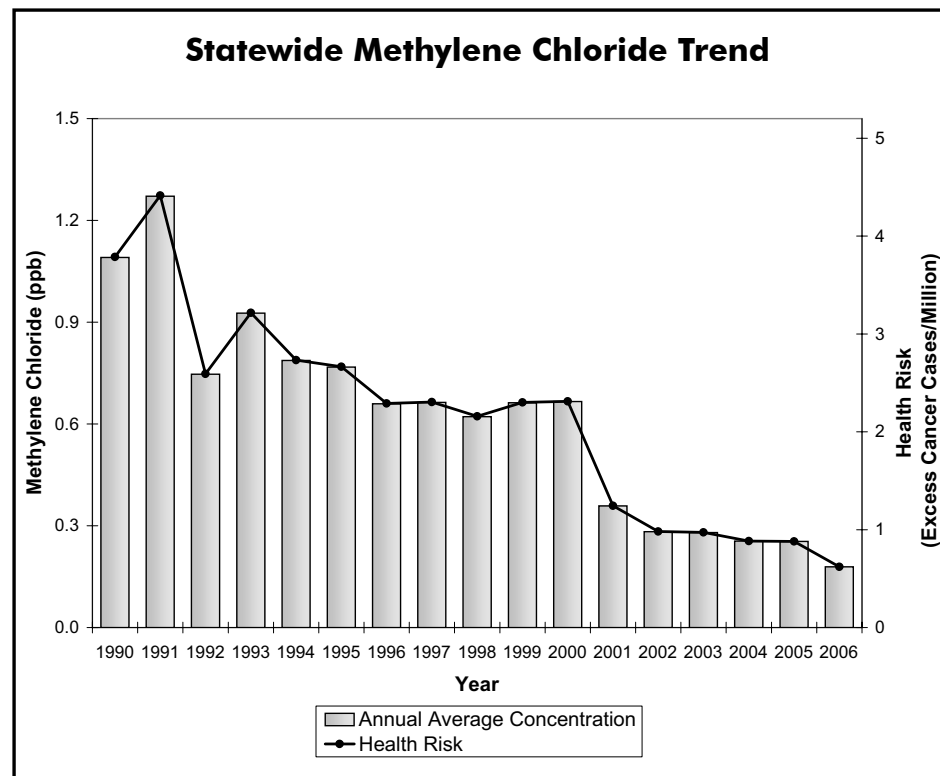


Figure 5-10



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## *Perchloroethylene*

### 2006 Statewide Emission Inventory

The ARB identified perchloroethylene as a TAC in 1991 under California's TAC program (AB 1807, Tanner, 1983). In California, perchloroethylene has been identified as a carcinogen. Perchloroethylene vapors are irritating to the eyes and respiratory tract. Following chronic exposure, workers have shown signs of liver toxicity, as well as kidney dysfunction and neurological effects.

Perchloroethylene is used as a solvent, primarily in dry cleaning operations. Perchloroethylene is also used in degreasing operations, paints and coatings, adhesives, aerosols, specialty chemical production, printing inks, silicones, rug shampoos, and laboratory solvents. In California, the stationary sources that have reported emissions of perchloroethylene are dry cleaning plants, aircraft part and equipment manufacturers, and fabricated metal product manufacturers. These stationary sources account for 56 percent of the statewide emissions of perchloroethylene. Area-wide sources contribute approximately 44 percent. The primary area-wide sources include consumer products such as automotive brake cleaners and tire sealants and inflators.

| <b>Perchloroethylene</b>  |                  |                      |
|---------------------------|------------------|----------------------|
| <b>Emissions Source</b>   | <b>tons/year</b> | <b>Percent State</b> |
| <b>Stationary Sources</b> | <b>2742</b>      | <b>56%</b>           |
| <b>Area-wide Sources</b>  | <b>2123</b>      | <b>44%</b>           |
| <b>On-Road Mobile</b>     | <b>0</b>         | <b>0%</b>            |
| <b>Gasoline Vehicles</b>  | <b>0</b>         | <b>0%</b>            |
| <b>Diesel Vehicles</b>    | <b>0</b>         | <b>0%</b>            |
| <b>Other Mobile</b>       | <b>0</b>         | <b>0%</b>            |
| <b>Gasoline Fuel</b>      | <b>0</b>         | <b>0%</b>            |
| <b>Diesel Fuel</b>        | <b>0</b>         | <b>0%</b>            |
| <b>Other Fuel</b>         | <b>0</b>         | <b>0%</b>            |
| <b>Natural Sources</b>    | <b>0</b>         | <b>0%</b>            |
| <b>Total Statewide</b>    | <b>4865</b>      | <b>100%</b>          |

Table 5-19

## 2006 Top Ten Counties - Perchloroethylene

The top ten counties account for approximately 69 percent of the statewide perchloroethylene emissions. The South Coast Air Basin has four of the top ten counties emitting perchloroethylene, representing 43 percent of statewide perchloroethylene emissions. San Diego County contributes approximately nine percent. The five other counties in the top ten for perchloroethylene emissions are: Sacramento, Santa Clara, Alameda, Fresno, and San Joaquin. These five counties account for approximately 18 percent of statewide perchloroethylene emissions.

| Perchloroethylene |                        |           |         |
|-------------------|------------------------|-----------|---------|
| County            | Air Basin              | tons/year | Percent |
| Los Angeles       | South Coast            | 1263      | 26%     |
| San Diego         | San Diego              | 422       | 9%      |
| Orange            | South Coast            | 419       | 9%      |
| Sacramento        | Sacramento Valley      | 251       | 5%      |
| San Bernardino    | South Coast            | 212       | 4%      |
| Riverside         | South Coast            | 199       | 4%      |
| Santa Clara       | San Francisco Bay Area | 172       | 4%      |
| Alameda           | San Francisco Bay Area | 169       | 3%      |
| Fresno            | San Joaquin Valley     | 159       | 3%      |
| San Joaquin       | San Joaquin Valley     | 111       | 2%      |

Table 5-20

## Perchloroethylene

### Statewide Air Quality and Health Risk

The ARB routinely monitors outdoor levels of perchloroethylene in its statewide air toxics monitoring network. Although the trend graph for perchloroethylene in Figure 5-11 shows some variability during the early 1990s, there is an overall downward trend. To examine the trend in perchloroethylene over the monitoring period of record and to minimize the influences of weather on the trend, the statewide perchloroethylene concentration for 1990-1992 was compared to that for 2004-2006. The result is an 83 percent decrease in both concentration and health risk. For 1999, complete and representative data are not available.

In Figure 5-11, health risk is based on the annual average concentration and represents the estimated risk of excess cancer cases per million people exposed over a 70-year lifetime at the specified concentration level. During 2006, there was an estimated risk of less than two excess cancer cases per million people. Based on this, perchloroethylene ranks ninth out of the ten compounds presented in this almanac.

When the ARB identified perchloroethylene as a TAC in October 1991, it was estimated that 60 percent of perchloroethylene came from dry cleaning operations. Examination of industry practices suggested the potential for significant reductions of emissions. The ARB focused control efforts on that industry and adopted a control measure governing the use of perchloroethylene in dry cleaning operations in 1993 (dry cleaning ATCM). In 2007, the ARB amended the Dry Cleaning ATCM which will virtually eliminate the potential health risk due to perchloroethylene emissions from dry cleaning machines. The amended dry cleaning ATCM will over time phase out the use of perchlorethynene dry cleanig machines and related equipment by January 1, 2023. Additionally, while perchloroethylene dry cleaning machines remain in use, the ARB will continue to provide training for

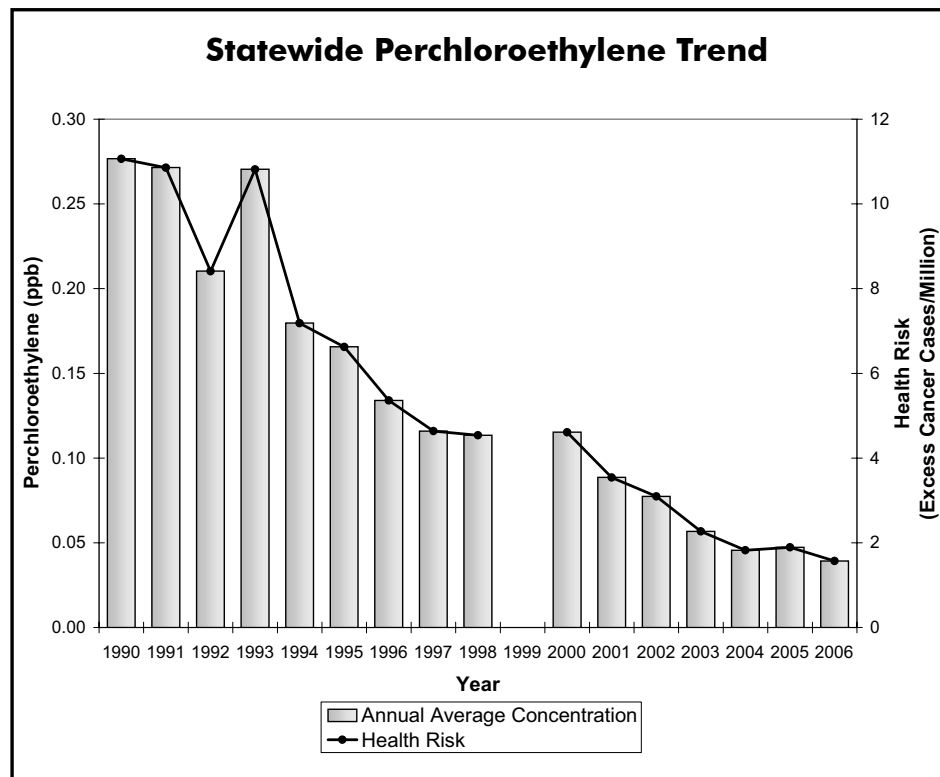


Figure 5-11

dry cleaners on improved practices and methods for reducing emissions.

The ARB has also developed control measures that prohibit the use of perchloroethylene in automotive and many consumer products, including aerosol coatings and adhesives.

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## *Diesel Particulate Matter*

### 2006 Statewide Emission Inventory

The ARB identified the PM emissions from diesel-fueled engines as a TAC in August 1998 under California's TAC program. In California, diesel engine exhaust has been identified as a carcinogen. Most researchers believe that diesel exhaust particles contribute the majority of the risk.

Diesel PM is emitted from both mobile and stationary sources. In California, on-road diesel-fueled vehicles contribute approximately 40 percent of the statewide total, with an additional 57 percent attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources, contributing about three percent of emissions, include shipyards, warehouses, heavy equipment repair yards, and oil and gas production operations. Emissions from these sources are from diesel-fueled internal combustion engines. Stationary sources that report diesel PM emissions also include heavy construction (except highway), manufacturers of asphalt paving materials and blocks, and electrical generation.

Readers may note that the stationary source diesel PM emission estimates differ from those presented in previous editions of the almanac and in the ARB's October 2000 report entitled: "*Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*" (Diesel Risk Reduction Plan or Plan). This is because they incorporate more recent data and have been calculated with updated methodologies developed for new regulations. These regulations are those that were recommended in the Diesel Risk Reduction Plan. The on-road mobile source emissions cited in the Diesel Risk Reduction Plan are based on an earlier version of EMFAC2001 (EMFAC1.99(f) 6/26/00), whereas the current estimates are based on EMFAC2007. The other mobile inventory includes revised estimates for ship diesel PM emissions. In 2005, ARB staff improved the methodology for estimating ship emissions by developing a consistent statewide

| <b>Diesel PM</b>          |                  |                      |
|---------------------------|------------------|----------------------|
| <b>Emissions Source</b>   | <b>tons/year</b> | <b>Percent State</b> |
| <b>Stationary Sources</b> | 1227             | 3%                   |
| <b>Area-wide Sources</b>  | 0                | 0%                   |
| <b>On-Road Mobile</b>     | 16936            | 40%                  |
| <b>Gasoline Vehicles</b>  | 0                | 0%                   |
| <b>Diesel Vehicles</b>    | 16936            | 40%                  |
| <b>Other Mobile</b>       | 24163            | 57%                  |
| <b>Gasoline Fuel</b>      | 0                | 0%                   |
| <b>Diesel Fuel</b>        | 24163            | 57%                  |
| <b>Other Fuel</b>         | 0                | 0%                   |
| <b>Natural Sources</b>    | 0                | 0%                   |
| <b>Total Statewide</b>    | <b>42326</b>     | <b>100%</b>          |

Table 5-21

methodology that incorporates more recent data on ship activities and emission factors. This has resulted in an increase of approximately 119 percent increase in the estimates for ship emissions as compared to estimates developed with previous methodologies.

## 2006 Top Ten Counties - Diesel Particulate Matter

The top ten counties account for approximately 51 percent of the statewide diesel PM emissions. The South Coast Air Basin has four of the top ten counties emitting diesel particulate matter which represents 24 percent of statewide diesel PM emissions. Alameda contributes four percent, and San Diego contributes five percent. Three counties in the San Joaquin Air Basin contribute 11 percent: Kern (five percent), Fresno (four percent), and San Joaquin (three percent). The Mojave Desert portion of San Bernardino contributes approximately four percent.

| Diesel PM      |                        |           |         |
|----------------|------------------------|-----------|---------|
| County         | Air Basin              | tons/year | Percent |
| Los Angeles    | South Coast            | 6525      | 15%     |
| Kern           | San Joaquin Valley     | 2099      | 5%      |
| San Diego      | San Diego              | 2083      | 5%      |
| San Bernardino | Mojave Desert          | 1759      | 4%      |
| Orange         | South Coast            | 1587      | 4%      |
| Alameda        | San Francisco Bay Area | 1584      | 4%      |
| Fresno         | San Joaquin Valley     | 1519      | 4%      |
| San Joaquin    | San Joaquin Valley     | 1213      | 3%      |
| San Bernardino | South Coast            | 1075      | 3%      |
| Riverside      | South Coast            | 1058      | 2%      |

Table 5-22

## Diesel Particulate Matter

### Statewide Air Quality and Health Risk

The exhaust from diesel-fueled engines is a complex mixture of gases, vapors, and particles, many of which are known human carcinogens. More than 40 diesel exhaust components are listed by the State and federal governments as TACs or hazardous air pollutants. Most researchers believe that diesel PM contributes to the majority of the risk from exposure to diesel exhaust because the particles carry many of the harmful organics and metals present in the exhaust.

Unlike the other TACs presented in this almanac, the ARB does not monitor outdoor diesel PM because there is no routine method for monitoring ambient concentrations. However, the ARB made a preliminary estimation of diesel PM concentrations for the State's 15 air basins and for the State as a whole using a PM-based exposure method. The method uses the ARB emission inventory's PM<sub>10</sub> database, ambient PM<sub>10</sub> monitoring data, and the results from several studies with chemical speciation of ambient data. These data were used, along with receptor modeling techniques, to estimate statewide outdoor concentrations of diesel PM. The ARB subsequently updated the original statewide estimates based on the ratio between the previous estimate for 1990 and the most recent diesel PM emission inventory for the year 1990. The details of the methodology are described in Appendix VI to the ARB Diesel Risk Reduction Plan.

The updated statewide population-weighted average diesel PM concentrations and health risk for various years are shown in Figure 5-12. The average statewide concentration for 1990 was estimated at 3.0 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ). This is associated with a health risk of 900 excess cancer cases per million people exposed over a 70-year lifetime. The estimates for 2000 show a 40 percent drop from 1990, with a concentration of 1.8  $\mu\text{g}/\text{m}^3$  and an associated health risk of 540 excess cancer cases per million people. In addition, the ARB estimated population-weighted concentrations for 2010 and 2020. Two estimates are given for each of these years: one reflecting the

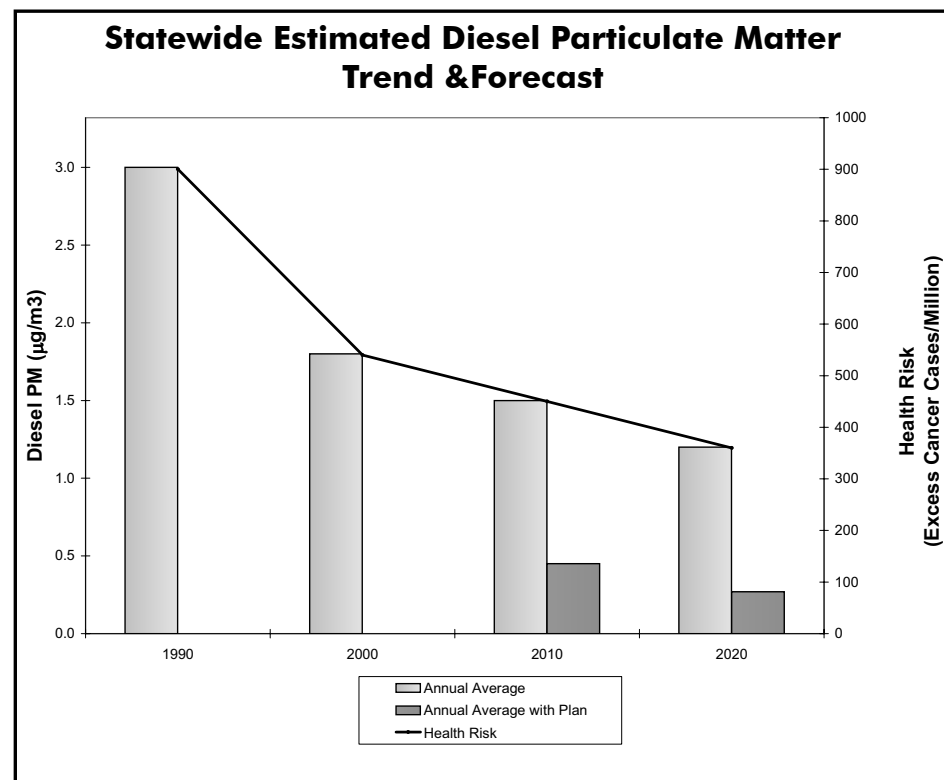


Figure 5-12

estimated ambient concentrations without implementing the Diesel Risk Reduction Plan and one reflecting the estimated ambient concentrations with implementation of control measures in the Diesel Risk Reduction Plan. These future year estimates are based on linear extrapolations from the 1990 emissions inventory and linear rollback techniques. It is important to note that the estimated risk from diesel PM is higher than the risk from all other TACs combined, and this TAC poses the most significant risk to California's citizens. In fact, the ARB estimates that 78 percent of the known statewide cancer risk from the top 10 outdoor air toxics is attributable to diesel PM.



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The Diesel Risk Reduction Plan provides a mechanism for combating the diesel PM problem. Without implementing the Plan, concentrations in 2010 and 2020 are estimated to drop by only about 17 percent and 33 percent, respectively, from the estimated year 2000 level. However, the goal of the Plan is to reduce concentrations by 75 percent by 2010 and 85 percent by 2020. The key elements of the Plan are to clean up existing engines through engine retrofit emission control devices, to adopt stringent standards for new diesel engines, and to lower the sulfur content of diesel fuel to protect new, and very effective, advanced technology emission control devices on diesel engines. When fully implemented, the Diesel Risk Reduction Plan will significantly reduce emissions from both old and new diesel-fueled motor vehicles and from stationary sources that burn diesel fuel. In addition to these strategies, the ARB continues to promote the use of alternative fuels and electrification. As a result of these actions, diesel PM concentrations and associated health risks should continue to decline.

*South Coast Air Basin***2006 Emission Inventory by Compound****Acetaldehyde**

Approximately 95 percent of the emissions of acetaldehyde are from mobile sources.

| South Coast - Acetaldehyde |              |                   |               |
|----------------------------|--------------|-------------------|---------------|
| Emissions Source           | tons/year    | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>  | 17           | 1%                | <1%           |
| <b>Area-wide Sources</b>   | 90           | 4%                | 1%            |
| <b>On-Road Mobile</b>      | 869          | 38%               | 9%            |
| Gasoline Vehicles          | 327          | 14%               | 3%            |
| Diesel Vehicles            | 543          | 24%               | 5%            |
| <b>Other Mobile</b>        | 1325         | 58%               | 13%           |
| Gasoline Fuel              | 265          | 11%               | 3%            |
| Diesel Fuel                | 1049         | 46%               | 10%           |
| Other Fuel                 | 11           | <1%               | <1%           |
| <b>Natural Sources</b>     | 0            | 0%                | 0%            |
| <b>Total</b>               | 2302         | 100%              | 23%           |
| <b>Total Statewide</b>     | <b>10023</b> |                   |               |

Table 5-23

**Benzene**

The primary sources of benzene emissions in the South Coast Air Basin are mobile sources (approximately 95 percent).

| South Coast - Benzene     |              |                   |               |
|---------------------------|--------------|-------------------|---------------|
| Emissions Source          | tons/year    | Percent Air Basin | Percent State |
| <b>Stationary Sources</b> | 142          | 4%                | 1%            |
| <b>Area-wide Sources</b>  | 45           | 1%                | <1%           |
| <b>On-Road Mobile</b>     | 2109         | 59%               | 17%           |
| Gasoline Vehicles         | 1962         | 55%               | 16%           |
| Diesel Vehicles           | 148          | 4%                | 1%            |
| <b>Other Mobile</b>       | 1282         | 36%               | 11%           |
| Gasoline Fuel             | 987          | 28%               | 8%            |
| Diesel Fuel               | 286          | 8%                | 2%            |
| Other Fuel                | 10           | <1%               | <1%           |
| <b>Natural Sources</b>    | 0            | 0%                | 0%            |
| <b>Total</b>              | 3578         | 100%              | 30%           |
| <b>Total Statewide</b>    | <b>12060</b> |                   |               |

Table 5-24

## 1,3-Butadiene

Approximately 89 percent of the emissions of 1,3-butadiene are from mobile sources.

| South Coast - 1,3-Butadiene |             |                   |               |
|-----------------------------|-------------|-------------------|---------------|
| Emissions Source            | tons/year   | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>   | 5           | 1%                | <1%           |
| <b>Area-wide Sources</b>    | 20          | 3%                | 1%            |
| <b>On-Road Mobile</b>       | 428         | 56%               | 12%           |
| Gasoline Vehicles           | 414         | 54%               | 12%           |
| Diesel Vehicles             | 14          | 2%                | <1%           |
| <b>Other Mobile</b>         | 251         | 33%               | 7%            |
| Gasoline Fuel               | 224         | 29%               | 6%            |
| Diesel Fuel                 | 27          | 4%                | 1%            |
| Other Fuel                  | < 1         | <1%               | <1%           |
| <b>Natural Sources</b>      | 62          | 8%                | 2%            |
| <b>Total</b>                | 766         | 100%              | 21%           |
| <b>Total Statewide</b>      | <b>3589</b> |                   |               |

Table 5-25

## Carbon Tetrachloride

Stationary sources, such as chemical manufacturers and petroleum refineries, account for all of the emissions of carbon tetrachloride.

| South Coast - Carbon Tetrachloride |             |                   |               |
|------------------------------------|-------------|-------------------|---------------|
| Emissions Source                   | tons/year   | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>          | 0.75        | 100%              | 39%           |
| <b>Area-wide Sources</b>           | 0           | 0%                | 0%            |
| <b>On-Road Mobile</b>              | 0           | 0%                | 0%            |
| Gasoline Vehicles                  | 0           | 0%                | 0%            |
| Diesel Vehicles                    | 0           | 0%                | 0%            |
| <b>Other Mobile</b>                | 0           | 0%                | 0%            |
| Gasoline Fuel                      | 0           | 0%                | 0%            |
| Diesel Fuel                        | 0           | 0%                | 0%            |
| Other Fuel                         | 0           | 0%                | 0%            |
| <b>Natural Sources</b>             | 0           | 0%                | 0%            |
| <b>Total</b>                       | 0.75        | 100%              | 39%           |
| <b>Total Statewide</b>             | <b>1.96</b> |                   |               |

Table 5-26

## Chromium, Hexavalent

On-road mobile sources account for 66 percent of the hexavalent chromium emissions. Approximately 33 percent of the hexavalent chromium emissions are from stationary sources such as chrome platers, aircraft and parts manufacturing, and fabricated metal product manufacturing.

| South Coast - Chromium, Hexavalent |           |                   |               |
|------------------------------------|-----------|-------------------|---------------|
| Emissions Source                   | tons/year | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>          | 0.03      | 33%               | 3%            |
| <b>Area-wide Sources</b>           | < .01     | 1%                | <1%           |
| <b>On-Road Mobile</b>              | 0.07      | 66%               | 6%            |
| Gasoline Vehicles                  | 0.06      | 64%               | 5%            |
| Diesel Vehicles                    | < .01     | 2%                | <1%           |
| <b>Other Mobile</b>                | < .01     | <1%               | <1%           |
| Gasoline Fuel                      | 0         | 0%                | 0%            |
| Diesel Fuel                        | < .01     | <1%               | <1%           |
| Other Fuel                         | < .01     | <1%               | <1%           |
| <b>Natural Sources</b>             | 0         | 0%                | 0%            |
| <b>Total</b>                       | 0.10      | 100%              | 9%            |
| <b>Total Statewide</b>             | 1.17      |                   |               |

Table 5-27

## *para*-Dichlorobenzene

Most of the emissions of *para*-dichlorobenzene are from consumer products (non-aerosol insect repellants and solid/gel air fresheners).

| South Coast - <i>para</i> -Dichlorobenzene |           |                   |               |
|--|-----------|-------------------|---------------|
| Emissions Source                           | tons/year | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>                  | < 1       | <1%               | <1%           |
| <b>Area-wide Sources</b>                   | 623       | 100%              | 42%           |
| <b>On-Road Mobile</b>                      | 0         | 0%                | 0%            |
| Gasoline Vehicles                          | 0         | 0%                | 0%            |
| Diesel Vehicles                            | 0         | 0%                | 0%            |
| <b>Other Mobile</b>                        | 0         | 0%                | 0%            |
| Gasoline Fuel                              | 0         | 0%                | 0%            |
| Diesel Fuel                                | 0         | 0%                | 0%            |
| Other Fuel                                 | 0         | 0%                | 0%            |
| <b>Natural Sources</b>                     | 0         | 0%                | 0%            |
| <b>Total</b>                               | 623       | 100%              | 42%           |
| <b>Total Statewide</b>                     | 1469      |                   |               |

Table 5-28

## Formaldehyde

Approximately 90 percent of the formaldehyde emissions are from mobile sources.

| South Coast - Formaldehyde |              |                   |               |
|----------------------------|--------------|-------------------|---------------|
| Emissions Source           | tons/year    | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>  | 357          | 6%                | 2%            |
| <b>Area-wide Sources</b>   | 186          | 3%                | 1%            |
| <b>On-Road Mobile</b>      | 2183         | 39%               | 9%            |
| Gasoline Vehicles          | 1097         | 19%               | 5%            |
| Diesel Vehicles            | 1087         | 19%               | 5%            |
| <b>Other Mobile</b>        | 2942         | 52%               | 13%           |
| Gasoline Fuel              | 810          | 14%               | 3%            |
| Diesel Fuel                | 2100         | 37%               | 9%            |
| Other Fuel                 | 32           | 1%                | <1%           |
| <b>Natural Sources</b>     | 0            | 0%                | 0%            |
| <b>Total</b>               | 5668         | 100%              | 24%           |
| <b>Total Statewide</b>     | <b>23154</b> |                   |               |

Table 5-29

## Methylene Chloride

Approximately 57 percent of the emissions of methylene chloride are from stationary sources such as plastic product manufacturers, manufacturers of synthetics, and aircraft and parts manufacturers.

| South Coast - Methylene Chloride |             |                   |               |
|----------------------------------|-------------|-------------------|---------------|
| Emissions Source                 | tons/year   | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>        | 2004        | 57%               | 31%           |
| <b>Area-wide Sources</b>         | 1509        | 43%               | 23%           |
| <b>On-Road Mobile</b>            | 0           | 0%                | 0%            |
| Gasoline Vehicles                | 0           | 0%                | 0%            |
| Diesel Vehicles                  | 0           | 0%                | 0%            |
| <b>Other Mobile</b>              | 0           | 0%                | 0%            |
| Gasoline Fuel                    | 0           | 0%                | 0%            |
| Diesel Fuel                      | 0           | 0%                | 0%            |
| Other Fuel                       | 0           | 0%                | 0%            |
| <b>Natural Sources</b>           | 0           | 0%                | 0%            |
| <b>Total</b>                     | 3514        | 100%              | 54%           |
| <b>Total Statewide</b>           | <b>6527</b> |                   |               |

Table 5-30

## Perchloroethylene

Approximately 57 percent of the emissions of perchloroethylene are from dry cleaning plants, manufacturers of aircraft parts and fabricated metal parts, and other stationary sources.

| South Coast - Perchloroethylene |           |                   |               |
|---------------------------------|-----------|-------------------|---------------|
| Emissions Source                | tons/year | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>       | 1195      | 57%               | 25%           |
| <b>Area-wide Sources</b>        | 898       | 43%               | 18%           |
| <b>On-Road Mobile</b>           | 0         | 0%                | 0%            |
| Gasoline Vehicles               | 0         | 0%                | 0%            |
| Diesel Vehicles                 | 0         | 0%                | 0%            |
| <b>Other Mobile</b>             | 0         | 0%                | 0%            |
| Gasoline Fuel                   | 0         | 0%                | 0%            |
| Diesel Fuel                     | 0         | 0%                | 0%            |
| Other Fuel                      | 0         | 0%                | 0%            |
| <b>Natural Sources</b>          | 0         | 0%                | 0%            |
| <b>Total</b>                    | 2093      | 100%              | 43%           |
| <b>Total Statewide</b>          | 4865      |                   |               |

Table 5-31

## Diesel Particulate Matter

Approximately 98 percent of the emissions of diesel PM are from mobile sources.

| South Coast - Diesel PM   |           |                   |               |
|---------------------------|-----------|-------------------|---------------|
| Emissions Source          | tons/year | Percent Air Basin | Percent State |
| <b>Stationary Sources</b> | 199       | 2%                | <1%           |
| <b>Area-wide Sources</b>  | 0         | 0%                | 0%            |
| <b>On-Road Mobile</b>     | 4249      | 41%               | 10%           |
| Gasoline Vehicles         | 0         | 0%                | 0%            |
| Diesel Vehicles           | 4249      | 41%               | 10%           |
| <b>Other Mobile</b>       | 5797      | 57%               | 14%           |
| Gasoline Fuel             | 0         | 0%                | 0%            |
| Diesel Fuel               | 5797      | 57%               | 14%           |
| Other Fuel                | 0         | 0%                | 0%            |
| <b>Natural Sources</b>    | 0         | 0%                | 0%            |
| <b>Total</b>              | 10245     | 100%              | 24%           |
| <b>Total Statewide</b>    | 42326     |                   |               |

Table 5-32

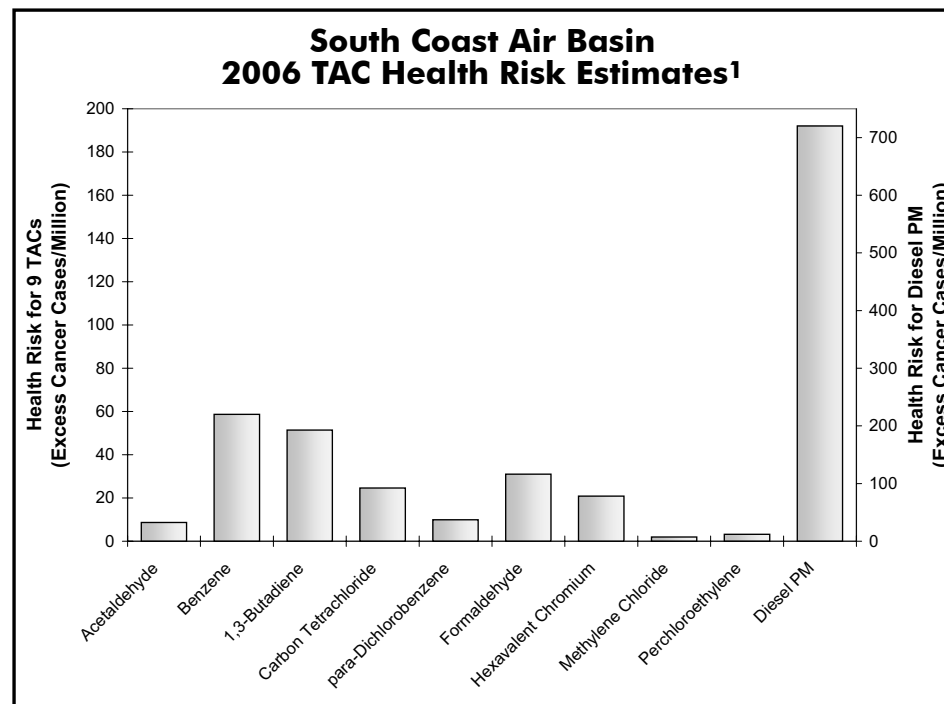
## South Coast Air Basin

### Air Quality and Health Risk

From 1990 through 2006, the ARB monitored outdoor concentrations for various TACs at seven sites in the South Coast Air Basin. Data are available for most of the years at sites located in Burbank, Los Angeles, North Long Beach, and Riverside. Measurements for 1990 through 1997 are also available from a site at Upland. In addition, there are data for 1998 at a site in Fontana. During December 1999, monitoring activities for most of the TACs at Fontana were relocated to Azusa. Annual average concentration and associated health risk are not available for the year during which the site was moved because neither site had a full year of data. This almanac focuses on the top ten TACs based on available data. It is important to note that there are other compounds which pose a significant risk, but have insufficient data or are not monitored, so they are not included in the almanac.

Annual average concentrations and associated health risks for the top ten TACs individually as well as cumulatively for the South Coast Air Basin, are provided in Table 5-33. Data for individual sites are provided in Appendix C. Figure 5-13 shows individual health risk from the ten TACs for the South Coast Air Basin. As indicated on the graph, the health risk data reflect the year of 2006 except those for diesel PM which reflects the year 2000 and for carbon tetrachloride which reflects the year 2003, the most recent years for which estimated and monitoring data are available. The health risks shown here are based on an annual average concentration for all sites in the air basin. The risk at individual locations may be higher or lower than the average for the air basin, depending on the impact of nearby sources.

Unlike the other nine TACs, diesel PM does not have ambient monitoring data because an accepted ambient monitoring measurement method does not currently exist. However, the ARB has made preliminary concentration estimates for the State and its 15 air basins using



<sup>1</sup> Data for Diesel PM reflect 2000; carbon tetrachloride reflect 2003; all other TACs reflect 2006

Figure 5-13

a PM-based exposure method. The method uses the ARB emission inventory's PM<sub>10</sub> database, ambient PM<sub>10</sub> monitoring data, and the results from several studies on chemical speciation of ambient data. These data were used, along with receptor modeling techniques, to estimate outdoor concentrations of diesel PM. The existing diesel PM estimates are currently being reviewed to reflect control measures that were outlined in the ARB Diesel Risk Reduction Plan.

Diesel PM poses the greatest health risk among the ten TACs. In the South Coast Air Basin, the estimated health risk from diesel PM was 720 excess cancer cases per million people in 2000. Although the

health risk is higher than the statewide average, it represents a 33 percent drop between 1990 and 2000.

Trends and health risks for the nine other TACs are based on monitoring data. To examine their trends while minimizing the annual variation due to meteorology and sampling schedule, the air basin average concentration for the 1990-1992 time period was compared to that for 2004-2006. The health risks of 1,3-butadiene and benzene have been reduced by 74 percent and 81 percent, respectively. Methylene chloride and perchloroethylene also show substantial reductions of 66 percent and 85 percent, respectively.

Carbon tetrachloride data show a 33 percent decrease when comparing periods between 1990-1991 (1992 average was not valid) and 2001-2003. Carbon tetrachloride data from mid-February 2004 through 2006 were invalidated.

Although acetaldehyde and formaldehyde data were collected beginning in 1990, concentration and health risk values prior to 1996 were uncertain because the method used to collect these samples underestimated the actual concentrations. The bias was corrected by a method change in 1996; however, the ARB was unable to develop a correction factor for the earlier data. Therefore, the data for years prior to 1996 are not directly comparable to data collected during the later years. The 1996-1998 time period is used instead to compare with that for 2004-2006. Acetaldehyde and formaldehyde show a 44 percent and 13 percent reduction, respectively.

*Para*-dichlorobenzene data show a 13 percent decrease when comparing periods between 1991-1993 and 2004-2006. Note that *para*-dichlorobenzene has a high number of samples that can not be reliably measured, so its trend is biased by these measurements.

Hexavalent chromium data show a 58 percent decrease when comparing periods between 1992-1994 and 2004-2006. The significant reduction in hexavalent chromium in years after 1995 was attributed to implementation of a series of successful control measures. Similar to *para*-dichlorobenzene, it also had a high number

of samples below its LOD. To better assess the hexavalent chromium measurements below its LOD, the ARB's Monitoring and Laboratory division used a different approach to analyze hexavalent chromium samples in 2001. The method has been discussed in the Hexavalent Chromium Statewide Air Quality and Health Risk section in this chapter and will not be repeated here.

Overall, in the South Coast Air Basin, all TACs have shown improvement since 1990, but their health risks are still higher than the statewide levels. It is important to note that there may be other compounds that pose a significant health risk but are not monitored. Reductions in ambient TAC concentrations and health risks should continue, as new rules and regulations are implemented to control TACs.

In addition to the routine monitoring, a special study was conducted at two sites located in the Boyle Heights and Wilmington areas of Los Angeles between February 2001 and May 2002 (Boyle Heights) and between May 2001 and July 2002 (Wilmington). Monitoring included both TACs and criteria air pollutants. Limited monitoring of a few pollutants was conducted at two satellite sites in Boyle Heights from March 2001 through October 2001, and at one satellite site in Wilmington from November 2001 through May 2002. The Boyle Heights and Wilmington communities are both located near major freeways. The Wilmington community is also located near oil refineries and port facilities. Although not included in this almanac, data from Boyle Heights, Wilmington, and other community monitoring studies are being used in support of the ARB's Community Health Program. Copies of the full reports are available at [www.arb.ca.gov/ch/programs/sb25/sb25.htm](http://www.arb.ca.gov/ch/programs/sb25/sb25.htm).



# South Coast Air Basin

## Annual Average Concentrations and Health Risks

| Annual Average Concentrations and Health Risks |                          |        |       |       |       |       |        |       |       |       |       |        |       |       |       |       |       |       |
|--|--------------------------|--------|-------|-------|-------|-------|--------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|
| TAC  | Conc.1/Risk <sup>2</sup> | 1990   | 1991  | 1992  | 1993  | 1994  | 1995   | 1996  | 1997  | 1998  | 1999  | 2000   | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Acetaldehyde                                   | Annual Avg               | 2.46   | 3     | 2.46  | 2.67  | 2.3   | 0.97   | 2.08  | 1.77  | 1.54  | 1.63  | 1.26   | 1.47  | 1.41  | 1.47  | 1.46  | 1.79  | 1.17  |
|  | Health Risk              | 12     | 15    | 12    | 13    | 11    | 5      | 10    | 9     | 7     | 8     | 6      | 7     | 7     | 7     | 7     | 9     | 6     |
| Benzene  | Annual Avg               | 3.42   | 2.91  | 2.61  | 2.17  | 2.4   | 1.89   | 1.45  | 1.34  | 1.25  | 1.2   | 0.97   | 0.86  | 0.769 | 0.745 | 0.589 | 0.634 | 0.504 |
|  | Health Risk              | 317    | 269   | 242   | 201   | 222   | 175    | 134   | 124   | 116   | 111   | 90     | 80    | 71    | 69    | 55    | 59    | 47    |
| 1,3-Butadiene                                  | Annual Avg               | 0.532  | 0.452 | 0.498 | 0.565 | 0.497 | 0.459  | 0.39  | 0.378 | 0.354 | 0.328 | 0.251  | 0.251 | 0.211 | 0.147 | 0.143 | 0.137 | 0.111 |
|  | Health Risk              | 200    | 170   | 187   | 212   | 187   | 173    | 146   | 142   | 133   | 123   | 94     | 94    | 79    | 55    | 54    | 51    | 42    |
| Carbon Tetrachloride                           | Annual Avg               | 0.136  | 0.134 |       | 0.105 |       | 0.102  | 0.079 |       | 0.114 |       | 0.096  | 0.086 | 0.092 | 0.093 |       |       |       |
|  | Health Risk              | 36     | 35    |       | 28    |       | 27     | 21    |       | 30    |       | 25     | 23    | 24    | 25    |       |       |       |
| Chromium, Hexavalent                           | Annual Avg               |        |       | 0.39  | 0.29  | 0.29  | 0.46   | 0.18  | 0.17  | 0.15  | 0.14  | 0.18   |       | 0.179 | 0.158 | 0.126 | 0.139 | 0.139 |
|  | Health Risk              |        |       | 59    | 43    | 43    | 69     | 27    | 25    | 22    | 22    | 27     |       | 27    | 24    | 19    | 21    | 21    |
| <i>para</i> -Dichlorobenzene                   | Annual Avg               |        | 0.17  | 0.19  | 0.17  | 0.13  | 0.17   | 0.11  | 0.13  |       |       | 0.13   | 0.15  | 0.16  | 0.17  | 0.16  | 0.15  | 0.15  |
|  | Health Risk              |        | 11    | 13    | 11    | 8     | 11     | 7     | 9     |       |       | 9      | 10    | 11    | 11    | 11    | 10    | 10    |
| Formaldehyde                                   | Annual Avg               | 2.92   | 3.08  | 2.22  | 3.22  | 3.14  | 3.57   | 5.06  | 4.47  | 3.79  | 4.06  | 3.13   | 4.13  | 4.16  | 3.83  | 3.76  | 4.21  | 3.58  |
|  | Health Risk              | 22     | 23    | 16    | 24    | 23    | 26     | 37    | 33    | 28    | 30    | 23     | 30    | 31    | 28    | 28    | 31    | 26    |
| Methylene Chloride                             | Annual Avg               | 1.86   | 1.51  | 0.9   | 1.23  | 1.1   | 1.28   | 0.95  | 1.14  | 0.85  | 0.92  | 0.83   | 0.63  | 0.57  | 0.59  | 0.57  | 0.57  | 0.32  |
|  | Health Risk              | 6      | 5     | 3     | 4     | 4     | 4      | 3     | 4     | 3     | 3     | 3      | 2     | 2     | 2     | 2     | 2     | 1     |
| Perchloroethylene                              | Annual Avg               | 0.576  | 0.547 | 0.412 | 0.448 | 0.393 | 0.364  | 0.32  | 0.274 | 0.259 |       | 0.207  | 0.176 | 0.146 | 0.105 | 0.082 | 0.08  | 0.062 |
|  | Health Risk              | 23     | 22    | 16    | 18    | 16    | 15     | 13    | 11    | 10    |       | 8      | 7     | 6     | 4     | 3     | 3     | 2     |
| Diesel PM <sup>3</sup>                         | Annual Avg               | (3.6)  |       |       |       |       | (2.7)  |       |       |       |       | (2.4)  |       |       |       |       |       |       |
|  | Health Risk              | (1080) |       |       |       |       | (810)  |       |       |       |       | (720)  |       |       |       |       |       |       |
| Average Basin Risk                             | w/o Diesel PM            | 616    | 550   | 548   | 554   | 514   | 505    | 398   | 357   | 349   | 297   | 285    | 253   | 258   | 225   | 179   | 186   | 155   |
|  | w/ Diesel PM             | (1696) |       |       |       |       | (1315) |       |       |       |       | (1005) |       |       |       |       |       |       |

- 1 Concentrations for Hexavalent chromium are expressed as ng/m3 and concentrations for diesel PM are expressed as ug/m3. Concentrations for all other TACs are expressed as parts per billion.
- 2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. It reflects only those compounds listed in this table and only those with data for that year. There may be other significant compounds for which we do not monitor or have health risk information. Additional information about interpreting the toxic air contaminant air quality trends can be found in Chapter 1, Interpreting the Emission and Air Quality Statistics.
- 3 Diesel PM estimates are based on receptor modeling techniques, and the estimates are available only for selected years. Currently, the estimates are being reviewed.

Table 5-33

## *San Francisco Bay Area Air Basin*

### 2006 Emission Inventory by Compound

#### Acetaldehyde

Approximately 80 percent of the emissions of acetaldehyde are from mobile sources. Area-wide sources such as residential wood combustion and agricultural burning contribute approximately 19 percent.

| San Francisco Bay Area - Acetaldehyde |              |                   |               |
|---------------------------------------|--------------|-------------------|---------------|
| Emissions Source                      | tons/year    | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>             | 7            | <1%               | <1%           |
| <b>Area-wide Sources</b>              | 294          | 19%               | 3%            |
| <b>On-Road Mobile</b>                 | 350          | 23%               | 3%            |
| Gasoline Vehicles                     | 166          | 11%               | 2%            |
| Diesel Vehicles                       | 185          | 12%               | 2%            |
| <b>Other Mobile</b>                   | 869          | 57%               | 9%            |
| Gasoline Fuel                         | 113          | 7%                | 1%            |
| Diesel Fuel                           | 609          | 40%               | 6%            |
| Other Fuel                            | 147          | 10%               | 1%            |
| <b>Natural Sources</b>                | 0            | 0%                | 0%            |
| <b>Total</b>                          | 1521         | 100%              | 15%           |
| <b>Total Statewide</b>                | <b>10023</b> |                   |               |

Table 5-34

#### Benzene

Mobile sources are the primary sources of benzene emissions in the San Francisco Bay Area Air Basin (approximately 92 percent).

| San Francisco Bay Area - Benzene |              |                   |               |
|----------------------------------|--------------|-------------------|---------------|
| Emissions Source                 | tons/year    | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>        | 114          | 6%                | 1%            |
| <b>Area-wide Sources</b>         | 38           | 2%                | <1%           |
| <b>On-Road Mobile</b>            | 1031         | 56%               | 9%            |
| Gasoline Vehicles                | 981          | 53%               | 8%            |
| Diesel Vehicles                  | 50           | 3%                | <1%           |
| <b>Other Mobile</b>              | 653          | 36%               | 5%            |
| Gasoline Fuel                    | 427          | 23%               | 4%            |
| Diesel Fuel                      | 166          | 9%                | 1%            |
| Other Fuel                       | 60           | 3%                | <1%           |
| <b>Natural Sources</b>           | 0            | 0%                | 0%            |
| <b>Total</b>                     | 1836         | 100%              | 15%           |
| <b>Total Statewide</b>           | <b>12060</b> |                   |               |

Table 5-35

## 1,3-Butadiene

Most of the emissions of 1,3-butadiene are from mobile sources.

| San Francisco Bay Area - 1,3-Butadiene |             |                   |               |
|--|-------------|-------------------|---------------|
| Emissions Source                       | tons/year   | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>              | 2           | <1%               | <1%           |
| <b>Area-wide Sources</b>               | 2           | 1%                | <1%           |
| <b>On-Road Mobile</b>                  | 211         | 53%               | 6%            |
| Gasoline Vehicles                      | 206         | 52%               | 6%            |
| Diesel Vehicles                        | 5           | 1%                | <1%           |
| <b>Other Mobile</b>                    | 161         | 41%               | 4%            |
| Gasoline Fuel                          | 96          | 24%               | 3%            |
| Diesel Fuel                            | 16          | 4%                | <1%           |
| Other Fuel                             | 49          | 12%               | 1%            |
| <b>Natural Sources</b>                 | 19          | 5%                | 1%            |
| <b>Total</b>                           | 394         | 100%              | 11%           |
| <b>Total Statewide</b>                 | <b>3589</b> |                   |               |

Table 5-36

## Carbon Tetrachloride

Stationary sources, such as chemical and petroleum refineries, account for all of the emissions of carbon tetrachloride.

| San Francisco Bay Area - Carbon Tetrachloride |             |                   |               |
|---|-------------|-------------------|---------------|
| Emissions Source                              | tons/year   | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>                     | 0.94        | 100%              | 48%           |
| <b>Area-wide Sources</b>                      | 0           | 0%                | 0%            |
| <b>On-Road Mobile</b>                         | 0           | 0%                | 0%            |
| Gasoline Vehicles                             | 0           | 0%                | 0%            |
| Diesel Vehicles                               | 0           | 0%                | 0%            |
| <b>Other Mobile</b>                           | 0           | 0%                | 0%            |
| Gasoline Fuel                                 | 0           | 0%                | 0%            |
| Diesel Fuel                                   | 0           | 0%                | 0%            |
| Other Fuel                                    | 0           | 0%                | 0%            |
| <b>Natural Sources</b>                        | 0           | 0%                | 0%            |
| <b>Total</b>                                  | 0.94        | 100%              | 48%           |
| <b>Total Statewide</b>                        | <b>1.96</b> |                   |               |

Table 5-37

## Chromium, Hexavalent

Approximately 62 percent of the hexavalent chromium emissions are from other mobile sources. On-road mobile sources account for approximately 32 percent of hexavalent chromium emissions. Stationary sources such as electrical generation and fabricated metal product manufacturing contribute approximately six percent.

| San Francisco Bay Area - Chromium, Hexavalent |           |                   |               |
|---|-----------|-------------------|---------------|
| Emissions Source                              | tons/year | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>                     | < .01     | 6%                | <1%           |
| <b>Area-wide Sources</b>                      | < .01     | 1%                | <1%           |
| <b>On-Road Mobile</b>                         | 0.03      | 32%               | 2%            |
| Gasoline Vehicles                             | 0.02      | 31%               | 2%            |
| Diesel Vehicles                               | < .01     | 1%                | <1%           |
| <b>Other Mobile</b>                           | 0.05      | 62%               | 4%            |
| Gasoline Fuel                                 | < .01     | <1%               | <1%           |
| Diesel Fuel                                   | < .01     | <1%               | <1%           |
| Other Fuel                                    | 0.05      | 61%               | 4%            |
| <b>Natural Sources</b>                        | 0         | 0%                | 0%            |
| <b>Total</b>                                  | 0.08      | 100%              | 7%            |
| <b>Total Statewide</b>                        | 1.17      |                   |               |

Table 5-38

## *para*-Dichlorobenzene

Emissions of *para*-dichlorobenzene are essentially all from consumer products (non-aerosol insect repellants and solid/gel air fresheners).

| San Francisco Bay Area - <i>para</i> -Dichlorobenzene |           |                   |               |
|---|-----------|-------------------|---------------|
| Emissions Source                                      | tons/year | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>                             | < 1       | <1%               | <1%           |
| <b>Area-wide Sources</b>                              | 278       | 100%              | 19%           |
| <b>On-Road Mobile</b>                                 | 0         | 0%                | 0%            |
| Gasoline Vehicles                                     | 0         | 0%                | 0%            |
| Diesel Vehicles                                       | 0         | 0%                | 0%            |
| <b>Other Mobile</b>                                   | 0         | 0%                | 0%            |
| Gasoline Fuel   | 0         | 0%                | 0%            |
| Diesel Fuel   | 0         | 0%                | 0%            |
| Other Fuel  | 0         | 0%                | 0%            |
| <b>Natural Sources</b>                                | 0         | 0%                | 0%            |
| <b>Total</b>  | 279       | 100%              | 19%           |
| <b>Total Statewide</b>                                | 1469      |                   |               |

Table 5-39

## Formaldehyde

Approximately 84 percent of the formaldehyde emissions are from mobile sources.

| San Francisco Bay Area - Formaldehyde |              |                   |               |
|---------------------------------------|--------------|-------------------|---------------|
| Emissions Source                      | tons/year    | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>             | 175          | 5%                | 1%            |
| <b>Area-wide Sources</b>              | 384          | 11%               | 2%            |
| <b>On-Road Mobile</b>                 | 913          | 26%               | 4%            |
| Gasoline Vehicles                     | 543          | 16%               | 2%            |
| Diesel Vehicles                       | 369          | 11%               | 2%            |
| <b>Other Mobile</b>                   | 2016         | 58%               | 9%            |
| Gasoline Fuel                         | 344          | 10%               | 1%            |
| Diesel Fuel                           | 1219         | 35%               | 5%            |
| Other Fuel                            | 453          | 13%               | 2%            |
| <b>Natural Sources</b>                | 0            | 0%                | 0%            |
| <b>Total</b>                          | 3488         | 100%              | 15%           |
| <b>Total Statewide</b>                | <b>23154</b> |                   |               |

Table 5-40

## Methylene Chloride

Approximately 72 percent of the emissions of methylene chloride are from area-wide sources.

| San Francisco Bay Area - Methylene Chloride |             |                   |               |
|---|-------------|-------------------|---------------|
| Emissions Source                            | tons/year   | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>                   | 271         | 28%               | 4%            |
| <b>Area-wide Sources</b>                    | 692         | 72%               | 11%           |
| <b>On-Road Mobile</b>                       | 0           | 0%                | 0%            |
| Gasoline Vehicles                           | 0           | 0%                | 0%            |
| Diesel Vehicles                             | 0           | 0%                | 0%            |
| <b>Other Mobile</b>                         | 0           | 0%                | 0%            |
| Gasoline Fuel                               | 0           | 0%                | 0%            |
| Diesel Fuel                                 | 0           | 0%                | 0%            |
| Other Fuel                                  | 0           | 0%                | 0%            |
| <b>Natural Sources</b>                      | 0           | 0%                | 0%            |
| <b>Total</b>                                | 963         | 100%              | 15%           |
| <b>Total Statewide</b>                      | <b>6527</b> |                   |               |

Table 5-41

## Perchloroethylene

Approximately 57 percent of the emissions of perchloroethylene are from such area-wide sources as automotive brake cleaners and other consumer products.

| San Francisco Bay Area - Perchloroethylene |             |                   |               |
|--|-------------|-------------------|---------------|
| Emissions Source                           | tons/year   | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>                  | 306         | 43%               | 6%            |
| <b>Area-wide Sources</b>                   | 402         | 57%               | 8%            |
| <b>On-Road Mobile</b>                      | 0           | 0%                | 0%            |
| Gasoline Vehicles                          | 0           | 0%                | 0%            |
| Diesel Vehicles                            | 0           | 0%                | 0%            |
| <b>Other Mobile</b>                        | 0           | 0%                | 0%            |
| Gasoline Fuel                              | 0           | 0%                | 0%            |
| Diesel Fuel                                | 0           | 0%                | 0%            |
| Other Fuel                                 | 0           | 0%                | 0%            |
| <b>Natural Sources</b>                     | 0           | 0%                | 0%            |
| <b>Total</b>                               | 709         | 100%              | 15%           |
| <b>Total Statewide</b>                     | <b>4865</b> |                   |               |

Table 5-42

## Diesel Particulate Matter

Emissions of diesel PM are primarily from mobile sources.

| San Francisco Bay Area - Diesel PM |              |                   |               |
|------------------------------------|--------------|-------------------|---------------|
| Emissions Source                   | tons/year    | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>          | 82           | 2%                | <1%           |
| <b>Area-wide Sources</b>           | 0            | 0%                | 0%            |
| <b>On-Road Mobile</b>              | 1424         | 30%               | 3%            |
| Gasoline Vehicles                  | 0            | 0%                | 0%            |
| Diesel Vehicles                    | 1424         | 30%               | 3%            |
| <b>Other Mobile</b>                | 3191         | 68%               | 8%            |
| Gasoline Fuel                      | 0            | 0%                | 0%            |
| Diesel Fuel                        | 3191         | 68%               | 8%            |
| Other Fuel                         | 0            | 0%                | 0%            |
| <b>Natural Sources</b>             | 0            | 0%                | 0%            |
| <b>Total</b>                       | 4697         | 100%              | 11%           |
| <b>Total Statewide</b>             | <b>42326</b> |                   |               |

Table 5-43

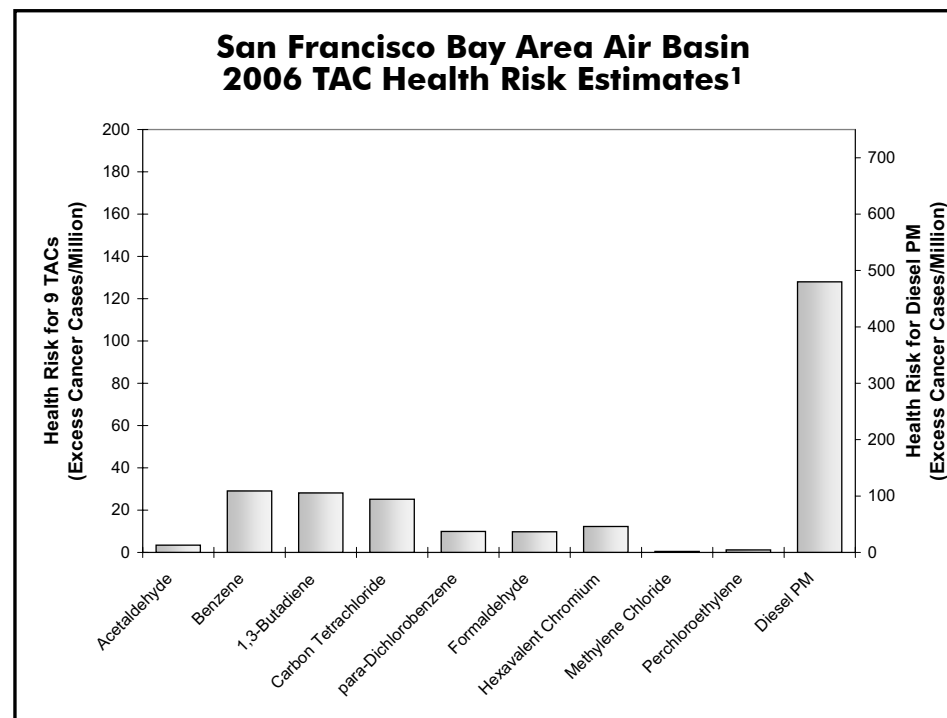
## San Francisco Bay Area Air Basin

### Air Quality and Health Risk

From 1990 through 2006, the ARB monitored outdoor concentration for various TACs at six sites in the San Francisco Bay Area Air Basin. Data for the entire time period are available from sites located in Fremont and San Francisco. The San Jose-Fourth Street site has measurements from 1990 through 2001; this site was relocated to San Jose-Jackson Street in mid-2002. Data are also available from a site at Concord from 1990 through 1999. In addition, there was a monitor at Richmond from 1990 through April 1997. This site was relocated to San Pablo and began sampling there in May 1997. At the end of February 2000, TAC monitoring was discontinued at the Concord and San Pablo sites, and additional data from these sites will not be available. Annual average concentration and associated health risk are unavailable for the year during a site move because neither site has a full year of data. This almanac focuses on the top ten TACs based on available data. It is important to note that there are other compounds which pose a significant risk, but have insufficient data or are not monitored, so they are not included in the almanac.

Annual average concentrations and associated health risks for the top ten TACs individually as well as cumulatively for the San Francisco Bay Area Air Basin, are provided in Table 5-44. Data for individual sites are provided in Appendix C. Figure 5-14 shows individual health risk from the ten TACs for the San Francisco Bay Area Air Basin. As indicated on the graph, the health risk data reflect the year of 2006 except those for diesel PM which reflects the year 2000 and for carbon tetrachloride which reflects the year 2003, the most recent years for which estimated data are available. The health risks shown here are based on an annual average concentration for all sites in the air basin. The risk at individual locations may be higher or lower than the average for the air basin, depending on the impact of nearby sources.

Unlike the other nine TACs, diesel PM does not have ambient monitoring data because an accepted measurement method does not cur-



<sup>1</sup> Data for Diesel PM reflect 2000; carbon tetrachloride reflect 2003; all other TACs reflect 2006.

Figure 5-14

rently exist. However, the ARB has made preliminary concentration estimates for the State and its 15 air basins using a PM-based exposure method. The method uses the ARB emission inventory's PM<sub>10</sub> database, ambient PM<sub>10</sub> monitoring data, and the results from several studies on chemical speciation of ambient data. These data were used, along with receptor modeling techniques, to estimate outdoor concentrations of diesel PM. The existing diesel PM estimates are currently being reviewed to reflect control measures that were outlined in the ARB Diesel Risk Reduction Plan.

Diesel PM poses the greatest health risk among the ten TACs. In the San Francisco Bay Area Air Basin, the estimated health risk from

diesel PM was 480 excess cancer cases per million people in 2000. Although the health risk is higher than the statewide average, it represents a 36 percent drop between 1990 and 2000.

Trends and health risks for the nine other TACs are based on monitoring data. To examine their trends while minimizing the annual variation due to meteorology and sampling schedule, the air basin average concentration for the 1990-1992 time period was compared to that for 2004-2006. The health risks of 1,3-butadiene and benzene have been reduced by 75 percent and 82 percent, respectively. Methylene chloride and perchloroethylene also show substantial reductions of 89 percent and 85 percent, respectively.

Carbon tetrachloride data show a 29 percent decrease when comparing periods between 1990-1991 (1992 average was not valid) and 2001-2003. Carbon tetrachloride data from mid-February 2004 through 2006 were invalidated.

Although acetaldehyde and formaldehyde data were collected beginning in 1990, concentration and health risk values prior to 1996 were uncertain because the method used to collect these samples underestimated the actual concentrations. The bias was corrected by a method change in 1996; however, the ARB was unable to develop a correction factor for the earlier data. Therefore, the data for years prior to 1996 are not directly comparable to data collected during the later years. The 1996-1998 time period is used instead to compare with that for 2004-2006. Acetaldehyde and formaldehyde show a 43 percent and a 26 percent reduction, respectively.

*Para*-dichlorobenzene data show a 31 percent increase when comparing periods between 1991-1993 and 2004-2006. Note that *para*-dichlorobenzene has a high number of samples that can not be reliably measured, so its trend is biased by these measurements.

Hexavalent chromium data show a 62 percent decrease when comparing periods between 1992-1994 and 2004-2006. The significant reduction in hexavalent chromium in years after 1995 was attributed to implementation of a series of successful control

measures. Similar to *para*-dichlorobenzene, it also had a high number of samples below its LOD. To better assess the hexavalent chromium measurements below its LOD, the ARB's Monitoring and Laboratory division used a different approach to analyze hexavalent chromium samples in 2001. The method has been discussed in the Hexavalent Chromium Statewide Air Quality and Health Risk section in this chapter and will not be repeated here.

In addition to the routine monitoring, a special study was conducted at two sites, located in the Crockett and Fruitvale/Oakland areas of the San Francisco Bay Area Air Basin between October 2001 and May 2003 (Crockett) and between November 2001 and April 2003 (Fruitvale). Monitoring included both TACs and criteria air pollutants. The Crockett community is located near high-risk facilities, including mobile source emissions. Oil refineries and major oil storage facilities are located in nearby cities to Crockett. Crockett is also the location of a major food processing operation and a heavy-rail transfer facility. The Fruitvale community lies between two major freeways that are a significant source of vehicular emissions. The Fruitvale area is also downwind of several industrial operations that are sources of pollution. Although not included in this almanac, data from Crockett, Fruitvale, and other community monitoring studies are being used in support of the ARB's Community Health Program. Copies of the full reports are available at [www.arb.ca.gov/ch/programs/sb25/sb25.htm](http://www.arb.ca.gov/ch/programs/sb25/sb25.htm).



## San Francisco Bay Area Air Basin Annual Average Concentrations and Health Risks

| Annual Average Concentrations and Health Risks |                          |        |       |       |       |       |       |       |       |       |      |       |       |       |       |       |       |       |
|--|--------------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| TAC  | Conc.1/Risk <sup>2</sup> | 1990   | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999 | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Acetaldehyde                                   | Annual Avg               | 1.3    | 1.4   | 1.03  | 1.31  | 1.17  | 0.42  | 0.83  | 0.73  | 0.65  | 0.76 | 0.68  | 0.73  | 0.63  | 0.74  | 0.74  | 0.71  | 0.66  |
|  | Health Risk              | 6      | 7     | 5     | 6     | 6     | 2     | 4     | 4     | 3     | 4    | 3     | 4     | 3     | 4     | 4     | 3     | 3     |
| Benzene  | Annual Avg               | 2.18   | 1.82  | 1.49  | 1.49  | 1.4   | 1.26  | 0.71  | 0.61  | 0.71  | 0.6  | 0.56  | 0.425 | 0.454 | 0.439 | 0.372 | 0.314 | 0.326 |
|  | Health Risk              | 202    | 169   | 138   | 138   | 129   | 116   | 66    | 56    | 66    | 55   | 52    | 39    | 42    | 41    | 34    | 29    | 30    |
| 1,3-Butadiene                                  | Annual Avg               | 0.359  | 0.287 | 0.275 | 0.367 | 0.287 | 0.277 | 0.218 | 0.187 | 0.217 | 0.17 | 0.149 | 0.133 | 0.137 | 0.098 | 0.09  | 0.075 | 0.069 |
|  | Health Risk              | 135    | 108   | 103   | 138   | 108   | 104   | 82    | 70    | 82    | 64   | 56    | 50    | 51    | 37    | 34    | 28    | 26    |
| Carbon Tetrachloride                           | Annual Avg               | 0.128  | 0.125 |       | 0.108 |       | 0.1   | 0.078 |       |       |      | 0.094 | 0.087 | 0.089 | 0.095 |       |       |       |
|  | Health Risk              | 34     | 33    |       | 29    |       | 26    | 21    |       |       |      | 25    | 23    | 24    | 25    |       |       |       |
| Chromium, Hexavalent                           | Annual Avg               |        |       | 0.23  | 0.2   | 0.19  | 0.25  | 0.13  | 0.12  | 0.1   | 0.1  | 0.12  |       | 0.074 | 0.096 | 0.094 | 0.08  | 0.063 |
|  | Health Risk              |        |       | 34    | 29    | 29    | 37    | 19    | 17    | 15    | 15   | 18    |       | 11    | 14    | 14    | 12    | 9     |
| <i>para</i> -Dichlorobenzene                   | Annual Avg               |        | 0.12  | 0.12  | 0.12  | 0.11  | 0.13  | 0.14  | 0.12  |       |      | 0.11  | 0.14  | 0.15  | 0.15  | 0.17  | 0.15  | 0.15  |
|  | Health Risk              |        | 8     | 8     | 8     | 7     | 8     | 9     | 8     |       |      | 7     | 9     | 10    | 10    | 11    | 10    | 10    |
| Formaldehyde                                   | Annual Avg               | 1.87   | 1.73  | 1.43  | 1.56  | 1.66  | 2.06  | 2.62  | 1.85  | 1.76  | 2.09 | 1.77  | 2.32  | 2.57  | 2.22  | 1.71  | 1.32  | 1.59  |
|  | Health Risk              | 14     | 13    | 11    | 11    | 12    | 15    | 19    | 14    | 13    | 15   | 13    | 17    | 19    | 16    | 13    | 10    | 12    |
| Methylene Chloride                             | Annual Avg               | 1.04   | 2.32  | 0.65  | 0.72  | 0.59  | 0.6   | 0.58  | 0.55  |       |      | 0.53  | 0.27  | 0.22  | 0.22  | 0.14  | 0.13  | 0.16  |
|  | Health Risk              | 4      | 8     | 2     | 2     | 2     | 2     | 2     | 2     |       |      | 2     | <1    | <1    | <1    | <1    | <1    | <1    |
| Perchloroethylene                              | Annual Avg               | 0.204  | 0.232 | 0.169 | 0.128 | 0.082 | 0.094 | 0.067 | 0.071 |       |      | 0.078 | 0.059 | 0.052 | 0.039 | 0.035 | 0.029 | 0.027 |
|  | Health Risk              | 8      | 9     | 7     | 5     | 3     | 4     | 3     | 3     |       |      | 3     | 2     | 2     | 2     | 1     | 1     | 1     |
| Diesel PM <sup>3</sup>                         | Annual Avg               | (2.5)  |       |       |       |       | (1.9) |       |       |       |      | (1.6) |       |       |       |       |       |       |
|  | Health Risk              | (750)  |       |       |       |       | (570) |       |       |       |      | (480) |       |       |       |       |       |       |
| Average Basin Risk                             | w/o Diesel PM            | 403    | 355   | 308   | 366   | 296   | 314   | 225   | 174   | 179   | 153  | 179   | 144   | 162   | 149   | 111   | 93    | 91    |
|  | w/ Diesel PM             | (1153) |       |       |       |       | (884) |       |       |       |      | (659) |       |       |       |       |       |       |

- 1 Concentrations for Hexavalent chromium are expressed as ng/m3 and concentrations for diesel PM are expressed as ug/m3. Concentrations for all other TACs are expressed as parts per billion.
- 2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. It reflects only those compounds listed in this table and only those with data for that year. There may be other significant compounds for which we do not monitor or have health risk information. Additional information about interpreting the toxic air contaminant air quality trends can be found in Chapter 1, *Interpreting the Emission and Air Quality Statistics*.
- 3 Diesel PM estimates are based on receptor modeling techniques, and the estimates are available only for selected years. Currently, the estimates are being reviewed.

Table 5-44

## San Joaquin Valley Air Basin

### 2006 Emission Inventory by Compound

#### Acetaldehyde

Approximately 87 percent of the emissions of acetaldehyde are from mobile sources. Area-wide sources such as residential wood combustion account for approximately 10 percent.

| San Joaquin Valley - Acetaldehyde |              |                   |               |
|-----------------------------------|--------------|-------------------|---------------|
| Emissions Source                  | tons/year    | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>         | 56           | 3%                | 1%            |
| <b>Area-wide Sources</b>          | 177          | 10%               | 2%            |
| <b>On-Road Mobile</b>             | 731          | 42%               | 7%            |
| Gasoline Vehicles                 | 100          | 6%                | 1%            |
| Diesel Vehicles                   | 631          | 36%               | 6%            |
| <b>Other Mobile</b>               | 797          | 45%               | 8%            |
| Gasoline Fuel                     | 81           | 5%                | 1%            |
| Diesel Fuel                       | 587          | 33%               | 6%            |
| Other Fuel                        | 129          | 7%                | 1%            |
| <b>Natural Sources</b>            | 0            | 0%                | 0%            |
| <b>Total</b>                      | 1761         | 100%              | 18%           |
| <b>Total Statewide</b>            | <b>10023</b> |                   |               |

Table 5-45

#### Benzene

The primary sources of benzene emissions in the San Joaquin Valley Air Basin are mobile sources (approximately 71 percent) and stationary sources (approximately 28 percent).

| San Joaquin Valley - Benzene |              |                   |               |
|------------------------------|--------------|-------------------|---------------|
| Emissions Source             | tons/year    | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>    | 502          | 28%               | 4%            |
| <b>Area-wide Sources</b>     | 13           | 1%                | <1%           |
| <b>On-Road Mobile</b>        | 752          | 42%               | 6%            |
| Gasoline Vehicles            | 580          | 32%               | 5%            |
| Diesel Vehicles              | 172          | 10%               | 1%            |
| <b>Other Mobile</b>          | 522          | 29%               | 4%            |
| Gasoline Fuel                | 308          | 17%               | 3%            |
| Diesel Fuel                  | 160          | 9%                | 1%            |
| Other Fuel                   | 54           | 3%                | <1%           |
| <b>Natural Sources</b>       | < 1          | <1%               | <1%           |
| <b>Total</b>                 | 1789         | 100%              | 15%           |
| <b>Total Statewide</b>       | <b>12060</b> |                   |               |

Table 5-46

## 1,3-Butadiene

Approximately 54 percent of the emissions of 1,3-butadiene are from mobile sources.

| San Joaquin Valley - 1,3-Butadiene |             |                   |               |
|------------------------------------|-------------|-------------------|---------------|
| Emissions Source                   | tons/year   | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>          | 2           | <1%               | <1%           |
| <b>Area-wide Sources</b>           | 96          | 19%               | 3%            |
| <b>On-Road Mobile</b>              | 140         | 28%               | 4%            |
| Gasoline Vehicles                  | 124         | 25%               | 3%            |
| Diesel Vehicles                    | 16          | 3%                | <1%           |
| <b>Other Mobile</b>                | 134         | 27%               | 4%            |
| Gasoline Fuel                      | 70          | 14%               | 2%            |
| Diesel Fuel                        | 15          | 3%                | <1%           |
| Other Fuel                         | 49          | 10%               | 1%            |
| <b>Natural Sources</b>             | 131         | 26%               | 4%            |
| <b>Total</b>                       | 503         | 100%              | 14%           |
| <b>Total Statewide</b>             | <b>3589</b> |                   |               |

Table 5-47

## Carbon Tetrachloride

There are no major sources of carbon tetrachloride in the San Joaquin Valley.

| San Joaquin Valley - Carbon Tetrachloride |             |                   |               |
|---|-------------|-------------------|---------------|
| Emissions Source                          | tons/year   | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>                 | 0           | 0%                | 0%            |
| <b>Area-wide Sources</b>                  | 0           | 0%                | 0%            |
| <b>On-Road Mobile</b>                     | 0           | 0%                | 0%            |
| Gasoline Vehicles                         | 0           | 0%                | 0%            |
| Diesel Vehicles                           | 0           | 0%                | 0%            |
| <b>Other Mobile</b>                       | 0           | 0%                | 0%            |
| Gasoline Fuel                             | 0           | 0%                | 0%            |
| Diesel Fuel                               | 0           | 0%                | 0%            |
| Other Fuel                                | 0           | 0%                | 0%            |
| <b>Natural Sources</b>                    | 0           | 0%                | 0%            |
| <b>Total</b>                              | 0           | 0%                | 0%            |
| <b>Total Statewide</b>                    | <b>1.96</b> |                   |               |

Table 5-48

## Chromium, Hexavalent

Approximately 72 percent of the hexavalent chromium emissions are from mobile sources.

| San Joaquin Valley - Chromium, Hexavalent |           |                   |               |
|---|-----------|-------------------|---------------|
| Emissions Source                          | tons/year | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>                 | 0.06      | 28%               | 5%            |
| <b>Area-wide Sources</b>                  | < .01     | <1%               | <1%           |
| <b>On-Road Mobile</b>                     | 0.02      | 8%                | 1%            |
| Gasoline Vehicles                         | 0.02      | 7%                | 1%            |
| Diesel Vehicles                           | < .01     | 1%                | <1%           |
| <b>Other Mobile</b>                       | 0.14      | 64%               | 12%           |
| Gasoline Fuel                             | < .01     | <1%               | <1%           |
| Diesel Fuel                               | < .01     | <1%               | <1%           |
| Other Fuel                                | 0.14      | 64%               | 12%           |
| <b>Natural Sources</b>                    | 0         | 0%                | 0%            |
| <b>Total</b>                              | 0.22      | 100%              | 19%           |
| <b>Total Statewide</b>                    | 1.17      |                   |               |

Table 5-49

## *para*-Dichlorobenzene

Most of the emissions of *para*-dichlorobenzene are from consumer products (non-aerosol insect repellants and solid/gel air fresheners).

| San Joaquin Valley - <i>para</i> -Dichlorobenzene |           |                   |               |
|---|-----------|-------------------|---------------|
| Emissions Source                                  | tons/year | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>                         | 0         | 0%                | 0%            |
| <b>Area-wide Sources</b>                          | 147       | 100%              | 10%           |
| <b>On-Road Mobile</b>                             | 0         | 0%                | 0%            |
| Gasoline Vehicles                                 | 0         | 0%                | 0%            |
| Diesel Vehicles                                   | 0         | 0%                | 0%            |
| <b>Other Mobile</b>                               | 0         | 0%                | 0%            |
| Gasoline Fuel                                     | 0         | 0%                | 0%            |
| Diesel Fuel                                       | 0         | 0%                | 0%            |
| Other Fuel  | 0         | 0%                | 0%            |
| <b>Natural Sources</b>                            | 0         | 0%                | 0%            |
| <b>Total</b>                                      | 147       | 100%              | 10%           |
| <b>Total Statewide</b>                            | 1469      |                   |               |

Table 5-50

## Formaldehyde

Approximately 78 percent of the formaldehyde emissions are from mobile sources.

| San Joaquin Valley - Formaldehyde |              |                   |               |
|-----------------------------------|--------------|-------------------|---------------|
| Emissions Source                  | tons/year    | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>         | 756          | 17%               | 3%            |
| <b>Area-wide Sources</b>          | 210          | 5%                | 1%            |
| <b>On-Road Mobile</b>             | 1593         | 36%               | 7%            |
| Gasoline Vehicles                 | 329          | 7%                | 1%            |
| Diesel Vehicles                   | 1264         | 29%               | 5%            |
| <b>Other Mobile</b>               | 1837         | 42%               | 8%            |
| Gasoline Fuel                     | 246          | 6%                | 1%            |
| Diesel Fuel                       | 1174         | 27%               | 5%            |
| Other Fuel                        | 418          | 9%                | 2%            |
| <b>Natural Sources</b>            | 0            | 0%                | 0%            |
| <b>Total</b>                      | 4396         | 100%              | 19%           |
| <b>Total Statewide</b>            | <b>23154</b> |                   |               |

Table 5-51

## Methylene Chloride

Approximately 84 percent of the emissions of methylene chloride are from paint removers/strippers, automotive brake cleaners, and other consumer products.

| San Joaquin Valley - Methylene Chloride |             |                   |               |
|---|-------------|-------------------|---------------|
| Emissions Source                        | tons/year   | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>               | 68          | 16%               | 1%            |
| <b>Area-wide Sources</b>                | 361         | 84%               | 6%            |
| <b>On-Road Mobile</b>                   | 0           | 0%                | 0%            |
| Gasoline Vehicles                       | 0           | 0%                | 0%            |
| Diesel Vehicles                         | 0           | 0%                | 0%            |
| <b>Other Mobile</b>                     | 0           | 0%                | 0%            |
| Gasoline Fuel                           | 0           | 0%                | 0%            |
| Diesel Fuel                             | 0           | 0%                | 0%            |
| Other Fuel                              | 0           | 0%                | 0%            |
| <b>Natural Sources</b>                  | 0           | 0%                | 0%            |
| <b>Total</b>                            | 429         | 100%              | 7%            |
| <b>Total Statewide</b>                  | <b>6527</b> |                   |               |

Table 5-52

## Perchloroethylene

Approximately 64 percent of the emissions of perchloroethylene are from such stationary sources as dry cleaning plants and manufacturers of aircraft parts and fabricated metal parts.

| San Joaquin Valley - Perchloroethylene |           |                   |               |
|--|-----------|-------------------|---------------|
| Emissions Source                       | tons/year | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>              | 375       | 64%               | 8%            |
| <b>Area-wide Sources</b>               | 213       | 36%               | 4%            |
| <b>On-Road Mobile</b>                  | 0         | 0%                | 0%            |
| Gasoline Vehicles                      | 0         | 0%                | 0%            |
| Diesel Vehicles                        | 0         | 0%                | 0%            |
| <b>Other Mobile</b>                    | 0         | 0%                | 0%            |
| Gasoline Fuel                          | 0         | 0%                | 0%            |
| Diesel Fuel                            | 0         | 0%                | 0%            |
| Other Fuel                             | 0         | 0%                | 0%            |
| <b>Natural Sources</b>                 | 0         | 0%                | 0%            |
| <b>Total</b>                           | 588       | 100%              | 12%           |
| <b>Total Statewide</b>                 | 4865      |                   |               |

Table 5-53

## Diesel Particulate Matter

Approximately 94 percent of the diesel PM emissions are from mobile sources.

| San Joaquin Valley - Diesel PM |           |                   |               |
|--------------------------------|-----------|-------------------|---------------|
| Emissions Source               | tons/year | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>      | 482       | 6%                | 1%            |
| <b>Area-wide Sources</b>       | 0         | 0%                | 0%            |
| <b>On-Road Mobile</b>          | 4584      | 60%               | 11%           |
| Gasoline Vehicles              | 0         | 0%                | 0%            |
| Diesel Vehicles                | 4584      | 60%               | 11%           |
| <b>Other Mobile</b>            | 2629      | 34%               | 6%            |
| Gasoline Fuel                  | 0         | 0%                | 0%            |
| Diesel Fuel                    | 2629      | 34%               | 6%            |
| Other Fuel                     | 0         | 0%                | 0%            |
| <b>Natural Sources</b>         | 0         | 0%                | 0%            |
| <b>Total</b>                   | 7695      | 100%              | 18%           |
| <b>Total Statewide</b>         | 42326     |                   |               |

Table 5-54

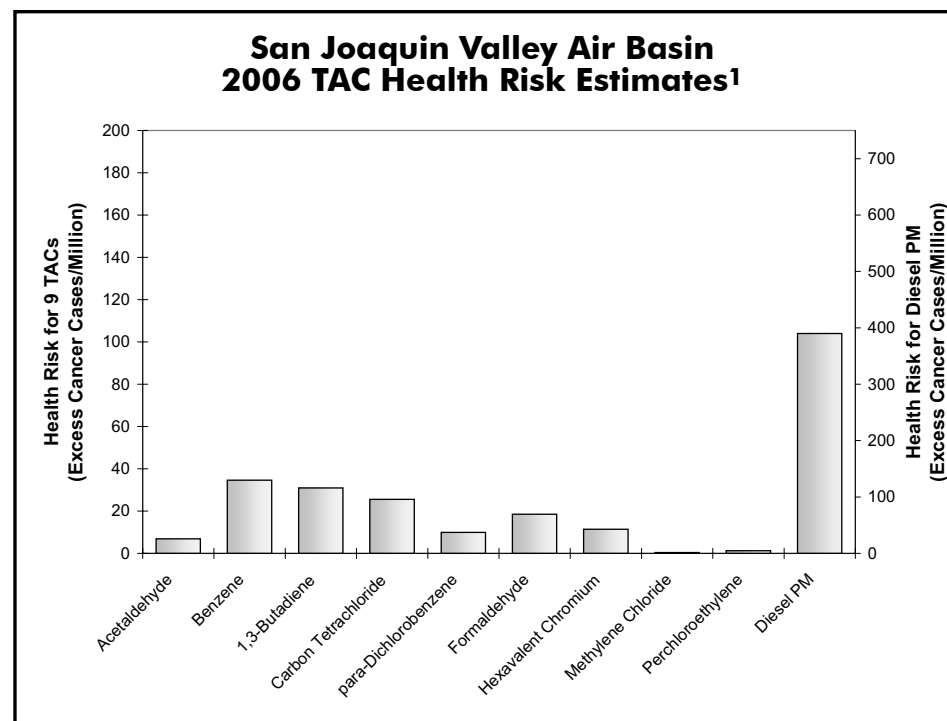
## San Joaquin Valley Air Basin

### Air Quality and Health Risk

From 1990 through 2006, the ARB monitored outdoor concentrations for various TACs at six sites in the San Joaquin Valley Air Basin. Data for all years are available only for the Stockton site. Data are available for 1991 through 2006 at the Fresno-First Street site, for 1990 through 1993 at the Bakersfield-Chester Avenue site, and for 1995 through 2003 at the Bakersfield-5558 California Avenue site. Data are also available at the Modesto-14<sup>th</sup> Street site from 1990 through 1999. In addition, limited TAC data are available at the Modesto-I Street site from 1991 to 1997. This almanac focuses on the top ten TACs based on available data. It is important to note that there are other compounds which pose a significant risk, but have insufficient data or are not monitored, so they are not included in the almanac.

Annual average concentrations and associated health risks for the top ten TACs individually as well as cumulatively for the San Joaquin Valley Air Basin, are provided in Table 5-55. Data for individual sites are provided in Appendix C. Figure 5-15 shows individual health risk from the ten TACs for the San Joaquin Valley Air Basin. As indicated on the graph, the health risk data reflect the year of 2006 except those for diesel PM which reflects the year 2000 and for carbon tetrachloride which reflects the year 2003, the most recent years for which estimated data are available. The health risks shown here are based on an annual average concentration for all sites in the air basin. The risk at individual locations may be higher or lower than the average for the air basin, depending on the impact of nearby sources.

Unlike the other nine TACs, diesel PM does not have ambient monitoring data because an accepted measurement method does not currently exist. However, the ARB has made preliminary concentration estimates for the State and its 15 air basins using a PM-based exposure method. The method uses the ARB emission inventory's PM<sub>10</sub> database, ambient PM<sub>10</sub> monitoring data, and the results from several studies on chemical speciation of ambient data. These data were used,



<sup>1</sup> Data for Diesel PM reflect 2000; carbon tetrachloride reflect 2003; all other TACs reflect 2006.

Figure 5-15

along with receptor modeling techniques, to estimate outdoor concentrations of diesel PM. The existing diesel PM estimates are currently being reviewed to reflect control measures that were outlined in the ARB Diesel Risk Reduction Plan.

Diesel PM poses the greatest health risk among the ten TACs. In the San Joaquin Valley Air Basin, the estimated health risk from diesel PM was 390 excess cancer cases per million people in 2000. Although the health risk is higher than the statewide average, it represents a 50 percent drop between 1990 and 2000.

Trends and health risks for the nine other TACs are based on monitoring data. To examine their trends while minimizing the annual variation due to meteorology and sampling schedule, the air basin average concentration for the 1990-1992 time period was compared to that for 2004-2006. The health risks of 1,3-butadiene and benzene have been reduced by 77 percent and 81 percent, respectively. Methylene chloride and perchloroethylene also show substantial reductions of 82 percent and 75 percent, respectively.

Carbon tetrachloride data show a 29 percent decrease when comparing periods between 1990-1991 (1992 average was not valid) and 2001-2003. Carbon tetrachloride data from mid-February 2004 through 2006 were invalidated.

Although acetaldehyde and formaldehyde data were collected beginning in 1990, concentration and health risk values prior to 1996 were uncertain because the method used to collect these samples underestimated the actual concentrations. The bias was corrected by a method change in 1996; however, the ARB was unable to develop a correction factor for the earlier data. Therefore, the data for years prior to 1996 are not directly comparable to data collected during the later years. The 1996-1998 time period is used instead to compare with that for 2004-2006. Acetaldehyde shows a 25 percent decrease while formaldehyde had a 12 percent decrease.

*Para*-dichlorobenzene data show a 29 percent increase when comparing periods between 1991-1993 and 2004-2006. Note that *para*-dichlorobenzene has a high number of samples that can not be reliably measured, so its trend is biased by these measurements.

Hexavalent chromium data show a 67 percent decrease when comparing periods between 1992-1994 and 2004-2006. The significant reduction in hexavalent chromium in years after 1995 was attributed to implementation of a series of successful control measures. Similar to *para*-dichlorobenzene, it also had a high number of samples below its LOD. To better assess the hexavalent chromium

measurements below the LOD, the ARB's Monitoring and Laboratory division used a different approach to analyze hexavalent chromium samples in 2001. The method has been discussed in the Hexavalent Chromium Statewide Air Quality and Health Risk section in this chapter and will not be repeated here.

In addition to the routine monitoring, a special study was conducted at a site located in the Fresno area of the San Joaquin Valley Air Basin between June 2002 and August 2003. Monitoring included both TACs and criteria air pollutants. This Fresno community is located in a residential neighborhood near sources of motor vehicle pollution. There are a large number of children living in the community. Although not included in the almanac, data from Fresno and other community monitoring studies are being used in support of the ARB's Community Health Program. Copies of the full reports are available at [www.arb.ca.gov/ch/communities/studies/fresno/fresno.htm](http://www.arb.ca.gov/ch/communities/studies/fresno/fresno.htm).



# San Joaquin Valley Air Basin

## Annual Average Concentrations and Health Risks

| Annual Average Concentrations and Health Risks |                          |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|--|--------------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| TAC  | Conc.1/Risk <sup>2</sup> | 1990   | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Acetaldehyde                                   | Annual Avg               | 1.94   | 1.84  | 1.38  | 1.73  | 1.29  | 0.54  | 1.28  | 1.19  | 1.3   | 1.56  | 1.09  | 1.15  | 1.24  | 1.34  | 1.14  | 1.42  | 1.33  |
|  | Health Risk              | 9      | 9     | 7     | 8     | 6     | 3     | 6     | 6     | 6     | 8     | 5     | 6     | 6     | 7     | 6     | 7     | 6     |
| Benzene  | Annual Avg               | 2.45   | 2.11  | 1.36  | 1.32  | 1.33  | 1.16  | 0.73  | 0.71  | 0.76  | 0.69  | 0.63  | 0.538 | 0.552 | 0.463 | 0.372 | 0.374 | 0.362 |
|  | Health Risk              | 227    | 196   | 126   | 122   | 123   | 107   | 68    | 66    | 71    | 64    | 58    | 50    | 51    | 43    | 34    | 35    | 34    |
| 1,3-Butadiene                                  | Annual Avg               | 0.409  | 0.36  | 0.236 | 0.339 | 0.323 | 0.264 | 0.222 | 0.195 | 0.233 | 0.177 | 0.158 | 0.15  | 0.146 | 0.095 | 0.08  | 0.082 | 0.069 |
|  | Health Risk              | 154    | 135   | 89    | 127   | 121   | 99    | 83    | 73    | 88    | 67    | 59    | 56    | 55    | 36    | 30    | 31    | 26    |
| Carbon Tetrachloride                           | Annual Avg               | 0.128  | 0.129 |       | 0.109 |       | 0.098 | 0.077 |       | 0.114 |       | 0.096 | 0.086 | 0.091 | 0.097 |       |       |       |
|  | Health Risk              | 34     | 34    |       | 29    |       | 26    | 20    |       | 30    |       | 25    | 23    | 24    | 26    |       |       |       |
| Chromium, Hexavalent                           | Annual Avg               |        |       | 0.23  | 0.21  | 0.19  | 0.28  | 0.13  | 0.11  | 0.1   | 0.1   | 0.12  |       | 0.086 | 0.078 | 0.083 | 0.076 | 0.05  |
|  | Health Risk              |        |       | 34    | 31    | 29    | 42    | 20    | 16    | 15    | 15    | 18    |       | 13    | 12    | 13    | 11    | 8     |
| <i>para</i> -Dichlorobenzene                   | Annual Avg               |        | 0.11  | 0.11  | 0.13  | 0.11  | 0.11  | 0.1   | 0.13  |       |       | 0.11  | 0.13  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  |
|  | Health Risk              |        | 7     | 7     | 9     | 7     | 8     | 7     | 9     |       |       | 7     | 9     | 10    | 10    | 10    | 10    | 10    |
| Formaldehyde                                   | Annual Avg               | 2.45   | 1.81  | 1.46  | 1.67  | 1.8   | 2.1   | 2.96  | 2.77  | 2.86  | 3.44  | 2.61  | 3.08  | 3.13  | 3.02  | 2.27  | 2.52  | 2.78  |
|  | Health Risk              | 18     | 13    | 11    | 12    | 13    | 15    | 22    | 20    | 21    | 25    | 19    | 23    | 23    | 22    | 17    | 19    | 20    |
| Methylene Chloride                             | Annual Avg               | 0.76   | 0.59  | 0.55  | 0.76  | 0.59  | 0.61  | 0.54  | 0.53  | 0.52  | 0.5   | 0.53  | 0.27  | 0.16  | 0.14  | 0.11  | 0.12  | 0.11  |
|  | Health Risk              | 3      | 2     | 2     | 3     | 2     | 2     | 2     | 2     | 2     | 2     | 2     | <1    | <1    | <1    | <1    | <1    | <1    |
| Perchloroethylene                              | Annual Avg               | 0.126  | 0.133 | 0.104 | 0.473 | 0.067 | 0.068 | 0.068 | 0.056 | 0.039 |       | 0.076 | 0.052 | 0.039 | 0.033 | 0.027 | 0.032 | 0.032 |
|  | Health Risk              | 5      | 5     | 4     | 19    | 3     | 3     | 3     | 2     | 2     |       | 3     | 2     | 2     | 1     | 1     | 1     | 1     |
| Diesel PM <sup>3</sup>                         | Annual Avg               | (2.6)  |       |       |       |       | (1.7) |       |       |       |       | (1.3) |       |       |       |       |       |       |
|  | Health Risk              | (780)  |       |       |       |       | (510) |       |       |       |       | (390) |       |       |       |       |       |       |
| Average Basin Risk                             | w/o Diesel PM            | 450    | 401   | 280   | 360   | 304   | 305   | 231   | 194   | 235   | 181   | 196   | 169   | 184   | 157   | 111   | 114   | 105   |
|  | w/ Diesel PM             | (1230) |       |       |       |       | (815) |       |       |       |       | (586) |       |       |       |       |       |       |

- 1 Concentrations for Hexavalent chromium are expressed as ng/m3 and concentrations for diesel PM are expressed as ug/m3. Concentrations for all other TACs are expressed as parts per billion.
- 2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. It reflects only those compounds listed in this table and only those with data for that year. There may be other significant compounds for which we do not monitor or have health risk information. Additional information about interpreting the toxic air contaminant air quality trends can be found in Chapter 1, *Interpreting the Emission and Air Quality Statistics*.
- 3 Diesel PM estimates are based on receptor modeling techniques, and the estimates are available only for selected years. Currently, the estimates are being reviewed.

Table 5-55

*San Diego Air Basin***2006 Emission Inventory by Compound****Acetaldehyde**

Approximately 92 percent of the emissions of acetaldehyde are from mobile sources.

| <b>San Diego - Acetaldehyde</b> |                  |                          |                      |
|---------------------------------|------------------|--------------------------|----------------------|
| <b>Emissions Source</b>         | <b>tons/year</b> | <b>Percent Air Basin</b> | <b>Percent State</b> |
| <b>Stationary Sources</b>       | 5                | 1%                       | <1%                  |
| <b>Area-wide Sources</b>        | 45               | 8%                       | <1%                  |
| <b>On-Road Mobile</b>           | 178              | 30%                      | 2%                   |
| Gasoline Vehicles               | 79               | 13%                      | 1%                   |
| Diesel Vehicles                 | 98               | 17%                      | 1%                   |
| <b>Other Mobile</b>             | 361              | 61%                      | 4%                   |
| Gasoline Fuel                   | 66               | 11%                      | 1%                   |
| Diesel Fuel                     | 224              | 38%                      | 2%                   |
| Other Fuel                      | 71               | 12%                      | 1%                   |
| <b>Natural Sources</b>          | 0                | 0%                       | 0%                   |
| <b>Total</b>                    | 589              | 100%                     | 6%                   |
| <b>Total Statewide</b>          | <b>10023</b>     |                          |                      |

Table 5-56

**Benzene**

The primary sources of benzene emissions in the San Diego Air Basin are mobile sources (approximately 95 percent).

| <b>San Diego - Benzene</b> |                  |                          |                      |
|----------------------------|------------------|--------------------------|----------------------|
| <b>Emissions Source</b>    | <b>tons/year</b> | <b>Percent Air Basin</b> | <b>Percent State</b> |
| <b>Stationary Sources</b>  | 39               | 5%                       | <1%                  |
| <b>Area-wide Sources</b>   | 4                | <1%                      | <1%                  |
| <b>On-Road Mobile</b>      | 488              | 56%                      | 4%                   |
| Gasoline Vehicles          | 462              | 53%                      | 4%                   |
| Diesel Vehicles            | 27               | 3%                       | <1%                  |
| <b>Other Mobile</b>        | 338              | 39%                      | 3%                   |
| Gasoline Fuel              | 248              | 29%                      | 2%                   |
| Diesel Fuel                | 61               | 7%                       | 1%                   |
| Other Fuel                 | 29               | 3%                       | <1%                  |
| <b>Natural Sources</b>     | 0                | 0%                       | 0%                   |
| <b>Total</b>               | 869              | 100%                     | 7%                   |
| <b>Total Statewide</b>     | <b>12060</b>     |                          |                      |

Table 5-57

## 1,3-Butadiene

Approximately 78 percent of the emissions of 1,3-butadiene are from mobile sources, and 22 percent from natural sources.

| San Diego - 1,3-Butadiene |             |                   |               |
|---------------------------|-------------|-------------------|---------------|
| Emissions Source          | tons/year   | Percent Air Basin | Percent State |
| <b>Stationary Sources</b> | 1           | <1%               | <1%           |
| <b>Area-wide Sources</b>  | < 1         | <1%               | <1%           |
| <b>On-Road Mobile</b>     | 101         | 42%               | 3%            |
| Gasoline Vehicles         | 99          | 41%               | 3%            |
| Diesel Vehicles           | 3           | 1%                | <1%           |
| <b>Other Mobile</b>       | 87          | 36%               | 2%            |
| Gasoline Fuel             | 56          | 23%               | 2%            |
| Diesel Fuel               | 6           | 2%                | <1%           |
| Other Fuel                | 24          | 10%               | 1%            |
| <b>Natural Sources</b>    | 52          | 22%               | 1%            |
| <b>Total</b>              | 241         | 100%              | 7%            |
| <b>Total Statewide</b>    | <b>3589</b> |                   |               |

Table 5-58

## Carbon Tetrachloride

Stationary sources such as chemical and allied product manufacturers account for all of the emissions of carbon tetrachloride.

| San Diego - Carbon Tetrachloride |             |                   |               |
|----------------------------------|-------------|-------------------|---------------|
| Emissions Source                 | tons/year   | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>        | 0.09        | 100%              | 5%            |
| <b>Area-wide Sources</b>         | 0           | 0%                | 0%            |
| <b>On-Road Mobile</b>            | 0           | 0%                | 0%            |
| Gasoline Vehicles                | 0           | 0%                | 0%            |
| Diesel Vehicles                  | 0           | 0%                | 0%            |
| <b>Other Mobile</b>              | 0           | 0%                | 0%            |
| Gasoline Fuel                    | 0           | 0%                | 0%            |
| Diesel Fuel                      | 0           | 0%                | 0%            |
| Other Fuel                       | 0           | 0%                | 0%            |
| <b>Natural Sources</b>           | 0           | 0%                | 0%            |
| <b>Total</b>                     | 0.09        | 100%              | 5%            |
| <b>Total Statewide</b>           | <b>1.96</b> |                   |               |

Table 5-59

## Chromium, Hexavalent

Approximately 73 percent of the hexavalent chromium emissions are from other mobile sources. Stationary sources account for approximately 19 percent.

| San Diego - Chromium, Hexavalent |           |                   |               |
|----------------------------------|-----------|-------------------|---------------|
| Emissions Source                 | tons/year | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>        | 0.04      | 19%               | 4%            |
| <b>Area-wide Sources</b>         | < .01     | <1%               | <1%           |
| <b>On-Road Mobile</b>            | 0.02      | 7%                | 1%            |
| Gasoline Vehicles                | 0.02      | 7%                | 1%            |
| Diesel Vehicles                  | < .01     | <1%               | <1%           |
| <b>Other Mobile</b>              | 0.17      | 73%               | 14%           |
| Gasoline Fuel                    | < .01     | <1%               | <1%           |
| Diesel Fuel                      | < .01     | <1%               | <1%           |
| Other Fuel                       | 0.17      | 73%               | 14%           |
| <b>Natural Sources</b>           | 0         | 0%                | 0%            |
| <b>Total</b>                     | 0.23      | 100%              | 20%           |
| <b>Total Statewide</b>           | 1.17      |                   |               |

Table 5-60

## *para*-Dichlorobenzene

All of the emissions of *para*-dichlorobenzene are from consumer products (non-aerosol insect repellants and solid/gel air fresheners).

| San Diego - <i>para</i> -Dichlorobenzene |           |                   |               |
|--|-----------|-------------------|---------------|
| Emissions Source                         | tons/year | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>                | 0         | 0%                | 0%            |
| <b>Area-wide Sources</b>                 | 122       | 100%              | 8%            |
| <b>On-Road Mobile</b>                    | 0         | 0%                | 0%            |
| Gasoline Vehicles                        | 0         | 0%                | 0%            |
| Diesel Vehicles                          | 0         | 0%                | 0%            |
| <b>Other Mobile</b>                      | 0         | 0%                | 0%            |
| Gasoline Fuel                            | 0         | 0%                | 0%            |
| Diesel Fuel                              | 0         | 0%                | 0%            |
| Other Fuel                               | 0         | 0%                | 0%            |
| <b>Natural Sources</b>                   | 0         | 0%                | 0%            |
| <b>Total</b>                             | 122       | 100%              | 8%            |
| <b>Total Statewide</b>                   | 1469      |                   |               |

Table 5-61

## Formaldehyde

Approximately 94 percent of the formaldehyde emissions are from mobile sources.

| San Diego - Formaldehyde  |              |                   |               |
|---------------------------|--------------|-------------------|---------------|
| Emissions Source          | tons/year    | Percent Air Basin | Percent State |
| <b>Stationary Sources</b> | 35           | 2%                | <1%           |
| <b>Area-wide Sources</b>  | 56           | 4%                | <1%           |
| <b>On-Road Mobile</b>     | 463          | 33%               | 2%            |
| Gasoline Vehicles         | 267          | 19%               | 1%            |
| Diesel Vehicles           | 197          | 14%               | 1%            |
| <b>Other Mobile</b>       | 871          | 61%               | 4%            |
| Gasoline Fuel             | 202          | 14%               | 1%            |
| Diesel Fuel               | 448          | 31%               | 2%            |
| Other Fuel                | 221          | 16%               | 1%            |
| <b>Natural Sources</b>    | 0            | 0%                | 0%            |
| <b>Total</b>              | 1426         | 100%              | 6%            |
| <b>Total Statewide</b>    | <b>23154</b> |                   |               |

Table 5-62

## Methylene Chloride

Area-wide sources such as paint removers/strippers, automotive brake cleaners, and other consumer products account for approximately 82 percent of the emissions of methylene chloride.

| San Diego - Methylene Chloride |             |                   |               |
|--------------------------------|-------------|-------------------|---------------|
| Emissions Source               | tons/year   | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>      | 66          | 18%               | 1%            |
| <b>Area-wide Sources</b>       | 301         | 82%               | 5%            |
| <b>On-Road Mobile</b>          | 0           | 0%                | 0%            |
| Gasoline Vehicles              | 0           | 0%                | 0%            |
| Diesel Vehicles                | 0           | 0%                | 0%            |
| <b>Other Mobile</b>            | 0           | 0%                | 0%            |
| Gasoline Fuel                  | 0           | 0%                | 0%            |
| Diesel Fuel                    | 0           | 0%                | 0%            |
| Other Fuel                     | 0           | 0%                | 0%            |
| <b>Natural Sources</b>         | 0           | 0%                | 0%            |
| <b>Total</b>                   | 367         | 100%              | 6%            |
| <b>Total Statewide</b>         | <b>6527</b> |                   |               |

Table 5-63

## Perchloroethylene

Approximately 58 percent of the emissions of perchloroethylene are from stationary sources such as dry cleaning plants, manufacturers of aircraft parts and fabricated metal parts, and other stationary sources.

| San Diego - Perchloroethylene |           |                   |               |
|-------------------------------|-----------|-------------------|---------------|
| Emissions Source              | tons/year | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>     | 245       | 58%               | 5%            |
| <b>Area-wide Sources</b>      | 177       | 42%               | 4%            |
| <b>On-Road Mobile</b>         | 0         | 0%                | 0%            |
| Gasoline Vehicles             | 0         | 0%                | 0%            |
| Diesel Vehicles               | 0         | 0%                | 0%            |
| <b>Other Mobile</b>           | 0         | 0%                | 0%            |
| Gasoline Fuel                 | 0         | 0%                | 0%            |
| Diesel Fuel                   | 0         | 0%                | 0%            |
| Other Fuel                    | 0         | 0%                | 0%            |
| <b>Natural Sources</b>        | 0         | 0%                | 0%            |
| <b>Total</b>                  | 422       | 100%              | 9%            |
| <b>Total Statewide</b>        | 4865      |                   |               |

Table 5-64

## Diesel Particulate Matter

Approximately 98 percent of the emissions of diesel PM are from mobile sources.

| San Diego - Diesel PM     |           |                   |               |
|---------------------------|-----------|-------------------|---------------|
| Emissions Source          | tons/year | Percent Air Basin | Percent State |
| <b>Stationary Sources</b> | 32        | 2%                | <1%           |
| <b>Area-wide Sources</b>  | 0         | 0%                | 0%            |
| <b>On-Road Mobile</b>     | 760       | 36%               | 2%            |
| Gasoline Vehicles         | 0         | 0%                | 0%            |
| Diesel Vehicles           | 760       | 36%               | 2%            |
| <b>Other Mobile</b>       | 1291      | 62%               | 3%            |
| Gasoline Fuel             | 0         | 0%                | 0%            |
| Diesel Fuel               | 1291      | 62%               | 3%            |
| Other Fuel                | 0         | 0%                | 0%            |
| <b>Natural Sources</b>    | 0         | 0%                | 0%            |
| <b>Total</b>              | 2083      | 100%              | 5%            |
| <b>Total Statewide</b>    | 42326     |                   |               |

Table 5-65

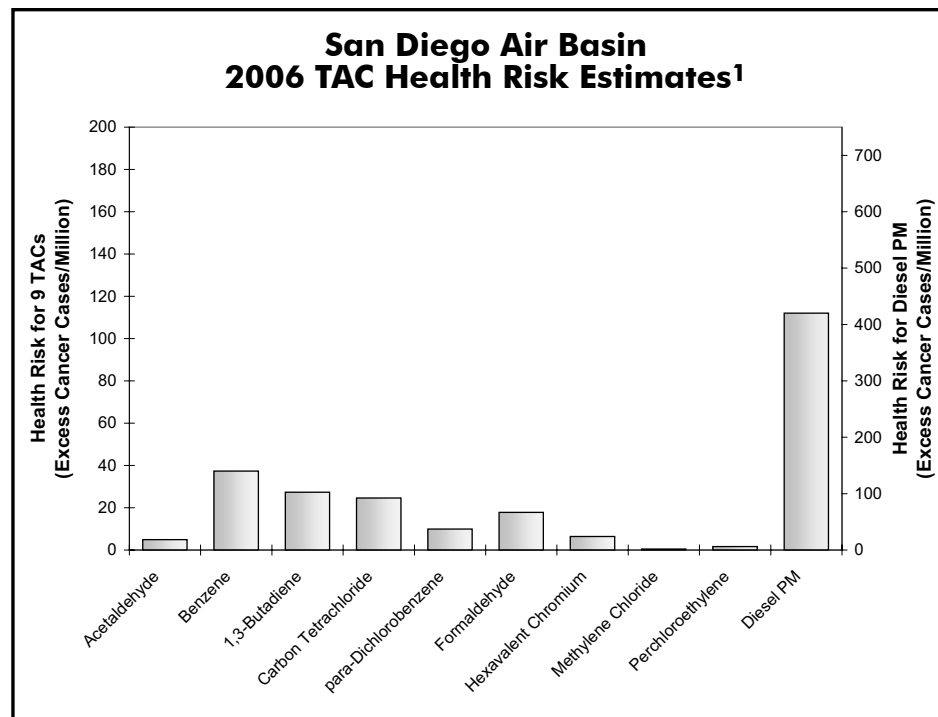
## San Diego Air Basin

### Air Quality and Health Risk

During 1990 through 2006, the ARB monitored outdoor concentrations for various TACs at two sites in the San Diego Air Basin. The sites are located in Chula Vista and El Cajon. This almanac focuses on the top ten TACs based on available data. It is important to note that there are other compounds which pose a significant risk, but have insufficient data or are not monitored, so they are not included in the almanac.

Annual average concentrations and associated health risks for the top ten TACs individually as well as cumulatively for the San Diego Air Basin, are provided in Table 5-66. Data for individual sites are provided in Appendix C. Figure 5-16 shows individual health risk from the ten TACs for the San Diego Air Basin. As indicated on the graph, the health risk data reflect the year of 2006 except those for diesel PM which reflects the year 2000 and for carbon tetrachloride which reflects the year 2003, the most recent years for which estimated data are available. The health risks shown here are based on an annual average concentration for all sites in the air basin. The risk at individual locations may be higher or lower than the average for the air basin, depending on the impact of nearby sources.

Unlike the other nine TACs, diesel PM does not have ambient monitoring data because an accepted measurement method does not currently exist. However, the ARB has made preliminary concentration estimates for the State and its 15 air basins using a PM-based exposure method. The method uses the ARB emission inventory's PM<sub>10</sub> database, ambient PM<sub>10</sub> monitoring data, and the results from several studies on chemical speciation of ambient data. These data were used, along with receptor modeling techniques, to estimate outdoor concentrations of diesel PM. The existing diesel PM estimates are currently being reviewed to reflect control measures that were outlined in the ARB Diesel Risk Reduction Plan.



<sup>1</sup> Data for Diesel PM reflect 2000; carbon tetrachloride reflect 2003; all other TACs reflect 2006.

Figure 5-16

Diesel PM poses the greatest health risk among the ten TACs. In the San Diego Air Basin, the estimated health risk from diesel PM was 420 excess cancer cases per million people in 2000. Although the health risk is higher than the statewide average, it represents a 52 percent drop between 1990 and 2000.

Trends and health risks for the nine other TACs are based on monitoring data. To examine their trends while minimizing the annual variation due to meteorology and sampling schedule, the air basin average concentration for the 1990-1992 time period was compared to that for 2004-2006. The health risks of 1,3-butadiene and benzene have

been reduced by 75 percent and 79 percent, respectively. Methylene chloride and perchloroethylene also show substantial reductions of 85 percent and 86 percent, respectively.

Carbon tetrachloride data show a 30 percent decrease when comparing periods between 1990-1991 (1992 average was not valid) and 2001-2003. Carbon tetrachloride data from mid-February 2004 through 2006 were invalidated.

Although acetaldehyde and formaldehyde data were collected beginning in 1990, concentration and health risk values prior to 1996 were uncertain because the method used to collect these samples underestimated the actual concentrations. The bias was corrected by a method change in 1996; however, the ARB was unable to develop a correction factor for the earlier data. Therefore, the data for years prior to 1996 are not directly comparable to data collected during the later years. The 1996-1998 time period is used instead to compare with that for 2004-2006. Acetaldehyde data show a 32 percent reduction and formaldehyde data show an 11 percent reduction.

*Para*-dichlorobenzene data show a 32 percent increase when comparing periods between 1991-1993 and 2004-2006. Note that *para*-dichlorobenzene has a high number of samples that can not be reliably measured, so its trend is biased by these measurements.

Hexavalent chromium data show a 79 percent decrease when comparing periods between 1992-1994 and 2004-2006. The significant reduction in hexavalent chromium in years after 1995 was attributed to implementation of a series of successful control measures. Similar to *para*-dichlorobenzene, it also had a high number of samples below its LOD. To better assess hexavalent chromium measurements below its LOD, the ARB's Monitoring and Laboratory division used a different approach to analyze hexavalent chromium samples in 2001. The method has been discussed in the Hexavalent Chromium Statewide Air Quality and Health Risk section in this chapter.

In addition to routine monitoring, a special study was conducted at

a site located in the Logan Heights/Barrio Logan area of San Diego during the period of October 1999 through February 2001. Monitoring included both TACs and criteria air pollutants. The Barrio Logan community is located in a large urban area near major freeways, industrial sources, and neighborhood sources such as gas stations, dry cleaners, and automotive repair facilities. Although not included in this almanac, data from Barrio Logan and other community monitoring studies are being used in support of the ARB's Community Health Program. Copies of the full reports are available at [www.arb.ca.gov/ch/programs/sb25/sb25.htm](http://www.arb.ca.gov/ch/programs/sb25/sb25.htm).



# San Diego Air Basin

## Annual Average Concentrations and Health Risks

| Annual Average Concentrations and Health Risks |                          |        |       |       |       |       |       |       |       |       |      |       |       |       |       |       |       |       |
|--|--------------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| TAC  | Conc.1/Risk <sup>2</sup> | 1990   | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999 | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Acetaldehyde                                   | Annual Avg               | 1.33   | 1.5   | 1.22  | 1.41  | 1.48  | 0.64  | 1.03  | 1     | 0.86  | 1.04 | 0.84  | 0.95  | 0.97  | 0.89  | 0.89  | 1.01  | 0.85  |
|  | Health Risk              | 6      | 7     | 6     | 7     | 7     | 3     | 5     | 5     | 4     | 5    | 4     | 5     | 5     | 4     | 4     | 5     | 4     |
| Benzene  | Annual Avg               | 2.25   | 1.7   | 1.48  | 1.16  | 1.39  | 0.98  | 0.76  | 0.76  | 0.76  | 0.86 | 0.65  | 0.505 | 0.491 | 0.483 | 0.371 | 0.404 | 0.362 |
|  | Health Risk              | 208    | 158   | 137   | 107   | 129   | 90    | 71    | 70    | 70    | 79   | 60    | 47    | 45    | 45    | 34    | 37    | 34    |
| 1,3-Butadiene                                  | Annual Avg               | 0.333  | 0.257 | 0.258 | 0.312 | 0.307 | 0.242 | 0.208 | 0.198 | 0.196 | 0.22 | 0.159 | 0.136 | 0.12  | 0.089 | 0.074 | 0.073 | 0.068 |
|  | Health Risk              | 125    | 97    | 97    | 117   | 115   | 91    | 78    | 75    | 74    | 83   | 60    | 51    | 45    | 33    | 28    | 27    | 26    |
| Carbon Tetrachloride                           | Annual Avg               | 0.132  | 0.127 |       | 0.103 |       | 0.099 | 0.077 |       |       |      | 0.094 | 0.086 | 0.092 | 0.093 |       |       |       |
|  | Health Risk              | 35     | 34    |       | 27    |       | 26    | 20    |       |       |      | 25    | 23    | 24    | 25    |       |       |       |
| Chromium, Hexavalent                           | Annual Avg               |        |       | 0.24  | 0.19  | 0.16  | 0.18  | 0.11  | 0.11  | 0.1   | 0.1  | 0.1   |       | 0.045 | 0.05  | 0.03  | 0.043 | 0.05  |
|  | Health Risk              |        |       | 36    | 28    | 23    | 27    | 16    | 16    | 15    | 15   | 15    |       | 7     | 8     | 5     | 6     | 8     |
| <i>para</i> -Dichlorobenzene                   | Annual Avg               |        | 0.1   | 0.11  | 0.13  | 0.15  | 0.12  | 0.11  | 0.13  |       |      |       | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  |
|  | Health Risk              |        | 7     | 8     | 8     | 10    | 8     | 7     | 8     |       |      |       | 10    | 10    | 10    | 10    | 10    | 10    |
| Formaldehyde                                   | Annual Avg               | 1.64   | 1.53  | 1.26  | 1.76  | 2.25  | 2.13  | 2.62  | 2.62  | 2.27  | 2.67 | 2.23  | 2.59  | 2.99  | 2.68  | 2.19  | 2.42  | 2.08  |
|  | Health Risk              | 12     | 11    | 9     | 13    | 17    | 16    | 19    | 19    | 17    | 20   | 16    | 19    | 22    | 20    | 16    | 18    | 15    |
| Methylene Chloride                             | Annual Avg               | 0.59   | 0.83  | 1.34  | 1.13  | 0.73  | 0.63  | 0.59  | 0.57  |       | 0.53 | 0.76  | 0.17  | 0.16  | 0.16  | 0.13  | 0.14  | 0.14  |
|  | Health Risk              | 2      | 3     | 5     | 4     | 3     | 2     | 2     | 2     |       | 2    | 3     | <1    | <1    | <1    | <1    | <1    | <1    |
| Perchloroethylene                              | Annual Avg               | 0.282  | 0.269 | 0.263 | 0.2   | 0.207 | 0.249 | 0.147 | 0.125 |       |      | 0.089 | 0.061 | 0.06  | 0.047 | 0.037 | 0.041 | 0.037 |
|  | Health Risk              | 11     | 11    | 11    | 8     | 8     | 10    | 6     | 5     |       |      | 4     | 2     | 2     | 2     | 1     | 2     | 1     |
| Diesel PM <sup>3</sup>                         | Annual Avg               | (2.9)  |       |       |       |       | (1.9) |       |       |       |      | (1.4) |       |       |       |       |       |       |
|  | Health Risk              | (870)  |       |       |       |       | (570) |       |       |       |      | (420) |       |       |       |       |       |       |
| Average Basin Risk                             | w/o Diesel PM            | 399    | 328   | 309   | 319   | 312   | 273   | 224   | 200   | 180   | 204  | 187   | 157   | 160   | 147   | 98    | 105   | 98    |
|  | w/ Diesel PM             | (1269) |       |       |       |       | (843) |       |       |       |      | (607) |       |       |       |       |       |       |

- 1 Concentrations for Hexavalent chromium are expressed as ng/m3 and concentrations for diesel PM are expressed as ug/m3. Concentrations for all other TACs are expressed as parts per billion.
- 2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. It reflects only those compounds listed in this table and only those with data for that year. There may be other significant compounds for which we do not monitor or have health risk information. Additional information about interpreting the toxic air contaminant air quality trends can be found in Chapter 1, *Interpreting the Emission and Air Quality Statistics*.
- 3 Diesel PM estimates are based on receptor modeling techniques, and the estimates are available only for selected years. Currently, the estimates are being reviewed.

Table 5-66

## Sacramento Valley Air Basin

### 2006 Emission Inventory by Compound

#### Acetaldehyde

Approximately 69 percent of the emissions of acetaldehyde are from mobile sources. Another 29 percent are from area-wide sources, including the burning of wood in residential fireplaces and wood stoves.

| Sacramento Valley - Acetaldehyde |              |                   |               |
|----------------------------------|--------------|-------------------|---------------|
| Emissions Source                 | tons/year    | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>        | 25           | 2%                | <1%           |
| <b>Area-wide Sources</b>         | 302          | 29%               | 3%            |
| <b>On-Road Mobile</b>            | 275          | 26%               | 3%            |
| Gasoline Vehicles                | 74           | 7%                | 1%            |
| Diesel Vehicles                  | 201          | 19%               | 2%            |
| <b>Other Mobile</b>              | 445          | 42%               | 4%            |
| Gasoline Fuel                    | 79           | 8%                | 1%            |
| Diesel Fuel                      | 320          | 31%               | 3%            |
| Other Fuel                       | 45           | 4%                | <1%           |
| <b>Natural Sources</b>           | 0            | 0%                | 0%            |
| <b>Total</b>                     | 1047         | 100%              | 10%           |
| <b>Total Statewide</b>           | <b>10023</b> |                   |               |

Table 5-67

#### Benzene

The primary sources of benzene emissions in the Sacramento Valley Air Basin are mobile sources (approximately 86 percent).

| Sacramento Valley - Benzene |              |                   |               |
|-----------------------------|--------------|-------------------|---------------|
| Emissions Source            | tons/year    | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>   | 141          | 14%               | 1%            |
| <b>Area-wide Sources</b>    | 8            | 1%                | <1%           |
| <b>On-Road Mobile</b>       | 493          | 47%               | 4%            |
| Gasoline Vehicles           | 439          | 42%               | 4%            |
| Diesel Vehicles             | 55           | 5%                | <1%           |
| <b>Other Mobile</b>         | 397          | 38%               | 3%            |
| Gasoline Fuel               | 291          | 28%               | 2%            |
| Diesel Fuel                 | 87           | 8%                | 1%            |
| Other Fuel                  | 19           | 2%                | <1%           |
| <b>Natural Sources</b>      | 0            | 0%                | 0%            |
| <b>Total</b>                | 1039         | 100%              | 9%            |
| <b>Total Statewide</b>      | <b>12060</b> |                   |               |

Table 5-68

## 1,3-Butadiene

Approximately 51 percent of the emissions of 1,3-butadiene are from mobile sources.

| Sacramento Valley - 1,3-Butadiene |             |                   |               |
|-----------------------------------|-------------|-------------------|---------------|
| Emissions Source                  | tons/year   | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>         | < 1         | <1%               | <1%           |
| <b>Area-wide Sources</b>          | 42          | 11%               | 1%            |
| <b>On-Road Mobile</b>             | 98          | 26%               | 3%            |
| Gasoline Vehicles                 | 93          | 25%               | 3%            |
| Diesel Vehicles                   | 5           | 1%                | <1%           |
| <b>Other Mobile</b>               | 92          | 24%               | 3%            |
| Gasoline Fuel                     | 67          | 18%               | 2%            |
| Diesel Fuel                       | 8           | 2%                | <1%           |
| Other Fuel                        | 16          | 4%                | <1%           |
| <b>Natural Sources</b>            | 143         | 38%               | 4%            |
| <b>Total</b>                      | 376         | 100%              | 10%           |
| <b>Total Statewide</b>            | <b>3589</b> |                   |               |

Table 5-69

## Carbon Tetrachloride

Stationary sources such as chemical and allied product manufacturers account for all of the emissions of carbon tetrachloride.

| Sacramento Valley - Carbon Tetrachloride |             |                   |               |
|--|-------------|-------------------|---------------|
| Emissions Source                         | tons/year   | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>                | 0.05        | 100%              | 3%            |
| <b>Area-wide Sources</b>                 | 0           | 0%                | 0%            |
| <b>On-Road Mobile</b>                    | 0           | 0%                | 0%            |
| Gasoline Vehicles                        | 0           | 0%                | 0%            |
| Diesel Vehicles                          | 0           | 0%                | 0%            |
| <b>Other Mobile</b>                      | 0           | 0%                | 0%            |
| Gasoline Fuel                            | 0           | 0%                | 0%            |
| Diesel Fuel                              | 0           | 0%                | 0%            |
| Other Fuel                               | 0           | 0%                | 0%            |
| <b>Natural Sources</b>                   | 0           | 0%                | 0%            |
| <b>Total</b>                             | 0.05        | 100%              | 3%            |
| <b>Total Statewide</b>                   | <b>1.96</b> |                   |               |

Table 5-70

## Chromium, Hexavalent

Approximately 66 percent of the hexavalent chromium emissions are from mobile sources.

| Sacramento Valley - Chromium, Hexavalent |           |                   |               |
|--|-----------|-------------------|---------------|
| Emissions Source                         | tons/year | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>                | 0.01      | 31%               | 1%            |
| <b>Area-wide Sources</b>                 | < .01     | 3%                | <1%           |
| <b>On-Road Mobile</b>                    | 0.01      | 29%               | 1%            |
| Gasoline Vehicles                        | 0.01      | 27%               | 1%            |
| Diesel Vehicles                          | < .01     | 2%                | <1%           |
| <b>Other Mobile</b>                      | 0.01      | 37%               | 1%            |
| Gasoline Fuel                            | < .01     | <1%               | <1%           |
| Diesel Fuel                              | < .01     | <1%               | <1%           |
| Other Fuel                               | 0.01      | 36%               | 1%            |
| <b>Natural Sources</b>                   | 0         | 0%                | 0%            |
| <b>Total</b>                             | 0.04      | 100%              | 3%            |
| <b>Total Statewide</b>                   | 1.17      |                   |               |

Table 5-71

## *para*-Dichlorobenzene

Most of the emissions of *para*-dichlorobenzene are from consumer products (non-aerosol insect repellants and solid/gel air fresheners).

| Sacramento Valley - <i>para</i> -Dichlorobenzene |           |                   |               |
|--|-----------|-------------------|---------------|
| Emissions Source                                 | tons/year | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>                        | < 1       | 0%                | 0%            |
| <b>Area-wide Sources</b>                         | 105       | 100%              | 7%            |
| <b>On-Road Mobile</b>                            | 0         | 0%                | 0%            |
| Gasoline Vehicles                                | 0         | 0%                | 0%            |
| Diesel Vehicles                                  | 0         | 0%                | 0%            |
| <b>Other Mobile</b>                              | 0         | 0%                | 0%            |
| Gasoline Fuel                                    | 0         | 0%                | 0%            |
| Diesel Fuel                                      | 0         | 0%                | 0%            |
| Other Fuel                                       | 0         | 0%                | 0%            |
| <b>Natural Sources</b>                           | 0         | 0%                | 0%            |
| <b>Total</b>                                     | 105       | 100%              | 7%            |
| <b>Total Statewide</b>                           | 1469      |                   |               |

Table 5-72

## Formaldehyde

Approximately 76 percent of the formaldehyde emissions are from mobile sources, and 16 percent are from area-wide sources.

| Sacramento Valley - Formaldehyde |              |                   |               |
|----------------------------------|--------------|-------------------|---------------|
| Emissions Source                 | tons/year    | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>        | 179          | 8%                | 1%            |
| <b>Area-wide Sources</b>         | 341          | 16%               | 1%            |
| <b>On-Road Mobile</b>            | 645          | 29%               | 3%            |
| Gasoline Vehicles                | 243          | 11%               | 1%            |
| Diesel Vehicles                  | 402          | 18%               | 2%            |
| <b>Other Mobile</b>              | 1027         | 47%               | 4%            |
| Gasoline Fuel                    | 243          | 11%               | 1%            |
| Diesel Fuel                      | 640          | 29%               | 3%            |
| Other Fuel                       | 144          | 7%                | 1%            |
| <b>Natural Sources</b>           | 0            | 0%                | 0%            |
| <b>Total</b>                     | 2193         | 100%              | 9%            |
| <b>Total Statewide</b>           | <b>23154</b> |                   |               |

Table 5-73

## Methylene Chloride

Approximately 70 percent of the emissions of methylene chloride are from area-wide sources such as paint removers/strippers, automotive brake cleaners, and other consumer products.

| Sacramento Valley - Methylene Chloride |             |                   |               |
|--|-------------|-------------------|---------------|
| Emissions Source                       | tons/year   | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>              | 108         | 30%               | 2%            |
| <b>Area-wide Sources</b>               | 258         | 70%               | 4%            |
| <b>On-Road Mobile</b>                  | 0           | 0%                | 0%            |
| Gasoline Vehicles                      | 0           | 0%                | 0%            |
| Diesel Vehicles                        | 0           | 0%                | 0%            |
| <b>Other Mobile</b>                    | 0           | 0%                | 0%            |
| Gasoline Fuel                          | 0           | 0%                | 0%            |
| Diesel Fuel                            | 0           | 0%                | 0%            |
| Other Fuel                             | 0           | 0%                | 0%            |
| <b>Natural Sources</b>                 | 0           | 0%                | 0%            |
| <b>Total</b>                           | 366         | 100%              | 6%            |
| <b>Total Statewide</b>                 | <b>6527</b> |                   |               |

Table 5-74

## Perchloroethylene

Approximately 63 percent of the emissions of perchloroethylene are from stationary sources such as dry cleaning plants and manufacturers of aircraft parts and fabricated metal parts.

| Sacramento Valley - Perchloroethylene |           |                   |               |
|---------------------------------------|-----------|-------------------|---------------|
| Emissions Source                      | tons/year | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>             | 259       | 63%               | 5%            |
| <b>Area-wide Sources</b>              | 152       | 37%               | 3%            |
| <b>On-Road Mobile</b>                 | 0         | 0%                | 0%            |
| Gasoline Vehicles                     | 0         | 0%                | 0%            |
| Diesel Vehicles                       | 0         | 0%                | 0%            |
| <b>Other Mobile</b>                   | 0         | 0%                | 0%            |
| Gasoline Fuel                         | 0         | 0%                | 0%            |
| Diesel Fuel                           | 0         | 0%                | 0%            |
| Other Fuel                            | 0         | 0%                | 0%            |
| <b>Natural Sources</b>                | 0         | 0%                | 0%            |
| <b>Total</b>                          | 410       | 100%              | 8%            |
| <b>Total Statewide</b>                | 4865      |                   |               |

Table 5-75

## Diesel Particulate Matter

Approximately 93 percent of the emissions of diesel PM are from mobile sources.

| Sacramento Valley - Diesel PM |           |                   |               |
|-------------------------------|-----------|-------------------|---------------|
| Emissions Source              | tons/year | Percent Air Basin | Percent State |
| <b>Stationary Sources</b>     | 218       | 7%                | 1%            |
| <b>Area-wide Sources</b>      | 0         | 0%                | 0%            |
| <b>On-Road Mobile</b>         | 1469      | 46%               | 3%            |
| Gasoline Vehicles             | 0         | 0%                | 0%            |
| Diesel Vehicles               | 1469      | 46%               | 3%            |
| <b>Other Mobile</b>           | 1472      | 47%               | 3%            |
| Gasoline Fuel                 | 0         | 0%                | 0%            |
| Diesel Fuel                   | 1472      | 47%               | 3%            |
| Other Fuel                    | 0         | 0%                | 0%            |
| <b>Natural Sources</b>        | 0         | 0%                | 0%            |
| <b>Total</b>                  | 3159      | 100%              | 7%            |
| <b>Total Statewide</b>        | 42326     |                   |               |

Table 5-76

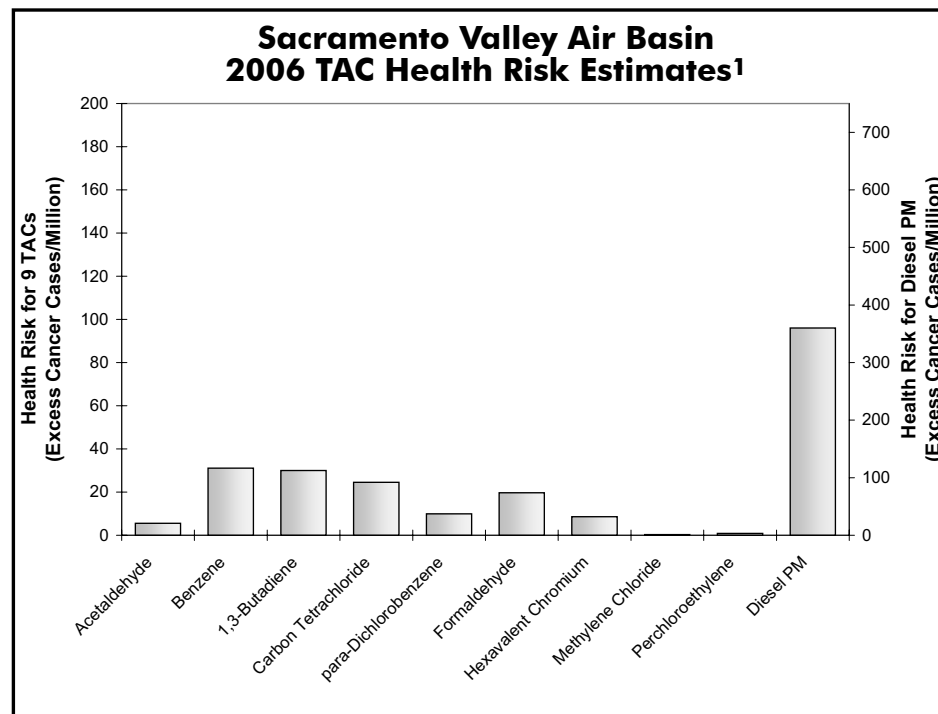
## Sacramento Valley Air Basin

### Air Quality and Health Risk

Unlike the other air basins described in this almanac, TAC monitoring in the Sacramento Valley Air Basin has not been continuous at any site. TAC concentrations were monitored at the Chico-Salem Street site during 1990 through the middle of 1992. The site was then moved to Chico-Manzanita Avenue. While there was monitoring in the Chico area for 1992, an annual average is not included here because neither site has a full year of data. Similarly, TAC concentrations were monitored at the Citrus Heights site during 1990 through part of 1993, when the site was relocated to Roseville. Again, annual average concentration and associated health risk are not available for the year during which the site was moved because neither site has a full year of data. This almanac focuses on the top ten TACs based on available data. It is important to note that there are other compounds which pose a significant risk, but have insufficient data or are not monitored, so they are not included in the almanac.

Annual average concentrations and associated health risks for the top ten TACs individually as well as cumulatively for the Sacramento Valley Air Basin, are provided in Table 5-77. Data for individual sites are provided in Appendix C. Figure 5-17 shows individual health risk from the ten TACs for the Sacramento Valley Air Basin. As indicated on the graph, the health risk data reflect the year of 2006 except those for diesel PM which reflects the year 2000 and for carbon tetrachloride which reflects the year 2003, the most recent years for which estimated data are available. The health risks shown here are based on an annual average concentration for all sites in the air basin. The risk at individual locations may be higher or lower than the average for the air basin, depending on the impact of nearby sources.

Unlike the other nine TACs, diesel PM does not have ambient monitoring data because an accepted measurement method does not currently exist. However, the ARB has made preliminary concentration estimates for the State and its 15 air basins using a PM-based expo-



<sup>1</sup> Data for Diesel PM reflect 2000; carbon tetrachloride reflect 2003; all other TACs reflect 2006.  
Figure 5-17

sure method. The method uses the ARB emission inventory's PM<sub>10</sub> database, ambient PM<sub>10</sub> monitoring data, and the results from several studies on chemical speciation of ambient data. These data were used, along with receptor modeling techniques, to estimate outdoor concentrations of diesel PM. The existing diesel PM estimates are currently being reviewed to reflect control measures that were outlined in the ARB Diesel Risk Reduction Plan.

Diesel PM poses the greatest health risk among the ten TACs. In the Sacramento Valley Air Basin, the estimated health risk from diesel PM was 360 excess cancer cases per million people in 2000. Although

the health risk is higher than the statewide average, it represents a 52 percent drop between 1990 and 2000.

Trends and health risks for the nine other TACs are based on monitoring data. To examine their trends while minimizing the annual variation due to meteorology and sampling schedule, the air basin average concentration for the 1990-1992 time period was compared to that for 2004-2006. The health risks of 1,3-butadiene and benzene have been reduced by 77 percent and 81 percent, respectively. Methylene chloride and perchloroethylene also show substantial reductions of 88 percent and 75 percent, respectively.

Carbon tetrachloride data show a 27 percent decrease when comparing periods between 1990-1991 (1992 average was not valid) and 2001-2003. Carbon tetrachloride data from mid-February 2004 through 2006 were invalidated.

Although acetaldehyde and formaldehyde data were collected beginning in 1990, concentration and health risk values prior to 1996 were uncertain because the method used to collect these samples underestimated the actual concentrations. The bias was corrected by a method change in 1996; however, the ARB was unable to develop a correction factor for the earlier data. Therefore, the data for years prior to 1996 are not directly comparable to data collected during the later years. The 1996-1998 time period is used instead to compare with that for 2004-2006. Acetaldehyde data show an 18 percent and formaldehyde data show a three percent increase.

*Para*-dichlorobenzene data show a 43 percent increase when comparing periods between 1991-1993 and 2004-2006. Note that *para*-dichlorobenzene has a high number of samples that can not be reliably measured, so its trend is biased by these measurements.

Hexavalent chromium data show a 62 percent decrease when comparing periods between 1992-1994 and 2004-2006. The significant reduction in hexavalent chromium in years after 1995 was attributed to implementation of a series of successful control measures. Similar to *para*-dichlorobenzene, it also had a high number of samples below

its LOD. To better assess the hexavalent chromium measurements below its LOD, the ARB's Monitoring and Laboratory division used a different approach to analyze hexavalent chromium samples in 2001. The method is discussed in the Hexavalent Chromium Statewide Air Quality and Health Risk section in this chapter.



# Sacramento Valley Air Basin

## Annual Average Concentrations and Health Risks

| Annual Average Concentrations and Health Risks |                          |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|--|--------------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| TAC  | Conc.1/Risk <sup>2</sup> | 1990   | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Acetaldehyde                                   | Annual Avg               | 1.29   |       |       | 1.37  | 1.04  | 0.39  | 1.03  | 1.05  | 0.92  | 1.23  | 0.83  | 0.74  | 1.14  | 1.04  | 1.09  | 1.15  | 0.92  |
|  | Health Risk              | 6      |       |       | 7     | 5     | 2     | 5     | 5     | 4     | 6     | 4     | 4     | 6     | 5     | 5     | 6     | 4     |
| Benzene  | Annual Avg               | 2.02   | 1.88  | 1.35  | 1     | 1.02  | 0.8   | 0.56  | 0.55  | 0.5   | 0.56  | 0.45  | 0.422 | 0.443 | 0.406 | 0.406 | 0.335 | 0.268 |
|  | Health Risk              | 187    | 174   | 125   | 92    | 95    | 74    | 51    | 51    | 47    | 52    | 42    | 39    | 41    | 38    | 38    | 31    | 25    |
| 1,3-Butadiene                                  | Annual Avg               | 0.378  | 0.332 | 0.283 | 0.288 | 0.221 | 0.186 | 0.176 | 0.16  | 0.154 | 0.128 | 0.119 | 0.125 | 0.116 | 0.094 | 0.093 | 0.08  | 0.051 |
|  | Health Risk              | 142    | 125   | 106   | 108   | 83    | 70    | 66    | 60    | 58    | 48    | 45    | 47    | 44    | 35    | 35    | 30    | 19    |
| Carbon Tetrachloride                           | Annual Avg               | 0.123  | 0.123 |       | 0.109 |       | 0.099 | 0.078 |       |       |       | 0.094 | 0.088 | 0.09  | 0.093 |       |       |       |
|  | Health Risk              | 33     | 32    |       | 29    |       | 26    | 21    |       |       |       | 25    | 23    | 24    | 25    |       |       |       |
| Chromium, Hexavalent                           | Annual Avg               |        |       | 0.17  | 0.14  | 0.13  | 0.18  | 0.11  | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.053 | 0.05  | 0.068 | 0.058 | 0.041 |
|  | Health Risk              |        |       | 26    | 21    | 19    | 26    | 16    | 15    | 15    | 15    | 15    | 15    | 8     | 8     | 10    | 9     | 6     |
| <i>para</i> -Dichlorobenzene                   | Annual Avg               |        |       | 0.11  | 0.1   | 0.2   | 0.14  | 0.11  | 0.14  |       |       | 0.1   | 0.13  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  |
|  | Health Risk              |        |       | 7     | 7     | 14    | 9     | 7     | 10    |       |       | 7     | 9     | 10    | 10    | 10    | 10    | 10    |
| Formaldehyde                                   | Annual Avg               | 1.57   |       |       | 1.77  | 1.75  | 1.91  | 2.76  | 2.92  | 2.52  | 3.61  | 2.51  | 2.41  | 3.79  | 3.53  | 2.76  | 2.68  | 2.54  |
|  | Health Risk              | 12     |       |       | 13    | 13    | 14    | 20    | 22    | 19    | 27    | 18    | 18    | 28    | 26    | 20    | 20    | 19    |
| Methylene Chloride                             | Annual Avg               | 0.65   | 0.56  | 0.55  | 0.98  | 0.66  | 0.53  | 0.54  | 0.52  |       | 0.6   | 0.57  | 0.29  | 0.08  | 0.08  | 0.07  | 0.08  | 0.07  |
|  | Health Risk              | 2      | 2     | 2     | 3     | 2     | 2     | 2     | 2     |       | 2     | 2     | 1     | <1    | <1    | <1    | <1    | <1    |
| Perchloroethylene                              | Annual Avg               | 0.071  | 0.074 | 0.063 | 0.052 | 0.165 | 0.049 | 0.055 | 0.052 |       |       | 0.058 | 0.027 | 0.025 | 0.018 | 0.015 | 0.021 | 0.015 |
|  | Health Risk              | 3      | 3     | 3     | 2     | 7     | 2     | 2     | 2     |       |       | 2     | 1     | 1     | <1    | <1    | <1    | <1    |
| <i>Diesel PM</i> <sup>3</sup>                  | Annual Avg               | (2.5)  |       |       |       |       | (1.6) |       |       |       |       | (1.2) |       |       |       |       |       |       |
|  | Health Risk              | (750)  |       |       |       |       | (480) |       |       |       |       | (360) |       |       |       |       |       |       |
| Average Basin Risk                             | w/o Diesel PM            | 385    | 336   | 269   | 282   | 238   | 225   | 190   | 167   | 143   | 150   | 160   | 157   | 162   | 147   | 118   | 106   | 83    |
|  | w/ Diesel PM             | (1153) |       |       |       |       | (705) |       |       |       |       | (520) |       |       |       |       |       |       |

- 1 Concentrations for Hexavalent chromium are expressed as ng/m3 and concentrations for diesel PM are expressed as ug/m3. Concentrations for all other TACs are expressed as parts per billion.
- 2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. It reflects only those compounds listed in this table and only those with data for that year. There may be other significant compounds for which we do not monitor or have health risk information. Additional information about interpreting the toxic air contaminant air quality trends can be found in Chapter 1, *Interpreting the Emission and Air Quality Statistics*.
- 3 Diesel PM estimates are based on receptor modeling techniques, and the estimates are available only for selected years. Currently, the estimates are being reviewed.

Table 5-77

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# APPENDIX A

## County Level Emissions and Air Quality by Air Basin

**Appendix A: County Level Emissions and Air Quality by Air Basin**

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## Introduction

This appendix contains criteria pollutant emission trends and forecasts and air quality trend data for each of California's 15 air basins. The emissions data are summarized first, by county or county portion within the air basin. Emissions data are included for the ozone precursors NO<sub>x</sub> and ROG, directly emitted PM<sub>10</sub> and PM<sub>2.5</sub>, and CO. The values represent the total tons of pollutant emissions per average day, listed every five years, from 1975 to 2020. In addition to these data, tables listing the highest emitting facilities for NO<sub>x</sub>, ROG, PM<sub>10</sub>, and PM<sub>2.5</sub>, by air basin, are also included. The lists of high emitting facilities consist of only the top ten facilities exceeding 100 tons per year. The emission totals are the most recent data available from the respective district agencies. Some facilities may have reduced or increased emissions since these data were collected, and these changes will be reflected in subsequent editions of the almanac. Finally, the lists do not include military bases, landfills, or airports.

The air quality trend statistics for each county or county portion are also organized alphabetically, by air basin. The time period covered is 1986 through 2005 for ozone, CO, NO<sub>2</sub>, and SO<sub>2</sub>, 1988 through 2005 for PM<sub>10</sub>, and 1999 through 2005 for PM<sub>2.5</sub>. Tables for some areas include blanks, indicating that no monitoring data are available or data are incomplete for a given statistic. In a number of cases, tables are completely blank. These blank tables are included for completeness, but the lack of data is noted on the tables.

Air quality statistics can fluctuate from year-to-year because of the influence of meteorology and/or changes in emissions. However, the statistics can also vary because of a change in monitoring site. The peak and maximum value air quality statistics reflect the highest value for the statistic at any site in the area. As a result, the statistic may not reflect the same site during the entire trend period. For example, the maximum 8-hour average CO concentrations in Imperial County in the Salton Sea Air Basin were below the levels of the State

and national standards from 1984 through 1993. In 1994, however, the concentrations show a significant increase, and both the State and national standards were violated. The CO concentrations in this air basin did not suddenly increase during 1994. Instead, monitoring began at a new site in Calexico, and the concentrations at the new site were higher than at the existing set of sites in the Salton Sea Air Basin. Information about the time periods for which air quality data are available for different pollutants at sites in California and Baja, Mexico is available on the web at [www.arb.ca.gov/aqd/netrpt/netrpt.htm](http://www.arb.ca.gov/aqd/netrpt/netrpt.htm).

Since the peak and maximum air quality statistics reflect the highest values in the area, the monitoring sites represented also may not be consistent among the various statistics during a particular year. For example, the monitoring site reflected in the maximum 1-hour ozone concentration may not be the same as the monitoring site reflected in the maximum 8-hour ozone concentration.

In contrast to the peak and maximum statistics, the counts of days above a standard generally reflect a composite, countywide value (in other words, a count of the total number of days an exceedance occurred at any site in the county.) The exception is PM<sub>10</sub>, these data reflect the estimated number of exceedances at the one site with the highest total in the air basin.

There are different methods to calculate the estimated number of exceedance days, and the numbers in this appendix may differ from estimates found in other sources. Finally, no estimates are provided for the number of PM<sub>2.5</sub> exceedance days because California does not have a 24-hour standard for this pollutant.

*Great Basin Valleys Air Basin*

## County Emission Trends and Forecasts

| County          | NO <sub>x</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | ROG Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |   |
|-----------------|--|------|------|------|------|------|------|------|------|------|--|------|------|------|------|------|------|------|------|------|---|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                     | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |   |
| Alpine          | 0  | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0  | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1 |
| Inyo*           | 7  | 7    | 6    | 6    | 6    | 5    | 5    | 4    | 3    | 3    | 8  | 8    | 8    | 7    | 6    | 6    | 6    | 6    | 6    | 6    | 6 |
| Mono*           | 3  | 4    | 4    | 4    | 3    | 3    | 3    | 3    | 2    | 1    | 4  | 5    | 5    | 4    | 3    | 3    | 3    | 3    | 3    | 3    | 3 |
| Air Basin Total | 10   | 11   | 10   | 10   | 9    | 9    | 9    | 7    | 6    | 4    | 13                                       | 14   | 13   | 12   | 10   | 9    | 10   | 9    | 9    | 9    | 9 |

| County          | Directly Emitted PM <sub>10</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | CO Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |    |
|-----------------|--|------|------|------|------|------|------|------|------|------|---|------|------|------|------|------|------|------|------|------|----|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                    | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |    |
| Alpine          | 1  | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 3    | 3                                       | 4    | 4    | 4    | 4    | 3    | 3    | 3    | 3    | 3    | 3  |
| Inyo*           | 637  | 637  | 638  | 637  | 636  | 635  | 120  | 39   | 40   | 40   | 68                                      | 65   | 54   | 48   | 35   | 28   | 25   | 23   | 21   | 21   | 21 |
| Mono*           | 25   | 28   | 28   | 31   | 32   | 32   | 33   | 33   | 35   | 36   | 37                                      | 43   | 42   | 33   | 25   | 21   | 18   | 17   | 16   | 15   | 15 |
| Air Basin Total | 663  | 667  | 667  | 670  | 669  | 669  | 155  | 74   | 76   | 79   | 107                                     | 112  | 100  | 86   | 64   | 52   | 47   | 43   | 40   | 39   | 39 |

| County          | Directly Emitted PM <sub>2.5</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975  | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Alpine          | 0   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Inyo*           | 85  | 85   | 85   | 85   | 85   | 84   | 16   | 5    | 5    | 6    |
| Mono*           | 4   | 4    | 4    | 5    | 5    | 5    | 5    | 5    | 5    | 5    |
| Air Basin Total | 89  | 89   | 89   | 90   | 90   | 89   | 21   | 11   | 11   | 11   |

\* Values for these counties include emissions from the Owens and Mono Lake Beds.

Table A-1

**Great Basin Valleys Air Basin**  
**High Emitting Facilities**

| <b>Oxides of Nitrogen (NO<sub>x</sub>)</b> |             |                      |
|--|-------------|----------------------|
| <b>Facility Name</b>                       | <b>City</b> | <b>Tons per Year</b> |
| Coso Operating Company (Steam Plant)       | Little Lake | 165                  |

| <b>Reactive Organic Gases (ROG)</b> |             |                      |
|-------------------------------------|-------------|----------------------|
| <b>Facility Name</b>                | <b>City</b> | <b>Tons per Year</b> |

No High Emitting Facilities

| <b>Directly Emitted Particulate Matter (PM<sub>10</sub>)</b> |             |                      |
|--|-------------|----------------------|
| <b>Facility Name</b>   | <b>City</b> | <b>Tons per Year</b> |

No High Emitting Facilities

| <b>Directly Emitted Particulate Matter (PM<sub>2.5</sub>)</b> |             |                      |
|---|-------------|----------------------|
| <b>Facility Name</b>  | <b>City</b> | <b>Tons per Year</b> |

No High Emitting Facilities

*Lake County Air Basin*

## County Emission Trends and Forecasts

| County | NO <sub>x</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | ROG Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|--------|--|------|------|------|------|------|------|------|------|------|--|------|------|------|------|------|------|------|------|------|
|        | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                     | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Lake   | 7  | 8    | 9    | 9    | 9    | 7    | 7    | 7    | 6    | 5    | 12                                       | 14   | 16   | 15   | 14   | 13   | 12   | 11   | 11   | 11   |

| County | Directly Emitted PM <sub>10</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | CO Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|--------|--|------|------|------|------|------|------|------|------|------|---|------|------|------|------|------|------|------|------|------|
|        | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                    | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Lake   | 8  | 9    | 11   | 11   | 11   | 12   | 12   | 12   | 12   | 13   | 102                                     | 113  | 126  | 120  | 105  | 88   | 80   | 75   | 71   | 69   |

| County | Directly Emitted PM <sub>2.5</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|--------|---|------|------|------|------|------|------|------|------|------|
|        | 1975  | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Lake   | 2   | 3    | 3    | 3    | 4    | 4    | 4    | 4    | 4    | 4    |

Table A-3

*Lake County Air Basin*  
High Emitting Facilities

| Oxides of Nitrogen (NO <sub>x</sub> ) |      |               |
|---------------------------------------|------|---------------|
| Facility Name                         | City | Tons per Year |

No High Emitting Facilities

| Reactive Organic Gases (ROG) |      |               |
|------------------------------|------|---------------|
| Facility Name                | City | Tons per Year |

No High Emitting Facilities

| Directly Emitted Particulate Matter (PM <sub>10</sub> ) |      |               |
|---|------|---------------|
| Facility Name   | City | Tons per Year |

No High Emitting Facilities

| Directly Emitted Particulate Matter (PM <sub>2.5</sub> ) |      |               |
|--|------|---------------|
| Facility Name  | City | Tons per Year |

No High Emitting Facilities

*Lake Tahoe Air Basin*

## County Emission Trends and Forecasts

| County          | NO <sub>x</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | ROG Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|--|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                     | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| El Dorado       | 5  | 4    | 4    | 5    | 5    | 4    | 4    | 3    | 3    | 2    | 11                                       | 8    | 7    | 7    | 6    | 5    | 4    | 4    | 4    | 4    |
| Placer          | 2  | 1    | 2    | 2    | 2    | 2    | 2    | 2    | 1    | 1    | 6  | 3    | 3    | 3    | 3    | 3    | 2    | 2    | 2    | 2    |
| Air Basin Total | 7  | 5    | 6    | 7    | 7    | 6    | 6    | 5    | 4    | 3    | 17                                       | 11   | 10   | 9    | 9    | 8    | 7    | 6    | 6    | 6    |

| County          | Directly Emitted PM <sub>10</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | CO Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                    | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| El Dorado       | 2  | 2    | 3    | 3    | 3    | 4    | 4    | 4    | 4    | 5    | 131                                     | 95   | 79   | 64   | 51   | 42   | 33   | 30   | 28   | 28   |
| Placer          | 1  | 1    | 1    | 1    | 1    | 1    | 2    | 2    | 2    | 2    | 75                                      | 33   | 33   | 27   | 22   | 17   | 14   | 12   | 11   | 11   |
| Air Basin Total | 3  | 4    | 4    | 5    | 5    | 5    | 5    | 6    | 6    | 6    | 206                                     | 129  | 112  | 92   | 73   | 59   | 46   | 42   | 40   | 38   |

| County          | Directly Emitted PM <sub>2.5</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975  | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| El Dorado       | 1   | 1    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Placer          | 0   | 0    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    |
| Air Basin Total | 2   | 2    | 2    | 2    | 2    | 3    | 3    | 3    | 3    | 3    |

A portion of El Dorado County lies within the Mountain Counties Air Basin. Portions of Placer County lie within the Mountain Counties and Sacramento Valley Air Basins.

Table A-5

*Lake Tahoe Air Basin*  
High Emitting Facilities

| Oxides of Nitrogen (NO <sub>x</sub> ) |      |               |
|---------------------------------------|------|---------------|
| Facility Name                         | City | Tons per Year |

No High Emitting Facilities

| Reactive Organic Gases (ROG) |      |               |
|------------------------------|------|---------------|
| Facility Name                | City | Tons per Year |

No High Emitting Facilities

| Directly Emitted Particulate Matter (PM <sub>10</sub> ) |      |               |
|---|------|---------------|
| Facility Name   | City | Tons per Year |

No High Emitting Facilities

| Directly Emitted Particulate Matter (PM <sub>2.5</sub> ) |      |               |
|--|------|---------------|
| Facility Name  | City | Tons per Year |

No High Emitting Facilities

## Mojave Desert Air Basin

### County Emission Trends and Forecasts

| County          | NO <sub>x</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | ROG Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|--|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                     | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Kern            | 62   | 41   | 50   | 66   | 57   | 61   | 59   | 56   | 55   | 52   | 66                                       | 47   | 32   | 29   | 19   | 17   | 15   | 14   | 13   | 12   |
| Los Angeles     | 19   | 25   | 28   | 38   | 33   | 34   | 34   | 25   | 20   | 17   | 38                                       | 43   | 43   | 41   | 28   | 24   | 23   | 20   | 21   | 22   |
| Riverside       | 11   | 12   | 13   | 25   | 21   | 23   | 21   | 19   | 14   | 11   | 5  | 4    | 5    | 6    | 5    | 4    | 4    | 4    | 4    | 4    |
| San Bernardino  | 139  | 160  | 157  | 200  | 182  | 190  | 168  | 135  | 119  | 110  | 37                                       | 44   | 55   | 75   | 62   | 56   | 57   | 52   | 52   | 54   |
| Air Basin Total | 231  | 238  | 248  | 330  | 293  | 308  | 282  | 235  | 208  | 190  | 145                                      | 138  | 136  | 151  | 115  | 101  | 100  | 90   | 89   | 92   |

| County          | Directly Emitted PM <sub>10</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | CO Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                    | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Kern            | 49   | 39   | 35   | 50   | 30   | 32   | 32   | 29   | 29   | 29   | 728                                     | 479  | 244  | 189  | 128  | 113  | 101  | 89   | 80   | 74   |
| Los Angeles     | 35   | 38   | 38   | 36   | 30   | 32   | 43   | 35   | 35   | 36   | 112                                     | 170  | 200  | 232  | 155  | 113  | 91   | 68   | 58   | 53   |
| Riverside       | 6  | 6    | 7    | 9    | 8    | 8    | 7    | 7    | 8    | 8    | 18                                      | 15   | 18   | 27   | 22   | 19   | 15   | 13   | 12   | 11   |
| San Bernardino  | 95   | 99   | 124  | 117  | 111  | 113  | 115  | 111  | 117  | 122  | 157                                     | 240  | 318  | 483  | 384  | 313  | 287  | 232  | 208  | 200  |
| Air Basin Total | 185  | 182  | 203  | 211  | 179  | 185  | 197  | 182  | 188  | 195  | 1015                                    | 904  | 781  | 932  | 689  | 558  | 494  | 402  | 357  | 338  |

| County          | Directly Emitted PM <sub>2.5</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975  | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Kern            | 20  | 14   | 12   | 22   | 9    | 10   | 10   | 9    | 10   | 10   |
| Los Angeles     | 6   | 7    | 6    | 7    | 6    | 6    | 9    | 6    | 7    | 7    |
| Riverside       | 2   | 2    | 2    | 3    | 2    | 2    | 2    | 2    | 2    | 2    |
| San Bernardino  | 28  | 28   | 42   | 39   | 38   | 36   | 32   | 31   | 32   | 34   |
| Air Basin Total | 55  | 50   | 62   | 71   | 54   | 53   | 53   | 48   | 51   | 52   |

A portion of Kern County lies within the San Joaquin Valley Air Basin. A portion of Los Angeles County lies within the South Coast Air Basin. Portions of Riverside County lie within the Salton Sea and South Coast Air Basins. A portion of San Bernardino County lies within the South Coast Air Basin.

Table A-7



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*Mojave Desert Air Basin*

## High Emitting Facilities

| <b>Oxides of Nitrogen (NO<sub>x</sub>)</b> |                |                      |
|--|----------------|----------------------|
| <b>Facility Name</b>                       | <b>City</b>    | <b>Tons per Year</b> |
| Cemex - Black Mountain Quarry              | Apple Valley   | 4754                 |
| TXI Riverside Cement Company               | Oro Grande     | 4111                 |
| California Portland Cement                 | Mojave         | 2975                 |
| Mitsubishi Cement 2000                     | Lucerne Valley | 2770                 |
| Searles Valley Minerals                    | Trona          | 2001                 |
| National Cement                            | Lebec          | 1300                 |
| PG&E Topock Compressor Station             | Needles        | 1140                 |
| Lehigh Southwest Cement.                   | Monolith       | 888                  |
| Southern California Gas                    | Needles        | 808                  |
| Reliant Energy                             | Daggett        | 665                  |

| <b>Reactive Organic Gases (ROG)</b> |             |                      |
|-------------------------------------|-------------|----------------------|
| <b>Facility Name</b>                | <b>City</b> | <b>Tons per Year</b> |
| PG&E Hinkley Compressor Station     | Hinkley     | 135                  |

***Mojave Desert Air Basin***  
**High Emitting Facilities**

| <b>Directly Emitted Particulate Matter (PM<sub>10</sub>)</b> |                |                      |
|--|----------------|----------------------|
| <b>Facility Name</b>   | <b>City</b>    | <b>Tons per Year</b> |
| Mitsubishi Cement 2000                                       | Lucerne Valley | 1468                 |
| TXI Riverside Cement Company                                 | Oro Grande     | 755                  |
| Antelope Valley Aggregate                                    | Littlerock     | 691                  |
| California Portland Cement                                   | Mojave         | 329                  |
| National Cement  | Lebec          | 309                  |
| Granite Construction   | Littlerock     | 297                  |
| U.S. Borax   | Boron          | 292                  |
| Searles Valley Minerals                                      | Trona          | 285                  |
| Cemex - Black Mountain Quarry                                | Apple Valley   | 277                  |

| <b>Directly Emitted Particulate Matter (PM<sub>2.5</sub>)</b> |                |                      |
|---|----------------|----------------------|
| <b>Facility Name</b>  | <b>City</b>    | <b>Tons per Year</b> |
| Mitsubishi Cement 2000  | Lucerne Valley | 928                  |
| TXI Riverside Cement Company                                  | Oro Grande     | 344                  |
| Antelope Valley Aggregate                                     | Littlerock     | 257                  |
| Searles Valley Minerals                                       | Trona          | 213                  |
| National Cement   | Lebec          | 205                  |
| Cemex - Black Mountain Quarry                                 | Apple Valley   | 183                  |
| California Portland Cement                                    | Mojave         | 171                  |
| Lehigh Southwest Cement.                                      | Monolith       | 127                  |
| U.S. Borax  | Boron          | 116                  |
| High Desert Power Project                                     | Victorville    | 105                  |

Table A-8 (continued)

*Mountain Counties Air Basin*

## County Emission Trends and Forecasts

| County          | NO <sub>x</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | ROG Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|--|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                     | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Amador          | 5  | 6    | 6    | 8    | 7    | 6    | 5    | 5    | 5    | 4    | 9  | 10   | 10   | 11   | 9    | 8    | 7    | 7    | 6    | 6    |
| Calaveras       | 5  | 12   | 6    | 7    | 6    | 5    | 5    | 4    | 4    | 3    | 9  | 11   | 12   | 13   | 12   | 12   | 10   | 9    | 8    | 8    |
| El Dorado       | 9  | 12   | 11   | 11   | 10   | 8    | 7    | 6    | 5    | 4    | 17                                       | 24   | 22   | 21   | 18   | 14   | 13   | 12   | 12   | 12   |
| Mariposa        | 2  | 2    | 2    | 3    | 2    | 2    | 2    | 2    | 1    | 1    | 6  | 6    | 7    | 8    | 7    | 7    | 6    | 6    | 5    | 5    |
| Nevada          | 13   | 16   | 17   | 18   | 16   | 13   | 13   | 11   | 9    | 7    | 15                                       | 19   | 21   | 19   | 16   | 14   | 13   | 12   | 11   | 11   |
| Placer          | 6  | 7    | 7    | 8    | 8    | 9    | 9    | 9    | 6    | 5    | 5  | 9    | 5    | 6    | 5    | 5    | 5    | 5    | 5    | 5    |
| Plumas          | 8  | 9    | 8    | 9    | 8    | 8    | 7    | 6    | 6    | 6    | 11                                       | 12   | 11   | 11   | 10   | 10   | 9    | 9    | 9    | 9    |
| Sierra          | 1  | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 3  | 3    | 3    | 4    | 3    | 4    | 4    | 4    | 4    | 5    |
| Tuolumne        | 11   | 12   | 11   | 14   | 12   | 10   | 10   | 9    | 8    | 8    | 20                                       | 21   | 21   | 22   | 20   | 18   | 18   | 17   | 17   | 17   |
| Air Basin Total | 60   | 77   | 69   | 78   | 71   | 62   | 60   | 54   | 45   | 38   | 95                                       | 116  | 112  | 114  | 100  | 90   | 85   | 80   | 77   | 78   |

| County          | Directly Emitted PM <sub>10</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | CO Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                    | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Amador          | 7  | 7    | 7    | 8    | 9    | 10   | 9    | 10   | 10   | 11   | 50                                      | 54   | 55   | 63   | 47   | 39   | 30   | 26   | 23   | 20   |
| Calaveras       | 29   | 10   | 10   | 11   | 11   | 11   | 11   | 12   | 12   | 13   | 70                                      | 88   | 81   | 86   | 75   | 62   | 54   | 48   | 43   | 40   |
| El Dorado       | 10   | 12   | 13   | 15   | 16   | 16   | 17   | 18   | 19   | 20   | 123                                     | 160  | 160  | 152  | 126  | 98   | 85   | 76   | 71   | 70   |
| Mariposa        | 6  | 7    | 8    | 8    | 8    | 8    | 8    | 8    | 9    | 9    | 28                                      | 33   | 34   | 37   | 32   | 26   | 23   | 20   | 19   | 18   |
| Nevada          | 12   | 14   | 16   | 19   | 19   | 19   | 20   | 21   | 21   | 22   | 127                                     | 159  | 172  | 154  | 124  | 104  | 91   | 83   | 77   | 74   |
| Placer          | 8  | 9    | 9    | 10   | 9    | 8    | 8    | 9    | 9    | 9    | 35                                      | 37   | 40   | 39   | 35   | 30   | 28   | 27   | 26   | 26   |
| Plumas          | 17   | 19   | 20   | 19   | 19   | 19   | 19   | 19   | 20   | 20   | 128                                     | 135  | 134  | 138  | 128  | 121  | 119  | 117  | 115  | 115  |
| Sierra          | 11   | 12   | 12   | 11   | 12   | 12   | 12   | 11   | 12   | 12   | 28                                      | 28   | 28   | 31   | 28   | 29   | 26   | 26   | 26   | 27   |
| Tuolumne        | 16   | 18   | 17   | 20   | 19   | 19   | 19   | 19   | 19   | 20   | 192                                     | 202  | 204  | 217  | 194  | 172  | 164  | 159  | 156  | 155  |
| Air Basin Total | 115  | 108  | 112  | 120  | 122  | 122  | 123  | 127  | 131  | 136  | 779                                     | 895  | 910  | 917  | 790  | 681  | 618  | 583  | 555  | 545  |

A portion of El Dorado County lies within the Lake Tahoe Air Basin. Portions of Placer County lie within the Lake Tahoe and Sacramento Valley Air Basins.

Table A-9

## Mountain Counties Air Basin

### County Emission Trends and Forecasts

| County          | Directly Emitted PM <sub>2.5</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975  | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Amador          | 2   | 2    | 2    | 3    | 4    | 4    | 3    | 4    | 4    | 4    |
| Calaveras       | 10  | 5    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 5    |
| El Dorado       | 4   | 5    | 5    | 6    | 6    | 6    | 6    | 6    | 7    | 7    |
| Mariposa        | 1   | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Nevada          | 5   | 6    | 7    | 8    | 8    | 8    | 8    | 8    | 8    | 8    |
| Placer          | 3   | 3    | 3    | 3    | 3    | 2    | 2    | 2    | 2    | 2    |
| Plumas          | 7   | 8    | 8    | 7    | 7    | 7    | 7    | 7    | 7    | 7    |
| Sierra          | 2   | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Tuolumne        | 10  | 12   | 11   | 12   | 12   | 11   | 11   | 11   | 11   | 12   |
| Air Basin Total | 44  | 45   | 45   | 48   | 48   | 47   | 46   | 47   | 48   | 49   |

A portion of El Dorado County lies within the Lake Tahoe Air Basin. Portions of Placer County lie within the Lake Tahoe and Sacramento Valley Air Basins.

Table A-9 (continued)

ARB Almanac 2008 – Appendix A: County Level Emissions and Air Quality by Air Basin

**Mountain Counties Air Basin****High Emitting Facilities**

| <b>Oxides of Nitrogen (NO<sub>x</sub>)</b> |             |                      |
|--|-------------|----------------------|
| <b>Facility Name</b>                       | <b>City</b> | <b>Tons per Year</b> |
| Sierra Pacific Industries                  | Quincy      | 307                  |
| Pacific-Ultrapower                         | Jamestown   | 190                  |
| Collins Pine                               | Chester     | 150                  |
| Sierra Pacific Industries                  | Loyalton    | 129                  |
| Sierra Pacific Ind. Standard               | Sonora      | 119                  |

| <b>Reactive Organic Gases (ROG)</b> |             |                      |
|-------------------------------------|-------------|----------------------|
| <b>Facility Name</b>                | <b>City</b> | <b>Tons per Year</b> |
| Sierrapine Ltd Ampine Division      | Martell     | 263                  |

| <b>Directly Emitted Particulate Matter (PM<sub>10</sub>)</b> |             |                      |
|--|-------------|----------------------|
| <b>Facility Name</b>   | <b>City</b> | <b>Tons per Year</b> |
| Sierrapine Ltd Ampine Division                               | Martell     | 518                  |
| Sierra Pacific Ind. Standard                                 | Sonora      | 103                  |

| <b>Directly Emitted Particulate Matter (PM<sub>2.5</sub>)</b> |             |                      |
|---|-------------|----------------------|
| <b>Facility Name</b>  | <b>City</b> | <b>Tons per Year</b> |
| Sierrapine Ltd Ampine Division                                | Martell     | 414                  |

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***North Central Coast Air Basin***  
**County Emission Trends and Forecasts**

| County          | NO <sub>x</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | ROG Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|--|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                     | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Monterey        | 113  | 124  | 81   | 80   | 64   | 57   | 48   | 43   | 36   | 32   | 97                                       | 78   | 72   | 64   | 54   | 46   | 40   | 36   | 34   | 33   |
| San Benito      | 13   | 12   | 13   | 15   | 15   | 13   | 13   | 12   | 9    | 7    | 13                                       | 12   | 11   | 11   | 9    | 8    | 8    | 8    | 8    | 7    |
| Santa Cruz      | 23   | 25   | 28   | 31   | 27   | 23   | 20   | 18   | 15   | 13   | 48                                       | 46   | 45   | 38   | 29   | 24   | 19   | 17   | 15   | 14   |
| Air Basin Total | 149  | 161  | 122  | 126  | 105  | 93   | 81   | 73   | 60   | 51   | 158                                      | 135  | 128  | 114  | 92   | 78   | 67   | 61   | 56   | 54   |

| County          | Directly Emitted PM <sub>10</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | CO Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                    | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Monterey        | 35   | 39   | 36   | 37   | 36   | 41   | 45   | 50   | 52   | 54   | 690                                     | 577  | 578  | 504  | 348  | 320  | 280  | 272  | 245  | 230  |
| San Benito      | 13   | 13   | 15   | 17   | 14   | 15   | 16   | 17   | 17   | 18   | 98                                      | 91   | 91   | 83   | 71   | 65   | 64   | 66   | 62   | 61   |
| Santa Cruz      | 11   | 12   | 13   | 14   | 13   | 14   | 14   | 14   | 15   | 15   | 297                                     | 295  | 294  | 257  | 187  | 152  | 119  | 102  | 86   | 76   |
| Air Basin Total | 60   | 64   | 65   | 68   | 63   | 69   | 75   | 81   | 84   | 87   | 1086                                    | 964  | 964  | 844  | 606  | 537  | 464  | 440  | 393  | 367  |

| County          | Directly Emitted PM <sub>2.5</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975  | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Monterey        | 16  | 18   | 14   | 14   | 12   | 15   | 17   | 20   | 20   | 21   |
| San Benito      | 5   | 5    | 7    | 7    | 5    | 5    | 6    | 7    | 6    | 6    |
| Santa Cruz      | 4   | 4    | 5    | 5    | 5    | 4    | 5    | 5    | 5    | 5    |
| Air Basin Total | 25  | 27   | 25   | 26   | 22   | 25   | 28   | 31   | 31   | 32   |



*North Central Coast Air Basin*  
 High Emitting Facilities

| <b>Oxides of Nitrogen (NO<sub>x</sub>)</b> |              |                      |
|--|--------------|----------------------|
| <b>Facility Name</b>                       | <b>City</b>  | <b>Tons per Year</b> |
| Cemex - Cement Plant                       | Davenport    | 749                  |
| Duke Energy Moss Landing                   | Moss Landing | 171                  |

| <b>Reactive Organic Gases (ROG)</b> |             |                      |
|-------------------------------------|-------------|----------------------|
| <b>Facility Name</b>                | <b>City</b> | <b>Tons per Year</b> |

No High Emitting Facilities

| <b>Directly Emitted Particulate Matter (PM<sub>10</sub>)</b> |             |                      |
|--|-------------|----------------------|
| <b>Facility Name</b>   | <b>City</b> | <b>Tons per Year</b> |
| Cemex - Cement Plant   | Davenport   | 191                  |
| Chemical Lime Company  | Salinas     | 127                  |

| <b>Directly Emitted Particulate Matter (PM<sub>2.5</sub>)</b> |              |                      |
|---|--------------|----------------------|
| <b>Facility Name</b>  | <b>City</b>  | <b>Tons per Year</b> |
| Cemex - Cement Plant  | Davenport    | 115                  |
| Duke Energy Moss Landing                                      | Moss Landing | 111                  |

*North Coast Air Basin*

## County Emission Trends and Forecasts

| County          | NO <sub>x</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | ROG Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|--|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                     | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Del Norte       | 5  | 5    | 4    | 4    | 3    | 3    | 2    | 2    | 1    | 1    | 10                                       | 11   | 7    | 7    | 6    | 6    | 5    | 5    | 5    | 5    |
| Humboldt        | 41   | 39   | 32   | 33   | 27   | 26   | 22   | 19   | 17   | 14   | 66                                       | 41   | 33   | 30   | 24   | 21   | 18   | 17   | 16   | 16   |
| Mendocino       | 24   | 23   | 23   | 23   | 18   | 16   | 15   | 13   | 10   | 8    | 32                                       | 27   | 20   | 19   | 17   | 15   | 13   | 12   | 11   | 11   |
| Sonoma          | 3  | 8    | 8    | 9    | 9    | 8    | 7    | 6    | 5    | 4    | 9  | 14   | 13   | 15   | 13   | 11   | 9    | 8    | 8    | 8    |
| Trinity         | 3  | 3    | 3    | 4    | 3    | 3    | 3    | 3    | 2    | 2    | 7  | 8    | 7    | 7    | 6    | 6    | 5    | 4    | 4    | 4    |
| Air Basin Total | 76   | 79   | 70   | 73   | 60   | 55   | 49   | 43   | 35   | 29   | 124                                      | 101  | 81   | 79   | 66   | 58   | 50   | 47   | 44   | 43   |

| County          | Directly Emitted PM <sub>10</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | CO Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                    | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Del Norte       | 8  | 9    | 9    | 10   | 10   | 10   | 10   | 11   | 11   | 11   | 134                                     | 130  | 117  | 114  | 104  | 97   | 93   | 91   | 89   | 88   |
| Humboldt        | 29   | 29   | 27   | 25   | 23   | 22   | 22   | 22   | 23   | 23   | 363                                     | 313  | 271  | 251  | 190  | 161  | 137  | 131  | 122  | 115  |
| Mendocino       | 19   | 17   | 18   | 20   | 20   | 20   | 21   | 21   | 22   | 23   | 190                                     | 173  | 158  | 147  | 112  | 90   | 75   | 68   | 61   | 56   |
| Sonoma          | 3  | 4    | 4    | 7    | 5    | 5    | 5    | 5    | 6    | 6    | 32                                      | 94   | 94   | 90   | 70   | 55   | 45   | 39   | 34   | 31   |
| Trinity         | 16   | 19   | 20   | 19   | 20   | 19   | 18   | 17   | 17   | 17   | 75                                      | 79   | 76   | 76   | 65   | 60   | 56   | 53   | 51   | 49   |
| Air Basin Total | 75   | 78   | 78   | 81   | 78   | 77   | 76   | 77   | 78   | 80   | 795                                     | 789  | 716  | 677  | 541  | 463  | 406  | 383  | 357  | 339  |

| County          | Directly Emitted PM <sub>2.5</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975  | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Del Norte       | 5   | 6    | 5    | 6    | 6    | 6    | 6    | 6    | 6    | 6    |
| Humboldt        | 16  | 16   | 14   | 12   | 10   | 9    | 9    | 9    | 9    | 9    |
| Mendocino       | 9   | 6    | 6    | 6    | 6    | 6    | 6    | 6    | 6    | 6    |
| Sonoma          | 1   | 2    | 2    | 4    | 2    | 2    | 2    | 2    | 2    | 2    |
| Trinity         | 4   | 5    | 5    | 5    | 5    | 5    | 4    | 4    | 4    | 4    |
| Air Basin Total | 36  | 34   | 32   | 32   | 28   | 27   | 27   | 27   | 27   | 27   |

A portion of Sonoma County lies within the San Francisco Bay Area Air Basin.

Table A-13

***North Coast Air Basin***  
**High Emitting Facilities**

| <b>Oxides of Nitrogen (NO<sub>x</sub>)</b> |             |                      |
|--|-------------|----------------------|
| <b>Facility Name</b>                       | <b>City</b> | <b>Tons per Year</b> |
| PG&E-Humboldt Bay Plant                    | Eureka      | 435                  |
| Samoa-Pacific Cellulose                    | Samoa       | 365                  |
| The Pacific Lumber Company                 | Scotia      | 321                  |
| Fairhaven Power Company                    | Fairhaven   | 280                  |
| Humboldt Flakeboard Panels                 | Arcata      | 140                  |

| <b>Reactive Organic Gases (ROG)</b> |             |                      |
|-------------------------------------|-------------|----------------------|
| <b>Facility Name</b>                | <b>City</b> | <b>Tons per Year</b> |
| Samoa-Pacific Cellulose             | Samoa       | 153                  |
| The Pacific Lumber Company          | Scotia      | 116                  |

| <b>Directly Emitted Particulate Matter (PM<sub>10</sub>)</b> |             |                      |
|--|-------------|----------------------|
| <b>Facility Name</b>   | <b>City</b> | <b>Tons per Year</b> |
| Samoa-Pacific Cellulose                                      | Samoa       | 143                  |
| Fairhaven Power Company                                      | Fairhaven   | 109                  |

| <b>Directly Emitted Particulate Matter (PM<sub>2.5</sub>)</b> |             |                      |
|---|-------------|----------------------|
| <b>Facility Name</b>  | <b>City</b> | <b>Tons per Year</b> |
| Fairhaven Power Company                                       | Fairhaven   | 102                  |
| Samoa-Pacific Cellulose                                       | Samoa       | 102                  |

*Northeast Plateau Air Basin*

## County Emission Trends and Forecasts

| County          | NO <sub>x</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | ROG Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|--|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                     | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Lassen          | 10   | 9    | 9    | 9    | 8    | 8    | 7    | 6    | 5    | 5    | 10                                       | 11   | 11   | 11   | 9    | 8    | 8    | 7    | 7    | 7    |
| Modoc           | 7  | 6    | 5    | 5    | 5    | 5    | 4    | 4    | 3    | 3    | 6  | 6    | 6    | 5    | 5    | 4    | 4    | 4    | 4    | 4    |
| Siskiyou        | 21   | 22   | 20   | 23   | 21   | 19   | 19   | 16   | 13   | 10   | 28                                       | 28   | 26   | 26   | 23   | 21   | 20   | 19   | 18   | 17   |
| Air Basin Total | 37   | 37   | 34   | 37   | 34   | 32   | 30   | 25   | 21   | 18   | 44                                       | 45   | 42   | 42   | 37   | 33   | 31   | 30   | 28   | 27   |

| County          | Directly Emitted PM <sub>10</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | CO Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                    | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Lassen          | 19   | 19   | 20   | 21   | 20   | 23   | 22   | 22   | 22   | 23   | 61                                      | 72   | 70   | 66   | 59   | 52   | 44   | 41   | 38   | 36   |
| Modoc           | 18   | 18   | 19   | 19   | 18   | 18   | 18   | 17   | 17   | 17   | 30                                      | 32   | 29   | 27   | 22   | 18   | 16   | 14   | 13   | 12   |
| Siskiyou        | 33   | 35   | 34   | 34   | 34   | 33   | 33   | 33   | 33   | 34   | 369                                     | 353  | 332  | 329  | 298  | 271  | 259  | 253  | 246  | 242  |
| Air Basin Total | 69   | 72   | 73   | 74   | 72   | 74   | 73   | 72   | 73   | 74   | 460                                     | 457  | 430  | 422  | 380  | 341  | 319  | 307  | 297  | 289  |

| County          | Directly Emitted PM <sub>2.5</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975  | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Lassen          | 5   | 5    | 5    | 5    | 5    | 5    | 5    | 5    | 5    | 5    |
| Modoc           | 4   | 4    | 4    | 4    | 3    | 3    | 3    | 3    | 3    | 3    |
| Siskiyou        | 19  | 20   | 18   | 19   | 18   | 18   | 18   | 17   | 17   | 17   |
| Air Basin Total | 28  | 28   | 27   | 28   | 26   | 26   | 25   | 25   | 25   | 25   |

*Northeast Plateau Air Basin*

High Emitting Facilities

| Oxides of Nitrogen (NO <sub>x</sub> ) |       |               |
|---------------------------------------|-------|---------------|
| Facility Name                         | City  | Tons per Year |
| H.L. Power Company                    | Wende | 150           |

| Reactive Organic Gases (ROG) |      |               |
|------------------------------|------|---------------|
| Facility Name                | City | Tons per Year |

No High Emitting Facilities

| Directly Emitted Particulate Matter (PM <sub>10</sub> ) |      |               |
|---|------|---------------|
| Facility Name   | City | Tons per Year |

No High Emitting Facilities

| Directly Emitted Particulate Matter (PM <sub>2.5</sub> ) |      |               |
|--|------|---------------|
| Facility Name  | City | Tons per Year |

No High Emitting Facilities

*Outer Continental Shelf*

## County Emission Trends and Forecasts

| County          | NO <sub>x</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | ROG Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|--|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                     | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Del Norte       | 1  | 1    | 2    | 2    | 3    | 3    | 4    | 5    | 6    | 8    | 0  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Humboldt        | 5  | 5    | 6    | 7    | 8    | 10   | 12   | 14   | 17   | 21   | 0  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    |
| Los Angeles     | 21   | 21   | 21   | 24   | 26   | 29   | 29   | 30   | 32   | 37   | 2  | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Marin           | 1  | 1    | 1    | 2    | 2    | 3    | 4    | 4    | 5    | 7    | 0  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Mendocino       | 4  | 4    | 5    | 6    | 7    | 8    | 10   | 12   | 14   | 18   | 0  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    |
| Monterey        | 7  | 7    | 8    | 9    | 11   | 14   | 16   | 19   | 23   | 28   | 0  | 0    | 0    | 1    | 1    | 1    | 1    | 1    | 1    | 1    |
| Orange          | 2  | 2    | 2    | 2    | 3    | 4    | 4    | 6    | 8    | 12   | 0  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| San Diego       | 14   | 14   | 14   | 14   | 15   | 17   | 18   | 21   | 26   | 34   | 1  | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    |
| San Francisco   | 2  | 2    | 3    | 3    | 4    | 6    | 7    | 8    | 10   | 13   | 0  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| San Luis Obispo | 4  | 5    | 5    | 6    | 8    | 10   | 12   | 14   | 18   | 22   | 0  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    |
| San Mateo       | 7  | 7    | 8    | 10   | 14   | 18   | 22   | 27   | 34   | 43   | 0  | 0    | 0    | 0    | 0    | 1    | 1    | 1    | 1    | 1    |
| Santa Barbara   | 18   | 20   | 26   | 33   | 42   | 54   | 65   | 79   | 98   | 120  | 1  | 1    | 4    | 5    | 3    | 3    | 4    | 4    | 4    | 5    |
| Santa Cruz      | 1  | 1    | 1    | 2    | 2    | 3    | 4    | 5    | 6    | 8    | 0  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sonoma          | 3  | 3    | 3    | 3    | 4    | 4    | 5    | 6    | 7    | 9    | 0  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ventura         | 6  | 6    | 7    | 9    | 11   | 13   | 15   | 17   | 20   | 25   | 0  | 0    | 1    | 2    | 2    | 1    | 1    | 1    | 1    | 1    |
| Air Basin Total | 96   | 99   | 110  | 133  | 159  | 195  | 226  | 268  | 325  | 403  | 5  | 6    | 10   | 11   | 10   | 9    | 10   | 11   | 12   | 15   |

| County          | Directly Emitted PM <sub>10</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | CO Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                    | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Del Norte       | 0  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 0                                       | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    |
| Humboldt        | 0  | 0    | 0    | 1    | 1    | 1    | 1    | 1    | 1    | 2    | 1                                       | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 2    | 2    |
| Los Angeles     | 1  | 1    | 1    | 2    | 2    | 2    | 2    | 2    | 3    | 3    | 4                                       | 4    | 4    | 4    | 4    | 4    | 4    | 5    | 5    | 6    |
| Marin           | 0  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 0                                       | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    |
| Mendocino       | 0  | 0    | 0    | 0    | 1    | 1    | 1    | 1    | 1    | 2    | 0                                       | 0    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 2    |
| Monterey        | 1  | 1    | 1    | 1    | 1    | 1    | 1    | 2    | 2    | 2    | 1                                       | 1    | 1    | 1    | 2    | 2    | 2    | 2    | 2    | 3    |
| Orange          | 0  | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 1    | 0                                       | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    |
| San Diego       | 1  | 1    | 1    | 1    | 1    | 1    | 2    | 2    | 2    | 3    | 3                                       | 3    | 3    | 3    | 4    | 4    | 4    | 4    | 4    | 5    |
| San Francisco   | 0  | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 1    | 1    | 0                                       | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 1    | 1    |
| San Luis Obispo | 0  | 0    | 0    | 0    | 1    | 1    | 1    | 1    | 2    | 2    | 1                                       | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 2    | 2    |
| San Mateo       | 1  | 1    | 1    | 1    | 1    | 1    | 2    | 2    | 3    | 4    | 1                                       | 1    | 1    | 1    | 1    | 2    | 2    | 3    | 3    | 4    |
| Santa Barbara   | 1  | 2    | 2    | 3    | 3    | 4    | 5    | 7    | 8    | 11   | 1                                       | 2    | 3    | 3    | 4    | 5    | 6    | 7    | 9    | 11   |
| Santa Cruz      | 0  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 0                                       | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    |
| Sonoma          | 0  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 0                                       | 0    | 0    | 0    | 0    | 1    | 1    | 1    | 1    | 1    |
| Ventura         | 0  | 0    | 1    | 1    | 1    | 1    | 1    | 1    | 2    | 2    | 1                                       | 2    | 2    | 2    | 2    | 3    | 3    | 3    | 3    | 4    |
| Air Basin Total | 7  | 7    | 8    | 10   | 12   | 15   | 18   | 22   | 28   | 36   | 14                                      | 15   | 16   | 17   | 20   | 23   | 26   | 30   | 36   | 43   |

Table A-17

## *Outer Continental Shelf*

### County Emission Trends and Forecasts

| County          | Directly Emitted PM <sub>2.5</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975  | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Del Norte       | 0   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    |
| Humboldt        | 0   | 0    | 0    | 0    | 1    | 1    | 1    | 1    | 1    | 2    |
| Los Angeles     | 1   | 1    | 1    | 1    | 2    | 2    | 2    | 2    | 2    | 3    |
| Marin           | 0   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    |
| Mendocino       | 0   | 0    | 0    | 0    | 1    | 1    | 1    | 1    | 1    | 2    |
| Monterey        | 0   | 0    | 1    | 1    | 1    | 1    | 1    | 1    | 2    | 2    |
| Orange          | 0   | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 1    |
| San Diego       | 1   | 1    | 1    | 1    | 1    | 1    | 1    | 2    | 2    | 3    |
| San Francisco   | 0   | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 1    | 1    |
| San Luis Obispo | 0   | 0    | 0    | 0    | 1    | 1    | 1    | 1    | 1    | 2    |
| San Mateo       | 1   | 1    | 1    | 1    | 1    | 1    | 2    | 2    | 3    | 4    |
| Santa Barbara   | 1   | 2    | 2    | 2    | 3    | 4    | 5    | 7    | 8    | 10   |
| Santa Cruz      | 0   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    |
| Sonoma          | 0   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    |
| Ventura         | 0   | 0    | 1    | 1    | 1    | 1    | 1    | 1    | 2    | 2    |
| Air Basin Total | 7   | 7    | 8    | 10   | 11   | 14   | 17   | 22   | 27   | 35   |

Table A-17

## *Outer Continental Shelf* High Emitting Facilities

| <b>Oxides of Nitrogen (NO<sub>x</sub>)</b> |                         |                      |
|--|-------------------------|----------------------|
| <b>Facility Name</b>                       | <b>City</b>             | <b>Tons per Year</b> |
| Point Arguello Platform Harvest            | Outer Continental Shelf | 151                  |
| Exxon - SYU Project (Offshore Platforms)   | Outer Continental Shelf | 138                  |

| <b>Reactive Organic Gases (ROG)</b>       |                         |                      |
|---|-------------------------|----------------------|
| <b>Facility Name</b>                      | <b>City</b>             | <b>Tons per Year</b> |
| Exxon - Syu Project (Offshore Platforms)  | Outer Continental Shelf | 141                  |
| South County/Dos Cuadras (Oil Production) | Outer Continental Shelf | 138                  |

| <b>Directly Emitted Particulate Matter (PM<sub>10</sub>)</b> |             |                      |
|--|-------------|----------------------|
| <b>Facility Name</b>   | <b>City</b> | <b>Tons per Year</b> |

No High Emitting Facilities

| <b>Directly Emitted Particulate Matter (PM<sub>2.5</sub>)</b> |             |                      |
|---|-------------|----------------------|
| <b>Facility Name</b>  | <b>City</b> | <b>Tons per Year</b> |

No High Emitting Facilities



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*Sacramento Valley Air Basin*

## County Emission Trends and Forecasts

| County          | NO <sub>x</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | ROG Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|--|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                     | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Butte           | 31   | 33   | 32   | 34   | 32   | 28   | 26   | 23   | 18   | 14   | 42                                       | 42   | 40   | 39   | 32   | 26   | 22   | 20   | 18   | 17   |
| Colusa          | 11   | 12   | 11   | 16   | 16   | 14   | 14   | 12   | 11   | 9    | 12                                       | 10   | 12   | 11   | 9    | 8    | 7    | 7    | 7    | 7    |
| Glenn           | 16   | 15   | 13   | 15   | 14   | 12   | 12   | 10   | 9    | 8    | 15                                       | 15   | 14   | 12   | 12   | 10   | 10   | 9    | 9    | 9    |
| Placer          | 20   | 23   | 24   | 26   | 26   | 25   | 24   | 18   | 15   | 14   | 36                                       | 33   | 34   | 31   | 29   | 23   | 21   | 17   | 17   | 17   |
| Sacramento      | 115  | 117  | 122  | 129  | 115  | 97   | 84   | 69   | 54   | 42   | 217                                      | 197  | 177  | 142  | 113  | 84   | 67   | 58   | 53   | 51   |
| Shasta          | 37   | 39   | 37   | 44   | 39   | 39   | 37   | 34   | 28   | 24   | 38                                       | 41   | 39   | 38   | 31   | 28   | 25   | 23   | 21   | 20   |
| Solano          | 17   | 22   | 22   | 27   | 26   | 23   | 21   | 19   | 14   | 11   | 16                                       | 22   | 21   | 21   | 17   | 14   | 11   | 10   | 9    | 8    |
| Sutter          | 22   | 22   | 20   | 24   | 23   | 20   | 19   | 19   | 15   | 12   | 19                                       | 18   | 18   | 16   | 14   | 12   | 10   | 10   | 10   | 10   |
| Tehama          | 19   | 21   | 18   | 19   | 18   | 18   | 18   | 16   | 12   | 10   | 16                                       | 17   | 16   | 15   | 12   | 10   | 9    | 9    | 8    | 7    |
| Yolo            | 35   | 35   | 33   | 37   | 36   | 33   | 28   | 23   | 18   | 15   | 37                                       | 34   | 30   | 24   | 21   | 17   | 14   | 12   | 12   | 11   |
| Yuba            | 11   | 14   | 11   | 10   | 10   | 9    | 8    | 7    | 6    | 5    | 14                                       | 17   | 14   | 13   | 11   | 10   | 9    | 8    | 8    | 7    |
| Air Basin Total | 335  | 351  | 342  | 382  | 354  | 318  | 290  | 250  | 200  | 164  | 461                                      | 447  | 415  | 362  | 301  | 243  | 207  | 183  | 170  | 165  |

| County          | Directly Emitted PM <sub>10</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | CO Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                    | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Butte           | 28   | 29   | 30   | 32   | 28   | 27   | 27   | 28   | 28   | 28   | 265                                     | 275  | 265  | 255  | 196  | 153  | 124  | 106  | 89   | 81   |
| Colusa          | 15   | 16   | 16   | 16   | 16   | 17   | 17   | 17   | 17   | 18   | 54                                      | 49   | 46   | 43   | 35   | 29   | 25   | 23   | 22   | 21   |
| Glenn           | 16   | 16   | 15   | 16   | 15   | 15   | 15   | 16   | 16   | 16   | 95                                      | 93   | 86   | 75   | 63   | 55   | 50   | 47   | 45   | 43   |
| Placer          | 8  | 9    | 11   | 13   | 13   | 14   | 16   | 17   | 18   | 19   | 216                                     | 251  | 238  | 212  | 176  | 155  | 132  | 105  | 98   | 95   |
| Sacramento      | 32   | 36   | 40   | 43   | 40   | 42   | 44   | 46   | 48   | 49   | 1487                                    | 1384 | 1272 | 1058 | 753  | 542  | 393  | 312  | 260  | 224  |
| Shasta          | 30   | 28   | 29   | 32   | 31   | 31   | 33   | 33   | 34   | 36   | 320                                     | 325  | 321  | 327  | 267  | 233  | 218  | 203  | 193  | 189  |
| Solano          | 9  | 10   | 10   | 10   | 10   | 9    | 9    | 9    | 9    | 9    | 129                                     | 203  | 187  | 176  | 119  | 91   | 69   | 53   | 44   | 39   |
| Sutter          | 14   | 15   | 14   | 14   | 14   | 15   | 14   | 15   | 15   | 15   | 105                                     | 101  | 95   | 89   | 69   | 55   | 44   | 40   | 35   | 31   |
| Tehama          | 14   | 15   | 16   | 15   | 15   | 15   | 15   | 15   | 16   | 16   | 104                                     | 107  | 95   | 97   | 72   | 57   | 48   | 41   | 36   | 32   |
| Yolo            | 24   | 24   | 25   | 28   | 27   | 29   | 28   | 28   | 28   | 28   | 246                                     | 225  | 209  | 163  | 121  | 98   | 74   | 58   | 49   | 44   |
| Yuba            | 9  | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 9    | 96                                      | 101  | 84   | 79   | 65   | 53   | 46   | 42   | 38   | 37   |
| Air Basin Total | 199  | 206  | 213  | 226  | 215  | 222  | 227  | 232  | 237  | 242  | 3116                                    | 3113 | 2899 | 2573 | 1935 | 1520 | 1223 | 1032 | 908  | 835  |

Portions of Placer County lie within the Lake Tahoe and Mountain Counties Air Basins. A portion of Solano County lies within the San Francisco Bay Area Air Basin.

Table A-19

## Sacramento Valley Air Basin

### County Emission Trends and Forecasts

| County          | Directly Emitted PM <sub>2.5</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975  | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Butte           | 10  | 11   | 11   | 13   | 10   | 10   | 9    | 9    | 9    | 9    |
| Colusa          | 4   | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    |
| Glenn           | 6   | 6    | 6    | 6    | 6    | 6    | 6    | 6    | 6    | 6    |
| Placer          | 4   | 4    | 5    | 6    | 6    | 6    | 6    | 7    | 7    | 7    |
| Sacramento      | 11  | 12   | 13   | 15   | 13   | 13   | 14   | 14   | 14   | 15   |
| Shasta          | 16  | 13   | 13   | 15   | 13   | 13   | 14   | 14   | 14   | 14   |
| Solano          | 3   | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    |
| Sutter          | 4   | 5    | 4    | 4    | 4    | 5    | 4    | 4    | 4    | 4    |
| Tehama          | 4   | 5    | 5    | 5    | 5    | 4    | 5    | 5    | 5    | 5    |
| Yolo            | 7   | 6    | 6    | 7    | 7    | 7    | 6    | 6    | 6    | 6    |
| Yuba            | 3   | 3    | 3    | 3    | 3    | 3    | 2    | 3    | 3    | 3    |
| Air Basin Total | 73  | 71   | 73   | 81   | 73   | 74   | 73   | 74   | 75   | 76   |

Portions of Placer County lie within the Lake Tahoe and Mountain Counties Air Basins. A portion of Solano County lies within the San Francisco Bay Area Air Basin.

Table A-19 (continued)

## Sacramento Valley Air Basin

### High Emitting Facilities

| Oxides of Nitrogen (NO <sub>x</sub> ) |           |               |
|---------------------------------------|-----------|---------------|
| Facility Name                         | City      | Tons per Year |
| Lehigh Southwest Cement               | Redding   | 612           |
| Wheelabrator Shasta                   | Anderson  | 568           |
| Burney Forest Products                | Burney    | 209           |
| PG&E Delevan Compressor Station       | Colusa    | 202           |
| Sierra Pacific Ind. - Burney          | Burney    | 155           |
| Sierra Pacific Industries             | Lincoln   | 148           |
| Calpine Greenleaf I                   | Yuba City | 144           |
| Pacific Oroville Power                | Oroville  | 124           |
| Johns-Manville (Insulation)           | Willows   | 123           |
| Wadham Energy                         | Williams  | 121           |

| Reactive Organic Gases (ROG) |         |               |
|------------------------------|---------|---------------|
| Facility Name                | City    | Tons per Year |
| Premier Industries           | Dixon   | 163           |
| Johns-Manville (Insulation)  | Willows | 162           |

| Directly Emitted Particulate Matter (PM <sub>10</sub> ) |          |               |
|---|----------|---------------|
| Facility Name   | City     | Tons per Year |
| Johns-Manville (Insulation)                             | Willows  | 249           |
| Lehigh Southwest Cement                                 | Redding  | 134           |
| Wheelabrator Shasta                                     | Anderson | 129           |

| Directly Emitted Particulate Matter (PM <sub>2.5</sub> ) |          |               |
|--|----------|---------------|
| Facility Name  | City     | Tons per Year |
| Johns-Manville (Insulation)                              | Willows  | 220           |
| Wheelabrator Shasta                                      | Anderson | 120           |
| Lehigh Southwest Cement                                  | Redding  | 101           |

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*Salton Sea Air Basin*

## County Emission Trends and Forecasts

| County          | NO <sub>x</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | ROG Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|--|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                     | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Imperial        | 44   | 39   | 35   | 39   | 43   | 40   | 38   | 35   | 31   | 28   | 46                                       | 45   | 36   | 37   | 37   | 33   | 33   | 32   | 32   | 32   |
| Riverside       | 40   | 43   | 48   | 60   | 55   | 51   | 53   | 39   | 28   | 21   | 40                                       | 42   | 44   | 42   | 35   | 24   | 20   | 17   | 16   | 16   |
| Air Basin Total | 84   | 82   | 83   | 99   | 97   | 91   | 91   | 74   | 59   | 49   | 86                                       | 86   | 81   | 79   | 72   | 57   | 52   | 49   | 48   | 48   |

| County          | Directly Emitted PM <sub>10</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | CO Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                    | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Imperial        | 256  | 259  | 257  | 250  | 232  | 231  | 232  | 235  | 237  | 240  | 230                                     | 220  | 190  | 190  | 156  | 122  | 103  | 91   | 83   | 79   |
| Riverside       | 12   | 13   | 14   | 20   | 19   | 19   | 17   | 20   | 22   | 24   | 278                                     | 274  | 289  | 307  | 232  | 128  | 98   | 77   | 66   | 61   |
| Air Basin Total | 268  | 272  | 271  | 270  | 251  | 250  | 250  | 255  | 259  | 263  | 508                                     | 494  | 479  | 496  | 388  | 250  | 201  | 168  | 149  | 140  |

| County          | Directly Emitted PM <sub>2.5</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975  | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Imperial        | 44  | 44   | 43   | 44   | 42   | 41   | 40   | 41   | 41   | 41   |
| Riverside       | 5   | 4    | 5    | 6    | 5    | 5    | 5    | 4    | 4    | 4    |
| Air Basin Total | 50  | 49   | 48   | 50   | 47   | 46   | 45   | 45   | 45   | 45   |

Portions of Riverside County lie within the Mojave Desert and South Coast Air Basins.

Table A-21

*Salton Sea Air Basin*  
High Emitting Facilities

| Oxides of Nitrogen (NO <sub>x</sub> ) |           |               |
|---------------------------------------|-----------|---------------|
| Facility Name                         | City      | Tons per Year |
| Imperial Irrigation District          | El Centro | 296           |
| Holly Sugar                           | Brawley   | 210           |

| Reactive Organic Gases (ROG) |      |               |
|------------------------------|------|---------------|
| Facility Name                | City | Tons per Year |

No High Emitting Facilities

| Directly Emitted Particulate Matter (PM <sub>10</sub> ) |              |               |
|---|--------------|---------------|
| Facility Name   | City         | Tons per Year |
| U.S. Gypsum Plaster City                                | Plaster City | 156           |

| Directly Emitted Particulate Matter (PM <sub>2.5</sub> ) |      |               |
|--|------|---------------|
| Facility Name  | City | Tons per Year |

No High Emitting Facilities

*San Diego Air Basin*

## County Emission Trends and Forecasts

| County    | NO <sub>x</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | ROG Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------|--|------|------|------|------|------|------|------|------|------|--|------|------|------|------|------|------|------|------|------|
|           | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                     | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| San Diego | 284  | 268  | 271  | 305  | 268  | 232  | 193  | 160  | 129  | 111  | 448                                      | 436  | 401  | 333  | 261  | 213  | 172  | 151  | 141  | 138  |

| County    | Directly Emitted PM <sub>10</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | CO Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------|--|------|------|------|------|------|------|------|------|------|---|------|------|------|------|------|------|------|------|------|
|           | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                    | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| San Diego | 69   | 77   | 86   | 104  | 99   | 107  | 116  | 121  | 127  | 134  | 3389                                    | 3066 | 2897 | 2517 | 1787 | 1333 | 955  | 753  | 630  | 564  |

| County    | Directly Emitted PM <sub>2.5</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------|---|------|------|------|------|------|------|------|------|------|
|           | 1975  | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| San Diego | 27  | 28   | 25   | 30   | 29   | 31   | 31   | 32   | 33   | 35   |



*San Diego Air Basin*  
High Emitting Facilities

| <b>Oxides of Nitrogen (NO<sub>x</sub>)</b> |             |                      |
|--|-------------|----------------------|
| <b>Facility Name</b>                       | <b>City</b> | <b>Tons per Year</b> |
| Cabrillo Power I Encina Power Plant        | Carlsbad    | 224                  |
| Duke Energy South Bay Power Plant          | Chula Vista | 121                  |

| <b>Reactive Organic Gases (ROG)</b> |             |                      |
|-------------------------------------|-------------|----------------------|
| <b>Facility Name</b>                | <b>City</b> | <b>Tons per Year</b> |
| National Steel & Shipbuilding       | San Diego   | 225                  |

| <b>Directly Emitted Particulate Matter (PM<sub>10</sub>)</b> |             |                      |
|--|-------------|----------------------|
| <b>Facility Name</b>   | <b>City</b> | <b>Tons per Year</b> |
| Cabrillo Power I Encina Power Plant                          | Carlsbad    | 169                  |
| Duke Energy South Bay Power Plant                            | Chula Vista | 136                  |

| <b>Directly Emitted Particulate Matter (PM<sub>2.5</sub>)</b> |             |                      |
|---|-------------|----------------------|
| <b>Facility Name</b>  | <b>City</b> | <b>Tons per Year</b> |
| Cabrillo Power I Encina Power Plant                           | Carlsbad    | 169                  |
| Duke Energy South Bay Power Plant                             | Chula Vista | 136                  |

## San Francisco Bay Area Air Basin

### County Emission Trends and Forecasts

| County          | NO <sub>x</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | ROG Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|--|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                     | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Alameda         | 198  | 191  | 190  | 186  | 164  | 151  | 130  | 114  | 90   | 77   | 304                                      | 270  | 221  | 166  | 136  | 108  | 81   | 71   | 64   | 61   |
| Contra Costa    | 254  | 235  | 186  | 170  | 149  | 124  | 87   | 76   | 65   | 59   | 249                                      | 250  | 189  | 127  | 112  | 98   | 66   | 60   | 57   | 56   |
| Marin           | 26   | 26   | 24   | 24   | 21   | 18   | 14   | 12   | 9    | 7    | 55                                       | 49   | 41   | 32   | 27   | 22   | 17   | 14   | 13   | 12   |
| Napa            | 17   | 16   | 17   | 16   | 16   | 14   | 12   | 10   | 8    | 6    | 31                                       | 28   | 24   | 19   | 18   | 18   | 12   | 10   | 9    | 8    |
| San Francisco   | 88   | 92   | 75   | 74   | 66   | 58   | 47   | 39   | 34   | 30   | 153                                      | 128  | 100  | 71   | 59   | 47   | 36   | 30   | 28   | 26   |
| San Mateo       | 91   | 88   | 82   | 79   | 74   | 61   | 49   | 42   | 38   | 35   | 163                                      | 146  | 118  | 84   | 72   | 52   | 39   | 32   | 30   | 29   |
| Santa Clara     | 192  | 185  | 166  | 165  | 152  | 129  | 102  | 84   | 67   | 55   | 345                                      | 317  | 243  | 177  | 147  | 117  | 86   | 72   | 66   | 62   |
| Solano          | 39   | 46   | 41   | 42   | 38   | 34   | 29   | 26   | 22   | 20   | 58                                       | 64   | 52   | 41   | 33   | 27   | 20   | 19   | 18   | 17   |
| Sonoma          | 39   | 40   | 40   | 41   | 39   | 33   | 27   | 21   | 16   | 12   | 73                                       | 68   | 59   | 48   | 42   | 35   | 26   | 22   | 19   | 18   |
| Air Basin Total | 943  | 918  | 821  | 797  | 720  | 622  | 496  | 423  | 348  | 301  | 1430                                     | 1320 | 1047 | 764  | 646  | 525  | 382  | 330  | 302  | 290  |

| County          | Directly Emitted PM <sub>10</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | CO Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                    | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Alameda         | 37   | 36   | 42   | 42   | 40   | 46   | 45   | 47   | 49   | 51   | 2014                                    | 1813 | 1539 | 1156 | 815  | 619  | 427  | 345  | 287  | 258  |
| Contra Costa    | 36   | 37   | 33   | 31   | 30   | 33   | 32   | 34   | 36   | 38   | 1305                                    | 1177 | 1041 | 800  | 600  | 453  | 310  | 249  | 208  | 188  |
| Marin           | 6  | 7    | 7    | 8    | 8    | 9    | 9    | 10   | 10   | 11   | 384                                     | 351  | 291  | 228  | 165  | 129  | 90   | 70   | 59   | 53   |
| Napa            | 7  | 7    | 8    | 8    | 8    | 9    | 8    | 9    | 9    | 10   | 194                                     | 180  | 160  | 136  | 117  | 98   | 71   | 58   | 49   | 44   |
| San Francisco   | 12   | 13   | 14   | 13   | 14   | 18   | 16   | 17   | 18   | 19   | 902                                     | 823  | 680  | 488  | 349  | 264  | 182  | 145  | 127  | 116  |
| San Mateo       | 14   | 14   | 17   | 17   | 17   | 21   | 20   | 21   | 23   | 24   | 1199                                    | 1104 | 883  | 648  | 483  | 329  | 221  | 167  | 145  | 136  |
| Santa Clara     | 40   | 39   | 44   | 45   | 44   | 52   | 50   | 52   | 55   | 57   | 2275                                    | 2089 | 1701 | 1281 | 943  | 723  | 496  | 391  | 329  | 295  |
| Solano          | 12   | 13   | 14   | 14   | 12   | 13   | 13   | 13   | 14   | 14   | 301                                     | 307  | 275  | 223  | 153  | 121  | 88   | 71   | 59   | 53   |
| Sonoma          | 16   | 16   | 18   | 17   | 16   | 18   | 17   | 17   | 18   | 18   | 500                                     | 490  | 441  | 365  | 291  | 226  | 156  | 121  | 98   | 86   |
| Air Basin Total | 181  | 182  | 195  | 194  | 189  | 218  | 210  | 220  | 230  | 241  | 9075                                    | 8334 | 7011 | 5325 | 3917 | 2961 | 2041 | 1617 | 1363 | 1230 |

A portion of Solano County lies within the Sacramento Valley Air Basin. A portion of Sonoma County lies within the North Coast Air Basin.

*San Francisco Bay Area Air Basin*  
 County Emission Trends and Forecasts

| County          | Directly Emitted PM <sub>2.5</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975  | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Alameda         | 15  | 15   | 17   | 17   | 16   | 17   | 17   | 17   | 17   | 17   |
| Contra Costa    | 21  | 21   | 16   | 15   | 14   | 14   | 14   | 14   | 15   | 15   |
| Marin           | 3   | 3    | 3    | 4    | 4    | 4    | 4    | 4    | 4    | 4    |
| Napa            | 3   | 3    | 3    | 3    | 4    | 4    | 4    | 4    | 4    | 4    |
| San Francisco   | 6   | 6    | 6    | 6    | 8    | 7    | 7    | 7    | 7    | 8    |
| San Mateo       | 5   | 5    | 6    | 7    | 7    | 8    | 7    | 8    | 8    | 8    |
| Santa Clara     | 15  | 14   | 15   | 17   | 16   | 17   | 16   | 17   | 17   | 18   |
| Solano          | 5   | 5    | 5    | 6    | 5    | 5    | 5    | 4    | 4    | 5    |
| Sonoma          | 7   | 7    | 8    | 9    | 8    | 8    | 8    | 8    | 8    | 8    |
| Air Basin Total | 81  | 79   | 79   | 83   | 81   | 84   | 81   | 83   | 84   | 87   |

A portion of Solano County lies within the Sacramento Valley Air Basin. A portion of Sonoma County lies within the North Coast Air Basin.  
 Table A-25 (continued)

*San Francisco Bay Area Air Basin*  
High Emitting Facilities

| <b>Oxides of Nitrogen (NO<sub>x</sub>)</b> |               |                      |
|--|---------------|----------------------|
| <b>Facility Name</b>                       | <b>City</b>   | <b>Tons per Year</b> |
| Valero Refining Company                    | Benicia       | 1963                 |
| Shell Martinez Refinery                    | Martinez      | 1782                 |
| Tesoro Refining And Marketing              | Martinez      | 1511                 |
| Hanson Permanente Cement                   | Cupertino     | 1074                 |
| Chevron Products Company                   | Richmond      | 1070                 |
| ConocoPhillips Refining Company            | Rodeo         | 584                  |
| Owens-Brockway Glass Container             | Oakland       | 518                  |
| ConocoPhillips - San Francisco             | Rodeo         | 328                  |
| Mirant Potrero                             | San Francisco | 289                  |
| PG&E Hunters Point Power                   | San Francisco | 216                  |

| <b>Reactive Organic Gases (ROG)</b> |             |                      |
|-------------------------------------|-------------|----------------------|
| <b>Facility Name</b>                | <b>City</b> | <b>Tons per Year</b> |
| Tesoro Refining And Marketing       | Martinez    | 1555                 |
| Chevron Products Company            | Richmond    | 1311                 |
| Shell Martinez Refinery             | Martinez    | 1235                 |
| New United Motor Manufacturing      | Fremont     | 556                  |
| Valero Refining Company             | Benicia     | 494                  |
| ConocoPhillips - San Francisco      | Rodeo       | 464                  |
| Ball Metal Beverage Container       | Fairfield   | 166                  |

*San Francisco Bay Area Air Basin*  
 High Emitting Facilities

| <b>Directly Emitted Particulate Matter (PM<sub>10</sub>)</b> |             |                      |
|--|-------------|----------------------|
| <b>Facility Name</b>   | <b>City</b> | <b>Tons per Year</b> |
| Shell Martinez Refinery                                      | Martinez    | 373                  |
| Chevron Products Company                                     | Richmond    | 240                  |
| Valero Refining Company                                      | Benicia     | 193                  |
| Tesoro Refining And Marketing                                | Martinez    | 127                  |

| <b>Directly Emitted Particulate Matter (PM<sub>2.5</sub>)</b> |             |                      |
|---|-------------|----------------------|
| <b>Facility Name</b>  | <b>City</b> | <b>Tons per Year</b> |
| Shell Martinez Refinery                                       | Martinez    | 360                  |
| Chevron Products Company                                      | Richmond    | 232                  |
| Valero Refining Company                                       | Benicia     | 179                  |
| Tesoro Refining And Marketing                                 | Martinez    | 115                  |

## San Joaquin Valley Air Basin

### County Emission Trends and Forecasts

| County          | NO <sub>x</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | ROG Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|--|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                     | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Fresno          | 132  | 149  | 160  | 169  | 156  | 131  | 117  | 104  | 80   | 65   | 172                                      | 157  | 139  | 129  | 112  | 97   | 87   | 81   | 78   | 78   |
| Kern            | 229  | 331  | 321  | 277  | 216  | 183  | 167  | 148  | 118  | 94   | 585                                      | 705  | 591  | 192  | 109  | 98   | 82   | 76   | 71   | 68   |
| Kings           | 44   | 40   | 43   | 42   | 39   | 36   | 31   | 30   | 24   | 19   | 25                                       | 24   | 24   | 20   | 22   | 19   | 19   | 18   | 18   | 19   |
| Madera          | 31   | 38   | 34   | 36   | 35   | 35   | 34   | 33   | 28   | 25   | 43                                       | 26   | 24   | 24   | 22   | 20   | 19   | 18   | 17   | 17   |
| Merced          | 48   | 53   | 50   | 62   | 57   | 56   | 56   | 48   | 36   | 27   | 49                                       | 46   | 40   | 43   | 37   | 34   | 31   | 29   | 28   | 29   |
| San Joaquin     | 110  | 108  | 113  | 129  | 124  | 115  | 106  | 92   | 74   | 62   | 94                                       | 89   | 87   | 83   | 72   | 61   | 51   | 46   | 43   | 42   |
| Stanislaus      | 51   | 59   | 54   | 71   | 65   | 60   | 56   | 48   | 38   | 31   | 66                                       | 64   | 61   | 65   | 57   | 52   | 45   | 41   | 40   | 40   |
| Tulare          | 55   | 61   | 57   | 59   | 58   | 55   | 49   | 44   | 33   | 26   | 68                                       | 65   | 62   | 60   | 56   | 51   | 48   | 48   | 47   | 49   |
| Air Basin Total | 700  | 839  | 831  | 844  | 750  | 672  | 616  | 549  | 431  | 349  | 1102                                     | 1176 | 1026 | 617  | 486  | 432  | 381  | 357  | 344  | 343  |

| County          | Directly Emitted PM <sub>10</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | CO Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                    | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Fresno          | 81   | 76   | 78   | 92   | 90   | 89   | 80   | 79   | 78   | 80   | 893                                     | 844  | 791  | 740  | 598  | 492  | 388  | 330  | 289  | 266  |
| Kern            | 56   | 55   | 55   | 57   | 54   | 54   | 49   | 48   | 48   | 49   | 683                                     | 763  | 646  | 563  | 426  | 346  | 274  | 227  | 195  | 176  |
| Kings           | 23   | 21   | 22   | 28   | 27   | 28   | 23   | 23   | 23   | 23   | 138                                     | 127  | 109  | 98   | 91   | 75   | 66   | 58   | 51   | 47   |
| Madera          | 18   | 20   | 18   | 21   | 21   | 20   | 18   | 18   | 19   | 19   | 173                                     | 183  | 174  | 156  | 124  | 111  | 94   | 86   | 75   | 70   |
| Merced          | 29   | 29   | 30   | 38   | 36   | 36   | 30   | 30   | 30   | 30   | 323                                     | 304  | 255  | 261  | 196  | 158  | 122  | 98   | 79   | 69   |
| San Joaquin     | 29   | 28   | 30   | 39   | 38   | 39   | 33   | 33   | 33   | 34   | 593                                     | 566  | 572  | 523  | 425  | 336  | 258  | 213  | 183  | 167  |
| Stanislaus      | 24   | 25   | 26   | 35   | 34   | 34   | 28   | 28   | 28   | 28   | 365                                     | 343  | 323  | 348  | 268  | 215  | 157  | 123  | 101  | 88   |
| Tulare          | 27   | 28   | 30   | 37   | 37   | 39   | 35   | 35   | 35   | 37   | 396                                     | 384  | 372  | 332  | 276  | 233  | 180  | 151  | 128  | 117  |
| Air Basin Total | 287  | 284  | 287  | 346  | 336  | 339  | 297  | 293  | 294  | 300  | 3564                                    | 3514 | 3241 | 3020 | 2404 | 1966 | 1538 | 1285 | 1101 | 1001 |

A portion of Kern County lies within the Mojave Desert Air Basin.

Table A-27

*San Joaquin Valley Air Basin*  
 County Emission Trends and Forecasts

| County          | Directly Emitted PM <sub>2.5</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975  | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Fresno          | 38  | 31   | 31   | 33   | 30   | 30   | 29   | 27   | 26   | 27   |
| Kern            | 31  | 30   | 27   | 24   | 21   | 21   | 19   | 18   | 17   | 17   |
| Kings           | 8   | 7    | 7    | 8    | 7    | 8    | 7    | 7    | 7    | 7    |
| Madera          | 8   | 9    | 7    | 8    | 8    | 8    | 7    | 7    | 7    | 7    |
| Merced          | 9   | 9    | 9    | 12   | 10   | 10   | 9    | 9    | 8    | 8    |
| San Joaquin     | 13  | 12   | 12   | 14   | 14   | 13   | 12   | 11   | 11   | 11   |
| Stanislaus      | 9   | 9    | 9    | 12   | 11   | 11   | 10   | 9    | 9    | 9    |
| Tulare          | 10  | 11   | 12   | 14   | 13   | 14   | 14   | 14   | 14   | 14   |
| Air Basin Total | 126   | 118  | 114  | 123  | 114  | 114  | 106  | 102  | 99   | 99   |

A portion of Kern County lies within the Mojave Desert Air Basin.

Table A-27 (continued)

***San Joaquin Valley Air Basin***  
**High Emitting Facilities**

| <b>Oxides of Nitrogen (NO<sub>x</sub>)</b> |               |                      |
|--|---------------|----------------------|
| <b>Facility Name</b>                       | <b>City</b>   | <b>Tons per Year</b> |
| Aera Energy                                | Kern County   | 966                  |
| Guardian Industries (Glass)                | Kingsburg     | 756                  |
| Kern River Cogeneration                    | Kern County   | 511                  |
| Saint-Gobain Containers                    | Madera        | 485                  |
| Sycamore Cogeneration                      | Kern County   | 447                  |
| Chevron USA                                | Kern County   | 436                  |
| Owens-Brockway Glass Container             | Tracy         | 422                  |
| PPG Industries                             | Fresno        | 408                  |
| Occidental Of Elk Hills (Natural Gas)      | Tupman        | 366                  |
| Covanta Stanislaus (Cogeneration)          | Crows Landing | 340                  |

| <b>Reactive Organic Gases (ROG)</b>   |             |                      |
|---------------------------------------|-------------|----------------------|
| <b>Facility Name</b>                  | <b>City</b> | <b>Tons per Year</b> |
| Pactiv Corporation (Packaging)        | Visalia     | 828                  |
| Crimson Resource Management           | Taft        | 445                  |
| Occidental Of Elk Hills (Natural Gas) | Tupman      | 316                  |
| J G Boswell Company Oil Mill          | Corcoran    | 260                  |
| MB Technology                         | Fresno      | 206                  |
| Pilkington North America (Glass)      | Lathrop     | 190                  |
| Equilon Enterprises                   | Bakersfield | 188                  |
| Pactiv Corporation (Packaging)        | Bakersfield | 187                  |
| Silgan Containers                     | Riverbank   | 144                  |
| Chevron USA                           | Kern County | 104                  |



*San Joaquin Valley Air Basin*  
 High Emitting Facilities

| <b>Directly Emitted Particulate Matter (PM<sub>10</sub>)</b> |             |                      |
|--|-------------|----------------------|
| <b>Facility Name</b>   | <b>City</b> | <b>Tons per Year</b> |
| Pilkington North America (Glass)                             | Lathrop     | 220                  |
| Chevron USA 1141   | Kern County | 184                  |
| Chevron USA 1128   | Kern County | 162                  |

| <b>Directly Emitted Particulate Matter (PM<sub>2.5</sub>)</b> |             |                      |
|---|-------------|----------------------|
| <b>Facility Name</b>  | <b>City</b> | <b>Tons per Year</b> |
| Pilkington North America (Glass)                              | Lathrop     | 199                  |
| Chevron USA 1141  | Kern County | 184                  |
| Chevron USA 1128  | Kern County | 162                  |

## South Central Coast Air Basin

### County Emission Trends and Forecasts

| County          | NO <sub>x</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | ROG Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|--|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                     | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| San Luis Obispo | 66   | 63   | 46   | 46   | 31   | 30   | 23   | 20   | 15   | 13   | 47                                       | 50   | 51   | 42   | 34   | 29   | 25   | 23   | 21   | 21   |
| Santa Barbara   | 54   | 64   | 61   | 64   | 54   | 47   | 41   | 35   | 29   | 24   | 83                                       | 75   | 76   | 70   | 53   | 42   | 38   | 34   | 32   | 32   |
| Ventura         | 97   | 106  | 93   | 89   | 73   | 65   | 55   | 42   | 34   | 28   | 109                                      | 117  | 106  | 92   | 74   | 63   | 52   | 46   | 43   | 42   |
| Air Basin Total | 217  | 233  | 200  | 199  | 158  | 143  | 120  | 97   | 78   | 64   | 239                                      | 241  | 233  | 204  | 161  | 134  | 115  | 103  | 97   | 95   |

| County          | Directly Emitted PM <sub>10</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | CO Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                    | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| San Luis Obispo | 24   | 26   | 26   | 27   | 27   | 28   | 29   | 29   | 30   | 31   | 311                                     | 319  | 326  | 292  | 214  | 186  | 146  | 127  | 111  | 102  |
| Santa Barbara   | 19   | 21   | 22   | 23   | 22   | 23   | 23   | 24   | 25   | 25   | 555                                     | 520  | 507  | 452  | 313  | 236  | 189  | 163  | 138  | 124  |
| Ventura         | 22   | 19   | 20   | 23   | 22   | 24   | 25   | 26   | 27   | 28   | 581                                     | 648  | 640  | 587  | 436  | 334  | 246  | 197  | 171  | 157  |
| Air Basin Total | 64   | 66   | 68   | 73   | 71   | 75   | 77   | 79   | 82   | 84   | 1447                                    | 1488 | 1472 | 1331 | 963  | 756  | 581  | 487  | 420  | 383  |

| County          | Directly Emitted PM <sub>2.5</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975  | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| San Luis Obispo | 10  | 10   | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    |
| Santa Barbara   | 9   | 10   | 10   | 10   | 9    | 9    | 9    | 9    | 9    | 10   |
| Ventura         | 11  | 9    | 8    | 9    | 8    | 8    | 8    | 8    | 9    | 9    |
| Air Basin Total | 30  | 29   | 26   | 28   | 26   | 27   | 26   | 27   | 27   | 27   |

## South Central Coast Air Basin

### High Emitting Facilities

| Oxides of Nitrogen (NO <sub>x</sub> )         |               |               |
|---|---------------|---------------|
| Facility Name                                 | City          | Tons per Year |
| Celite Corporation (Minerals)                 | Lompoc        | 437           |
| BreitBurn Energy-Orcutt Hill (Oil Production) | Orcutt        | 213           |
| ConocoPhillips Santa Maria                    | Arroyo Grande | 178           |
| Cat Canyon                                    | Santa Maria   | 101           |

| Reactive Organic Gases (ROG) |             |               |
|------------------------------|-------------|---------------|
| Facility Name                | City        | Tons per Year |
| Aera Energy                  | Ventura     | 167           |
| Cat Canyon                   | Santa Maria | 120           |

| Directly Emitted Particulate Matter (PM <sub>10</sub> ) |        |               |
|---|--------|---------------|
| Facility Name   | City   | Tons per Year |
| Celite Corporation (Minerals)                           | Lompoc | 142           |

| Directly Emitted Particulate Matter (PM <sub>2.5</sub> ) |      |               |
|--|------|---------------|
| Facility Name  | City | Tons per Year |

No High Emitting Facilities

*South Coast Air Basin*

## County Emission Trends and Forecasts

| County          | NO <sub>x</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | ROG Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|--|------|------|------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                     | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Los Angeles     | 1234   | 1067 | 1072 | 1021 | 859  | 735  | 613  | 468  | 374  | 312  | 1984                                     | 1578 | 1501 | 1164 | 859  | 663  | 432  | 324  | 288  | 271  |
| Orange          | 252  | 246  | 266  | 267  | 230  | 203  | 166  | 127  | 98   | 77   | 472                                      | 436  | 437  | 346  | 263  | 212  | 140  | 115  | 106  | 101  |
| Riverside       | 80   | 87   | 92   | 127  | 117  | 116  | 110  | 77   | 60   | 47   | 122                                      | 119  | 126  | 131  | 109  | 95   | 74   | 60   | 58   | 58   |
| San Bernardino  | 128  | 132  | 134  | 146  | 129  | 126  | 111  | 82   | 68   | 57   | 171                                      | 179  | 183  | 160  | 130  | 110  | 83   | 69   | 66   | 66   |
| Air Basin Total | 1693   | 1532 | 1564 | 1561 | 1335 | 1180 | 999  | 755  | 600  | 493  | 2748                                     | 2312 | 2246 | 1801 | 1361 | 1080 | 729  | 569  | 518  | 496  |

| County          | Directly Emitted PM <sub>10</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      | CO Emissions (tons/day, annual average) |       |       |       |      |      |      |      |      |      |
|-----------------|--|------|------|------|------|------|------|------|------|------|---|-------|-------|-------|------|------|------|------|------|------|
|                 | 1975   | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 1975                                    | 1980  | 1985  | 1990  | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Los Angeles     | 147  | 144  | 156  | 204  | 191  | 185  | 161  | 144  | 144  | 145  | 12001                                   | 9230  | 8866  | 6968  | 4904 | 3476 | 2478 | 1689 | 1398 | 1226 |
| Orange          | 30   | 37   | 42   | 64   | 61   | 64   | 57   | 54   | 55   | 56   | 2656                                    | 2397  | 2414  | 2014  | 1494 | 1074 | 780  | 613  | 522  | 467  |
| Riverside       | 17   | 22   | 25   | 48   | 50   | 53   | 51   | 48   | 55   | 60   | 746                                     | 756   | 793   | 827   | 653  | 539  | 433  | 316  | 262  | 233  |
| San Bernardino  | 30   | 30   | 31   | 42   | 43   | 46   | 44   | 40   | 43   | 45   | 1140                                    | 1221  | 1075  | 940   | 727  | 559  | 438  | 332  | 290  | 271  |
| Air Basin Total | 224  | 233  | 254  | 357  | 346  | 348  | 313  | 286  | 296  | 306  | 16544                                   | 13605 | 13148 | 10750 | 7778 | 5648 | 4129 | 2950 | 2472 | 2198 |

| County          | Directly Emitted PM <sub>2.5</sub> Emissions (tons/day, annual average) |      |      |      |      |      |      |      |      |      |
|-----------------|---|------|------|------|------|------|------|------|------|------|
|                 | 1975  | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Los Angeles     | 85  | 74   | 74   | 80   | 67   | 66   | 63   | 57   | 56   | 56   |
| Orange          | 15  | 16   | 17   | 21   | 18   | 19   | 19   | 18   | 18   | 18   |
| Riverside       | 7   | 9    | 9    | 14   | 13   | 14   | 14   | 13   | 14   | 14   |
| San Bernardino  | 18  | 16   | 14   | 16   | 15   | 16   | 16   | 15   | 16   | 16   |
| Air Basin Total | 126   | 115  | 114  | 131  | 114  | 115  | 112  | 103  | 103  | 105  |

A portion of Los Angeles County lies within the Mojave Desert Air Basin. Portions of Riverside County lie within the Mojave Desert and Salton Sea Air Basins. A portion of San Bernardino County Lies within the Mojave Desert Air Basin.

Table A-31

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**South Coast Air Basin****High Emitting Facilities**

| <b>Oxides of Nitrogen (NO<sub>x</sub>)</b> |             |                      |
|--|-------------|----------------------|
| <b>Facility Name</b>                       | <b>City</b> | <b>Tons per Year</b> |
| ChevronTexaco Products                     | El Segundo  | 1088                 |
| California Portland Cement                 | Colton      | 937                  |
| BP West Coast Products Carson Refinery     | Carson      | 893                  |
| ExxonMobil Oil Corporation                 | Torrance    | 770                  |
| Equilon Enterprises, Shell Oil Prod. U S   | Wilmington  | 729                  |
| ConocoPhillips Company                     | Wilmington  | 638                  |
| ConocoPhillips Company                     | Carson      | 368                  |
| BP West Coast Products Wilmington          | Wilmington  | 314                  |
| SERRF Project                              | Long Beach  | 302                  |
| Ultramar (Refining)                        | Wilmington  | 292                  |

| <b>Reactive Organic Gases (ROG)</b>      |             |                      |
|--|-------------|----------------------|
| <b>Facility Name</b>                     | <b>City</b> | <b>Tons per Year</b> |
| ChevronTexaco Products                   | El Segundo  | 775                  |
| BP West Coast Products Carson Refinery   | Carson      | 745                  |
| ExxonMobil Oil Corporation               | Torrance    | 713                  |
| Lasco Bathware (Plumbing Fixtures)       | Anaheim     | 288                  |
| Equilon Enterprises, Shell Oil Prod. U S | Wilmington  | 251                  |
| Dart Container Corp Of California        | Corona      | 205                  |
| ConocoPhillips Company                   | Wilmington  | 187                  |
| Anheuser-Busch (Brewery)                 | Van Nuys    | 162                  |
| ConocoPhillips Company                   | Carson      | 128                  |
| Kinder Morgan Liquids Terminals          | Carson      | 121                  |

## *South Coast Air Basin*

### High Emitting Facilities

| <b>Directly Emitted Particulate Matter (PM<sub>10</sub>)</b> |             |                      |
|--|-------------|----------------------|
| <b>Facility Name</b>   | <b>City</b> | <b>Tons per Year</b> |
| ChevronTexaco Products                                       | El Segundo  | 356                  |
| BP West Coast Products Carson Refinery                       | Carson      | 298                  |
| ExxonMobil Oil Corporation                                   | Torrance    | 196                  |
| ConocoPhillips Company                                       | Wilmington  | 129                  |
| Equilon Enterprises, Shell Oil Prod. U S                     | Wilmington  | 127                  |

| <b>Directly Emitted Particulate Matter (PM<sub>2.5</sub>)</b> |             |                      |
|---|-------------|----------------------|
| <b>Facility Name</b>  | <b>City</b> | <b>Tons per Year</b> |
| ChevronTexaco Products  | El Segundo  | 303                  |
| BP West Coast Products Carson Refinery                        | Carson      | 284                  |
| ExxonMobil Oil Corporation                                    | Torrance    | 187                  |
| ConocoPhillips Company  | Wilmington  | 122                  |

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## *Air Quality*

This section contains air quality trend data for each county in California's 15 air basins, organized alphabetically, by air basin. It is important to note that some counties are located in more than one air basin. For these counties, the air quality data are for that portion of the county located in each air basin. The time period covered is 1986 through 2005 for ozone, CO, NO<sub>2</sub>, and SO<sub>2</sub>; 1988 through 2005 for PM<sub>10</sub>; and 1999 through 2005 for PM<sub>2.5</sub>. In some areas, no monitoring data are available or the data are incomplete. Tables for these areas are included, but the lack of data is noted on the tables.

Consistent with last year's almanac, this section provides information on the 4th highest 1-hour ozone concentration in three years, and the average 4th highest 8-hour concentration in three years. In some cases, these statistics may be the same as the national 1-hour and 8-hour ozone design values. However, since this does not consider data completeness, they are not considered valid for design value purposes.

Consistent with last year's almanac, is the reporting of both State and national statistics for PM<sub>10</sub> and PM<sub>2.5</sub>. State and national values may differ for several reasons: 1) the State and national criteria for assessing data completeness are different, 2) different monitors are approved for assessing compliance with each standard, and 3) the State PM and national PM<sub>2.5</sub> standards use local conditions while the national PM<sub>10</sub> standard uses standard conditions for data reporting.

Additional information about the data in the following tables can be found in the *Introduction* section to this Appendix and in the *Interpreting the Emissions and Air Quality Statistics* section in Chapter 1.

*Great Basin Valleys Air Basin*

## County: Alpine

| OZONE (ppm)                            | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hour Indicator (State)          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat)  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Peak 1-Hour Indicator (State)          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 4th High 1-Hr. in 3 Yrs2               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Maximum 1-Hr. Concentration            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std.            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 1-Hr. Std.            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| PM <sub>10</sub> (µg/m <sup>3</sup> )  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State)            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Calc Days Above State 24-Hr Std        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Calc Days Above Nat 24-Hr Std          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| CARBON MONOXIDE (ppm)                  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Peak 8-Hr. Indicator                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std.            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| NITROGEN DIOXIDE (ppm)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Peak 1-Hr. Indicator                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State)            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| SULFUR DIOXIDE (ppm)                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Peak 1-Hr. Indicator                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average                    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

Table A-33

# Great Basin Valleys Air Basin

## County: Inyo

| OZONE (ppm)                           | 1987 | 1988 | 1989 | 1990 | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         |      |      |      |      |       | 0.073 | 0.076 | 0.090 | 0.090 | 0.089 | 0.085 | 0.089 | 0.089 | 0.087 | 0.086 | 0.088 | 0.088 | 0.085 | 0.090 | 0.090 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |      |      |      |      |       |       | 0.060 | 0.068 | 0.064 | 0.076 | 0.074 | 0.079 | 0.079 | 0.080 | 0.079 | 0.081 | 0.081 | 0.080 | 0.081 | 0.082 |
| Peak 1-Hour Indicator (State)         |      |      |      |      |       | 0.082 | 0.082 | 0.098 | 0.096 | 0.094 | 0.088 | 0.092 | 0.089 | 0.089 | 0.089 | 0.091 | 0.091 | 0.090 | 0.092 | 0.091 |
| 4th High 1-Hr. in 3 Yrs2              |      |      |      |      |       | 0.080 | 0.080 | 0.098 | 0.098 | 0.095 | 0.087 | 0.087 | 0.089 | 0.090 | 0.092 | 0.092 | 0.092 | 0.088 | 0.090 | 0.090 |
| Max. 8-Hr. Concentration              |      |      |      |      | 0.041 | 0.076 | 0.077 | 0.089 | 0.073 | 0.082 | 0.080 | 0.085 | 0.089 | 0.080 | 0.089 | 0.088 | 0.084 | 0.081 | 0.101 | 0.088 |
| Maximum 1-Hr. Concentration           |      |      |      |      | 0.050 | 0.080 | 0.080 | 0.101 | 0.085 | 0.095 | 0.084 | 0.092 | 0.094 | 0.090 | 0.095 | 0.100 | 0.089 | 0.086 | 0.105 | 0.092 |
| Days Above State 8-Hr. Std.           |      |      |      |      | 0     | 2     | 4     | 41    | 2     | 18    | 14    | 30    | 32    | 27    | 30    | 34    | 31    | 28    | 47    | 33    |
| Days Above Nat. 8-Hr. Std.            |      |      |      |      | 0     | 0     | 0     | 3     | 0     | 0     | 0     | 1     | 1     | 0     | 2     | 2     | 0     | 0     | 4     | 2     |
| Days Above State 1-Hr. Std.           |      |      |      |      | 0     | 0     | 0     | 2     | 0     | 1     | 0     | 0     | 0     | 0     | 1     | 2     | 0     | 0     | 1     | 0     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000  | 2001 | 2002  | 2003  | 2004  | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|-------|-------|-------|------|------|
| Max. 24-Hr. Concentration (State)     |      | 119  | 227  | 866  | 150  | 64   | 254  | 388  | 692  | 309  | 402  | 1022 | 2708 | 9967  | 3457 | 7401  | 15641 | 4797  | 738  | 7709 |
| Max. 24-Hr. Concentration (Nat)       |      | 394  | 1861 | 866  | 181  | 526  | 578  | 1381 | 3929 | 2383 | 2229 | 1116 | 2901 | 2638  | 3189 | 7915  | 16619 | 5225  | 879  | 8299 |
| Max. Annual Average (State)           |      |      | 27.1 | 29.4 | 23.2 | 18.1 | 28.7 | 22.4 | 32.3 | 21.5 | 14.6 | 57.8 | 13.6 | 115.4 | 63.1 | 159.3 | 130.4 | 68.3  | 30.1 | 63.1 |
| Max. Annual Average (Nat)             |      | 36.1 | 91.0 | 48.3 | 27.0 | 37.3 | 42.5 | 43.6 | 69.9 | 47.3 | 36.8 | 53.8 | 55.2 | 98.8  | 60.4 | 134.1 | 147.3 | 101.0 | 32.3 | 67.5 |
| Calc Days Above State 24-Hr Std       |      |      | 36   | 18   | 12   | 12   | 36   | 16   | 23   | 7    | 6    | 80   | 0    | 58    | 41   | 93    | 44    | 35    | 36   | 38   |
| Calc Days Above Nat 24-Hr Std         |      | 13   | 27   | 6    | 0    | 19   | 8    | 4    | 14   | 8    | 17   | 22   | 5    | 32    | 17   | 39    | 31    | 23    | 14   | 13   |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006  |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 40.7 | 68.0 | 76.0 | 68.0 | 44.0 | 81.0 | 22.0 | 193.0 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 40.7 | 68.0 | 76.0 | 68.0 | 41.0 | 81.0 | 22.0 | 193.0 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      |      | 67.0 | 23.0 | 62.0 |      |      |      |       |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 5.5  |      |      |      |      |       |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 5.5  | 8.2  |      |      |      |       |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        |      |      |      |      |      | 3.5  | 3.2  | 3.1  | 2.9  |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |      |      |      |      | 6.0  | 11.0 | 5.0  | 5.0  | 4.0  |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    |      |      |      |      | 3.6  | 3.8  | 2.8  | 2.8  | 2.0  |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. |      |      |      |      | 0    | 0    | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  |      |      |      |      | 0    | 0    | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |

| NITROGEN DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

Table A-34

*Great Basin Valleys Air Basin*

## County: Mono

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999 | 2000  | 2001  | 2002  | 2003  | 2004 | 2005 | 2006 |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|------|------|------|
| Peak 8-Hour Indicator (State)         | 0.098 | 0.096 | 0.094 | 0.096 | 0.091 | 0.100 | 0.097 | 0.096 | 0.089 | 0.090 | 0.085 | 0.081 |      | 0.095 | 0.095 | 0.089 | 0.088 |      |      |      |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.084 | 0.086 | 0.081 | 0.081 | 0.076 | 0.081 | 0.078 | 0.082 | 0.079 | 0.079 | 0.077 | 0.073 |      |       |       | 0.073 | 0.072 |      |      |      |
| Peak 1-Hour Indicator (State)         | 0.100 | 0.100 | 0.100 | 0.099 | 0.097 | 0.115 | 0.110 | 0.108 | 0.097 | 0.100 | 0.097 | 0.097 |      | 0.106 | 0.106 | 0.097 | 0.093 |      |      |      |
| 4th High 1-Hr. in 3 Yrs2              | 0.100 | 0.100 | 0.100 | 0.100 | 0.090 | 0.140 | 0.140 | 0.130 | 0.100 | 0.100 | 0.092 | 0.091 |      | 0.100 | 0.100 | 0.100 | 0.090 |      |      |      |
| Max. 8-Hr. Concentration              | 0.091 | 0.098 | 0.077 | 0.091 | 0.073 | 0.103 | 0.077 | 0.092 | 0.101 | 0.090 | 0.078 | 0.073 |      | 0.095 | 0.063 | 0.083 | 0.083 |      |      |      |
| Maximum 1-Hr. Concentration           | 0.100 | 0.100 | 0.080 | 0.100 | 0.090 | 0.150 | 0.090 | 0.120 | 0.110 | 0.090 | 0.092 | 0.079 |      | 0.099 | 0.071 | 0.088 | 0.092 |      |      |      |
| Days Above State 8-Hr. Std.           | 40    | 36    | 6     | 20    | 3     | 33    | 15    | 24    | 7     | 17    | 13    | 2     |      | 17    | 0     | 12    | 23    |      |      |      |
| Days Above Nat. 8-Hr. Std.            | 2     | 6     | 0     | 3     | 0     | 9     | 0     | 3     | 2     | 1     | 0     | 0     |      | 2     | 0     | 0     | 0     |      |      |      |
| Days Above State 1-Hr. Std.           | 4     | 3     | 0     | 2     | 0     | 5     | 0     | 2     | 2     | 0     | 0     | 0     |      | 4     | 0     | 0     | 0     |      |      |      |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000  | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      | 166  | 163  | 161  | 134  | 493  | 981  | 92   | 122  | 158  | 112  | 88   | 109  | 8817  | 3643 | 5291 | 4774 | 803  | 1720 | 3643 |
| Max. 24-Hr. Concentration (Nat)       |      | 166  | 163  | 161  | 134  | 493  | 981  | 92   | 122  | 158  | 112  | 106  | 133  | 10466 | 4482 | 6505 | 5745 | 987  | 2108 | 4300 |
| Max. Annual Average (State)           |      |      |      | 11.6 |      | 37.0 | 34.2 | 29.8 | 26.0 |      | 26.4 |      | 10.0 | 116.8 |      | 62.3 | 10.5 | 19.6 | 19.5 | 16.8 |
| Max. Annual Average (Nat)             |      | 28.6 | 34.6 | 39.6 | 28.6 | 36.3 | 59.4 | 29.9 | 26.0 | 22.1 | 26.5 | 20.8 | 12.6 | 121.2 | 34.6 | 81.7 | 97.9 | 62.4 | 83.5 | 93.2 |
| Calc Days Above State 24-Hr Std       |      |      |      | 13   |      | 83   | 62   | 64   | 37   |      | 36   |      | 0    | 18    |      | 22   | 0    | 11   | 27   | 11   |
| Calc Days Above Nat 24-Hr Std         |      |      | 7    | 12   | 0    | 9    | 6    | 0    | 0    | 0    | 0    | 0    | 0    | 15    | 0    | 14   | 26   | 0    | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      |      | 31.0 | 41.0 |      | 34.0 | 27.0 | 27.0 |      |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      |      | 31.0 | 41.0 |      | 34.0 | 27.0 | 27.0 |      |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 41.0 |      |      |      |      |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | 7.0  | 5.9  | 5.8  | 5.7  | 5.6  |      | 5.0  | 4.7  | 4.6  | 4.0  | 4.0  | 3.9  |      | 2.9  | 2.5  | 2.5  |      |      |      |      |
| Max. 1-Hr. Concentration    | 9.0  | 13.0 | 12.0 | 10.0 | 11.0 | 8.0  | 13.0 | 9.0  | 10.0 | 6.0  | 8.2  | 6.7  |      | 4.2  | 15.4 | 3.8  |      |      |      |      |
| Max. 8-Hr. Concentration    | 6.3  | 5.0  | 5.4  | 4.4  | 5.0  | 4.4  | 4.5  | 5.4  | 5.4  | 3.0  | 3.4  | 3.0  |      | 2.5  | 2.5  | 1.8  |      |      |      |      |
| Days Above State 8-Hr. Std. | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      | 0    | 0    | 0    |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      | 0    | 0    | 0    |      |      |      |      |

| NITROGEN DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| SULFUR DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

# Lake County Air Basin

County: Lake

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.077 | 0.078 | 0.074 | 0.062 | 0.066 | 0.066 | 0.069 | 0.074 | 0.074 | 0.074 | 0.064 | 0.066 | 0.078 | 0.076 | 0.074 | 0.075 | 0.073 | 0.073 | 0.067 | 0.068 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.065 | 0.065 | 0.058 | 0.054 | 0.055 | 0.055 | 0.057 | 0.059 | 0.061 | 0.060 | 0.058 | 0.057 | 0.061 | 0.062 | 0.064 | 0.064 | 0.064 | 0.065 | 0.061 | 0.061 |
| Peak 1-Hour Indicator (State)         | 0.081 | 0.080 | 0.083 | 0.074 | 0.075 | 0.077 | 0.077 | 0.083 | 0.082 | 0.082 | 0.073 | 0.075 | 0.087 | 0.083 | 0.080 | 0.081 | 0.080 | 0.081 | 0.076 | 0.076 |
| 4th High 1-Hr. in 3 Yrs2              | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.070 | 0.070 |
| Max. 8-Hr. Concentration              | 0.080 | 0.061 | 0.053 | 0.063 | 0.066 | 0.057 | 0.072 | 0.075 | 0.063 | 0.070 | 0.065 | 0.076 | 0.072 | 0.073 | 0.065 | 0.077 | 0.065 | 0.066 | 0.066 | 0.071 |
| Maximum 1-Hr. Concentration           | 0.090 | 0.070 | 0.060 | 0.090 | 0.080 | 0.080 | 0.080 | 0.090 | 0.070 | 0.090 | 0.080 | 0.080 | 0.090 | 0.080 | 0.070 | 0.090 | 0.080 | 0.080 | 0.070 | 0.080 |
| Days Above State 8-Hr. Std.           | 3     | 0     | 0     | 0     | 0     | 0     | 1     | 2     | 0     | 0     | 0     | 1     | 3     | 1     | 0     | 5     | 0     | 0     | 0     | 1     |
| Days Above Nat. 8-Hr. Std.            | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above State 1-Hr. Std.           | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      | 29   | 30   | 31   | 22   | 30   | 21   | 30   | 26   | 18   | 34   | 40   | 21   | 23   | 85   | 32   | 22   | 20   | 33   |
| Max. 24-Hr. Concentration (Nat)       |      |      | 29   | 30   | 31   | 22   | 30   | 21   | 30   | 26   | 18   | 35   | 43   | 22   | 21   |      |      |      |      |      |
| Max. Annual Average (State)           |      |      | 12.9 |      |      | 11.9 | 11.3 | 11.0 | 10.8 | 10.2 | 8.6  |      |      | 10.6 | 10.2 | 13.1 | 10.0 | 10.0 | 9.7  | 11.7 |
| Max. Annual Average (Nat)             |      |      | 12.9 | 11.4 | 12.6 | 11.8 | 11.3 | 10.9 | 10.7 | 10.2 | 8.6  | 7.8  | 12.5 | 10.8 | 7.6  |      |      |      |      |      |
| Calc Days Above State 24-Hr Std       |      |      | 0    |      |      | 0    | 0    | 0    | 0    | 0    | 0    |      |      | 0    | 0    | 12   | 0    | 0    | 0    | 0    |
| Calc Days Above Nat 24-Hr Std         |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      | 0    |      |      |      |      |      |      |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 14.5 | 10.0 | 15.1 | 74.7 | 21.9 | 18.1 | 11.3 | 21.6 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 14.5 | 10.0 | 15.1 | 74.7 | 21.9 | 18.1 | 11.3 | 21.6 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      | 9.4  | 11.3 | 46.3 | 15.1 | 9.0  | 10.5 | 21.4 |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 4.1  | 6.3  | 4.4  | 4.4  | 4.8  | 5.1  |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      | 4.3  | 4.1  | 6.3  | 4.4  | 4.4  | 4.8  | 5.1  |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        |      |      | 1.9  | 2.9  | 2.9  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |      |      | 3.0  | 6.0  | 7.0  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    |      |      | 2.2  | 2.6  | 3.1  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. |      |      | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  |      |      | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| NITROGEN DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| SULFUR DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

Table A-36

*Lake Tahoe Air Basin*

## County: El Dorado

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |       |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.080 | 0.083 | 0.084 | 0.085 | 0.086 | 0.083 | 0.072 | 0.076 | 0.078 | 0.079 | 0.077 | 0.077 | 0.077 | 0.077 | 0.075 | 0.075 | 0.075 | 0.071 | 0.071 | 0.074 |       |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.071 | 0.074 | 0.076 | 0.075 | 0.076 | 0.075 |       | 0.061 | 0.070 | 0.071 | 0.068 | 0.069 | 0.069 | 0.069 | 0.067 | 0.066 | 0.066 | 0.062 |       |       |       |
| Peak 1-Hour Indicator (State)         | 0.085 | 0.089 | 0.092 | 0.092 | 0.093 | 0.088 | 0.079 | 0.079 | 0.083 | 0.084 | 0.083 | 0.082 | 0.081 | 0.081 | 0.081 | 0.082 | 0.081 | 0.077 | 0.072 | 0.079 |       |
| 4th High 1-Hr. in 3 Yrs2              | 0.090 | 0.090 | 0.090 | 0.090 | 0.090 | 0.090 | 0.080 | 0.083 | 0.086 | 0.083 | 0.083 | 0.081 | 0.081 | 0.081 | 0.083 | 0.083 | 0.083 | 0.083 | 0.078 | 0.073 | 0.086 |
| Max. 8-Hr. Concentration              | 0.082 | 0.085 | 0.085 | 0.080 | 0.081 | 0.082 | 0.071 | 0.079 | 0.089 | 0.073 | 0.071 | 0.077 | 0.079 | 0.072 | 0.077 | 0.079 | 0.066 | 0.058 | 0.067 | 0.075 |       |
| Maximum 1-Hr. Concentration           | 0.090 | 0.090 | 0.100 | 0.090 | 0.090 | 0.100 | 0.090 | 0.086 | 0.092 | 0.083 | 0.095 | 0.081 | 0.095 | 0.083 | 0.088 | 0.083 | 0.075 | 0.066 | 0.073 | 0.086 |       |
| Days Above State 8-Hr. Std.           | 17    | 20    | 20    | 8     | 10    | 20    | 2     | 6     | 5     | 2     | 1     | 7     | 3     | 2     | 2     | 1     | 0     | 0     | 0     | 2     |       |
| Days Above Nat. 8-Hr. Std.            | 0     | 1     | 2     | 0     | 0     | 0     | 0     | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |       |
| Days Above State 1-Hr. Std.           | 0     | 0     | 2     | 0     | 0     | 1     | 0     | 0     | 0     | 0     | 1     | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |       |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      |      |      |      | 52   | 92   | 78   | 71   | 72   | 55   | 50   | 36   | 44   | 50   | 46   | 52   | 41   | 33   |      |
| Max. 24-Hr. Concentration (Nat)       |      |      |      |      |      | 52   | 92   | 78   | 71   | 72   | 55   | 59   | 41   | 50   | 58   | 51   | 61   | 47   | 38   | 67   |
| Max. Annual Average (State)           |      |      |      |      |      |      |      | 27.1 | 22.5 |      | 21.6 | 19.8 | 16.9 | 17.3 | 16.9 | 17.1 | 15.0 |      | 14.8 |      |
| Max. Annual Average (Nat)             |      |      |      |      |      | 5.9  | 26.0 | 27.1 | 22.5 | 23.4 | 21.6 | 23.4 | 19.9 | 20.4 | 19.8 | 19.9 | 17.6 | 15.2 | 17.5 | 17.1 |
| Calc Days Above State 24-Hr Std       |      |      |      |      |      |      |      | 42   | 18   |      | 13   | 0    | 0    | 0    | 0    | 0    | 6    |      | 0    |      |
| Calc Days Above Nat 24-Hr Std         |      |      |      |      |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 21.0 | 23.0 | 31.0 | 27.0 | 24.0 | 23.2 |      |      |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 21.0 | 23.0 | 31.0 | 27.0 | 21.0 | 20.0 |      |      |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      | 21.0 | 21.0 | 26.0 | 22.0 | 19.0 |      |      |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      | 8.3  | 7.8  | 8.2  |      | 7.2  |      |      |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      | 8.3  | 7.7  | 8.2  | 7.6  | 7.2  |      |      |      |

| CARBON MONOXIDE (ppm)            | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator             | 14.9 | 13.2 | 12.6 | 11.9 | 11.1 | 10.2 | 8.7  | 8.3  | 7.8  | 7.0  | 5.6  | 5.0  | 2.3  | 2.1  | 1.9  | 2.0  | 1.9  | 1.9  |      |      |
| Max. 1-Hr. Concentration         | 19.0 | 19.0 | 17.0 | 18.0 | 14.0 | 15.0 | 13.0 | 11.3 | 9.3  | 10.4 | 7.7  | 7.5  | 3.2  | 5.4  | 2.9  | 3.8  | 2.4  | 2.2  |      |      |
| Max. 8-Hr. Concentration         | 13.0 | 12.5 | 11.3 | 10.1 | 9.2  | 9.9  | 7.5  | 7.1  | 6.3  | 5.1  | 3.8  | 4.3  | 2.4  | 1.9  | 1.9  | 3.0  | 1.5  | 1.2  |      |      |
| Days Above Nat. 8-Hr. Std.       | 12   | 9    | 5    | 5    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      |      |
| Days Above Lake Tahoe 8-Hr. Std. | 87   | 80   | 67   | 39   | 24   | 13   | 12   | 9    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      |      |

| NITROGEN DIOXIDE (ppm)      | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005 | 2006 |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| Peak 1-Hr. Indicator        | 0.076 | 0.073 | 0.074 | 0.078 | 0.076 | 0.078 | 0.062 | 0.061 | 0.062 | 0.062 | 0.061 | 0.060 | 0.057 | 0.058 | 0.057 | 0.056 | 0.055 | 0.054 |      |      |
| Max. 1-Hr. Concentration    | 0.080 | 0.070 | 0.070 | 0.150 | 0.060 | 0.060 | 0.060 | 0.057 | 0.059 | 0.061 | 0.051 | 0.052 | 0.060 | 0.052 | 0.054 | 0.055 | 0.052 | 0.055 |      |      |
| Max. Annual Average (Nat)   | 0.012 | 0.012 | 0.012 | 0.012 | 0.012 | 0.011 | 0.011 | 0.012 | 0.011 | 0.011 | 0.011 | 0.010 | 0.011 | 0.011 | 0.011 | 0.012 | 0.010 |       |      |      |
| Max. Annual Average (State) | 0.012 | 0.012 |       | 0.012 | 0.012 |       | 0.011 | 0.012 | 0.011 | 0.011 | 0.011 |       | 0.011 | 0.011 | 0.011 | 0.012 | 0.010 |       |      |      |

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

Table A-37

A portion of El Dorado County lies within the Mountain Counties Air Basin.

# Lake Tahoe Air Basin

## County: Placer

| OZONE (ppm)                           | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003  | 2004  | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|------|------|
| Peak 8-Hour Indicator (State)         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.075 | 0.075 |      |      |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |      |      |
| Peak 1-Hour Indicator (State)         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.079 | 0.079 |      |      |
| 4th High 1-Hr. in 3 Yrs <sup>2</sup>  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.079 | 0.079 |      |      |
| Max. 8-Hr. Concentration              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.070 | 0.061 |      |      |
| Maximum 1-Hr. Concentration           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.086 | 0.065 |      |      |
| Days Above State 8-Hr. Std.           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 2     | 0     |      |      |
| Days Above Nat. 8-Hr. Std.            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0     | 0     |      |      |
| Days Above State 1-Hr. Std.           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0     | 0     |      |      |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      |      |      |      |      |      |      | 24   | 50   |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)       |      |      |      |      |      |      |      |      | 24   | 50   |      |      |      |      |      |      | 87   | 35   |      |      |
| Max. Annual Average (State)           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)             |      |      |      |      |      |      |      |      | 3.6  | 21.7 |      |      |      |      |      |      | 15.6 | 16.5 |      |      |
| Calc Days Above State 24-Hr Std       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Calc Days Above Nat 24-Hr Std         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 27.4 | 8.0  |      |      |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| CARBON MONOXIDE (ppm)            | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator             |      |      |      |      |      |      | 3.9  | 3.9  | 3.9  |      |      |      |      |      |      |      | 1.0  | 1.0  |      |      |
| Max. 1-Hr. Concentration         |      |      |      |      |      |      | 9.0  | 11.6 | 9.5  |      |      |      |      |      |      |      | 1.4  | 0.9  |      |      |
| Max. 8-Hr. Concentration         |      |      |      |      |      |      | 4.3  | 4.7  | 2.9  |      |      |      |      |      |      |      | 0.8  | 0.5  |      |      |
| Days Above Nat. 8-Hr. Std.       |      |      |      |      |      |      | 0    | 0    | 0    |      |      |      |      |      |      |      | 0    | 0    |      |      |
| Days Above Lake Tahoe 8-Hr. Std. |      |      |      |      |      |      | 0    | 0    | 0    |      |      |      |      |      |      |      | 0    | 0    |      |      |

| NITROGEN DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004  | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|
| Peak 1-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.026 |      |      |
| Max. Annual Average (Nat)   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |
| Max. Annual Average (State) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

Table A-38

Portions of Placer County lie within the Mountain Counties and Sacramento Valley Air Basins.

*Mojave Desert Air Basin*

County: Kern

| OZONE (ppm)                           | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         |      |      |      |      |      |      | 0.124 | 0.113 | 0.118 | 0.111 | 0.108 | 0.114 | 0.110 | 0.110 | 0.105 | 0.104 | 0.107 | 0.106 | 0.108 | 0.098 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |      |      |      |      |      |      |       |       | 0.099 | 0.100 | 0.097 | 0.099 | 0.096 | 0.097 | 0.096 | 0.095 | 0.098 | 0.092 | 0.090 | 0.086 |
| Peak 1-Hour Indicator (State)         |      |      |      |      |      |      | 0.140 | 0.129 | 0.137 | 0.125 | 0.122 | 0.125 | 0.121 | 0.121 | 0.116 | 0.115 | 0.117 | 0.114 | 0.117 | 0.107 |
| 4th High 1-Hr. in 3 Yrs2              |      |      |      |      |      |      | 0.130 | 0.130 | 0.142 | 0.123 | 0.123 | 0.126 | 0.119 | 0.119 | 0.118 | 0.116 | 0.118 | 0.113 | 0.111 | 0.109 |
| Max. 8-Hr. Concentration              |      |      |      |      |      |      | 0.112 | 0.107 | 0.109 | 0.109 | 0.096 | 0.117 | 0.100 | 0.095 | 0.104 | 0.102 | 0.103 | 0.090 | 0.096 | 0.101 |
| Maximum 1-Hr. Concentration           |      |      |      |      |      |      | 0.130 | 0.124 | 0.142 | 0.130 | 0.119 | 0.134 | 0.119 | 0.113 | 0.126 | 0.115 | 0.119 | 0.121 | 0.113 | 0.109 |
| Days Above State 8-Hr. Std.           |      |      |      |      |      |      | 33    | 114   | 101   | 103   | 76    | 93    | 106   | 86    | 104   | 90    | 84    | 50    | 41    | 52    |
| Days Above Nat. 8-Hr. Std.            |      |      |      |      |      |      | 13    | 46    | 46    | 42    | 19    | 40    | 34    | 15    | 32    | 26    | 27    | 3     | 9     | 8     |
| Days Above State 1-Hr. Std.           |      |      |      |      |      |      | 15    | 43    | 54    | 46    | 22    | 43    | 39    | 25    | 33    | 18    | 31    | 8     | 8     | 10    |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      | 54   | 462  | 534  | 65   | 50   | 33   | 143  | 92   | 130  | 159  | 40   | 90   | 112  | 194  | 158  | 44   | 51   | 61   |
| Max. 24-Hr. Concentration (Nat)       |      |      | 54   | 462  | 534  | 65   | 64   | 116  | 235  | 92   | 130  | 165  | 45   | 90   | 115  | 208  | 162  | 47   | 55   | 65   |
| Max. Annual Average (State)           |      |      |      |      |      |      |      |      |      | 16.9 | 18.4 | 15.0 | 17.7 | 20.3 | 19.8 | 24.2 | 21.5 | 18.3 |      | 19.5 |
| Max. Annual Average (Nat)             |      |      | 25.7 | 34.0 | 36.3 | 21.9 | 21.2 | 15.7 | 18.5 | 16.9 | 18.6 | 16.2 | 19.3 | 21.6 | 21.2 | 26.1 | 22.9 | 20.8 | 19.8 | 21.4 |
| Calc Days Above State 24-Hr Std       |      |      |      |      |      |      | 0    |      |      | 0    | 6    | 0    | 0    | 6    | 6    | 12   | 12   | 0    |      | 13   |
| Calc Days Above Nat 24-Hr Std         |      |      |      | 6    |      |      | 0    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 7    | 6    | 0    | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 27.6 | 38.6 | 15.3 | 31.4 | 23.2 | 17.8 | 26.1 | 21.3 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 27.6 | 38.6 | 15.3 | 31.4 | 23.2 | 17.8 | 26.1 | 21.3 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.9 | 28.0 |      |      |      | 13.0 |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 6.2  |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 6.1  | 8.2  |      |      |      | 6.2  |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

| NITROGEN DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006 |
|-----------------------------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| Peak 1-Hr. Indicator        |      |      |      |      |      |      |       | 0.063 | 0.067 | 0.072 | 0.072 | 0.072 | 0.067 | 0.070 | 0.066 | 0.067 | 0.064 | 0.062 | 0.063 |      |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      | 0.070 | 0.060 | 0.120 | 0.075 | 0.075 | 0.082 | 0.083 | 0.071 | 0.071 | 0.071 | 0.073 | 0.064 | 0.044 |      |
| Max. Annual Average (Nat)   |      |      |      |      |      |      |       | 0.008 | 0.008 | 0.009 | 0.010 | 0.011 | 0.010 | 0.010 | 0.010 | 0.009 | 0.009 | 0.008 |       |      |
| Max. Annual Average (State) |      |      |      |      |      |      |       |       | 0.008 |       | 0.010 | 0.011 |       | 0.010 | 0.010 |       | 0.009 |       |       |      |

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*



# Mojave Desert Air Basin

County: Los Angeles

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.151 | 0.145 | 0.144 | 0.142 | 0.117 | 0.125 | 0.127 | 0.129 | 0.151 | 0.114 | 0.114 | 0.112 | 0.109 | 0.112 | 0.109 | 0.116 | 0.119 | 0.115 | 0.112 | 0.109 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.132 | 0.128 | 0.123 | 0.095 |       | 0.110 | 0.113 | 0.113 | 0.108 | 0.103 | 0.098 | 0.097 | 0.089 | 0.092 | 0.091 |       | 0.082 | 0.100 | 0.098 | 0.096 |
| Peak 1-Hour Indicator (State)         | 0.192 | 0.187 | 0.180 | 0.178 | 0.140 | 0.154 | 0.159 | 0.161 | 0.194 | 0.138 | 0.135 | 0.140 | 0.132 | 0.138 | 0.129 | 0.140 | 0.135 | 0.132 | 0.128 | 0.126 |
| 4th High 1-Hr. in 3 Yrs2              | 0.190 | 0.180 | 0.170 | 0.170 | 0.140 | 0.160 | 0.160 | 0.160 | 0.185 | 0.138 | 0.129 | 0.137 | 0.137 | 0.139 | 0.128 | 0.135 | 0.135 | 0.133 | 0.127 | 0.123 |
| Max. 8-Hr. Concentration              | 0.140 | 0.131 | 0.147 | 0.106 | 0.111 | 0.137 | 0.127 | 0.112 | 0.154 | 0.104 | 0.101 | 0.118 | 0.083 | 0.117 | 0.102 | 0.107 | 0.120 | 0.101 | 0.103 | 0.105 |
| Maximum 1-Hr. Concentration           | 0.170 | 0.180 | 0.210 | 0.150 | 0.140 | 0.170 | 0.160 | 0.143 | 0.185 | 0.131 | 0.123 | 0.164 | 0.097 | 0.141 | 0.146 | 0.157 | 0.156 | 0.121 | 0.127 | 0.132 |
| Days Above State 8-Hr. Std.           | 120   | 123   | 119   | 76    | 90    | 101   | 75    | 78    | 121   | 58    | 32    | 53    | 8     | 79    | 84    | 87    | 92    | 85    | 73    | 66    |
| Days Above Nat. 8-Hr. Std.            | 76    | 91    | 65    | 36    | 39    | 53    | 36    | 33    | 70    | 18    | 7     | 18    | 0     | 28    | 24    | 38    | 33    | 24    | 31    | 16    |
| Days Above State 1-Hr. Std.           | 105   | 105   | 95    | 52    | 62    | 78    | 59    | 62    | 92    | 40    | 14    | 24    | 1     | 35    | 37    | 46    | 50    | 37    | 42    | 22    |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      |      | 342  | 780  | 68   | 70   | 97   | 61   | 67   | 54   | 80   | 85   |      |      | 73   | 54   | 33   | 47   | 58   |
| Max. 24-Hr. Concentration (Nat)       |      |      |      | 342  | 780  | 68   | 70   | 97   | 61   | 67   | 54   | 80   | 85   | 163  | 123  | 73   | 57   | 56   | 53   | 63   |
| Max. Annual Average (State)           |      |      |      |      |      |      | 35.1 |      |      | 29.0 |      |      | 28.6 |      |      | 29.7 | 23.2 |      |      | 25.2 |
| Max. Annual Average (Nat)             |      |      |      | 49.5 | 58.0 | 32.6 | 34.9 | 29.3 | 25.5 | 29.0 | 29.4 | 23.6 | 28.7 | 27.5 | 29.6 | 29.7 | 24.6 | 22.6 | 25.0 | 26.9 |
| Calc Days Above State 24-Hr Std       |      |      |      |      |      |      | 58   |      |      | 12   |      |      | 13   |      |      | 6    | 6    |      |      | 26   |
| Calc Days Above Nat 24-Hr Std         |      |      |      |      | 13   | 0    | 0    |      | 0    | 0    | 0    |      | 0    |      |      | 0    | 0    | 0    | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 47.6 | 36.0 | 35.0 | 24.0 | 25.0 | 18.0 | 28.0 | 18.0 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 47.6 | 36.0 | 35.0 | 24.0 | 25.0 | 18.0 | 28.0 | 18.0 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      | 23.5 | 21.0 |      |      | 17.0 | 15.0 |      | 13.0 |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      | 11.2 |      |      |      | 9.4  |      | 8.9  | 7.4  |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      | 11.2 | 10.5 |      |      | 9.4  | 8.5  |      | 7.4  |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | 4.9  | 4.6  | 5.5  | 7.7  | 7.6  | 6.5  | 6.2  | 6.1  | 5.8  | 5.3  | 4.8  | 4.4  | 4.4  | 4.6  | 4.8  | 2.0  | 2.0  | 2.0  | 1.9  | 1.8  |
| Max. 1-Hr. Concentration    | 12.0 | 11.0 | 13.0 | 11.0 | 10.0 | 9.0  | 8.0  | 9.1  | 7.5  | 6.8  | 5.9  | 5.4  | 7.2  | 6.0  | 6.1  | 3.4  | 3.2  | 2.9  | 2.9  | 3.2  |
| Max. 8-Hr. Concentration    | 3.9  | 5.9  | 7.1  | 8.3  | 7.1  | 5.4  | 5.9  | 5.6  | 5.1  | 4.7  | 4.0  | 3.6  | 5.4  | 4.3  | 3.3  | 2.2  | 1.9  | 1.7  | 1.5  | 1.6  |
| Days Above State 8-Hr. Std. | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Days Above Nat. 8-Hr. Std.  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| NITROGEN DIOXIDE (ppm)      | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 1-Hr. Indicator        | 0.084 | 0.090 | 0.091 | 0.096 | 0.095 | 0.097 | 0.098 | 0.097 | 0.098 | 0.090 | 0.086 | 0.070 | 0.070 | 0.070 | 0.070 | 0.074 | 0.071 | 0.072 | 0.071 | 0.070 |
| Max. 1-Hr. Concentration    | 0.090 | 0.090 | 0.080 | 0.090 | 0.110 | 0.160 | 0.110 | 0.097 | 0.140 | 0.080 | 0.071 | 0.077 | 0.083 | 0.065 | 0.075 | 0.101 | 0.067 | 0.103 | 0.074 | 0.066 |
| Max. Annual Average (Nat)   | 0.016 | 0.016 | 0.019 | 0.021 | 0.014 | 0.017 | 0.020 | 0.018 | 0.019 | 0.015 | 0.014 | 0.016 | 0.018 | 0.016 |       | 0.016 | 0.015 | 0.015 | 0.015 | 0.015 |
| Max. Annual Average (State) | 0.016 | 0.016 | 0.019 |       | 0.015 | 0.017 | 0.020 | 0.018 | 0.019 | 0.015 |       |       |       | 0.016 |       | 0.016 | 0.015 | 0.015 | 0.015 | 0.015 |

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

Table A-40

A portion of Los Angeles County lies within the South Coast Air Basin.

*Mojave Desert Air Basin*

County: Riverside

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.116 | 0.117 | 0.119 | 0.109 | 0.115 | 0.118 | 0.119 |      |      |      |      |      |      |      |      |      | 0.076 | 0.070 | 0.073 | 0.070 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.101 | 0.103 | 0.102 | 0.096 | 0.099 | 0.101 | 0.101 |      |      |      |      |      |      |      |      |      |       |       | 0.063 | 0.061 |
| Peak 1-Hour Indicator (State)         | 0.148 | 0.149 | 0.147 | 0.135 | 0.140 | 0.143 | 0.144 |      |      |      |      |      |      |      |      |      | 0.079 | 0.077 | 0.079 | 0.076 |
| 4th High 1-Hr. in 3 Yrs2              | 0.148 | 0.148 | 0.147 | 0.134 | 0.130 | 0.130 | 0.131 |      |      |      |      |      |      |      |      |      | 0.077 | 0.077 | 0.077 | 0.077 |
| Max. 8-Hr. Concentration              | 0.127 | 0.105 | 0.117 | 0.102 | 0.115 | 0.115 | 0.108 |      |      |      |      |      |      |      |      |      | 0.071 | 0.067 | 0.072 | 0.059 |
| Maximum 1-Hr. Concentration           | 0.148 | 0.140 | 0.140 | 0.130 | 0.130 | 0.138 | 0.140 |      |      |      |      |      |      |      |      |      | 0.077 | 0.078 | 0.084 | 0.078 |
| Days Above State 8-Hr. Std.           | 89    | 48    | 49    | 45    | 81    | 79    | 39    |      |      |      |      |      |      |      |      |      | 1     | 0     | 1     | 0     |
| Days Above Nat. 8-Hr. Std.            | 49    | 16    | 20    | 18    | 37    | 39    | 16    |      |      |      |      |      |      |      |      |      | 0     | 0     | 0     | 0     |
| Days Above State 1-Hr. Std.           | 65    | 32    | 31    | 23    | 33    | 44    | 18    |      |      |      |      |      |      |      |      |      | 0     | 0     | 0     | 0     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)       |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State)           |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)             |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Calc Days Above State 24-Hr Std       |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Calc Days Above Nat 24-Hr Std         |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)        |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 98th Percentile of 24-Hr Conc.         |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Annual Average (State)                 |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| CARBON MONOXIDE (ppm)       | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| NITROGEN DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| SULFUR DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

# Mojave Desert Air Basin

County: San Bernardino

| OZONE (ppm)                            | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)          | 0.201 | 0.198 | 0.169 | 0.178 | 0.177 | 0.172 | 0.162 | 0.154 | 0.157 | 0.154 | 0.152 | 0.151 | 0.138 | 0.130 | 0.118 | 0.120 | 0.121 | 0.122 | 0.121 | 0.119 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat)  | 0.163 | 0.165 | 0.153 | 0.151 | 0.151 | 0.147 | 0.139 | 0.138 | 0.133 | 0.131 | 0.124 | 0.127 | 0.118 | 0.110 | 0.102 | 0.106 | 0.106 | 0.107 | 0.105 | 0.103 |
| Peak 1-Hour Indicator (State)          | 0.230 | 0.233 | 0.204 | 0.215 | 0.223 | 0.219 | 0.193 | 0.191 | 0.192 | 0.186 | 0.172 | 0.176 | 0.162 | 0.154 | 0.136 | 0.139 | 0.137 | 0.139 | 0.138 | 0.132 |
| 4th High 1-Hr. in 3 Yrs2               | 0.230 | 0.230 | 0.210 | 0.220 | 0.230 | 0.230 | 0.200 | 0.190 | 0.210 | 0.182 | 0.175 | 0.167 | 0.166 | 0.164 | 0.135 | 0.143 | 0.138 | 0.138 | 0.138 | 0.134 |
| Max. 8-Hr. Concentration               | 0.161 | 0.167 | 0.161 | 0.198 | 0.173 | 0.165 | 0.147 | 0.155 | 0.170 | 0.146 | 0.133 | 0.144 | 0.122 | 0.132 | 0.117 | 0.123 | 0.130 | 0.119 | 0.123 | 0.124 |
| Maximum 1-Hr. Concentration            | 0.220 | 0.270 | 0.220 | 0.270 | 0.240 | 0.230 | 0.200 | 0.188 | 0.240 | 0.175 | 0.187 | 0.202 | 0.137 | 0.163 | 0.146 | 0.148 | 0.163 | 0.138 | 0.145 | 0.148 |
| Days Above State 8-Hr. Std.            | 172   | 170   | 172   | 179   | 162   | 168   | 157   | 170   | 139   | 148   | 150   | 122   | 146   | 129   | 117   | 126   | 133   | 121   | 123   | 119   |
| Days Above Nat. 8-Hr. Std.             | 135   | 137   | 136   | 118   | 122   | 128   | 121   | 126   | 94    | 83    | 74    | 60    | 61    | 61    | 47    | 59    | 61    | 41    | 49    | 47    |
| Days Above State 1-Hr. Std.            | 147   | 148   | 150   | 135   | 132   | 148   | 129   | 137   | 109   | 98    | 95    | 74    | 74    | 79    | 52    | 68    | 78    | 63    | 59    | 56    |
| PM <sub>10</sub> (µg/m <sup>3</sup> )  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       | 63    | 191   | 381   | 389   | 80    | 79    | 140   | 85    | 138   | 85    | 70    | 109   | 80    | 84    | 98    | 169   | 83    | 70    | 77    |
| Max. 24-Hr. Concentration (Nat)        |       | 63    | 191   | 381   | 389   | 80    | 79    | 140   | 85    | 138   | 85    | 70    | 109   | 95    | 84    | 98    | 181   | 88    | 78    | 83    |
| Max. Annual Average (State)            |       |       | 42.5  |       |       | 39.7  | 34.4  | 27.9  |       | 28.9  | 27.4  | 15.6  | 32.2  | 33.6  | 29.7  | 34.0  | 27.9  |       | 26.1  | 30.5  |
| Max. Annual Average (Nat)              |       | 34.7  | 42.5  | 40.9  | 36.9  | 39.4  | 35.2  | 42.1  | 14.7  | 28.9  | 27.3  | 27.8  | 32.1  | 33.6  | 29.8  | 34.3  | 33.2  | 28.4  | 28.9  | 33.0  |
| Calc Days Above State 24-Hr Std        |       |       | 72    |       |       | 84    | 50    | 6     |       | 18    | 6     | 0     | 31    | 37    | 18    | 55    | 18    |       | 19    | 12    |
| Calc Days Above Nat 24-Hr Std          |       |       | 6     |       | 7     | 0     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 8     | 0     | 0     | 0     |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       |       |       |       |       |       |       |       |       |       |       |       | 25.4  | 31.0  | 32.0  | 38.0  | 28.0  | 34.0  | 27.0  | 22.0  |
| Max. 24-Hr. Concentration (Nat)        |       |       |       |       |       |       |       |       |       |       |       |       | 25.4  | 31.0  | 31.0  | 38.0  | 28.0  | 34.0  | 27.0  | 22.0  |
| 98th Percentile of 24-Hr Conc.         |       |       |       |       |       |       |       |       |       |       |       |       | 20.4  | 23.0  | 21.0  | 33.0  |       | 20.0  |       | 19.0  |
| Annual Average (State)                 |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 11.5  | 13.9  |       | 10.8  |       | 10.3  |
| Avg. of Qtrly. Means (Nat)             |       |       |       |       |       |       |       |       |       |       |       |       | 11.9  | 12.0  | 11.5  | 13.9  |       | 10.8  |       | 10.4  |
| CARBON MONOXIDE (ppm)                  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 8-Hr. Indicator                   | 3.5   | 4.2   | 4.1   | 4.1   | 4.2   | 4.3   | 3.8   | 3.8   | 2.9   | 7.4   | 2.3   | 2.4   | 2.1   | 1.7   | 1.8   | 1.8   | 1.8   | 1.8   | 1.7   | 1.7   |
| Max. 1-Hr. Concentration               | 6.0   | 10.0  | 7.0   | 9.0   | 5.0   | 6.0   | 5.0   | 7.9   | 6.1   | 8.4   | 4.1   | 3.9   | 10.3  | 3.0   | 3.8   | 3.0   | 3.9   | 2.4   | 3.3   | 3.5   |
| Max. 8-Hr. Concentration               | 4.0   | 5.8   | 3.9   | 3.9   | 3.9   | 3.4   | 3.5   | 3.2   | 2.7   | 7.5   | 3.1   | 2.2   | 3.2   | 1.6   | 1.7   | 1.8   | 2.1   | 1.7   | 1.6   | 1.6   |
| Days Above State 8-Hr. Std.            | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above Nat. 8-Hr. Std.             | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| NITROGEN DIOXIDE (ppm)                 | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.134 | 0.112 | 0.100 | 0.182 | 0.259 | 0.275 | 0.289 | 0.202 | 0.124 | 0.119 | 0.097 | 0.102 | 0.105 | 0.106 | 0.099 | 0.096 | 0.092 | 0.092 | 0.090 | 0.088 |
| Max. 1-Hr. Concentration               | 0.130 | 0.100 | 0.120 | 0.190 | 0.350 | 0.240 | 0.360 | 0.138 | 0.118 | 0.087 | 0.107 | 0.196 | 0.113 | 0.105 | 0.102 | 0.091 | 0.095 | 0.101 | 0.087 | 0.082 |
| Max. Annual Average (Nat)              |       | 0.023 | 0.026 | 0.024 | 0.028 | 0.026 | 0.026 | 0.027 | 0.023 | 0.021 | 0.020 | 0.022 | 0.024 | 0.025 | 0.024 | 0.025 | 0.024 | 0.023 | 0.022 | 0.022 |
| Max. Annual Average (State)            |       | 0.018 | 0.026 | 0.019 |       | 0.025 |       | 0.024 | 0.023 | 0.021 | 0.020 | 0.021 | 0.024 | 0.025 | 0.024 | 0.025 | 0.024 | 0.023 | 0.022 | 0.022 |
| SULFUR DIOXIDE (ppm)                   | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.03  | 0.07  | 0.06  | 0.06  | 0.04  | 0.03  | 0.02  | 0.02  | 0.02  | 0.01  | 0.02  | 0.02  | 0.02  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  |
| Max. Annual Average                    | 0.00  | 0.00  | 0.00  | 0.01  | 0.01  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Max. 24-Hr. Concentration              | 0.00  | 0.02  | 0.03  | 0.05  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  |

Table A-42

A portion of San Bernardino County lies within the South Coast Air Basin.

**Mountain Counties Air Basin****County: Amador**

| OZONE (ppm)                           | 1987 | 1988 | 1989 | 1990 | 1991 | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         |      |      |      |      |      | 0.101 | 0.099 | 0.100 | 0.104 | 0.107 | 0.108 | 0.115 | 0.114 | 0.113 | 0.102 | 0.101 | 0.095 | 0.093 | 0.096 | 0.095 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |      |      |      |      |      |       |       | 0.091 | 0.091 | 0.093 | 0.090 | 0.095 | 0.096 | 0.099 | 0.091 | 0.088 | 0.085 | 0.084 | 0.084 | 0.084 |
| Peak 1-Hour Indicator (State)         |      |      |      |      |      | 0.117 | 0.115 | 0.118 | 0.119 | 0.123 | 0.124 | 0.134 | 0.130 | 0.127 | 0.115 | 0.113 | 0.110 | 0.110 | 0.110 | 0.109 |
| 4th High 1-Hr. in 3 Yrs <sup>2</sup>  |      |      |      |      |      | 0.120 | 0.120 | 0.120 | 0.119 | 0.123 | 0.127 | 0.128 | 0.128 | 0.126 | 0.118 | 0.111 | 0.108 | 0.110 | 0.107 | 0.111 |
| Max. 8-Hr. Concentration              |      |      |      |      |      | 0.105 | 0.090 | 0.104 | 0.112 | 0.106 | 0.104 | 0.115 | 0.107 | 0.102 | 0.087 | 0.092 | 0.085 | 0.088 | 0.097 | 0.099 |
| Maximum 1-Hr. Concentration           |      |      |      |      |      | 0.120 | 0.110 | 0.123 | 0.146 | 0.127 | 0.135 | 0.143 | 0.121 | 0.121 | 0.107 | 0.118 | 0.111 | 0.110 | 0.116 | 0.127 |
| Days Above State 8-Hr. Std.           |      |      |      |      |      | 57    | 40    | 63    | 52    | 63    | 26    | 51    | 64    | 47    | 28    | 38    | 30    | 20    | 22    | 32    |
| Days Above Nat. 8-Hr. Std.            |      |      |      |      |      | 11    | 5     | 15    | 18    | 14    | 3     | 28    | 13    | 14    | 2     | 7     | 2     | 2     | 4     | 4     |
| Days Above State 1-Hr. Std.           |      |      |      |      |      | 15    | 11    | 15    | 21    | 21    | 9     | 30    | 22    | 13    | 4     | 8     | 12    | 3     | 8     | 7     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      |      |      |      |      |      |      |      |      | 30   |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)       |      |      |      |      |      |      |      |      |      |      | 30   |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State)           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)             |      |      |      |      |      |      |      |      |      |      | 20.4 |      |      |      |      |      |      |      |      |      |
| Calc Days Above State 24-Hr Std       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Calc Days Above Nat 24-Hr Std         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        |      |      |      |      |      | 2.5  | 2.2  | 2.0  | 2.0  | 1.7  | 1.5  | 1.4  | 1.5  | 1.6  | 1.5  | 1.4  | 1.3  | 1.4  | 1.2  |      |
| Max. 1-Hr. Concentration    |      |      |      |      |      | 3.0  | 3.0  | 9.3  | 9.3  | 2.2  | 2.8  | 2.5  | 2.2  | 5.0  | 3.5  | 3.0  | 2.2  | 5.7  | 2.4  |      |
| Max. 8-Hr. Concentration    |      |      |      |      |      | 2.4  | 3.0  | 1.8  | 2.6  | 1.5  | 1.4  | 1.4  | 1.5  | 1.3  | 1.4  | 1.2  | 1.2  | 4.3  | 1.0  |      |
| Days Above State 8-Hr. Std. |      |      |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Days Above Nat. 8-Hr. Std.  |      |      |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| NITROGEN DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

# Mountain Counties Air Basin

## County: Calaveras

| OZONE (ppm)                           | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         |      |      |      |      |      |      |      | 0.109 | 0.106 | 0.109 | 0.110 | 0.116 | 0.113 | 0.114 | 0.104 | 0.104 | 0.103 | 0.104 | 0.103 | 0.104 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |      |      |      |      |      |      |      |       |       | 0.097 | 0.093 | 0.096 | 0.096 | 0.100 | 0.094 | 0.092 | 0.091 | 0.090 | 0.091 | 0.093 |
| Peak 1-Hour Indicator (State)         |      |      |      |      |      |      |      | 0.123 | 0.120 | 0.123 | 0.124 | 0.129 | 0.123 | 0.124 | 0.117 | 0.116 | 0.117 | 0.117 | 0.117 | 0.115 |
| 4th High 1-Hr. in 3 Yrs2              |      |      |      |      |      |      |      | 0.121 | 0.121 | 0.130 | 0.130 | 0.130 | 0.124 | 0.124 | 0.120 | 0.117 | 0.117 | 0.113 | 0.113 | 0.124 |
| Max. 8-Hr. Concentration              |      |      |      |      |      |      |      | 0.108 | 0.107 | 0.112 | 0.112 | 0.109 | 0.106 | 0.105 | 0.090 | 0.108 | 0.097 | 0.088 | 0.098 | 0.106 |
| Maximum 1-Hr. Concentration           |      |      |      |      |      |      |      | 0.121 | 0.146 | 0.138 | 0.140 | 0.134 | 0.126 | 0.134 | 0.120 | 0.131 | 0.117 | 0.111 | 0.126 | 0.134 |
| Days Above State 8-Hr. Std.           |      |      |      |      |      |      |      | 92    | 60    | 68    | 35    | 67    | 65    | 48    | 48    | 61    | 67    | 30    | 47    | 48    |
| Days Above Nat. 8-Hr. Std.            |      |      |      |      |      |      |      | 34    | 19    | 18    | 4     | 28    | 18    | 17    | 5     | 12    | 18    | 4     | 8     | 14    |
| Days Above State 1-Hr. Std.           |      |      |      |      |      |      |      | 35    | 23    | 24    | 6     | 27    | 21    | 16    | 8     | 14    | 20    | 7     | 9     | 13    |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      |      |      |      |      |      | 44   | 118  | 36   | 112  | 34   | 63   | 36   | 42   | 47   | 39   | 34   | 33   | 42   |
| Max. 24-Hr. Concentration (Nat)       |      |      |      |      |      |      |      | 44   | 118  | 36   | 112  | 35   | 65   | 35   | 44   | 44   | 40   | 33   | 34   | 42   |
| Max. Annual Average (State)           |      |      |      |      |      |      |      |      | 20.9 | 17.7 |      | 15.6 |      | 17.7 | 19.2 | 20.9 | 18.2 | 17.3 | 14.2 | 16.6 |
| Max. Annual Average (Nat)             |      |      |      |      |      |      |      | 23.6 | 21.0 | 17.8 | 19.9 | 15.8 | 20.7 | 17.9 | 19.4 | 20.9 | 18.2 | 17.2 | 14.2 | 16.8 |
| Calc Days Above State 24-Hr Std       |      |      |      |      |      |      |      |      | 12   | 0    |      | 0    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Calc Days Above Nat 24-Hr Std         |      |      |      |      |      |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 33.0 | 48.0 | 31.0 | 40.0 | 20.0 | 24.0 | 21.0 | 23.0 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 33.0 | 48.0 | 31.0 | 40.0 | 20.0 | 24.0 | 21.0 | 23.0 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      | 28.0 | 30.0 | 18.0 | 30.0 | 19.0 | 21.0 | 18.0 | 23.0 |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      | 11.1 | 9.0  | 8.1  | 9.9  | 8.6  | 7.6  | 7.0  | 8.6  |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      | 11.1 | 9.0  | 8.1  | 9.9  | 8.6  | 7.6  | 7.0  | 8.6  |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        |      |      |      |      |      |      |      | 0.7  | 1.0  | 0.9  | 0.9  | 0.9  | 0.9  | 0.8  | 1.1  | 1.0  | 1.0  | 0.7  | 0.7  |      |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      | 1.5  | 2.1  | 1.7  | 2.1  | 1.8  | 1.8  | 1.2  | 6.2  | 1.2  | 0.9  | 1.6  | 1.2  |      |
| Max. 8-Hr. Concentration    |      |      |      |      |      |      |      | 0.7  | 1.8  | 0.9  | 1.7  | 0.9  | 0.8  | 0.9  | 4.3  | 0.8  | 0.7  | 1.1  | 0.6  |      |
| Days Above State 8-Hr. Std. |      |      |      |      |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      |
| Days Above Nat. 8-Hr. Std.  |      |      |      |      |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      |

| NITROGEN DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

Table A-44

*Mountain Counties Air Basin*

## County: El Dorado

| OZONE (ppm)                           | 1987 | 1988 | 1989  | 1990 | 1991 | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|------|------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         |      |      | 0.125 |      |      | 0.114 | 0.111 | 0.113 | 0.117 | 0.122 | 0.119 | 0.125 | 0.124 | 0.126 | 0.119 | 0.124 | 0.127 | 0.126 | 0.116 | 0.111 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |      |      |       |      |      |       |       | 0.097 | 0.099 | 0.103 | 0.099 | 0.103 | 0.103 | 0.107 | 0.104 | 0.106 | 0.107 | 0.102 | 0.097 | 0.095 |
| Peak 1-Hour Indicator (State)         |      |      | 0.131 |      |      | 0.128 | 0.122 | 0.127 | 0.128 | 0.137 | 0.140 | 0.147 | 0.143 | 0.143 | 0.136 | 0.142 | 0.146 | 0.143 | 0.130 | 0.122 |
| 4th High 1-Hr. in 3 Yrs2              |      |      | 0.130 |      |      | 0.120 | 0.120 | 0.124 | 0.124 | 0.136 | 0.145 | 0.145 | 0.145 | 0.144 | 0.144 | 0.148 | 0.148 | 0.145 | 0.139 | 0.126 |
| Max. 8-Hr. Concentration              |      |      | 0.110 |      |      | 0.112 | 0.108 | 0.104 | 0.113 | 0.113 | 0.106 | 0.127 | 0.118 | 0.113 | 0.109 | 0.137 | 0.122 | 0.102 | 0.104 | 0.115 |
| Maximum 1-Hr. Concentration           |      |      | 0.130 |      |      | 0.120 | 0.120 | 0.130 | 0.126 | 0.136 | 0.145 | 0.163 | 0.144 | 0.128 | 0.148 | 0.156 | 0.145 | 0.113 | 0.116 | 0.130 |
| Days Above State 8-Hr. Std.           |      |      | 44    |      |      | 83    | 51    | 77    | 60    | 83    | 57    | 64    | 92    | 76    | 88    | 102   | 85    | 66    | 60    | 80    |
| Days Above Nat. 8-Hr. Std.            |      |      | 24    |      |      | 29    | 12    | 22    | 31    | 36    | 16    | 26    | 40    | 31    | 35    | 42    | 27    | 11    | 25    | 31    |
| Days Above State 1-Hr. Std.           |      |      | 21    |      |      | 29    | 10    | 26    | 32    | 41    | 19    | 32    | 39    | 37    | 42    | 50    | 37    | 16    | 26    | 41    |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      |      |      |      | 103  | 62   | 34   | 53   | 58   | 62   | 39   | 46   | 38   | 51   | 36   | 50   | 28   | 25   | 33   |
| Max. 24-Hr. Concentration (Nat)       |      |      |      |      |      | 103  | 62   | 34   | 53   | 58   | 62   | 41   | 49   | 38   | 52   | 37   | 51   | 28   | 27   | 34   |
| Max. Annual Average (State)           |      |      |      |      |      |      | 18.4 | 18.0 | 18.1 |      | 17.4 | 14.3 | 17.7 | 7.3  | 16.0 | 16.4 | 14.4 | 14.8 | 12.9 | 14.1 |
| Max. Annual Average (Nat)             |      |      |      |      |      | 21.3 | 18.4 | 18.0 | 18.1 | 17.0 | 17.4 | 14.9 | 18.5 | 16.5 | 16.8 | 17.3 | 15.1 | 15.4 | 13.5 | 14.8 |
| Calc Days Above State 24-Hr Std       |      |      |      |      |      |      | 6    | 0    | 6    |      | 6    | 0    | 0    | 0    | 6    | 0    | 0    | 0    | 0    | 0    |
| Calc Days Above Nat 24-Hr Std         |      |      |      |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      |      | 10.0 | 26.0 | 1.0  | 21.7 | 33.0 |      |      |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      |      | 10.0 | 26.0 | 1.0  |      |      |      |      |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      |      | 9.0  |      |      |      |      |      |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      | 3.8  |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      | 3.8  |      |      |      |      |      |      |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        |      |      | 4.1  | 4.3  |      | 1.6  | 1.3  | 1.3  | 1.2  | 1.0  | 1.0  | 0.9  | 0.8  | 0.8  | 0.9  | 0.8  | 1.3  | 1.5  | 0.9  |      |
| Max. 1-Hr. Concentration    |      |      | 6.0  | 5.0  |      | 3.0  | 2.0  | 1.7  | 1.6  | 1.3  | 1.6  | 1.7  | 1.4  | 2.7  | 3.1  | 2.5  | 2.4  | 6.1  | 1.5  |      |
| Max. 8-Hr. Concentration    |      |      | 4.6  | 3.5  |      | 2.4  | 1.5  | 1.0  | 1.0  | 0.9  | 0.8  | 0.9  | 0.9  | 1.2  | 1.0  | 0.8  | 1.9  | 4.4  | 0.7  |      |
| Days Above State 8-Hr. Std. |      |      | 0    | 0    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Days Above Nat. 8-Hr. Std.  |      |      | 0    | 0    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| NITROGEN DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000  | 2001  | 2002  | 2003  | 2004  | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|------|------|
| Peak 1-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |       | 0.068 | 0.063 | 0.062 | 0.062 |      |      |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.086 | 0.090 | 0.088 | 0.059 | 0.068 |      |      |
| Max. Annual Average (Nat)   |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       | 0.001 | 0.002 | 0.002 |      |      |
| Max. Annual Average (State) |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       | 0.002 |       |      |      |

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

Table A-45

A portion of El Dorado County lies within the Lake Tahoe Air Basin.

# Mountain Counties Air Basin

## County: Mariposa

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.106 | 0.104 | 0.103 | 0.106 | 0.107 | 0.107 | 0.114 | 0.111 | 0.109 | 0.107 | 0.109 | 0.110 | 0.110 | 0.108 | 0.106 | 0.102 | 0.102 | 0.104 | 0.101 | 0.099 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |       |       | 0.090 | 0.090 | 0.086 | 0.089 | 0.096 | 0.095 | 0.095 | 0.091 | 0.095 | 0.095 | 0.095 | 0.094 | 0.091 | 0.089 | 0.091 | 0.090 | 0.088 | 0.086 |
| Peak 1-Hour Indicator (State)         | 0.120 | 0.120 | 0.117 | 0.117 | 0.117 | 0.117 | 0.114 | 0.115 | 0.114 | 0.109 | 0.111 | 0.114 | 0.120 | 0.117 | 0.113 | 0.108 | 0.111 | 0.111 | 0.110 | 0.104 |
| 4th High 1-Hr. in 3 Yrs2              | 0.145 | 0.133 | 0.128 | 0.113 | 0.110 | 0.110 | 0.110 | 0.111 | 0.111 | 0.111 | 0.111 | 0.114 | 0.120 | 0.117 | 0.117 | 0.116 | 0.116 | 0.113 | 0.113 | 0.107 |
| Max. 8-Hr. Concentration              | 0.111 | 0.096 | 0.093 | 0.096 | 0.102 | 0.095 | 0.111 | 0.104 | 0.103 | 0.107 | 0.105 | 0.103 | 0.105 | 0.100 | 0.098 | 0.097 | 0.103 | 0.124 | 0.096 | 0.094 |
| Maximum 1-Hr. Concentration           | 0.145 | 0.119 | 0.110 | 0.120 | 0.110 | 0.111 | 0.120 | 0.113 | 0.114 | 0.111 | 0.120 | 0.114 | 0.155 | 0.121 | 0.116 | 0.106 | 0.135 | 0.137 | 0.109 | 0.101 |
| Days Above State 8-Hr. Std.           | 74    | 75    | 31    | 72    | 85    | 68    | 71    | 84    | 81    | 103   | 55    | 69    | 95    | 72    | 69    | 105   | 110   | 70    | 45    | 64    |
| Days Above Nat. 8-Hr. Std.            | 22    | 20    | 4     | 20    | 31    | 9     | 22    | 12    | 24    | 30    | 7     | 14    | 24    | 14    | 8     | 26    | 28    | 9     | 5     | 6     |
| Days Above State 1-Hr. Std.           | 27    | 26    | 2     | 20    | 19    | 10    | 17    | 10    | 20    | 28    | 7     | 13    | 16    | 10    | 4     | 19    | 15    | 7     | 6     | 5     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      | 84   | 209  | 350  | 104  | 126  | 115  | 71   | 106  | 62   | 36   | 75   | 89   | 277  | 72   | 58   | 124  | 73   | 97   |
| Max. 24-Hr. Concentration (Nat)       |      |      | 84   | 209  | 350  | 104  | 126  | 115  | 71   | 106  | 62   | 40   | 82   | 98   | 312  | 76   | 66   | 133  | 78   | 104  |
| Max. Annual Average (State)           |      |      |      |      | 48.4 |      |      | 33.9 |      |      |      |      |      |      | 29.6 | 25.9 | 21.0 |      |      |      |
| Max. Annual Average (Nat)             |      |      | 26.9 | 40.9 | 47.8 | 30.9 | 29.2 | 34.6 | 28.0 | 20.9 | 21.3 | 20.4 | 26.7 | 26.3 | 33.3 | 28.5 | 23.1 | 23.5 | 23.9 | 25.0 |
| Calc Days Above State 24-Hr Std       |      |      |      |      | 95   |      |      | 87   |      |      |      |      |      |      | 37   | 18   | 6    |      |      |      |
| Calc Days Above Nat 24-Hr Std         |      |      |      | 10   | 14   | 0    |      | 0    | 0    |      | 0    | 0    | 0    | 0    | 6    | 0    | 0    |      |      | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004  | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 29.0 | 54.0 | 148.4 | 73.2 | 36.1 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 4.8  | 2.8  | 0.5  |
| Max. 1-Hr. Concentration    |      |      |      |      |      | 6.2  |      |      |      |      |      |      |      |      |      |      | 2.5  | 6.5  | 2.0  | 2.2  |
| Max. 8-Hr. Concentration    |      |      |      |      |      | 4.5  |      |      |      |      |      |      |      |      |      |      | 1.5  | 5.7  | 1.1  | 0.6  |
| Days Above State 8-Hr. Std. |      |      |      |      |      | 0    |      |      |      |      |      |      |      |      |      |      | 0    | 0    | 0    | 0    |
| Days Above Nat. 8-Hr. Std.  |      |      |      |      |      | 0    |      |      |      |      |      |      |      |      |      |      | 0    | 0    | 0    | 0    |

| NITROGEN DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002  | 2003  | 2004 | 2005 | 2006  |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|------|------|-------|
| Peak 1-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |      |      | 0.006 |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.043 | 0.019 |      |      | 0.006 |
| Max. Annual Average (Nat)   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |      |      |       |
| Max. Annual Average (State) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |      |      |       |

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

Table A-46

*Mountain Counties Air Basin*

## County: Nevada

| OZONE (ppm)                           | 1987 | 1988 | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         |      |      | 0.115 | 0.115 | 0.108 | 0.101 | 0.066 | 0.101 | 0.101 | 0.110 | 0.109 | 0.108 | 0.105 | 0.107 | 0.106 | 0.110 | 0.111 | 0.110 | 0.110 | 0.107 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |      |      |       |       | 0.092 | 0.088 |       | 0.049 | 0.076 | 0.087 | 0.089 | 0.095 | 0.095 | 0.096 | 0.097 | 0.098 | 0.098 | 0.097 | 0.098 | 0.096 |
| Peak 1-Hour Indicator (State)         |      |      | 0.118 | 0.125 | 0.118 | 0.110 | 0.076 | 0.111 | 0.111 | 0.116 | 0.114 | 0.114 | 0.114 | 0.117 | 0.118 | 0.117 | 0.117 | 0.115 | 0.115 | 0.114 |
| 4th High 1-Hr. in 3 Yrs2              |      |      | 0.120 | 0.150 | 0.150 | 0.150 | 0.090 | 0.110 | 0.110 | 0.110 | 0.109 | 0.111 | 0.112 | 0.118 | 0.116 | 0.117 | 0.116 | 0.117 | 0.118 | 0.118 |
| Max. 8-Hr. Concentration              |      |      | 0.107 | 0.115 | 0.096 | 0.087 | 0.078 | 0.107 | 0.092 | 0.104 | 0.101 | 0.099 | 0.103 | 0.113 | 0.106 | 0.113 | 0.103 | 0.111 | 0.120 | 0.105 |
| Maximum 1-Hr. Concentration           |      |      | 0.120 | 0.150 | 0.110 | 0.110 | 0.090 | 0.110 | 0.099 | 0.111 | 0.108 | 0.119 | 0.165 | 0.130 | 0.116 | 0.127 | 0.120 | 0.126 | 0.128 | 0.112 |
| Days Above State 8-Hr. Std.           |      |      | 32    | 36    | 39    | 36    | 2     | 41    | 30    | 94    | 85    | 80    | 97    | 90    | 72    | 90    | 94    | 73    | 66    | 84    |
| Days Above Nat. 8-Hr. Std.            |      |      | 11    | 9     | 7     | 5     | 0     | 9     | 4     | 29    | 17    | 25    | 33    | 28    | 23    | 28    | 23    | 14    | 20    | 26    |
| Days Above State 1-Hr. Std.           |      |      | 12    | 8     | 7     | 2     | 0     | 8     | 3     | 22    | 10    | 16    | 20    | 21    | 21    | 24    | 23    | 11    | 15    | 19    |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      |      |      |      | 30   | 34   |      |      | 44   | 81   | 92   | 84   | 49   |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)       |      |      | 38   |      |      | 30   | 34   |      |      | 90   | 179  | 114  | 105  | 62   | 71   | 53   | 38   | 107  | 127  | 167  |
| Max. Annual Average (State)           |      |      |      |      |      |      |      |      |      |      | 28.3 |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)             |      |      | 3.5  |      |      | 21.7 | 14.4 |      |      | 32.2 | 38.3 | 32.5 | 27.9 | 22.5 | 18.5 | 17.8 | 15.5 | 32.3 | 29.9 | 29.0 |
| Calc Days Above State 24-Hr Std       |      |      |      |      |      |      |      |      |      |      | 41   |      |      |      |      |      |      |      |      |      |
| Calc Days Above Nat 24-Hr Std         |      |      |      |      |      |      |      |      |      |      | 2    | 0    | 0    |      | 0    |      |      |      | 0    | 1    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001  | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 50.0 | 27.0 | 120.0 | 23.0 | 21.0 | 34.0 | 35.0 | 32.0 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 50.0 | 27.0 | 120.0 | 23.0 | 20.0 | 34.0 | 35.0 | 32.0 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      | 50.0 | 22.0 | 26.0  | 18.0 | 20.0 | 18.0 | 16.0 | 24.0 |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      | 7.2  | 7.7  |      | 6.3  |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      | 8.8  | 9.4   | 7.6  | 7.3  | 7.1  | 6.8  | 6.2  |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |      |      |      |      | 1.0  | 0.0  | 10.0 | 9.0  |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    |      |      |      |      | 0.1  | 0.0  | 5.4  | 5.4  |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. |      |      |      |      | 0    | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  |      |      |      |      | 0    | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |

| NITROGEN DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*



# Mountain Counties Air Basin

## County: Placer

| OZONE (ppm)                           | 1987 | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         |      | 0.128 | 0.119 | 0.119 | 0.112 | 0.104 | 0.102 | 0.103 | 0.107 | 0.107 | 0.101 | 0.098 | 0.099 | 0.100 | 0.098 | 0.119 | 0.110 | 0.107 | 0.104 | 0.109 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |      |       |       | 0.089 | 0.063 |       |       | 0.092 | 0.092 | 0.091 | 0.086 | 0.086 | 0.086 | 0.079 | 0.073 | 0.077 | 0.088 | 0.092 | 0.091 | 0.097 |
| Peak 1-Hour Indicator (State)         |      | 0.155 | 0.134 | 0.134 | 0.109 | 0.119 | 0.118 | 0.120 | 0.121 | 0.118 | 0.111 | 0.106 | 0.111 | 0.114 | 0.113 | 0.130 | 0.123 | 0.117 | 0.116 | 0.117 |
| 4th High 1-Hr. in 3 Yrs2              |      | 0.160 | 0.160 | 0.160 | 0.110 | 0.130 | 0.120 | 0.120 | 0.119 | 0.117 | 0.109 | 0.103 | 0.105 | 0.111 | 0.111 | 0.130 | 0.121 | 0.118 | 0.118 | 0.116 |
| Max. 8-Hr. Concentration              |      | 0.138 | 0.101 | 0.078 | 0.035 | 0.098 | 0.097 | 0.107 | 0.100 | 0.091 | 0.097 | 0.108 | 0.093 | 0.058 | 0.088 | 0.113 | 0.097 | 0.102 | 0.108 | 0.111 |
| Maximum 1-Hr. Concentration           |      | 0.160 | 0.120 | 0.090 | 0.060 | 0.130 | 0.120 | 0.122 | 0.130 | 0.108 | 0.103 | 0.132 | 0.159 | 0.070 | 0.095 | 0.142 | 0.121 | 0.106 | 0.125 | 0.133 |
| Days Above State 8-Hr. Std.           |      | 79    | 59    | 2     | 0     | 59    | 33    | 56    | 29    | 22    | 13    | 39    | 54    | 0     | 9     | 54    | 46    | 42    | 45    | 64    |
| Days Above Nat. 8-Hr. Std.            |      | 35    | 22    | 0     | 0     | 12    | 4     | 12    | 11    | 5     | 2     | 8     | 9     | 0     | 2     | 18    | 12    | 9     | 13    | 14    |
| Days Above State 1-Hr. Std.           |      | 39    | 24    | 0     | 0     | 17    | 9     | 15    | 16    | 4     | 2     | 11    | 9     | 0     | 2     | 17    | 13    | 12    | 18    | 16    |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      |      |      |      |      |      |      | 86   | 60   | 74   |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)       |      |      |      |      |      |      |      |      | 86   | 60   | 74   |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State)           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)             |      |      |      |      |      |      |      |      | 22.9 | 21.8 | 21.9 |      |      |      |      |      |      |      |      |      |
| Calc Days Above State 24-Hr Std       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Calc Days Above Nat 24-Hr Std         |      |      |      |      |      |      |      |      |      | 0    | 0    |      |      |      |      |      |      |      |      |      |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

| NITROGEN DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

Table A-48

Portions of Placer County lie within the Lake Tahoe and Sacramento Valley Air Basins.

*Mountain Counties Air Basin***County: Plumas**

| OZONE (ppm)                           | 1987  | 1988 | 1989 | 1990 | 1991 | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |       |
|---------------------------------------|-------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.085 |      |      |      |      |       | 0.077 | 0.085 | 0.090 | 0.091 | 0.093 | 0.078 | 0.079 | 0.079 | 0.080 | 0.084 | 0.083 | 0.086 | 0.069 | 0.072 |       |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |       |      |      |      |      |       |       | 0.062 | 0.077 | 0.078 | 0.065 | 0.060 | 0.060 | 0.070 | 0.069 | 0.071 | 0.069 | 0.067 | 0.062 | 0.063 |       |
| Peak 1-Hour Indicator (State)         | 0.091 |      |      |      |      |       | 0.086 | 0.086 | 0.092 | 0.093 | 0.096 | 0.083 | 0.084 | 0.083 | 0.083 | 0.087 | 0.088 | 0.088 | 0.072 | 0.077 |       |
| 4th High 1-Hr. in 3 Yrs2              | 0.090 |      |      |      |      |       | 0.090 | 0.090 | 0.092 | 0.092 | 0.092 | 0.090 | 0.084 | 0.083 | 0.084 | 0.089 | 0.089 | 0.089 | 0.089 | 0.074 | 0.087 |
| Max. 8-Hr. Concentration              | 0.073 |      |      |      |      | 0.040 | 0.076 | 0.083 | 0.096 | 0.080 | 0.042 | 0.074 | 0.077 | 0.076 | 0.072 | 0.084 | 0.064 | 0.066 | 0.068 | 0.074 |       |
| Maximum 1-Hr. Concentration           | 0.080 |      |      |      |      | 0.050 | 0.090 | 0.090 | 0.105 | 0.091 | 0.046 | 0.087 | 0.086 | 0.081 | 0.086 | 0.091 | 0.075 | 0.073 | 0.076 | 0.087 |       |
| Days Above State 8-Hr. Std.           | 2     |      |      |      |      | 0     | 3     | 25    | 23    | 6     | 0     | 2     | 8     | 2     | 2     | 50    | 0     | 0     | 0     | 1     |       |
| Days Above Nat. 8-Hr. Std.            | 0     |      |      |      |      | 0     | 0     | 0     | 2     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |       |
| Days Above State 1-Hr. Std.           | 0     |      |      |      |      | 0     | 0     | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |       |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      | 113  | 144  | 138  | 162  | 120  | 130  | 98   | 52   | 55   | 66   | 69   | 115  | 67   | 60   | 48   | 33   | 37   | 53   | 50   |
| Max. 24-Hr. Concentration (Nat)       |      | 113  | 144  | 138  | 162  | 120  | 130  | 98   | 52   | 55   | 66   | 74   | 125  | 75   | 60   | 49   | 50   | 58   | 65   | 54   |
| Max. Annual Average (State)           |      |      |      |      |      |      |      | 33.4 | 24.2 | 21.5 |      | 25.3 | 25.3 | 19.9 |      |      | 17.6 |      | 18.0 | 17.6 |
| Max. Annual Average (Nat)             |      | 28.1 | 77.9 | 38.2 | 40.3 | 37.5 | 35.4 | 33.0 | 24.0 | 25.9 | 23.0 | 25.3 | 27.6 | 21.3 | 22.5 | 19.1 | 20.0 | 23.0 | 20.1 | 18.8 |
| Calc Days Above State 24-Hr Std       |      |      |      |      |      |      |      | 42   | 6    | 6    |      | 19   | 24   | 25   |      |      | 0    |      | 6    | 0    |
| Calc Days Above Nat 24-Hr Std         |      |      |      | 0    |      | 0    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      | 0    |      | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005  | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 92.0 | 46.0 | 58.0 | 41.0 | 47.8 | 53.8 | 179.7 | 62.7 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 92.0 | 46.0 | 58.0 | 41.0 | 43.0 | 44.0 | 60.0  | 51.0 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      | 84.0 | 44.0 | 43.0 | 38.0 | 40.0 | 33.0 | 27.0  | 31.0 |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 11.7 | 10.6  |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 15.6 |      | 13.3 | 11.7 | 10.6  | 10.9 |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | 4.5  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    | 3.0  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    | 2.3  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| NITROGEN DIOXIDE (ppm)      | 1987  | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        | 0.046 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    | 0.040 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

# Mountain Counties Air Basin

County: Sierra

| OZONE (ppm)                           | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hour Indicator (State)         | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Peak 1-Hour Indicator (State)         |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 4th High 1-Hr. in 3 Yrs2              |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration              |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Maximum 1-Hr. Concentration           |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std.           |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.            |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 1-Hr. Std.           |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |  |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| Max. 24-Hr. Concentration (State)     |      |      |      |      |      |      |      |      |      |      | 114  | 138  | 60   | 68   | 34   |      |      |      |      |      |  |
| Max. 24-Hr. Concentration (Nat)       |      |      |      |      |      |      |      |      |      |      | 114  | 138  | 60   | 68   | 39   |      |      |      |      |      |  |
| Max. Annual Average (State)           |      |      |      |      |      |      |      |      |      |      |      |      |      | 25.0 |      |      |      |      |      |      |  |
| Max. Annual Average (Nat)             |      |      |      |      |      |      |      |      |      |      | 29.6 | 32.0 | 22.6 | 25.0 | 15.2 |      |      |      |      |      |  |
| Calc Days Above State 24-Hr Std       |      |      |      |      |      |      |      |      |      |      |      |      |      | 12   |      |      |      |      |      |      |  |
| Calc Days Above Nat 24-Hr Std         |      |      |      |      |      |      |      |      |      |      |      |      |      | 0    | 0    | 0    |      |      |      |      |  |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)        |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 98th Percentile of 24-Hr Conc.         |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Annual Average (State)                 |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| CARBON MONOXIDE (ppm)       | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| NITROGEN DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| SULFUR DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

Table A-50

**Mountain Counties Air Basin****County: Tuolumne**

| OZONE (ppm)                           | 1987 | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         |      |       | 0.083 | 0.084 | 0.084 | 0.097 | 0.095 | 0.095 | 0.098 | 0.103 | 0.103 | 0.107 | 0.108 | 0.106 | 0.104 | 0.106 | 0.095 | 0.096 | 0.092 | 0.086 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |      |       |       | 0.077 | 0.075 | 0.074 | 0.076 | 0.085 | 0.087 | 0.088 | 0.088 | 0.092 | 0.092 | 0.096 | 0.092 | 0.091 | 0.085 | 0.084 | 0.081 | 0.078 |
| Peak 1-Hour Indicator (State)         |      |       | 0.085 | 0.089 | 0.089 | 0.102 | 0.101 | 0.103 | 0.105 | 0.111 | 0.111 | 0.117 | 0.115 | 0.114 | 0.108 | 0.109 | 0.105 | 0.105 | 0.102 | 0.094 |
| 4th High 1-Hr. in 3 Yrs2              |      | 0.096 | 0.095 | 0.095 | 0.090 | 0.100 | 0.100 | 0.102 | 0.103 | 0.116 | 0.117 | 0.117 | 0.116 | 0.114 | 0.109 | 0.110 | 0.104 | 0.102 | 0.104 | 0.099 |
| Max. 8-Hr. Concentration              |      | 0.086 | 0.078 | 0.081 | 0.078 | 0.097 | 0.088 | 0.094 | 0.105 | 0.108 | 0.107 | 0.107 | 0.103 | 0.104 | 0.097 | 0.101 | 0.088 | 0.082 | 0.089 | 0.083 |
| Maximum 1-Hr. Concentration           |      | 0.096 | 0.090 | 0.090 | 0.090 | 0.100 | 0.120 | 0.107 | 0.135 | 0.121 | 0.117 | 0.122 | 0.130 | 0.109 | 0.109 | 0.132 | 0.116 | 0.089 | 0.112 | 0.101 |
| Days Above State 8-Hr. Std.           |      | 31    | 7     | 9     | 12    | 31    | 47    | 72    | 55    | 83    | 56    | 82    | 104   | 81    | 54    | 98    | 60    | 17    | 25    | 20    |
| Days Above Nat. 8-Hr. Std.            |      | 3     | 0     | 0     | 0     | 1     | 6     | 9     | 14    | 21    | 7     | 26    | 25    | 26    | 5     | 25    | 7     | 0     | 1     | 0     |
| Days Above State 1-Hr. Std.           |      | 2     | 0     | 0     | 0     | 2     | 5     | 8     | 9     | 25    | 8     | 21    | 17    | 13    | 4     | 16    | 8     | 0     | 3     | 3     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)       |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State)           |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)             |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Calc Days Above State 24-Hr Std       |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Calc Days Above Nat 24-Hr Std         |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)        |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 98th Percentile of 24-Hr Conc.         |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Annual Average (State)                 |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        |      |      |      |      |      | 2.9  | 2.9  | 2.8  | 2.8  | 2.7  | 2.4  | 5.1  | 5.4  | 5.7  | 2.4  | 1.6  | 1.6  | 1.4  | 1.3  |      |
| Max. 1-Hr. Concentration    |      |      |      |      |      | 4.0  | 5.0  | 4.4  | 3.9  | 4.5  | 6.6  | 6.7  | 4.1  | 3.4  | 2.8  | 3.7  | 2.5  | 1.8  | 2.2  |      |
| Max. 8-Hr. Concentration    |      |      |      |      |      | 2.6  | 3.0  | 2.7  | 3.4  | 2.6  | 1.9  | 5.5  | 3.0  | 1.6  | 1.6  | 1.5  | 1.4  | 1.3  | 1.2  |      |
| Days Above State 8-Hr. Std. |      |      |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      |
| Days Above Nat. 8-Hr. Std.  |      |      |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      |

| NITROGEN DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| SULFUR DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

# North Central Coast Air Basin

## County: Monterey

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.085 | 0.080 | 0.087 | 0.088 | 0.083 | 0.082 | 0.082 | 0.084 | 0.083 | 0.083 | 0.082 | 0.082 | 0.071 | 0.073 | 0.071 | 0.073 | 0.073 | 0.076 | 0.070 | 0.069 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.071 | 0.068 | 0.072 | 0.070 | 0.070 | 0.071 | 0.069 | 0.070 | 0.069 | 0.067 | 0.066 | 0.066 | 0.062 | 0.064 | 0.063 | 0.064 | 0.066 | 0.068 | 0.065 | 0.062 |
| Peak 1-Hour Indicator (State)         | 0.095 | 0.092 | 0.098 | 0.096 | 0.094 | 0.093 | 0.091 | 0.095 | 0.096 | 0.092 | 0.090 | 0.093 | 0.084 | 0.088 | 0.082 | 0.081 | 0.082 | 0.083 | 0.078 | 0.076 |
| 4th High 1-Hr. in 3 Yrs2              | 0.090 | 0.090 | 0.090 | 0.090 | 0.100 | 0.090 | 0.090 | 0.090 | 0.090 | 0.091 | 0.087 | 0.089 | 0.084 | 0.085 | 0.081 | 0.082 | 0.082 | 0.080 | 0.080 | 0.080 |
| Max. 8-Hr. Concentration              | 0.077 | 0.077 | 0.095 | 0.080 | 0.078 | 0.085 | 0.083 | 0.092 | 0.077 | 0.081 | 0.076 | 0.076 | 0.072 | 0.079 | 0.079 | 0.073 | 0.081 | 0.079 | 0.065 | 0.078 |
| Maximum 1-Hr. Concentration           | 0.090 | 0.090 | 0.130 | 0.090 | 0.100 | 0.090 | 0.110 | 0.093 | 0.093 | 0.094 | 0.091 | 0.091 | 0.086 | 0.095 | 0.085 | 0.082 | 0.092 | 0.093 | 0.073 | 0.093 |
| Days Above State 8-Hr. Std.           | 4     | 2     | 9     | 7     | 5     | 3     | 8     | 4     | 1     | 11    | 2     | 1     | 1     | 3     | 2     | 1     | 5     | 3     | 0     | 1     |
| Days Above Nat. 8-Hr. Std.            | 0     | 0     | 1     | 0     | 0     | 1     | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above State 1-Hr. Std.           | 0     | 0     | 3     | 0     | 1     | 0     | 2     | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      | 54   | 56   | 46   | 41   | 86   | 50   | 50   | 50   | 91   | 54   | 94   | 77   | 72   | 60   | 90   | 58   | 60   | 51   |
| Max. 24-Hr. Concentration (Nat)       |      |      | 54   | 57   | 58   | 45   | 86   | 50   | 50   | 50   | 91   | 52   | 91   | 74   | 68   | 62   | 87   | 56   | 58   | 49   |
| Max. Annual Average (State)           |      |      |      | 22.5 |      |      | 11.6 | 19.5 | 20.6 | 20.0 | 21.4 |      | 30.3 | 31.2 |      | 28.9 | 31.6 | 25.9 | 15.8 | 18.0 |
| Max. Annual Average (Nat)             |      |      | 25.4 | 29.1 | 23.4 | 19.7 | 19.5 | 19.5 | 20.6 | 20.0 | 29.9 | 27.0 | 29.0 | 29.9 | 29.4 | 27.7 | 30.1 | 24.9 | 18.4 | 17.3 |
| Calc Days Above State 24-Hr Std       |      |      |      | 6    |      |      | 0    | 0    | 0    | 0    | 6    |      | 12   | 24   |      | 25   | 41   | 13   | 0    | 6    |
| Calc Days Above Nat 24-Hr Std         |      |      | 0    | 0    | 0    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 30.8 | 26.4 | 25.6 | 23.5 | 15.9 | 22.3 | 16.2 | 13.0 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 30.8 | 26.4 | 25.6 | 23.5 | 15.9 | 22.3 | 16.2 | 13.0 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      |      | 21.5 | 21.7 | 22.8 | 14.0 | 15.5 | 14.2 |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 8.7  | 9.1  | 7.3  |      | 6.8  |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      | 7.9  | 8.7  | 9.1  | 7.3  | 7.0  | 6.8  |      |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | 2.5  | 2.5  | 2.5  | 2.5  | 2.5  | 2.5  | 2.4  | 2.3  | 2.2  | 2.2  | 2.0  | 2.0  | 2.0  | 1.6  | 1.6  | 1.5  | 1.4  | 1.2  | 1.2  | 1.1  |
| Max. 1-Hr. Concentration    | 5.0  | 6.0  | 5.0  | 5.0  | 4.0  | 4.0  | 4.0  | 4.6  | 3.2  | 5.5  | 4.4  | 3.8  | 3.8  | 3.5  | 3.3  | 2.3  | 2.8  | 1.9  | 2.1  | 2.5  |
| Max. 8-Hr. Concentration    | 2.3  | 2.4  | 2.4  | 2.5  | 2.5  | 2.9  | 2.7  | 2.1  | 2.1  | 2.6  | 1.8  | 2.2  | 1.8  | 1.4  | 1.6  | 1.4  | 1.1  | 1.2  | 0.9  | 1.0  |
| Days Above State 8-Hr. Std. | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Days Above Nat. 8-Hr. Std.  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| NITROGEN DIOXIDE (ppm)      | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 1-Hr. Indicator        | 0.083 | 0.077 | 0.072 | 0.071 | 0.068 | 0.062 | 0.064 | 0.064 | 0.062 | 0.059 | 0.059 | 0.059 | 0.054 | 0.046 | 0.045 | 0.046 | 0.046 | 0.050 | 0.051 | 0.052 |
| Max. 1-Hr. Concentration    | 0.070 | 0.070 | 0.070 | 0.060 | 0.060 | 0.070 | 0.070 | 0.067 | 0.054 | 0.060 | 0.056 | 0.085 | 0.054 | 0.071 | 0.041 | 0.049 | 0.053 | 0.139 | 0.052 | 0.067 |
| Max. Annual Average (Nat)   | 0.013 | 0.014 | 0.014 | 0.012 | 0.011 | 0.012 | 0.012 | 0.012 | 0.011 | 0.011 | 0.010 | 0.010 | 0.010 | 0.007 | 0.007 | 0.007 | 0.006 | 0.007 | 0.008 | 0.007 |
| Max. Annual Average (State) |       | 0.014 | 0.014 | 0.012 | 0.011 | 0.012 | 0.012 | 0.012 |       | 0.011 | 0.010 | 0.010 |       | 0.007 |       | 0.007 | 0.006 | 0.007 | 0.008 | 0.007 |

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      | 0.01 | 0.01 | 0.01 | 0.01 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       | 0.00 | 0.00 | 0.00 | 0.00 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration | 0.00 | 0.00 | 0.00 | 0.00 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

Table A-52

*North Central Coast Air Basin***County: San Benito**

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.120 | 0.114 | 0.110 | 0.095 | 0.095 | 0.097 | 0.095 | 0.091 | 0.091 | 0.097 | 0.097 | 0.099 | 0.093 | 0.094 | 0.089 | 0.092 | 0.092 | 0.091 | 0.084 | 0.085 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.082 | 0.079 | 0.090 | 0.084 | 0.083 | 0.084 | 0.083 | 0.081 | 0.081 | 0.085 | 0.084 | 0.086 | 0.082 | 0.082 | 0.079 | 0.081 | 0.081 | 0.081 | 0.076 | 0.075 |
| Peak 1-Hour Indicator (State)         | 0.145 | 0.137 | 0.132 | 0.115 | 0.113 | 0.113 | 0.112 | 0.107 | 0.106 | 0.112 | 0.111 | 0.112 | 0.102 | 0.106 | 0.101 | 0.103 | 0.103 | 0.102 | 0.097 | 0.095 |
| 4th High 1-Hr. in 3 Yrs2              | 0.146 | 0.140 | 0.140 | 0.120 | 0.110 | 0.110 | 0.110 | 0.110 | 0.104 | 0.114 | 0.114 | 0.114 | 0.109 | 0.107 | 0.100 | 0.104 | 0.106 | 0.104 | 0.095 | 0.095 |
| Max. 8-Hr. Concentration              | 0.113 | 0.096 | 0.100 | 0.095 | 0.108 | 0.090 | 0.087 | 0.084 | 0.102 | 0.101 | 0.091 | 0.097 | 0.085 | 0.084 | 0.088 | 0.094 | 0.088 | 0.083 | 0.085 | 0.088 |
| Maximum 1-Hr. Concentration           | 0.146 | 0.127 | 0.140 | 0.120 | 0.140 | 0.110 | 0.110 | 0.101 | 0.138 | 0.120 | 0.112 | 0.124 | 0.107 | 0.098 | 0.108 | 0.115 | 0.111 | 0.093 | 0.107 | 0.105 |
| Days Above State 8-Hr. Std.           | 84    | 48    | 23    | 28    | 32    | 28    | 29    | 23    | 32    | 49    | 16    | 33    | 24    | 22    | 20    | 36    | 26    | 12    | 7     | 20    |
| Days Above Nat. 8-Hr. Std.            | 26    | 6     | 1     | 5     | 3     | 3     | 2     | 0     | 3     | 9     | 1     | 6     | 1     | 0     | 2     | 5     | 2     | 0     | 1     | 2     |
| Days Above State 1-Hr. Std.           | 37    | 14    | 8     | 10    | 9     | 9     | 8     | 6     | 7     | 16    | 1     | 9     | 2     | 2     | 3     | 8     | 2     | 0     | 2     | 2     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      | 58   | 48   | 55   | 17   | 61   | 37   | 50   | 38   | 34   | 39   | 68   | 41   | 42   | 59   | 36   | 41   | 37   | 46   |
| Max. 24-Hr. Concentration (Nat)       |      |      | 58   | 48   | 55   | 17   | 61   | 37   | 50   | 38   | 34   | 37   | 67   | 40   | 42   | 59   | 36   | 40   | 36   | 45   |
| Max. Annual Average (State)           |      |      | 24.3 |      |      |      | 18.9 |      | 17.2 | 16.8 | 18.0 |      | 22.6 | 16.4 |      | 18.5 | 16.7 | 15.6 | 15.9 | 16.1 |
| Max. Annual Average (Nat)             |      |      | 24.4 | 19.8 | 22.6 | 2.7  | 18.8 | 16.9 | 17.2 | 16.8 | 18.0 | 15.7 | 21.8 | 15.7 | 17.6 | 17.9 | 16.4 | 15.1 | 15.3 | 15.8 |
| Calc Days Above State 24-Hr Std       |      |      | 6    |      |      |      | 12   |      | 0    | 0    | 0    |      | 13   | 0    |      | 7    | 0    | 0    | 0    | 0    |
| Calc Days Above Nat 24-Hr Std         |      |      | 0    |      | 0    |      | 0    | 0    | 0    | 0    | 0    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)        |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 98th Percentile of 24-Hr Conc.         |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Annual Average (State)                 |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| CARBON MONOXIDE (ppm)       | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| NITROGEN DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| SULFUR DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

# North Central Coast Air Basin

## County: Santa Cruz

| OZONE (ppm)                            | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)          | 0.077 | 0.075 | 0.074 | 0.070 | 0.068 | 0.079 | 0.090 | 0.087 | 0.088 | 0.082 | 0.080 | 0.081 | 0.075 | 0.078 | 0.075 | 0.077 | 0.076 | 0.078 | 0.074 | 0.071 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat)  | 0.067 | 0.062 | 0.061 | 0.060 | 0.058 | 0.058 | 0.059 | 0.072 | 0.062 | 0.066 | 0.067 | 0.068 | 0.066 | 0.066 | 0.065 | 0.064 | 0.065 | 0.066 | 0.063 | 0.062 |
| Peak 1-Hour Indicator (State)          | 0.098 | 0.095 | 0.093 | 0.084 | 0.083 | 0.089 | 0.099 | 0.103 | 0.104 | 0.098 | 0.095 | 0.097 | 0.088 | 0.090 | 0.087 | 0.085 | 0.085 | 0.087 | 0.082 | 0.080 |
| 4th High 1-Hr. in 3 Yrs2               | 0.090 | 0.090 | 0.090 | 0.080 | 0.090 | 0.090 | 0.100 | 0.100 | 0.100 | 0.097 | 0.091 | 0.092 | 0.084 | 0.089 | 0.084 | 0.085 | 0.085 | 0.085 | 0.081 | 0.082 |
| Max. 8-Hr. Concentration               | 0.073 | 0.070 | 0.087 | 0.080 | 0.082 | 0.075 | 0.086 | 0.078 | 0.070 | 0.088 | 0.071 | 0.077 | 0.072 | 0.078 | 0.073 | 0.077 | 0.074 | 0.083 | 0.066 | 0.071 |
| Maximum 1-Hr. Concentration            | 0.090 | 0.080 | 0.100 | 0.100 | 0.120 | 0.090 | 0.100 | 0.094 | 0.097 | 0.107 | 0.089 | 0.107 | 0.097 | 0.096 | 0.085 | 0.086 | 0.098 | 0.091 | 0.078 | 0.094 |
| Days Above State 8-Hr. Std.            | 2     | 0     | 3     | 1     | 2     | 1     | 13    | 4     | 0     | 7     | 1     | 1     | 3     | 2     | 2     | 1     | 2     | 3     | 0     | 1     |
| Days Above Nat. 8-Hr. Std.             | 0     | 0     | 1     | 0     | 0     | 0     | 2     | 0     | 0     | 2     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above State 1-Hr. Std.            | 0     | 0     | 1     | 1     | 2     | 0     | 7     | 0     | 1     | 2     | 0     | 1     | 1     | 1     | 0     | 0     | 1     | 0     | 0     | 0     |
| PM <sub>10</sub> (µg/m <sup>3</sup> )  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       | 65    | 51    | 49    | 49    | 36    | 102   | 106   | 152   | 115   | 113   | 78    | 106   | 52    | 74    | 81    | 72    | 83    | 69    | 65    |
| Max. 24-Hr. Concentration (Nat)        |       | 65    | 51    | 49    | 49    | 36    | 102   | 106   | 152   | 115   | 113   | 76    | 103   | 50    | 72    | 77    | 70    | 80    | 66    | 63    |
| Max. Annual Average (State)            |       |       |       | 23.8  | 24.3  |       | 21.7  | 31.1  | 36.3  | 32.8  | 36.9  |       | 32.3  | 27.1  |       | 28.0  | 28.6  | 28.2  | 24.3  | 25.0  |
| Max. Annual Average (Nat)              |       | 26.3  | 25.5  | 23.9  | 24.3  | 17.4  | 35.6  | 31.1  | 36.4  | 32.8  | 37.0  | 28.5  | 30.9  | 26.2  | 28.7  | 26.8  | 27.3  | 27.3  | 23.6  | 23.9  |
| Calc Days Above State 24-Hr Std        |       |       |       | 0     | 0     |       | 12    | 31    | 71    | 71    | 72    |       | 50    | 18    |       | 24    | 31    | 43    | 12    | 18    |
| Calc Days Above Nat 24-Hr Std          |       |       |       | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       |       |       |       |       |       |       |       |       |       |       |       | 31.4  | 23.3  | 23.1  | 22.8  | 15.0  | 22.6  | 21.7  | 12.6  |
| Max. 24-Hr. Concentration (Nat)        |       |       |       |       |       |       |       |       |       |       |       |       | 31.4  | 23.3  | 23.1  | 22.8  | 15.0  | 22.6  | 21.7  | 12.6  |
| 98th Percentile of 24-Hr Conc.         |       |       |       |       |       |       |       |       |       |       |       |       | 17.9  | 23.1  | 22.0  | 13.6  |       |       |       |       |
| Annual Average (State)                 |       |       |       |       |       |       |       |       |       |       |       |       | 7.9   | 9.1   | 8.6   |       |       |       |       |       |
| Avg. of Qtrly. Means (Nat)             |       |       |       |       |       |       |       |       |       |       |       |       | 7.9   | 9.1   | 8.6   | 7.4   |       |       |       |       |
| CARBON MONOXIDE (ppm)                  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 8-Hr. Indicator                   | 1.5   | 1.1   | 1.1   | 1.1   | 1.1   | 1.1   | 1.1   | 1.1   | 1.1   | 1.0   | 0.8   | 0.8   | 0.8   | 0.8   | 0.9   | 0.9   | 0.9   | 0.8   | 0.8   | 0.9   |
| Max. 1-Hr. Concentration               | 1.0   | 2.0   | 3.0   | 2.0   | 1.0   | 2.0   | 1.0   | 2.2   | 1.4   | 3.0   | 0.9   | 1.0   | 2.0   | 1.3   | 1.9   | 1.3   | 1.6   | 2.1   | 1.6   | 1.3   |
| Max. 8-Hr. Concentration               | 1.0   | 1.3   | 1.3   | 1.0   | 1.0   | 1.2   | 1.0   | 1.3   | 0.9   | 1.0   | 0.7   | 0.9   | 0.8   | 0.8   | 1.0   | 0.8   | 0.7   | 1.0   | 0.9   | 0.8   |
| Days Above State 8-Hr. Std.            | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above Nat. 8-Hr. Std.             | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| NITROGEN DIOXIDE (ppm)                 | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.044 | 0.048 | 0.049 | 0.050 | 0.049 | 0.047 | 0.043 | 0.051 | 0.052 | 0.050 | 0.045 | 0.041 | 0.035 | 0.036 | 0.036 | 0.035 | 0.036 | 0.035 | 0.031 | 0.032 |
| Max. 1-Hr. Concentration               | 0.050 | 0.050 | 0.040 | 0.050 | 0.040 | 0.040 | 0.050 | 0.045 | 0.053 | 0.042 | 0.031 | 0.039 | 0.032 | 0.035 | 0.042 | 0.035 | 0.034 | 0.032 | 0.030 | 0.030 |
| Max. Annual Average (Nat)              | 0.005 | 0.007 | 0.008 | 0.007 |       | 0.006 |       | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.005 | 0.005 | 0.005 | 0.005 |       | 0.004 | 0.004 | 0.004 |
| Max. Annual Average (State)            | 0.005 |       | 0.008 |       |       | 0.006 |       | 0.005 |       | 0.005 |       | 0.004 | 0.005 | 0.005 | 0.005 | 0.005 |       |       | 0.004 | 0.004 |
| SULFUR DIOXIDE (ppm)                   | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   |       | 0.02  | 0.02  | 0.02  | 0.01  | 0.01  | 0.03  | 0.04  | 0.05  | 0.04  | 0.03  | 0.01  | 0.01  | 0.01  | 0.02  | 0.03  | 0.03  | 0.03  | 0.02  | 0.02  |
| Max. Annual Average                    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Max. 24-Hr. Concentration              | 0.01  | 0.01  | 0.01  | 0.01  | 0.00  | 0.01  | 0.01  | 0.01  | 0.02  | 0.00  | 0.00  | 0.01  | 0.00  | 0.00  | 0.01  | 0.01  | 0.01  | 0.00  | 0.00  | 0.01  |

Table A-54

*North Coast Air Basin*

County: Del Norte

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hour Indicator (State)         |       | 0.055 | 0.051 | 0.064 | 0.064 | 0.061 | 0.059 | 0.058 | 0.055 |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |       |       | 0.042 | 0.046 | 0.044 | 0.051 | 0.050 | 0.051 | 0.049 |      |      |      |      |      |      |      |      |      |      |      |
| Peak 1-Hour Indicator (State)         |       | 0.059 | 0.057 | 0.066 | 0.066 | 0.064 | 0.062 | 0.059 | 0.061 |      |      |      |      |      |      |      |      |      |      |      |
| 4th High 1-Hr. in 3 Yrs2              |       | 0.060 | 0.059 | 0.070 | 0.060 | 0.070 | 0.060 | 0.060 | 0.060 |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration              | 0.038 | 0.060 | 0.042 | 0.060 | 0.051 | 0.061 | 0.053 | 0.061 | 0.052 |      |      |      |      |      |      |      |      |      |      |      |
| Maximum 1-Hr. Concentration           | 0.040 | 0.068 | 0.050 | 0.070 | 0.060 | 0.070 | 0.060 | 0.064 | 0.056 |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std.           | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.            | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 1-Hr. Std.           | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |      |      |      |      |      |      |      |      |      |      |      |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      |      |      |      |      |      |      | 41   | 42   | 58   | 50   | 42   | 46   | 48   | 39   | 37   | 44   | 31   | 43   |
| Max. 24-Hr. Concentration (Nat)       |      |      |      |      |      |      |      |      | 41   | 42   | 58   | 48   | 39   | 44   | 46   | 39   | 39   | 42   | 30   | 41   |
| Max. Annual Average (State)           |      |      |      |      |      |      |      |      |      |      | 20.8 |      | 18.4 | 17.6 | 17.3 |      |      | 18.6 |      |      |
| Max. Annual Average (Nat)             |      |      |      |      |      |      |      |      | 20.5 | 15.8 | 20.9 | 24.7 | 17.3 | 17.4 | 16.9 | 18.7 | 14.1 | 17.9 | 18.0 | 11.3 |
| Calc Days Above State 24-Hr Std       |      |      |      |      |      |      |      |      |      |      | 6    |      | 0    | 0    | 0    |      |      | 0    |      |      |
| Calc Days Above Nat 24-Hr Std         |      |      |      |      |      |      |      |      | 0    |      | 0    |      | 0    | 0    | 0    | 0    |      | 0    |      |      |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

| NITROGEN DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*



# North Coast Air Basin

## County: Humboldt

| OZONE (ppm)                           | 1987 | 1988 | 1989 | 1990  | 1991  | 1992  | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006  |
|---------------------------------------|------|------|------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| Peak 8-Hour Indicator (State)         |      |      |      | 0.036 | 0.042 | 0.042 |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |      |      |      |       |       | 0.034 |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
| Peak 1-Hour Indicator (State)         |      |      |      | 0.041 | 0.048 | 0.048 |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
| 4th High 1-Hr. in 3 Yrs2              |      |      |      | 0.040 | 0.040 | 0.040 |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
| Max. 8-Hr. Concentration              |      |      |      | 0.031 | 0.042 | 0.040 |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.037 |
| Maximum 1-Hr. Concentration           |      |      |      | 0.040 | 0.050 | 0.040 |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.039 |
| Days Above State 8-Hr. Std.           |      |      |      | 0     | 0     | 0     |      |      |      |      |      |      |      |      |      |      |      |      |      | 0     |
| Days Above Nat. 8-Hr. Std.            |      |      |      | 0     | 0     | 0     |      |      |      |      |      |      |      |      |      |      |      |      |      | 0     |
| Days Above State 1-Hr. Std.           |      |      |      | 0     | 0     | 0     |      |      |      |      |      |      |      |      |      |      |      |      |      | 0     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      | 92   | 83   |      |      |      | 77   | 68   | 87   | 56   | 45   | 60   | 53   | 67   | 38   | 71   | 64   | 71   | 72   |
| Max. 24-Hr. Concentration (Nat)       |      | 79   | 92   | 83   |      |      |      | 77   | 68   | 87   | 56   | 43   | 57   | 51   | 64   | 36   | 68   | 61   | 67   | 68   |
| Max. Annual Average (State)           |      |      | 31.4 | 28.0 |      |      |      | 24.3 |      | 19.0 | 21.0 | 15.9 | 19.9 | 21.8 | 21.3 |      |      |      |      | 21.1 |
| Max. Annual Average (Nat)             |      | 15.5 | 31.4 | 28.0 |      |      |      | 24.3 | 19.9 | 18.4 | 21.2 | 14.8 | 19.2 | 20.9 | 20.8 | 18.5 | 17.8 | 20.7 | 13.6 | 20.4 |
| Calc Days Above State 24-Hr Std       |      |      | 35   | 29   |      |      |      | 12   |      | 12   | 6    | 0    | 13   | 6    | 13   |      |      |      |      | 12   |
| Calc Days Above Nat 24-Hr Std         |      |      | 0    | 0    |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      | 0    |      | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 36.9 | 24.0 | 32.6 | 23.7 | 36.1 | 25.6 | 31.8 | 35.0 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 36.9 | 24.0 | 32.6 | 23.7 | 36.1 | 25.6 | 31.8 | 35.0 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      | 27.7 | 29.0 | 29.0 | 22.6 | 36.1 | 23.1 |      |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      | 9.1  |      | 9.4  |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      | 9.1  |      | 9.4  | 7.9  |      | 8.2  |      |      |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        |      |      | 4.6  | 4.6  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |      |      | 10.0 | 9.0  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 1.3  |
| Max. 8-Hr. Concentration    |      |      | 4.5  | 3.5  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 1.2  |
| Days Above State 8-Hr. Std. |      |      | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0    |
| Days Above Nat. 8-Hr. Std.  |      |      | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0    |

| NITROGEN DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006  |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| Peak 1-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.024 |
| Max. Annual Average (Nat)   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
| Max. Annual Average (State) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.00 |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.00 |

Table A-56

*North Coast Air Basin*

## County: Mendocino

|  |       |       |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|--|-------|-------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| OZONE (ppm)                            | 1987  | 1988  | 1989 | 1990 | 1991 | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 8-Hour Indicator (State)          | 0.073 |       |      |      |      |       | 0.061 | 0.063 | 0.064 | 0.064 | 0.062 | 0.065 | 0.068 | 0.067 | 0.065 | 0.065 | 0.067 | 0.068 | 0.064 | 0.067 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat)  | 0.056 |       |      |      |      |       |       | 0.050 | 0.056 | 0.052 | 0.050 | 0.052 | 0.058 | 0.058 | 0.055 | 0.055 | 0.057 | 0.058 | 0.057 | 0.057 |
| Peak 1-Hour Indicator (State)          | 0.084 |       |      |      |      |       | 0.073 | 0.076 | 0.076 | 0.077 | 0.075 | 0.080 | 0.079 | 0.079 | 0.077 | 0.076 | 0.080 | 0.080 | 0.075 | 0.075 |
| 4th High 1-Hr. in 3 Yrs2               | 0.090 |       |      |      |      |       | 0.080 | 0.080 | 0.080 | 0.074 | 0.069 | 0.069 | 0.073 | 0.073 | 0.073 | 0.083 | 0.083 | 0.083 | 0.071 | 0.078 |
| Max. 8-Hr. Concentration               | 0.076 | 0.076 |      |      |      | 0.043 | 0.065 | 0.061 | 0.065 | 0.049 | 0.061 | 0.071 | 0.069 | 0.059 | 0.055 | 0.072 | 0.066 | 0.056 | 0.060 | 0.069 |
| Maximum 1-Hr. Concentration            | 0.090 | 0.090 |      |      |      | 0.060 | 0.080 | 0.087 | 0.084 | 0.058 | 0.071 | 0.090 | 0.079 | 0.071 | 0.070 | 0.092 | 0.090 | 0.070 | 0.088 | 0.081 |
| Days Above State 8-Hr. Std.            | 2     | 3     |      |      |      | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 0     | 0     | 0     | 2     | 0     | 0     | 0     | 0     |
| Days Above Nat. 8-Hr. Std.             | 0     | 0     |      |      |      | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above State 1-Hr. Std.            | 0     | 0     |      |      |      | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| PM <sub>10</sub> (µg/m <sup>3</sup> )  | 1987  | 1988  | 1989 | 1990 | 1991 | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       | 101   | 82   | 60   | 74   | 51    | 54    | 62    | 54    | 56    | 66    | 52    | 69    | 51    | 64    | 72    | 67    | 45    | 49    | 60    |
| Max. 24-Hr. Concentration (Nat)        |       | 101   | 82   | 60   | 74   | 51    | 54    | 62    | 54    | 56    | 66    | 50    | 66    | 49    | 61    | 74    | 65    | 44    | 46    | 57    |
| Max. Annual Average (State)            |       |       | 29.7 | 23.7 | 25.4 | 21.9  | 23.2  | 21.9  | 26.0  | 24.4  | 23.4  | 22.1  |       | 23.5  | 25.4  | 22.9  | 22.2  | 20.6  | 18.6  | 21.9  |
| Max. Annual Average (Nat)              |       | 27.1  | 29.9 | 23.7 | 25.3 | 21.8  | 22.6  | 23.9  | 26.1  | 24.6  | 23.4  | 21.1  | 24.3  | 22.4  | 24.1  | 22.2  | 21.4  | 19.8  | 17.9  | 20.9  |
| Calc Days Above State 24-Hr Std        |       |       | 40   | 24   | 17   | 6     | 13    | 6     | 13    | 7     | 6     | 6     |       | 6     | 24    | 12    | 25    | 0     | 0     | 6     |
| Calc Days Above Nat 24-Hr Std          |       |       | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987  | 1988  | 1989 | 1990 | 1991 | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       |       |      |      |      |       |       |       |       |       |       |       | 35.6  | 22.3  | 38.3  | 59.7  | 15.6  | 18.5  | 20.8  | 21.0  |
| Max. 24-Hr. Concentration (Nat)        |       |       |      |      |      |       |       |       |       |       |       |       | 35.6  | 20.0  | 38.3  | 59.7  | 15.6  | 18.5  | 20.8  | 21.0  |
| 98th Percentile of 24-Hr Conc.         |       |       |      |      |      |       |       |       |       |       |       |       | 26.2  |       | 27.0  | 39.7  | 15.2  | 14.4  | 15.2  | 17.4  |
| Annual Average (State)                 |       |       |      |      |      |       |       |       |       |       |       |       | 8.8   |       |       | 9.1   | 7.4   | 7.0   | 6.2   | 6.8   |
| Avg. of Qtrly. Means (Nat)             |       |       |      |      |      |       |       |       |       |       |       |       | 8.8   |       | 8.0   | 9.1   | 7.4   | 7.0   | 6.2   | 6.8   |
| CARBON MONOXIDE (ppm)                  | 1987  | 1988  | 1989 | 1990 | 1991 | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 8-Hr. Indicator                   |       |       |      |      |      |       | 2.4   |       | 3.2   | 3.4   | 3.3   | 3.1   | 3.6   | 3.4   | 3.3   | 2.6   | 2.3   | 2.0   | 1.8   | 1.7   |
| Max. 1-Hr. Concentration               |       | 1.0   |      |      |      | 1.0   | 6.0   |       | 5.4   | 4.8   | 7.4   | 4.8   | 5.2   | 4.4   | 4.0   | 3.1   | 5.3   | 2.3   | 2.6   | 2.2   |
| Max. 8-Hr. Concentration               |       | 1.0   |      |      |      | 0.6   | 2.4   |       | 3.2   | 2.7   | 3.2   | 3.5   | 3.7   | 2.6   | 2.3   | 2.5   | 2.2   | 1.8   | 1.5   | 1.6   |
| Days Above State 8-Hr. Std.            |       | 0     |      |      |      | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above Nat. 8-Hr. Std.             |       | 0     |      |      |      | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| NITROGEN DIOXIDE (ppm)                 | 1987  | 1988  | 1989 | 1990 | 1991 | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   |       |       |      |      |      |       | 0.054 | 0.053 | 0.053 | 0.053 | 0.049 | 0.050 | 0.054 | 0.053 | 0.052 | 0.042 | 0.045 | 0.044 | 0.039 | 0.039 |
| Max. 1-Hr. Concentration               |       | 0.030 |      |      |      | 0.080 | 0.050 | 0.079 | 0.078 | 0.044 | 0.061 | 0.052 | 0.066 | 0.042 | 0.052 | 0.080 | 0.053 | 0.037 | 0.037 | 0.040 |
| Max. Annual Average (Nat)              |       |       |      |      |      |       |       | 0.009 | 0.009 |       | 0.010 | 0.010 | 0.010 | 0.011 | 0.010 | 0.010 | 0.009 | 0.009 | 0.008 | 0.009 |
| Max. Annual Average (State)            |       |       |      |      |      |       |       | 0.008 | 0.009 |       | 0.010 | 0.010 | 0.010 | 0.011 | 0.010 | 0.009 | 0.009 | 0.009 | 0.008 | 0.009 |
| SULFUR DIOXIDE (ppm)                   | 1987  | 1988  | 1989 | 1990 | 1991 | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   |       |       |      |      |      |       | 0.01  | 0.01  |       |       |       |       |       |       |       |       |       |       |       |       |
| Max. Annual Average                    |       | 0.00  |      |      |      | 0.00  | 0.00  | 0.00  |       |       |       |       |       |       |       |       |       |       |       |       |
| Max. 24-Hr. Concentration              |       | 0.01  |      |      |      | 0.01  | 0.00  | 0.00  |       |       |       |       |       |       |       |       |       |       |       |       |

Table A-57

# North Coast Air Basin

County: Sonoma

| OZONE (ppm)                           | 1987 | 1988 | 1989 | 1990 | 1991 | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         |      |      |      |      |      | 0.070 | 0.074 | 0.072 | 0.075 | 0.074 | 0.082 | 0.091 | 0.097 | 0.093 | 0.081 | 0.071 | 0.071 | 0.070 | 0.065 | 0.064 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |      |      |      |      |      |       |       | 0.066 | 0.069 | 0.069 | 0.072 | 0.077 | 0.082 | 0.076 | 0.069 | 0.063 | 0.062 | 0.061 | 0.056 | 0.055 |
| Peak 1-Hour Indicator (State)         |      |      |      |      |      | 0.085 | 0.088 | 0.088 | 0.088 | 0.086 | 0.091 | 0.104 | 0.110 | 0.106 | 0.093 | 0.083 | 0.082 | 0.082 | 0.077 | 0.075 |
| 4th High 1-Hr. in 3 Yrs2              |      |      |      |      |      | 0.080 | 0.090 | 0.090 | 0.090 | 0.090 | 0.110 | 0.110 | 0.110 | 0.100 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 |
| Max. 8-Hr. Concentration              |      |      |      |      |      | 0.072 | 0.073 | 0.080 | 0.090 | 0.071 | 0.091 | 0.106 | 0.087 | 0.077 | 0.073 | 0.068 | 0.080 | 0.077 | 0.060 | 0.060 |
| Maximum 1-Hr. Concentration           |      |      |      |      |      | 0.090 | 0.090 | 0.100 | 0.100 | 0.080 | 0.100 | 0.130 | 0.100 | 0.090 | 0.090 | 0.080 | 0.090 | 0.090 | 0.080 | 0.070 |
| Days Above State 8-Hr. Std.           |      |      |      |      |      | 2     | 3     | 3     | 4     | 2     | 9     | 11    | 9     | 1     | 1     | 0     | 1     | 1     | 0     | 0     |
| Days Above Nat. 8-Hr. Std.            |      |      |      |      |      | 0     | 0     | 0     | 1     | 0     | 1     | 5     | 2     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above State 1-Hr. Std.           |      |      |      |      |      | 0     | 0     | 1     | 1     | 0     | 2     | 7     | 4     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      | 62   | 85   | 266  | 78   | 58   | 53   | 57   | 43   | 40   | 54   | 33   | 74   | 45   | 63   | 37   | 45   | 33   | 39   | 30   |
| Max. 24-Hr. Concentration (Nat)       |      | 62   | 85   | 266  | 78   | 58   | 53   | 57   | 43   | 40   | 54   | 32   | 71   | 44   | 59   | 36   | 45   | 33   | 37   | 30   |
| Max. Annual Average (State)           |      |      |      | 23.8 | 24.8 |      | 20.7 | 18.4 |      | 16.4 | 16.5 | 16.6 | 19.4 | 12.6 |      | 15.6 | 15.1 | 15.7 | 14.1 | 16.2 |
| Max. Annual Average (Nat)             |      | 21.3 | 24.7 | 23.8 | 25.1 | 21.4 | 20.3 | 18.4 | 13.7 | 16.5 | 16.5 | 16.0 | 18.3 | 14.7 | 15.0 | 15.0 | 14.8 | 15.2 | 13.9 | 15.6 |
| Calc Days Above State 24-Hr Std       |      |      |      | 22   | 23   |      | 12   | 13   |      | 0    | 5    | 0    | 18   | 0    |      | 0    | 0    | 0    | 0    | 0    |
| Calc Days Above Nat 24-Hr Std         |      |      | 0    | 6    | 0    |      | 0    | 0    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

| NITROGEN DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

Table A-58

A portion of Sonoma County lies within the San Francisco Bay Area Air Basin.

**North Coast Air Basin**

County: Trinity

| OZONE (ppm)                           | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hour Indicator (State)         | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Peak 1-Hour Indicator (State)         |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 4th High 1-Hr. in 3 Yrs2              |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration              |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Maximum 1-Hr. Concentration           |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std.           |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.            |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 1-Hr. Std.           |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      |      |      |      |      |      |      |      | 63   | 54   | 47   | 95   | 51   | 72   | 53   | 54   | 43   | 32   | 154  |
| Max. 24-Hr. Concentration (Nat)       |      |      |      |      |      |      |      |      | 41   | 72   | 54   | 46   | 100  | 51   | 73   | 52   | 57   | 42   | 32   | 161  |
| Max. Annual Average (State)           |      |      |      |      |      |      |      |      |      |      | 17.8 | 18.1 | 24.3 | 18.8 |      |      |      |      |      |      |
| Max. Annual Average (Nat)             |      |      |      |      |      |      |      |      | 17.4 | 17.7 | 18.0 | 18.7 | 25.3 | 18.7 | 20.5 | 16.7 | 17.3 | 13.2 | 7.6  | 25.8 |
| Calc Days Above State 24-Hr Std       |      |      |      |      |      |      |      |      |      |      | 6    | 0    | 36   | 7    |      |      |      |      |      |      |
| Calc Days Above Nat 24-Hr Std         |      |      |      |      |      |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      |      |      |      |      |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)        |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 98th Percentile of 24-Hr Conc.         |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Annual Average (State)                 |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | 3.4  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    | 4.0  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    | 3.0  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| NITROGEN DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| SULFUR DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

# Northeast Plateau Air Basin

County: Lassen

| OZONE (ppm)                           | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hour Indicator (State)         | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Peak 1-Hour Indicator (State)         |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 4th High 1-Hr. in 3 Yrs2              |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration              |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Maximum 1-Hr. Concentration           |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std.           |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.            |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 1-Hr. Std.           |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      |      |      |      |      |      |      |      |      | 42   | 84   | 48   | 93   | 74   | 91   |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)       |      |      |      |      |      |      |      |      |      |      | 42   | 84   | 52   | 100  | 80   | 105  |      |      |      |      |
| Max. Annual Average (State)           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)             |      |      |      |      |      |      |      |      |      |      | 15.6 | 20.2 | 14.7 | 32.9 | 27.9 | 25.1 |      |      |      |      |
| Calc Days Above State 24-Hr Std       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Calc Days Above Nat 24-Hr Std         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)        |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 98th Percentile of 24-Hr Conc.         |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Annual Average (State)                 |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| CARBON MONOXIDE (ppm)       | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| NITROGEN DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| SULFUR DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

Table A-60

**Northeast Plateau Air Basin**

County: Modoc

| OZONE (ppm)                           | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hour Indicator (State)         | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Peak 1-Hour Indicator (State)         |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 4th High 1-Hr. in 3 Yrs2              |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration              |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Maximum 1-Hr. Concentration           |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std.           |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.            |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 1-Hr. Std.           |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      |      |      |      |      |      | 101  | 78   | 74   | 97   | 41   | 89   | 74   |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)       |      |      |      |      |      |      |      | 101  | 78   | 74   | 97   | 62   | 94   | 79   | 67   |      |      |      |      |      |
| Max. Annual Average (State)           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)             |      |      |      |      |      |      |      | 29.6 | 30.3 | 16.2 | 17.3 | 14.2 | 26.3 | 22.4 | 19.8 |      |      |      |      |      |
| Calc Days Above State 24-Hr Std       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Calc Days Above Nat 24-Hr Std         |      |      |      |      |      |      |      |      | 0    |      |      |      | 0    | 0    | 0    |      |      |      |      |      |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 40.0 | 38.0 | 35.0 | 5.0  | 10.0 |      |      |      |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 40.0 | 38.0 | 35.0 | 5.0  | 10.0 |      |      |      |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      | 27.0 | 37.0 |      |      |      |      |      |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      | 8.5  |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      | 7.9  | 8.5  |      |      |      |      |      |      |

| CARBON MONOXIDE (ppm)       | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| NITROGEN DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| SULFUR DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

# Northeast Plateau Air Basin

## County: Siskiyou

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.077 | 0.076 | 0.076 | 0.076 | 0.077 | 0.073 | 0.069 | 0.069 | 0.066 | 0.066 | 0.068 | 0.071 | 0.071 | 0.072 | 0.070 | 0.074 | 0.075 | 0.075 | 0.074 | 0.073 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.069 | 0.069 | 0.069 | 0.067 | 0.059 | 0.057 | 0.051 | 0.058 | 0.057 | 0.059 | 0.058 | 0.061 | 0.062 | 0.063 | 0.053 | 0.055 | 0.057 | 0.065 | 0.064 | 0.064 |
| Peak 1-Hour Indicator (State)         | 0.081 | 0.081 | 0.083 | 0.082 | 0.084 | 0.080 | 0.073 | 0.075 | 0.074 | 0.075 | 0.073 | 0.075 | 0.077 | 0.079 | 0.081 | 0.085 | 0.082 | 0.082 | 0.078 | 0.078 |
| 4th High 1-Hr. in 3 Yrs2              | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.070 | 0.070 | 0.070 | 0.070 | 0.070 | 0.078 | 0.077 | 0.081 | 0.082 | 0.082 | 0.087 | 0.081 | 0.077 | 0.076 |
| Max. 8-Hr. Concentration              | 0.081 | 0.071 | 0.076 | 0.076 | 0.046 | 0.073 | 0.070 | 0.068 | 0.062 | 0.063 | 0.074 | 0.071 | 0.067 | 0.071 | 0.038 | 0.075 | 0.074 | 0.071 | 0.064 | 0.072 |
| Maximum 1-Hr. Concentration           | 0.090 | 0.080 | 0.080 | 0.080 | 0.050 | 0.080 | 0.070 | 0.080 | 0.070 | 0.070 | 0.082 | 0.078 | 0.070 | 0.082 | 0.049 | 0.087 | 0.089 | 0.077 | 0.070 | 0.080 |
| Days Above State 8-Hr. Std.           | 4     | 1     | 2     | 3     | 0     | 1     | 0     | 0     | 0     | 0     | 1     | 1     | 0     | 1     | 0     | 1     | 3     | 1     | 0     | 2     |
| Days Above Nat. 8-Hr. Std.            | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above State 1-Hr. Std.           | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      | 59   | 63   | 60   | 74   | 60   | 61   | 46   | 188  | 40   | 63   | 51   | 33   | 33   | 73   | 31   | 29   | 28   | 44   |
| Max. 24-Hr. Concentration (Nat)       |      |      | 59   | 63   | 60   | 74   | 60   | 61   | 46   | 188  | 40   | 66   | 56   | 53   | 41   | 86   | 33   | 32   | 29   | 50   |
| Max. Annual Average (State)           |      |      | 24.8 |      |      | 23.6 |      | 22.1 | 16.0 |      |      |      | 16.8 |      |      | 17.5 | 12.8 | 12.8 | 13.3 | 13.4 |
| Max. Annual Average (Nat)             |      |      | 24.8 | 23.5 | 21.4 | 23.6 | 21.4 | 22.1 | 16.6 | 16.1 | 12.9 | 14.2 | 17.7 | 14.7 | 14.1 | 18.6 | 13.3 | 13.6 | 13.9 | 14.1 |
| Calc Days Above State 24-Hr Std       |      |      | 29   |      |      | 24   |      | 0    | 0    |      |      |      | 0    |      |      | 6    | 0    | 0    | 0    | 0    |
| Calc Days Above Nat 24-Hr Std         |      |      | 0    | 0    |      | 0    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 26.0 | 22.0 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 26.0 | 22.0 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    | 12.0 | 4.0  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    | 10.4 | 1.8  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. | 1    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  | 1    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| NITROGEN DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| SULFUR DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

Table A-62

*Sacramento Valley Air Basin*

## County: Butte

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.093 | 0.092 | 0.094 | 0.092 | 0.087 | 0.086 | 0.085 | 0.088 | 0.089 | 0.089 | 0.082 | 0.082 | 0.090 | 0.100 | 0.099 | 0.099 | 0.099 | 0.100 | 0.092 | 0.094 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.082 | 0.081 | 0.082 | 0.080 | 0.077 | 0.076 | 0.075 | 0.078 | 0.078 | 0.077 | 0.072 | 0.072 | 0.077 | 0.081 | 0.081 | 0.089 | 0.089 | 0.088 | 0.083 | 0.084 |
| Peak 1-Hour Indicator (State)         | 0.102 | 0.104 | 0.105 | 0.103 | 0.099 | 0.094 | 0.091 | 0.095 | 0.097 | 0.095 | 0.091 | 0.091 | 0.101 | 0.102 | 0.102 | 0.103 | 0.102 | 0.103 | 0.099 | 0.099 |
| 4th High 1-Hr. in 3 Yrs2              | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.090 | 0.090 | 0.095 | 0.097 | 0.097 | 0.091 | 0.096 | 0.103 | 0.105 | 0.101 | 0.107 | 0.102 | 0.103 | 0.101 | 0.102 |
| Max. 8-Hr. Concentration              | 0.088 | 0.092 | 0.087 | 0.095 | 0.085 | 0.077 | 0.083 | 0.091 | 0.086 | 0.084 | 0.072 | 0.090 | 0.100 | 0.095 | 0.089 | 0.101 | 0.091 | 0.094 | 0.085 | 0.094 |
| Maximum 1-Hr. Concentration           | 0.110 | 0.100 | 0.100 | 0.130 | 0.100 | 0.090 | 0.100 | 0.099 | 0.105 | 0.108 | 0.087 | 0.106 | 0.135 | 0.105 | 0.101 | 0.112 | 0.101 | 0.103 | 0.092 | 0.104 |
| Days Above State 8-Hr. Std.           | 30    | 25    | 18    | 16    | 9     | 20    | 15    | 46    | 11    | 17    | 1     | 10    | 30    | 43    | 39    | 66    | 45    | 37    | 31    | 59    |
| Days Above Nat. 8-Hr. Std.            | 3     | 3     | 1     | 1     | 1     | 0     | 0     | 2     | 1     | 0     | 0     | 1     | 5     | 6     | 6     | 13    | 8     | 3     | 1     | 7     |
| Days Above State 1-Hr. Std.           | 5     | 8     | 4     | 2     | 1     | 0     | 1     | 3     | 1     | 2     | 0     | 2     | 7     | 5     | 4     | 10    | 5     | 2     | 0     | 8     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      | 100  | 82   |      |      | 83   | 78   | 93   | 64   | 66   | 108  | 71   | 94   | 85   | 112  | 96   | 54   | 115  | 76   | 81   |
| Max. 24-Hr. Concentration (Nat)       |      | 100  | 82   |      |      | 83   | 78   | 93   | 64   | 66   | 108  | 68   | 95   | 81   | 105  | 92   | 54   | 110  | 71   | 76   |
| Max. Annual Average (State)           |      |      |      |      |      |      | 28.0 | 33.3 | 27.0 | 25.2 | 25.2 | 22.8 | 31.1 | 27.9 | 29.9 | 28.8 | 21.7 | 28.8 | 23.9 | 26.9 |
| Max. Annual Average (Nat)             |      | 30.5 | 25.3 |      |      | 24.6 | 27.6 | 33.3 | 26.2 | 25.5 | 24.9 | 22.3 | 30.5 | 27.6 | 29.3 | 28.2 | 21.3 | 28.1 | 23.4 | 26.3 |
| Calc Days Above State 24-Hr Std       |      |      |      |      |      |      | 46   | 36   | 37   | 16   | 21   | 18   | 49   | 39   | 31   | 37   | 6    | 30   | 29   | 41   |
| Calc Days Above Nat 24-Hr Std         |      |      |      |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      | 69.0 | 73.0 | 98.0 | 65.0 | 96.1 | 67.0 | 76.3 | 82.7 | 76.1 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      | 69.0 | 73.0 | 98.0 | 65.0 | 84.0 | 33.0 | 65.0 | 67.0 | 67.0 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      | 69.0 | 60.0 | 70.0 | 56.0 | 53.0 | 32.0 | 54.0 | 54.0 | 59.0 |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      | 17.5 | 15.8 |      | 15.1 | 15.9 | 16.5 | 13.8 | 14.6 |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      | 17.5 | 15.8 | 13.0 | 15.1 | 10.5 | 15.1 | 12.3 | 13.2 |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | 10.2 | 10.7 | 10.1 | 10.4 | 9.8  | 9.8  | 8.9  | 6.2  | 5.8  | 5.9  | 5.5  | 5.3  | 4.4  | 4.5  | 4.6  | 4.1  | 3.5  | 3.1  | 3.0  | 3.0  |
| Max. 1-Hr. Concentration    | 12.0 | 17.0 | 15.0 | 17.0 | 15.0 | 14.0 | 9.0  | 9.4  | 8.5  | 8.7  | 7.0  | 6.0  | 7.2  | 5.2  | 6.4  | 5.1  | 3.9  | 3.6  | 3.3  | 4.3  |
| Max. 8-Hr. Concentration    | 8.6  | 12.3 | 10.0 | 10.8 | 9.2  | 6.8  | 5.8  | 5.7  | 4.8  | 6.1  | 5.1  | 4.5  | 5.4  | 4.0  | 4.3  | 3.5  | 2.5  | 2.9  | 2.7  | 2.7  |
| Days Above State 8-Hr. Std. | 0    | 2    | 1    | 1    | 2    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Days Above Nat. 8-Hr. Std.  | 0    | 2    | 1    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| NITROGEN DIOXIDE (ppm)      | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 1-Hr. Indicator        | 0.089 | 0.090 | 0.089 | 0.081 | 0.081 | 0.082 | 0.082 | 0.078 | 0.077 | 0.074 | 0.072 | 0.068 | 0.074 | 0.077 | 0.074 | 0.061 | 0.058 | 0.058 | 0.056 | 0.053 |
| Max. 1-Hr. Concentration    | 0.090 | 0.100 | 0.080 | 0.080 | 0.070 | 0.080 | 0.090 | 0.080 | 0.074 | 0.070 | 0.061 | 0.068 | 0.077 | 0.078 | 0.062 | 0.058 | 0.057 | 0.056 | 0.048 | 0.048 |
| Max. Annual Average (Nat)   | 0.017 | 0.016 | 0.016 | 0.015 | 0.015 | 0.016 | 0.016 | 0.015 | 0.014 | 0.013 | 0.013 | 0.013 | 0.015 | 0.012 | 0.012 | 0.012 | 0.011 | 0.011 | 0.009 | 0.009 |
| Max. Annual Average (State) | 0.017 | 0.016 | 0.016 | 0.015 |       | 0.016 | 0.016 | 0.015 | 0.014 | 0.013 | 0.013 | 0.013 | 0.015 | 0.013 | 0.012 | 0.012 | 0.011 | 0.011 | 0.009 | 0.009 |

| SULFUR DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |



# Sacramento Valley Air Basin

County: Colusa

| OZONE (ppm)                           | 1987  | 1988 | 1989 | 1990 | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.101 |      |      |      |       | 0.095 | 0.097 | 0.094 | 0.097 | 0.098 | 0.091 | 0.089 | 0.087 | 0.084 | 0.090 | 0.088 | 0.087 | 0.078 | 0.075 | 0.078 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.085 |      |      |      |       |       | 0.079 | 0.082 | 0.082 | 0.081 |       | 0.077 | 0.076 | 0.075 | 0.077 | 0.076 | 0.075 | 0.069 | 0.067 | 0.067 |
| Peak 1-Hour Indicator (State)         | 0.112 |      |      |      |       | 0.109 | 0.108 | 0.108 | 0.105 | 0.109 | 0.101 | 0.100 | 0.094 | 0.094 | 0.099 | 0.098 | 0.096 | 0.089 | 0.084 | 0.084 |
| 4th High 1-Hr. in 3 Yrs <sup>2</sup>  | 0.120 |      |      |      |       | 0.100 | 0.100 | 0.100 | 0.101 | 0.111 | 0.101 | 0.099 | 0.094 | 0.094 | 0.095 | 0.095 | 0.095 | 0.089 | 0.083 | 0.084 |
| Max. 8-Hr. Concentration              | 0.102 |      |      |      | 0.084 | 0.092 | 0.085 | 0.090 | 0.090 | 0.091 | 0.081 | 0.088 | 0.085 | 0.072 | 0.088 | 0.081 | 0.071 | 0.073 | 0.074 | 0.076 |
| Maximum 1-Hr. Concentration           | 0.120 |      |      |      | 0.100 | 0.110 | 0.100 | 0.107 | 0.106 | 0.111 | 0.093 | 0.099 | 0.095 | 0.092 | 0.101 | 0.094 | 0.089 | 0.084 | 0.085 | 0.084 |
| Days Above State 8-Hr. Std.           | 68    |      |      |      | 5     | 34    | 14    | 36    | 21    | 30    | 13    | 13    | 15    | 5     | 23    | 10    | 1     | 1     | 2     | 2     |
| Days Above Nat. 8-Hr. Std.            | 21    |      |      |      | 0     | 3     | 2     | 2     | 2     | 4     | 0     | 1     | 1     | 0     | 3     | 0     | 0     | 0     | 0     | 0     |
| Days Above State 1-Hr. Std.           | 28    |      |      |      | 1     | 8     | 3     | 4     | 6     | 6     | 0     | 2     | 1     | 0     | 5     | 0     | 0     | 0     | 0     | 0     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      | 98   | 72   | 93   | 102  | 84   | 70   | 57   | 93   | 57   | 57   | 59   | 172  | 55   | 76   | 64   | 69   | 81   | 92   | 69   |
| Max. 24-Hr. Concentration (Nat)       |      | 98   | 72   | 93   | 102  | 84   | 83   | 204  | 198  | 60   | 57   | 58   | 171  | 55   | 74   | 62   | 68   | 81   | 91   | 68   |
| Max. Annual Average (State)           |      |      | 29.8 | 31.3 |      | 29.9 | 25.0 | 28.9 |      |      | 25.1 | 20.0 |      |      | 25.2 |      |      |      | 25.5 |      |
| Max. Annual Average (Nat)             |      | 29.4 | 29.8 | 30.9 | 38.4 | 28.7 | 28.6 | 30.1 | 40.7 | 27.1 | 24.6 | 19.5 | 33.5 | 23.2 | 24.5 | 28.4 | 23.8 | 18.5 | 23.8 | 19.3 |
| Calc Days Above State 24-Hr Std       |      |      | 35   | 35   |      | 42   | 20   | 26   |      |      | 12   | 6    |      |      | 7    |      |      |      |      | 26   |
| Calc Days Above Nat 24-Hr Std         |      |      | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 6    | 0    | 0    | 0    | 0    |      |      | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      | 37.0 | 55.0 | 28.0 | 36.0 | 57.0 | 30.0 | 44.6 | 47.2 | 61.0 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      | 37.0 | 55.0 | 28.0 | 36.0 | 57.0 | 30.0 | 38.0 | 34.0 | 50.0 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      | 37.0 | 47.0 | 26.0 | 31.0 | 54.0 | 27.0 | 34.0 | 16.0 | 30.0 |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 9.6  |      |      | 7.3  | 11.2 | 7.9  |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      | 8.0  | 9.6  |      |      | 7.3  | 7.0  | 7.9  |

| CARBON MONOXIDE (ppm)       | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| NITROGEN DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| SULFUR DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

Table A-64

## Sacramento Valley Air Basin

### County: Glenn

| OZONE (ppm)                           | 1987  | 1988 | 1989 | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.095 |      |      | 0.091 | 0.094 | 0.093 | 0.093 | 0.092 | 0.089 | 0.088 | 0.088 | 0.084 | 0.090 | 0.088 | 0.089 | 0.083 | 0.083 | 0.078 | 0.077 | 0.074 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.084 |      |      |       |       | 0.081 | 0.080 | 0.076 |       | 0.079 | 0.077 | 0.076 | 0.078 | 0.077 | 0.077 | 0.074 | 0.073 | 0.070 | 0.067 | 0.064 |
| Peak 1-Hour Indicator (State)         | 0.109 |      |      | 0.102 | 0.104 | 0.101 | 0.103 | 0.101 | 0.099 | 0.098 | 0.097 | 0.093 | 0.097 | 0.097 | 0.097 | 0.092 | 0.091 | 0.088 | 0.085 | 0.079 |
| 4th High 1-Hr. in 3 Yrs2              | 0.110 |      |      | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.099 | 0.098 | 0.092 | 0.095 | 0.097 | 0.097 | 0.096 | 0.088 | 0.088 | 0.087 | 0.086 | 0.086 |
| Max. 8-Hr. Concentration              | 0.097 |      |      | 0.086 | 0.082 | 0.088 | 0.083 | 0.086 | 0.087 | 0.081 | 0.080 | 0.088 | 0.093 | 0.078 | 0.084 | 0.077 | 0.079 | 0.070 | 0.070 | 0.070 |
| Maximum 1-Hr. Concentration           | 0.120 |      |      | 0.100 | 0.100 | 0.110 | 0.100 | 0.099 | 0.103 | 0.098 | 0.096 | 0.098 | 0.101 | 0.086 | 0.094 | 0.093 | 0.090 | 0.084 | 0.077 | 0.086 |
| Days Above State 8-Hr. Std.           | 40    |      |      | 21    | 9     | 42    | 17    | 32    | 27    | 19    | 11    | 10    | 26    | 7     | 18    | 9     | 8     | 1     | 1     | 0     |
| Days Above Nat. 8-Hr. Std.            | 8     |      |      | 1     | 0     | 4     | 0     | 2     | 1     | 0     | 0     | 1     | 2     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above State 1-Hr. Std.           | 9     |      |      | 3     | 1     | 6     | 1     | 3     | 1     | 1     | 1     | 2     | 4     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      | 93   | 73   | 63   | 81   | 111  | 75   | 80   | 88   | 75   | 72   | 55   | 88   | 65   | 68   | 80   | 61   | 138  | 69   | 77   |
| Max. 24-Hr. Concentration (Nat)       |      | 93   | 73   | 63   | 81   | 111  | 75   | 80   | 88   | 75   | 72   | 53   | 88   | 65   | 68   | 77   | 61   | 135  | 67   | 78   |
| Max. Annual Average (State)           |      |      | 27.1 | 28.8 | 33.0 | 28.9 | 23.1 |      | 29.0 | 24.5 | 22.8 | 20.3 |      | 23.4 |      | 29.1 | 20.4 | 25.6 | 21.5 |      |
| Max. Annual Average (Nat)             |      | 32.8 | 27.1 | 28.0 | 32.3 | 28.4 | 23.1 | 24.5 | 27.6 | 24.7 | 22.4 | 19.6 | 26.1 | 22.2 | 25.5 | 28.6 | 20.1 | 25.2 | 21.1 | 20.0 |
| Calc Days Above State 24-Hr Std       |      |      | 18   | 23   | 83   | 46   | 16   |      | 57   | 29   | 10   | 12   |      | 6    |      | 41   | 18   | 24   | 18   |      |
| Calc Days Above Nat 24-Hr Std         |      |      | 0    | 0    | 0    | 0    | 0    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 54.2 | 45.1 | 59.1 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| CARBON MONOXIDE (ppm)       | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| NITROGEN DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| SULFUR DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

# Sacramento Valley Air Basin

## County: Placer

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.126 | 0.125 | 0.127 | 0.128 | 0.125 | 0.126 | 0.121 | 0.120 | 0.122 | 0.120 | 0.115 | 0.115 | 0.116 | 0.120 | 0.119 | 0.119 | 0.116 | 0.110 | 0.103 | 0.106 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.105 | 0.108 | 0.105 | 0.107 | 0.105 | 0.105 | 0.101 | 0.103 | 0.105 | 0.103 | 0.095 | 0.095 | 0.097 | 0.102 | 0.101 | 0.101 | 0.099 | 0.095 | 0.092 | 0.093 |
| Peak 1-Hour Indicator (State)         | 0.148 | 0.153 | 0.148 | 0.150 | 0.138 | 0.146 | 0.139 | 0.142 | 0.135 | 0.139 | 0.134 | 0.137 | 0.129 | 0.134 | 0.125 | 0.131 | 0.128 | 0.123 | 0.114 | 0.118 |
| 4th High 1-Hr. in 3 Yrs2              | 0.150 | 0.160 | 0.150 | 0.150 | 0.150 | 0.160 | 0.150 | 0.140 | 0.134 | 0.131 | 0.131 | 0.131 | 0.133 | 0.142 | 0.127 | 0.129 | 0.126 | 0.126 | 0.117 | 0.120 |
| Max. 8-Hr. Concentration              | 0.121 | 0.120 | 0.097 | 0.127 | 0.115 | 0.122 | 0.120 | 0.117 | 0.119 | 0.110 | 0.096 | 0.119 | 0.113 | 0.107 | 0.107 | 0.115 | 0.111 | 0.101 | 0.107 | 0.114 |
| Maximum 1-Hr. Concentration           | 0.180 | 0.180 | 0.120 | 0.150 | 0.130 | 0.170 | 0.150 | 0.133 | 0.148 | 0.135 | 0.113 | 0.153 | 0.142 | 0.128 | 0.128 | 0.136 | 0.133 | 0.118 | 0.120 | 0.129 |
| Days Above State 8-Hr. Std.           | 87    | 106   | 60    | 95    | 73    | 82    | 52    | 82    | 60    | 74    | 31    | 60    | 74    | 60    | 57    | 60    | 49    | 56    | 44    | 69    |
| Days Above Nat. 8-Hr. Std.            | 37    | 43    | 13    | 41    | 29    | 34    | 17    | 27    | 21    | 26    | 4     | 20    | 27    | 19    | 26    | 16    | 12    | 12    | 15    | 29    |
| Days Above State 1-Hr. Std.           | 41    | 55    | 23    | 42    | 36    | 46    | 23    | 35    | 35    | 33    | 10    | 23    | 28    | 25    | 32    | 25    | 17    | 15    | 17    | 28    |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      |      |      | 55   | 48   | 52   | 65   | 84   | 98   | 66   | 75   | 89   | 62   | 62   | 61   | 59   | 43   | 58   | 55   |
| Max. 24-Hr. Concentration (Nat)       |      |      |      |      | 55   | 48   | 52   | 65   | 84   | 98   | 66   | 70   | 89   | 58   | 59   | 58   | 58   | 43   | 55   | 54   |
| Max. Annual Average (State)           |      |      |      |      |      |      | 21.4 | 25.3 | 24.1 | 20.9 | 22.1 | 23.0 | 26.7 | 24.5 | 24.7 | 25.2 | 21.3 | 22.1 | 19.6 | 22.4 |
| Max. Annual Average (Nat)             |      |      |      |      | 7.1  | 17.4 | 24.3 | 25.0 | 27.3 | 23.6 | 21.8 | 22.3 | 26.1 | 23.9 | 24.2 | 24.6 | 21.0 | 21.6 | 19.1 | 22.0 |
| Calc Days Above State 24-Hr Std       |      |      |      |      |      |      | 0    | 16   | 7    | 0    | 0    | 18   | 31   | 11   | 24   | 6    | 6    | 0    | 6    | 6    |
| Calc Days Above Nat 24-Hr Std         |      |      |      |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      | 63.0 | 79.0 | 51.0 | 49.0 | 53.0 | 30.0 | 47.8 | 59.2 | 54.7 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      | 63.0 | 79.0 | 51.0 | 49.0 | 53.0 | 30.0 | 32.0 | 51.0 | 45.0 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      | 63.0 | 40.0 | 43.0 | 49.0 | 40.0 | 26.0 | 30.0 | 28.0 | 36.0 |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      | 13.4 | 12.2 | 11.9 | 13.2 | 9.9  | 9.4  | 10.0 | 10.5 |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      | 13.4 | 12.2 | 11.9 | 13.2 | 9.9  | 9.4  | 10.0 | 10.5 |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        |      |      |      |      |      | 2.3  | 2.6  | 2.9  | 2.6  | 2.5  | 2.2  | 2.3  | 2.3  | 2.4  | 2.3  | 2.2  | 2.0  | 1.8  | 1.5  |      |
| Max. 1-Hr. Concentration    |      |      |      |      | 4.0  | 9.0  | 6.0  | 4.7  | 3.9  | 4.5  | 3.7  | 4.2  | 3.9  | 3.2  | 3.1  | 4.6  | 2.4  | 2.6  | 2.0  |      |
| Max. 8-Hr. Concentration    |      |      |      |      | 3.3  | 2.3  | 2.8  | 3.0  | 2.2  | 2.8  | 2.2  | 2.4  | 2.2  | 2.4  | 1.9  | 2.8  | 1.6  | 1.9  | 1.3  |      |
| Days Above State 8-Hr. Std. |      |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Days Above Nat. 8-Hr. Std.  |      |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| NITROGEN DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|-----------------------------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 1-Hr. Indicator        |      |      |      |      |       | 0.090 | 0.088 | 0.090 | 0.096 | 0.098 | 0.095 | 0.091 | 0.092 | 0.091 | 0.090 | 0.085 | 0.087 | 0.086 | 0.082 | 0.073 |
| Max. 1-Hr. Concentration    |      |      |      |      | 0.050 | 0.080 | 0.090 | 0.089 | 0.093 | 0.100 | 0.080 | 0.097 | 0.093 | 0.082 | 0.086 | 0.075 | 0.083 | 0.067 | 0.079 | 0.063 |
| Max. Annual Average (Nat)   |      |      |      |      |       | 0.015 | 0.016 | 0.018 | 0.017 | 0.016 | 0.015 | 0.016 | 0.012 | 0.016 | 0.015 | 0.016 | 0.014 | 0.013 | 0.013 | 0.013 |
| Max. Annual Average (State) |      |      |      |      |       | 0.015 | 0.016 | 0.018 | 0.017 | 0.016 | 0.015 | 0.016 | 0.012 | 0.016 | 0.015 | 0.016 | 0.014 | 0.013 | 0.013 | 0.013 |

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

Table A-66

Portions of Placer County lie within the Lake Tahoe and Mountain Counties Air Basins.

*Sacramento Valley Air Basin*

## County: Sacramento

| OZONE (ppm)                            | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |      |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| Peak 8-Hour Indicator (State)          | 0.132 | 0.134 | 0.133 | 0.132 | 0.128 | 0.129 | 0.130 | 0.121 | 0.123 | 0.126 | 0.120 | 0.130 | 0.128 | 0.122 | 0.116 | 0.115 | 0.115 | 0.117 | 0.116 | 0.115 |      |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat)  | 0.114 | 0.114 | 0.114 | 0.101 | 0.100 | 0.101 | 0.110 | 0.104 | 0.106 | 0.106 | 0.097 | 0.095 | 0.101 | 0.105 | 0.099 | 0.100 | 0.100 | 0.097 | 0.097 | 0.097 |      |
| Peak 1-Hour Indicator (State)          | 0.164 | 0.168 | 0.164 | 0.162 | 0.153 | 0.158 | 0.159 | 0.151 | 0.148 | 0.152 | 0.138 | 0.159 | 0.154 | 0.152 | 0.139 | 0.136 | 0.137 | 0.133 | 0.131 | 0.130 |      |
| 4th High 1-Hr. in 3 Yrs2               | 0.160 | 0.160 | 0.160 | 0.160 | 0.150 | 0.150 | 0.150 | 0.142 | 0.145 | 0.145 | 0.143 | 0.149 | 0.149 | 0.149 | 0.138 | 0.134 | 0.138 | 0.138 | 0.131 | 0.134 |      |
| Max. 8-Hr. Concentration               | 0.127 | 0.130 | 0.133 | 0.108 | 0.140 | 0.122 | 0.118 | 0.121 | 0.128 | 0.126 | 0.107 | 0.137 | 0.129 | 0.108 | 0.108 | 0.120 | 0.118 | 0.094 | 0.117 | 0.112 |      |
| Maximum 1-Hr. Concentration            | 0.170 | 0.170 | 0.170 | 0.150 | 0.190 | 0.150 | 0.150 | 0.145 | 0.156 | 0.157 | 0.143 | 0.160 | 0.160 | 0.138 | 0.142 | 0.139 | 0.140 | 0.114 | 0.134 | 0.143 |      |
| Days Above State 8-Hr. Std.            | 103   | 103   | 86    | 48    | 83    | 75    | 41    | 53    | 54    | 70    | 41    | 51    | 60    | 50    | 62    | 66    | 70    | 51    | 45    | 68    |      |
| Days Above Nat. 8-Hr. Std.             | 53    | 58    | 32    | 20    | 45    | 35    | 14    | 24    | 32    | 29    | 9     | 29    | 26    | 26    | 23    | 28    | 30    | 12    | 21    | 28    |      |
| Days Above State 1-Hr. Std.            | 74    | 86    | 61    | 29    | 55    | 52    | 26    | 36    | 39    | 49    | 21    | 42    | 40    | 31    | 31    | 39    | 40    | 20    | 29    | 39    |      |
| PM <sub>10</sub> (µg/m <sup>3</sup> )  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |      |
| Max. 24-Hr. Concentration (State)      |       | 99    | 147   | 153   | 134   | 89    | 113   | 99    | 90    | 86    | 108   | 114   | 141   | 90    | 96    | 91    | 123   | 87    | 109   | 111   |      |
| Max. 24-Hr. Concentration (Nat)        |       | 99    | 147   | 153   | 134   | 89    | 113   | 99    | 90    | 86    | 108   | 104   | 141   | 86    | 89    | 86    | 75    | 58    | 110   | 109   |      |
| Max. Annual Average (State)            |       |       | 41.9  |       |       | 31.2  | 29.4  | 29.1  | 28.0  | 25.6  | 23.5  | 23.3  | 29.7  | 25.9  |       | 27.6  | 28.8  | 25.4  | 27.9  | 26.6  |      |
| Max. Annual Average (Nat)              |       | 30.1  | 41.9  | 51.9  | 42.3  | 31.1  | 31.5  | 30.2  | 28.8  | 24.9  | 23.2  | 27.0  | 33.1  | 26.7  | 26.5  | 29.0  | 28.4  | 24.6  | 27.2  | 37.8  |      |
| Calc Days Above State 24-Hr Std        |       |       | 82    |       |       | 34    | 43    | 23    | 42    | 24    | 12    | 18    | 49    | 36    |       | 30    | 25    | 6     | 42    | 40    |      |
| Calc Days Above Nat 24-Hr Std          |       |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |      |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |      |
| Max. 24-Hr. Concentration (State)      |       |       |       |       |       |       |       |       |       |       |       | 96.0  | 108.0 | 123.1 | 128.2 | 91.0  | 73.2  | 58.2  | 81.4  | 78.0  |      |
| Max. 24-Hr. Concentration (Nat)        |       |       |       |       |       |       |       |       |       |       |       | 96.0  | 108.0 | 81.0  | 78.0  | 91.0  | 65.0  | 51.0  | 80.0  | 78.0  |      |
| 98th Percentile of 24-Hr Conc.         |       |       |       |       |       |       |       |       |       |       |       | 96.0  | 84.0  | 81.0  | 53.0  | 63.0  | 43.0  | 42.0  | 49.0  | 55.0  |      |
| Annual Average (State)                 |       |       |       |       |       |       |       |       |       |       |       |       |       | 12.3  |       |       | 12.2  | 11.5  | 12.5  | 15.2  |      |
| Avg. of Qtrly. Means (Nat)             |       |       |       |       |       |       |       |       |       |       |       |       | 19.9  | 12.3  |       | 14.3  | 12.3  | 11.5  | 11.5  | 13.1  |      |
| CARBON MONOXIDE (ppm)                  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |      |
| Peak 8-Hr. Indicator                   | 14.4  | 13.4  | 14.0  | 14.7  | 14.8  | 12.9  | 10.7  | 9.6   | 9.3   | 8.5   | 7.7   | 7.3   | 7.0   | 7.0   | 7.3   | 6.0   | 4.4   | 4.2   | 4.4   | 4.2   |      |
| Max. 1-Hr. Concentration               | 15.0  | 15.0  | 18.0  | 16.0  | 15.0  | 12.0  | 12.0  | 10.8  | 9.8   | 8.7   | 9.5   | 7.9   | 7.7   | 10.0  | 6.7   | 7.8   | 8.5   | 7.3   | 8.0   | 7.5   |      |
| Max. 8-Hr. Concentration               | 10.0  | 11.6  | 15.9  | 14.0  | 12.3  | 8.6   | 9.4   | 8.5   | 7.4   | 7.2   | 7.2   | 7.1   | 6.6   | 6.3   | 5.3   | 4.3   | 4.5   | 4.1   | 4.2   | 4.2   |      |
| Days Above State 8-Hr. Std.            | 5     | 11    | 22    | 14    | 8     | 0     | 2     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |      |
| Days Above Nat. 8-Hr. Std.             | 3     | 8     | 22    | 12    | 6     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |      |
| NITROGEN DIOXIDE (ppm)                 | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |      |
| Peak 1-Hr. Indicator                   | 0.115 | 0.123 | 0.117 | 0.115 | 0.122 | 0.128 | 0.126 | 0.115 | 0.106 | 0.101 | 0.094 | 0.086 | 0.107 | 0.097 | 0.095 | 0.084 | 0.089 | 0.091 | 0.084 | 0.076 |      |
| Max. 1-Hr. Concentration               | 0.100 | 0.180 | 0.130 | 0.160 | 0.240 | 0.190 | 0.120 | 0.111 | 0.099 | 0.145 | 0.092 | 0.101 | 0.110 | 0.085 | 0.102 | 0.090 | 0.102 | 0.146 | 0.074 | 0.097 |      |
| Max. Annual Average (Nat)              | 0.022 | 0.025 | 0.021 | 0.023 | 0.024 | 0.021 | 0.022 | 0.022 | 0.022 | 0.022 | 0.019 | 0.021 | 0.021 | 0.019 | 0.019 | 0.020 | 0.018 | 0.017 | 0.016 | 0.016 |      |
| Max. Annual Average (State)            | 0.022 | 0.024 | 0.020 | 0.023 | 0.024 | 0.021 | 0.014 | 0.022 | 0.022 | 0.022 | 0.019 | 0.020 | 0.021 | 0.019 | 0.019 | 0.020 | 0.015 | 0.017 | 0.016 | 0.016 |      |
| SULFUR DIOXIDE (ppm)                   | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |      |
| Peak 1-Hr. Indicator                   |       | 0.05  | 0.05  | 0.04  | 0.04  | 0.03  | 0.03  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.01  | 0.01  | 0.01 |
| Max. Annual Average                    |       | 0.01  | 0.01  | 0.01  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |      |
| Max. 24-Hr. Concentration              |       | 0.02  | 0.02  | 0.01  | 0.02  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.02  | 0.01  | 0.01  | 0.02  | 0.01  | 0.01  | 0.01  | 0.00  | 0.00  | 0.00 |

Table A-67

# Sacramento Valley Air Basin

## County: Shasta

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.109 | 0.111 | 0.108 | 0.113 | 0.108 | 0.106 | 0.103 | 0.105 | 0.100 | 0.106 | 0.105 | 0.116 | 0.114 | 0.114 | 0.100 | 0.092 | 0.103 | 0.098 | 0.095 | 0.091 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.091 | 0.088 | 0.085 | 0.073 | 0.072 | 0.090 | 0.083 | 0.084 | 0.080 | 0.087 | 0.086 | 0.095 | 0.095 | 0.093 | 0.082 | 0.078 | 0.073 | 0.075 | 0.084 | 0.080 |
| Peak 1-Hour Indicator (State)         | 0.121 | 0.122 | 0.119 | 0.130 | 0.120 | 0.117 | 0.112 | 0.114 | 0.107 | 0.117 | 0.118 | 0.131 | 0.130 | 0.129 | 0.112 | 0.103 | 0.122 | 0.114 | 0.110 | 0.102 |
| 4th High 1-Hr. in 3 Yrs2              | 0.130 | 0.130 | 0.130 | 0.130 | 0.130 | 0.120 | 0.110 | 0.111 | 0.111 | 0.111 | 0.110 | 0.140 | 0.140 | 0.140 | 0.111 | 0.098 | 0.108 | 0.114 | 0.108 | 0.103 |
| Max. 8-Hr. Concentration              | 0.108 | 0.105 | 0.083 | 0.110 | 0.095 | 0.091 | 0.088 | 0.105 | 0.084 | 0.100 | 0.107 | 0.126 | 0.098 | 0.087 | 0.079 | 0.084 | 0.096 | 0.096 | 0.089 | 0.086 |
| Maximum 1-Hr. Concentration           | 0.130 | 0.120 | 0.090 | 0.130 | 0.110 | 0.110 | 0.110 | 0.113 | 0.099 | 0.110 | 0.118 | 0.140 | 0.116 | 0.102 | 0.087 | 0.097 | 0.113 | 0.131 | 0.105 | 0.107 |
| Days Above State 8-Hr. Std.           | 57    | 25    | 18    | 30    | 40    | 31    | 10    | 44    | 24    | 41    | 37    | 82    | 62    | 26    | 19    | 21    | 24    | 38    | 19    | 25    |
| Days Above Nat. 8-Hr. Std.            | 21    | 3     | 0     | 13    | 11    | 10    | 1     | 8     | 0     | 14    | 6     | 45    | 12    | 1     | 0     | 0     | 6     | 2     | 3     | 1     |
| Days Above State 1-Hr. Std.           | 25    | 5     | 0     | 13    | 12    | 10    | 1     | 7     | 3     | 16    | 8     | 40    | 23    | 3     | 0     | 4     | 9     | 3     | 3     | 2     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      | 91   | 80   | 83   | 86   | 91   | 64   | 55   | 51   | 63   | 61   | 81   | 53   | 71   | 58   | 52   | 74   | 50   | 53   |
| Max. 24-Hr. Concentration (Nat)       |      |      | 91   | 80   | 83   | 86   | 91   | 64   | 55   | 51   | 63   | 61   | 81   | 49   | 66   | 60   | 53   | 76   | 47   | 54   |
| Max. Annual Average (State)           |      |      |      |      | 28.7 |      | 20.1 | 24.4 | 25.1 | 24.3 |      | 23.4 |      | 24.3 | 24.1 | 20.8 | 21.7 | 23.6 | 22.3 | 23.2 |
| Max. Annual Average (Nat)             |      |      | 33.2 | 27.7 | 31.5 | 23.1 | 36.9 | 26.7 | 25.2 | 24.3 | 22.2 | 23.5 | 23.7 | 23.7 | 23.7 | 25.9 | 21.5 | 23.5 | 22.3 | 23.3 |
| Calc Days Above State 24-Hr Std       |      |      |      | 50   |      |      | 7    | 12   | 13   | 6    |      | 18   |      | 6    | 6    | 6    | 12   | 6    | 0    | 6    |
| Calc Days Above Nat 24-Hr Std         |      |      | 0    | 0    |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      | 50.0 | 57.0 | 45.0 | 49.0 | 40.0 | 34.0 | 26.0 | 20.0 | 31.0 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      | 50.0 | 57.0 | 45.0 | 49.0 | 40.0 | 34.0 | 26.0 | 20.0 | 31.0 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      | 50.0 | 55.0 | 35.0 | 29.0 | 40.0 | 16.0 | 18.0 | 19.0 | 29.0 |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      | 12.9 |      | 9.2  |      | 7.5  |      | 7.3  | 8.7  |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      | 12.9 |      | 9.2  |      | 7.5  | 7.2  | 7.3  | 8.7  |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | 3.1  |      | 2.4  | 2.3  | 2.3  | 2.7  | 2.0  | 2.0  |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    | 4.0  | 4.0  | 4.0  | 4.0  | 3.0  | 3.0  | 4.0  | 4.5  |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    | 2.5  | 1.8  | 2.5  | 2.3  | 2.0  | 1.9  | 2.1  | 1.7  |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |

| NITROGEN DIOXIDE (ppm)      | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        | 0.093 | 0.093 | 0.090 | 0.081 | 0.069 | 0.069 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    | 0.100 | 0.100 | 0.080 | 0.070 | 0.070 | 0.050 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   | 0.015 | 0.013 |       |       | 0.012 | 0.012 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) | 0.015 |       |       |       | 0.012 |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

Table A-68

*Sacramento Valley Air Basin*

## County: Solano

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991 | 1992 | 1993 | 1994 | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|-------|-------|-------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.098 | 0.099 | 0.098 | 0.094 |      |      |      |      | 0.093 | 0.096 | 0.094 | 0.102 | 0.106 | 0.106 | 0.096 | 0.086 | 0.088 | 0.087 | 0.087 | 0.089 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.066 | 0.079 | 0.082 | 0.075 |      |      |      |      |       |       | 0.076 | 0.082 | 0.085 | 0.085 | 0.077 | 0.072 | 0.068 |       | 0.071 | 0.073 |
| Peak 1-Hour Indicator (State)         | 0.113 | 0.109 | 0.111 | 0.103 |      |      |      |      | 0.120 | 0.115 | 0.116 | 0.118 | 0.124 | 0.123 | 0.113 | 0.101 | 0.103 | 0.099 | 0.099 | 0.101 |
| 4th High 1-Hr. in 3 Yrs2              | 0.110 | 0.110 | 0.120 | 0.110 |      |      |      |      | 0.115 | 0.117 | 0.115 | 0.123 | 0.123 | 0.123 | 0.110 | 0.100 | 0.096 | 0.095 | 0.095 | 0.102 |
| Max. 8-Hr. Concentration              | 0.102 | 0.088 | 0.101 | 0.088 |      |      |      |      | 0.090 | 0.101 | 0.083 | 0.101 | 0.106 | 0.081 | 0.081 | 0.077 | 0.081 | 0.087 | 0.080 | 0.087 |
| Maximum 1-Hr. Concentration           | 0.120 | 0.100 | 0.120 | 0.110 |      |      |      |      | 0.115 | 0.126 | 0.105 | 0.137 | 0.139 | 0.100 | 0.104 | 0.100 | 0.094 | 0.101 | 0.101 | 0.108 |
| Days Above State 8-Hr. Std.           | 22    | 18    | 6     | 3     |      |      |      |      | 7     | 24    | 5     | 28    | 22    | 5     | 5     | 6     | 7     | 3     | 5     | 10    |
| Days Above Nat. 8-Hr. Std.            | 8     | 2     | 1     | 1     |      |      |      |      | 3     | 2     | 0     | 7     | 8     | 0     | 0     | 0     | 0     | 1     | 0     | 2     |
| Days Above State 1-Hr. Std.           | 12    | 2     | 4     | 1     |      |      |      |      | 6     | 8     | 3     | 10    | 8     | 2     | 2     | 1     | 0     | 1     | 1     | 4     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      | 81   | 109  | 96   | 98   | 70   | 53   | 76   | 62   | 45   | 74   | 62   | 68   | 50   | 82   | 66   | 42   | 44   | 35   | 60   |
| Max. 24-Hr. Concentration (Nat)       |      | 81   | 109  | 96   | 98   | 70   | 53   | 76   | 62   | 45   | 74   | 56   | 66   | 47   | 77   | 63   | 40   | 44   | 33   | 56   |
| Max. Annual Average (State)           |      |      |      |      |      | 24.4 |      | 21.2 | 18.9 | 17.3 | 16.1 | 17.7 | 20.5 | 19.0 | 20.8 | 19.9 | 16.0 | 18.7 | 16.4 | 18.2 |
| Max. Annual Average (Nat)             |      | 24.3 | 46.0 | 21.0 | 40.6 | 24.4 | 22.4 | 21.2 | 19.0 | 17.3 | 16.1 | 17.2 | 19.8 | 18.3 | 20.2 | 19.4 | 15.7 | 18.2 | 16.1 | 18.2 |
| Calc Days Above State 24-Hr Std       |      |      |      |      |      | 24   |      | 18   | 13   | 0    | 6    | 6    | 18   | 0    | 12   | 6    | 0    | 0    | 0    | 6    |
| Calc Days Above Nat 24-Hr Std         |      |      |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |      | 4.0  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    |      | 1.8  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. |      | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  |      | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| NITROGEN DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

# Sacramento Valley Air Basin

## County: Sutter

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.107 | 0.108 | 0.107 | 0.100 | 0.095 | 0.102 | 0.114 | 0.109 | 0.110 | 0.107 | 0.106 | 0.106 | 0.104 | 0.104 | 0.100 | 0.103 | 0.109 | 0.108 | 0.097 | 0.095 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.093 | 0.095 | 0.091 | 0.082 | 0.076 | 0.082 | 0.082 | 0.085 | 0.096 | 0.096 | 0.091 | 0.091 | 0.089 | 0.089 | 0.083 | 0.084 | 0.088 | 0.090 | 0.083 | 0.082 |
| Peak 1-Hour Indicator (State)         | 0.121 | 0.128 | 0.123 | 0.121 | 0.105 | 0.111 | 0.126 | 0.123 | 0.120 | 0.115 | 0.114 | 0.120 | 0.116 | 0.115 | 0.108 | 0.113 | 0.121 | 0.120 | 0.106 | 0.100 |
| 4th High 1-Hr. in 3 Yrs2              | 0.140 | 0.140 | 0.140 | 0.120 | 0.100 | 0.110 | 0.120 | 0.120 | 0.115 | 0.115 | 0.109 | 0.124 | 0.124 | 0.124 | 0.106 | 0.117 | 0.117 | 0.117 | 0.113 | 0.102 |
| Max. 8-Hr. Concentration              | 0.107 | 0.103 | 0.087 | 0.083 | 0.095 | 0.108 | 0.108 | 0.100 | 0.103 | 0.102 | 0.092 | 0.102 | 0.097 | 0.092 | 0.093 | 0.103 | 0.099 | 0.089 | 0.083 | 0.097 |
| Maximum 1-Hr. Concentration           | 0.140 | 0.150 | 0.100 | 0.110 | 0.110 | 0.120 | 0.140 | 0.115 | 0.126 | 0.116 | 0.105 | 0.124 | 0.115 | 0.108 | 0.116 | 0.117 | 0.117 | 0.100 | 0.096 | 0.110 |
| Days Above State 8-Hr. Std.           | 63    | 77    | 22    | 13    | 28    | 69    | 37    | 88    | 54    | 81    | 25    | 53    | 62    | 33    | 28    | 38    | 38    | 24    | 20    | 44    |
| Days Above Nat. 8-Hr. Std.            | 16    | 32    | 2     | 0     | 2     | 13    | 9     | 18    | 17    | 28    | 3     | 14    | 11    | 5     | 3     | 11    | 6     | 1     | 0     | 7     |
| Days Above State 1-Hr. Std.           | 23    | 41    | 4     | 2     | 10    | 29    | 13    | 25    | 21    | 28    | 5     | 16    | 21    | 9     | 6     | 15    | 10    | 2     | 1     | 6     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      | 103  | 96   | 108  | 79   | 78   | 154  | 128  | 82   | 98   | 63   | 151  | 70   | 82   | 75   | 83   | 53   | 60   | 66   |
| Max. 24-Hr. Concentration (Nat)       |      |      | 103  | 96   | 108  | 79   | 78   | 154  | 128  | 82   | 98   | 60   | 150  | 70   | 80   | 74   | 81   | 53   | 59   | 63   |
| Max. Annual Average (State)           |      |      |      | 38.5 | 39.2 | 35.2 | 31.2 |      |      | 29.9 | 28.8 | 24.5 | 39.4 |      | 30.5 | 31.8 | 26.4 |      | 25.0 |      |
| Max. Annual Average (Nat)             |      |      | 37.9 | 38.5 | 38.5 | 34.3 | 30.7 | 34.5 | 30.4 | 29.8 | 28.6 | 23.8 | 38.4 | 27.9 | 30.2 | 30.9 | 26.0 | 20.0 | 24.7 | 23.0 |
| Calc Days Above State 24-Hr Std       |      |      |      | 74   | 104  | 61   | 43   |      |      | 27   | 22   | 30   | 62   |      | 50   | 25   | 31   |      | 31   |      |
| Calc Days Above Nat 24-Hr Std         |      |      |      | 0    | 0    | 0    | 0    | 0    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      | 0    |      |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      | 69.0 | 58.0 | 44.0 | 56.0 | 62.0 | 32.0 | 41.0 | 47.2 | 51.6 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      | 66.0 | 56.0 | 44.0 | 56.0 | 62.0 | 32.0 | 39.0 | 45.0 | 42.0 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      | 66.0 | 56.0 | 38.0 | 54.0 | 34.0 | 29.0 | 38.0 | 42.0 | 41.0 |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      | 15.9 | 11.2 | 11.9 | 13.1 | 9.4  | 10.1 | 10.2 | 11.2 |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      | 16.3 | 10.6 | 11.9 | 13.6 | 9.5  | 10.0 | 9.5  | 11.3 |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        |      |      |      |      | 10.2 | 8.1  | 5.8  | 5.7  | 5.2  | 4.8  | 4.6  | 4.4  | 4.4  | 4.4  | 4.6  | 4.2  | 3.6  | 3.1  | 2.8  | 2.9  |
| Max. 1-Hr. Concentration    |      |      |      |      | 12.0 | 9.0  | 10.0 | 8.8  | 7.5  | 7.7  | 6.1  | 7.3  | 7.2  | 6.1  | 17.2 | 6.4  | 4.3  | 5.8  | 4.4  | 3.1  |
| Max. 8-Hr. Concentration    |      |      |      |      | 8.5  | 6.3  | 7.3  | 6.1  | 4.7  | 4.7  | 4.1  | 4.9  | 4.4  | 3.6  | 3.9  | 3.5  | 2.4  | 2.5  | 3.4  | 2.3  |
| Days Above State 8-Hr. Std. |      |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Days Above Nat. 8-Hr. Std.  |      |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| NITROGEN DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|-----------------------------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 1-Hr. Indicator        |      |      |      |      | 0.108 | 0.089 | 0.088 | 0.086 | 0.083 | 0.079 | 0.077 | 0.075 | 0.081 | 0.079 | 0.082 | 0.075 | 0.078 | 0.075 | 0.071 | 0.065 |
| Max. 1-Hr. Concentration    |      |      |      |      | 0.100 | 0.090 | 0.090 | 0.075 | 0.074 | 0.068 | 0.073 | 0.074 | 0.085 | 0.072 | 0.079 | 0.068 | 0.080 | 0.066 | 0.062 | 0.070 |
| Max. Annual Average (Nat)   |      |      |      |      |       | 0.017 | 0.017 | 0.016 | 0.013 | 0.012 | 0.014 | 0.013 | 0.014 | 0.013 | 0.014 | 0.015 | 0.014 | 0.012 | 0.012 | 0.012 |
| Max. Annual Average (State) |      |      |      |      |       | 0.017 | 0.017 | 0.016 | 0.013 | 0.012 | 0.014 | 0.013 | 0.014 |       |       | 0.015 | 0.014 | 0.012 | 0.012 | 0.011 |

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

Table A-70

## Sacramento Valley Air Basin

### County: Tehama

| OZONE (ppm)                           | 1987 | 1988 | 1989 | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |       |
|---------------------------------------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         |      |      |      | 0.111 | 0.103 | 0.100 | 0.097 | 0.097 | 0.100 | 0.093 | 0.092 | 0.099 | 0.108 | 0.109 | 0.105 | 0.094 | 0.095 | 0.095 | 0.091 | 0.096 |       |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |      |      |      |       |       | 0.089 | 0.086 | 0.086 | 0.086 |       | 0.083 | 0.086 | 0.091 | 0.091 | 0.086 | 0.083 | 0.084 | 0.085 | 0.082 | 0.083 |       |
| Peak 1-Hour Indicator (State)         |      |      |      | 0.120 | 0.115 | 0.113 | 0.106 | 0.104 | 0.108 | 0.102 | 0.099 | 0.107 | 0.114 | 0.115 | 0.111 | 0.101 | 0.106 | 0.103 | 0.098 | 0.099 |       |
| 4th High 1-Hr. in 3 Yrs2              |      |      |      | 0.120 | 0.110 | 0.110 | 0.100 | 0.100 | 0.100 | 0.108 | 0.101 | 0.120 | 0.120 | 0.120 | 0.114 | 0.101 | 0.101 | 0.101 | 0.101 | 0.099 | 0.099 |
| Max. 8-Hr. Concentration              |      |      |      | 0.100 | 0.085 | 0.091 | 0.093 | 0.087 | 0.103 | 0.084 | 0.093 | 0.112 | 0.108 | 0.088 | 0.085 | 0.095 | 0.088 | 0.089 | 0.086 | 0.092 |       |
| Maximum 1-Hr. Concentration           |      |      |      | 0.120 | 0.110 | 0.100 | 0.100 | 0.100 | 0.110 | 0.108 | 0.101 | 0.120 | 0.128 | 0.095 | 0.094 | 0.109 | 0.102 | 0.097 | 0.098 | 0.099 |       |
| Days Above State 8-Hr. Std.           |      |      |      | 37    | 38    | 39    | 18    | 25    | 40    | 43    | 27    | 62    | 73    | 33    | 31    | 44    | 40    | 51    | 36    | 48    |       |
| Days Above Nat. 8-Hr. Std.            |      |      |      | 11    | 2     | 9     | 4     | 3     | 9     | 0     | 2     | 11    | 20    | 2     | 1     | 7     | 3     | 2     | 2     | 10    |       |
| Days Above State 1-Hr. Std.           |      |      |      | 15    | 6     | 9     | 5     | 2     | 10    | 4     | 2     | 12    | 18    | 2     | 0     | 7     | 6     | 2     | 2     | 4     |       |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      | 68   | 67   | 85   | 75   | 67   | 74   | 63   | 56   | 58   | 118  | 99   | 49   | 73   | 71   | 58   | 57   | 43   | 70   |
| Max. 24-Hr. Concentration (Nat)       |      |      | 68   | 67   | 85   | 75   | 67   | 74   | 63   | 56   | 58   | 119  | 98   | 49   | 71   | 69   | 58   | 57   | 41   | 70   |
| Max. Annual Average (State)           |      |      | 31.4 | 29.7 | 32.4 | 29.3 | 24.9 |      |      |      |      |      |      |      |      |      |      | 25.0 |      | 26.1 |
| Max. Annual Average (Nat)             |      |      | 31.4 | 29.7 | 32.5 | 29.3 | 25.0 | 30.0 | 25.2 | 20.6 | 22.5 | 23.6 | 28.8 | 23.6 | 26.2 | 30.5 | 22.6 | 24.5 | 21.9 | 25.6 |
| Calc Days Above State 24-Hr Std       |      |      | 42   | 24   | 67   | 30   | 18   |      |      |      |      |      |      |      |      |      |      | 12   |      | 24   |
| Calc Days Above Nat 24-Hr Std         |      |      | 0    | 0    | 0    | 0    | 0    | 0    |      |      | 0    |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

| NITROGEN DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*



# Sacramento Valley Air Basin

## County: Yolo

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.105 | 0.105 | 0.105 | 0.103 | 0.098 | 0.100 | 0.097 | 0.095 | 0.092 | 0.096 | 0.096 | 0.098 | 0.100 | 0.100 | 0.097 | 0.096 | 0.096 | 0.094 | 0.087 | 0.091 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.087 | 0.087 | 0.085 | 0.080 | 0.077 | 0.080 | 0.078 | 0.079 | 0.078 | 0.082 | 0.079 | 0.080 | 0.081 | 0.085 | 0.082 | 0.083 | 0.083 | 0.079 | 0.077 | 0.079 |
| Peak 1-Hour Indicator (State)         | 0.125 | 0.125 | 0.120 | 0.116 | 0.113 | 0.112 | 0.110 | 0.109 | 0.107 | 0.108 | 0.110 | 0.117 | 0.115 | 0.115 | 0.112 | 0.108 | 0.109 | 0.108 | 0.102 | 0.104 |
| 4th High 1-Hr. in 3 Yrs2              | 0.140 | 0.140 | 0.140 | 0.120 | 0.110 | 0.110 | 0.110 | 0.110 | 0.108 | 0.111 | 0.108 | 0.114 | 0.111 | 0.110 | 0.105 | 0.101 | 0.101 | 0.100 | 0.097 | 0.102 |
| Max. 8-Hr. Concentration              | 0.127 | 0.097 | 0.083 | 0.105 | 0.091 | 0.096 | 0.097 | 0.082 | 0.091 | 0.104 | 0.086 | 0.102 | 0.094 | 0.089 | 0.093 | 0.091 | 0.084 | 0.075 | 0.086 | 0.094 |
| Maximum 1-Hr. Concentration           | 0.140 | 0.120 | 0.100 | 0.140 | 0.100 | 0.120 | 0.130 | 0.100 | 0.114 | 0.122 | 0.104 | 0.115 | 0.117 | 0.103 | 0.102 | 0.121 | 0.098 | 0.096 | 0.099 | 0.106 |
| Days Above State 8-Hr. Std.           | 58    | 39    | 11    | 22    | 12    | 30    | 12    | 13    | 15    | 38    | 4     | 27    | 28    | 20    | 11    | 22    | 21    | 6     | 14    | 24    |
| Days Above Nat. 8-Hr. Std.            | 13    | 12    | 0     | 6     | 1     | 7     | 1     | 0     | 4     | 4     | 1     | 5     | 6     | 2     | 2     | 5     | 0     | 0     | 2     | 4     |
| Days Above State 1-Hr. Std.           | 25    | 32    | 3     | 9     | 4     | 14    | 1     | 4     | 9     | 13    | 2     | 10    | 10    | 7     | 6     | 10    | 4     | 1     | 2     | 7     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      |      | 147  | 136  | 106  | 96   | 98   | 145  | 77   | 126  | 130  | 179  | 85   | 101  | 87   | 70   | 171  | 66   | 78   |
| Max. 24-Hr. Concentration (Nat)       |      |      |      | 147  | 136  | 106  | 96   | 98   | 145  | 77   | 126  | 130  | 179  | 79   | 95   | 82   | 69   | 169  | 63   | 77   |
| Max. Annual Average (State)           |      |      |      |      |      | 34.7 | 30.5 |      | 29.9 | 27.5 | 27.7 | 29.9 | 33.3 | 26.6 | 28.2 | 28.0 |      | 35.2 | 24.2 | 28.8 |
| Max. Annual Average (Nat)             |      |      |      | 36.7 | 46.4 | 42.3 | 31.8 | 29.8 | 36.8 | 27.5 | 27.6 | 29.0 | 32.5 | 25.7 | 27.4 | 27.2 | 23.4 | 34.5 | 23.7 | 27.9 |
| Calc Days Above State 24-Hr Std       |      |      |      | 70   | 63   |      |      |      | 43   | 44   | 12   | 60   | 64   | 43   | 30   | 37   |      | 80   | 30   | 53   |
| Calc Days Above Nat 24-Hr Std         |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 7    | 0    | 0    | 0    | 0    | 6    | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 70.0 | 46.0 | 57.0 | 69.0 | 41.7 | 49.5 | 59.5 | 78.6 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 70.0 | 46.0 | 57.0 | 69.0 | 31.0 | 36.0 | 35.0 | 44.0 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      | 56.0 | 38.0 | 35.0 | 31.0 | 28.0 | 31.0 | 24.0 | 36.0 |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      | 10.3 |      |      | 8.4  | 10.4 |      | 9.3  |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      | 16.3 | 10.3 |      | 10.7 | 8.4  | 10.4 | 8.4  | 9.3  |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | 4.6  | 4.6  | 4.6  | 4.9  | 5.2  | 3.8  | 3.8  |      |      | 1.4  | 1.7  | 1.5  | 1.4  | 1.2  | 1.2  | 1.3  | 1.1  | 1.1  | 0.9  | 0.8  |
| Max. 1-Hr. Concentration    | 14.0 | 9.0  | 13.0 | 12.0 | 7.0  | 7.0  | 6.0  | 10.0 | 5.3  | 2.4  | 2.8  | 2.5  | 2.4  | 2.5  | 15.1 | 1.9  | 3.3  | 1.6  | 0.9  | 0.9  |
| Max. 8-Hr. Concentration    | 8.4  | 4.9  | 5.4  | 5.0  | 3.5  | 3.9  | 3.4  | 6.6  | 3.1  | 1.8  | 1.8  | 1.1  | 1.4  | 1.3  | 2.5  | 1.4  | 0.8  | 1.0  | 0.7  | 0.6  |
| Days Above State 8-Hr. Std. | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Days Above Nat. 8-Hr. Std.  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| NITROGEN DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|-----------------------------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 1-Hr. Indicator        |      |      |      |      |      |      |      |      |      | 0.064 | 0.061 | 0.064 | 0.069 | 0.069 | 0.082 | 0.075 | 0.076 | 0.060 | 0.052 | 0.050 |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      |      |      | 0.061 | 0.057 | 0.060 | 0.073 | 0.053 | 0.172 | 0.059 | 0.060 | 0.057 | 0.043 | 0.045 |
| Max. Annual Average (Nat)   |      |      |      |      |      |      |      |      |      |       | 0.010 | 0.011 | 0.012 | 0.011 | 0.010 | 0.012 | 0.011 | 0.009 | 0.009 | 0.009 |
| Max. Annual Average (State) |      |      |      |      |      |      |      |      |      |       | 0.010 | 0.011 | 0.012 | 0.011 | 0.010 | 0.012 | 0.011 | 0.009 | 0.009 | 0.009 |

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

Table A-72

*Sacramento Valley Air Basin*

County: Yuba

| OZONE (ppm)                           | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hour Indicator (State)         | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Peak 1-Hour Indicator (State)         |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 4th High 1-Hr. in 3 Yrs2              |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration              |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Maximum 1-Hr. Concentration           |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std.           |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.            |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 1-Hr. Std.           |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      | 96   | 113  | 80   | 102  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)       |      | 96   | 113  | 80   | 102  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State)           |      |      |      | 31.1 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)             |      | 51.2 | 30.9 | 31.3 | 38.2 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Calc Days Above State 24-Hr Std       |      |      |      | 43   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Calc Days Above Nat 24-Hr Std         |      |      |      | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)        |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 98th Percentile of 24-Hr Conc.         |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Annual Average (State)                 |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| CARBON MONOXIDE (ppm)       | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| NITROGEN DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator        | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)   |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State) |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| SULFUR DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

Table A-73

# Salton Sea Air Basin

## County: Imperial

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.078 | 0.090 | 0.092 | 0.094 | 0.088 | 0.116 | 0.119 | 0.119 | 0.121 | 0.120 | 0.119 | 0.115 | 0.114 | 0.103 | 0.107 | 0.103 | 0.101 | 0.097 | 0.098 | 0.099 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |       | 0.073 | 0.075 | 0.076 | 0.075 | 0.079 | 0.095 | 0.104 | 0.105 | 0.103 | 0.103 | 0.093 | 0.091 | 0.089 | 0.092 | 0.087 | 0.087 | 0.085 | 0.084 | 0.085 |
| Peak 1-Hour Indicator (State)         | 0.092 | 0.107 | 0.107 | 0.113 | 0.109 | 0.150 | 0.157 | 0.154 | 0.164 | 0.157 | 0.155 | 0.145 | 0.149 | 0.149 | 0.153 | 0.142 | 0.129 | 0.120 | 0.115 | 0.114 |
| 4th High 1-Hr. in 3 Yrs2              | 0.090 | 0.110 | 0.110 | 0.110 | 0.110 | 0.170 | 0.170 | 0.150 | 0.205 | 0.192 | 0.180 | 0.150 | 0.160 | 0.157 | 0.166 | 0.147 | 0.142 | 0.121 | 0.121 | 0.118 |
| Max. 8-Hr. Concentration              | 0.081 | 0.098 | 0.088 | 0.082 | 0.135 | 0.117 | 0.128 | 0.116 | 0.116 | 0.117 | 0.120 | 0.104 | 0.110 | 0.113 | 0.112 | 0.104 | 0.097 | 0.090 | 0.100 | 0.101 |
| Maximum 1-Hr. Concentration           | 0.090 | 0.120 | 0.110 | 0.110 | 0.180 | 0.150 | 0.210 | 0.180 | 0.232 | 0.180 | 0.160 | 0.236 | 0.171 | 0.169 | 0.167 | 0.156 | 0.144 | 0.124 | 0.122 | 0.129 |
| Days Above State 8-Hr. Std.           | 3     | 26    | 7     | 4     | 19    | 79    | 91    | 131   | 103   | 87    | 140   | 85    | 94    | 23    | 55    | 55    | 45    | 39    | 64    | 54    |
| Days Above Nat. 8-Hr. Std.            | 0     | 3     | 1     | 0     | 3     | 24    | 24    | 47    | 49    | 34    | 50    | 18    | 20    | 5     | 18    | 13    | 8     | 1     | 13    | 11    |
| Days Above State 1-Hr. Std.           | 0     | 17    | 4     | 6     | 9     | 46    | 50    | 75    | 83    | 69    | 69    | 44    | 65    | 20    | 41    | 29    | 23    | 10    | 20    | 24    |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      | 368  | 676  | 258  | 243  | 103  | 175  | 258  | 229  | 359  | 532  | 181  | 238  | 279  | 634  | 361  | 848  | 195  | 220  | 261  |
| Max. 24-Hr. Concentration (Nat)       |      | 368  | 676  | 258  | 243  | 103  | 175  | 258  | 229  | 359  | 532  | 185  | 227  | 268  | 647  | 373  | 840  | 201  | 211  | 248  |
| Max. Annual Average (State)           |      |      | 77.9 | 57.0 | 57.0 | 47.5 | 52.6 | 72.0 | 73.6 | 77.7 | 66.6 | 79.0 | 84.8 | 87.1 | 80.9 | 79.7 | 60.3 | 52.7 | 71.6 |      |
| Max. Annual Average (Nat)             |      | 61.8 | 77.9 | 57.3 | 58.9 | 47.5 | 53.3 | 75.1 | 71.9 | 73.6 | 77.7 | 74.1 | 77.8 | 95.2 | 86.2 | 79.9 | 80.0 | 60.8 | 53.2 | 70.9 |
| Calc Days Above State 24-Hr Std       |      |      | 221  | 197  | 182  | 143  | 144  |      | 218  | 244  | 294  | 227  | 289  | 313  | 312  | 305  | 284  | 220  | 160  | 241  |
| Calc Days Above Nat 24-Hr Std         |      |      | 27   | 12   | 7    | 0    | 13   | 0    | 13   | 30   | 12   | 12   | 32   | 38   | 18   | 18   | 25   | 6    | 6    | 16   |

\* PM<sub>10</sub> statistics exclude data from the Calexico - East site because data from this site do not represent widespread exposure.

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002  | 2003  | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 52.5 | 84.2 | 60.2 | 142.7 | 153.6 | 76.0 | 85.2 | 80.8 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 52.5 | 84.2 | 60.2 | 46.5  | 65.1  | 74.2 | 67.6 | 68.8 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      | 43.2 | 56.0 | 50.4 | 44.1  | 44.3  | 31.9 | 41.1 | 46.0 |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 15.1  |       | 16.1 | 15.5 | 17.3 |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      | 15.2 | 16.9 | 14.9 | 15.1  | 9.2   | 11.8 | 9.4  | 12.5 |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        |      |      |      |      |      |      |      | 17.4 | 18.8 | 17.8 | 17.4 | 15.5 | 15.5 | 14.8 | 14.3 | 12.8 | 11.5 | 10.5 | 8.4  | 8.0  |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      | 30.6 | 32.0 | 27.0 | 24.0 | 23.5 | 22.9 | 19.9 | 17.4 | 15.6 | 11.8 | 12.6 | 12.4 | 14.3 |
| Max. 8-Hr. Concentration    |      |      |      |      |      |      |      | 13.1 | 22.9 | 22.1 | 17.8 | 14.4 | 17.9 | 15.5 | 12.3 | 11.6 | 8.8  | 10.3 | 9.0  | 9.8  |
| Days Above State 8-Hr. Std. |      |      |      |      |      |      |      | 10   | 17   | 11   | 15   | 12   | 13   | 8    | 6    | 4    | 0    | 1    | 0    | 1    |
| Days Above Nat. 8-Hr. Std.  |      |      |      |      |      |      |      | 9    | 15   | 9    | 10   | 8    | 11   | 6    | 6    | 3    | 0    | 1    | 0    | 1    |

| NITROGEN DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|-----------------------------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 1-Hr. Indicator        |      |      |      |      |      |      |      | 0.153 | 0.182 | 0.178 | 0.178 | 0.150 | 0.145 | 0.170 | 0.161 | 0.153 | 0.147 | 0.128 | 0.113 | 0.102 |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      | 0.227 | 0.217 | 0.164 | 0.128 | 0.257 | 0.286 | 0.192 | 0.139 | 0.138 | 0.189 | 0.108 | 0.131 | 0.101 |
| Max. Annual Average (Nat)   |      |      |      |      |      |      |      |       | 0.016 | 0.014 | 0.015 | 0.012 | 0.018 | 0.019 | 0.014 | 0.013 | 0.013 | 0.015 | 0.015 | 0.014 |
| Max. Annual Average (State) |      |      |      |      |      |      |      |       | 0.016 | 0.014 |       |       | 0.018 |       |       | 0.013 | 0.012 | 0.015 | 0.015 | 0.014 |

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      | 0.04 | 0.04 | 0.04 | 0.04 | 0.03 | 0.03 | 0.02 | 0.00 | 0.00 | 0.00 | 0.03 |
| Max. Annual Average       |      |      |      |      |      |      |      | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 |

Table A-74

*Salton Sea Air Basin*

## County: Riverside

| OZONE (ppm)                            | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)          | 0.155 | 0.146 | 0.148 | 0.146 | 0.146 | 0.140 | 0.136 | 0.132 | 0.130 | 0.128 | 0.126 | 0.128 | 0.118 | 0.116 | 0.114 | 0.123 | 0.125 | 0.121 | 0.120 | 0.119 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat)  | 0.131 | 0.130 | 0.129 | 0.126 | 0.125 | 0.121 | 0.118 | 0.113 | 0.110 | 0.111 | 0.107 | 0.107 | 0.100 | 0.099 | 0.100 | 0.105 | 0.108 | 0.104 | 0.104 | 0.102 |
| Peak 1-Hour Indicator (State)          | 0.184 | 0.182 | 0.180 | 0.181 | 0.175 | 0.168 | 0.159 | 0.162 | 0.160 | 0.154 | 0.152 | 0.153 | 0.143 | 0.138 | 0.130 | 0.136 | 0.136 | 0.132 | 0.131 | 0.131 |
| 4th High 1-Hr. in 3 Yrs2               | 0.180 | 0.180 | 0.180 | 0.180 | 0.180 | 0.170 | 0.170 | 0.152 | 0.158 | 0.158 | 0.152 | 0.155 | 0.143 | 0.133 | 0.128 | 0.132 | 0.133 | 0.131 | 0.130 | 0.127 |
| Max. 8-Hr. Concentration               | 0.141 | 0.137 | 0.160 | 0.130 | 0.148 | 0.128 | 0.126 | 0.130 | 0.132 | 0.125 | 0.117 | 0.136 | 0.107 | 0.104 | 0.113 | 0.124 | 0.110 | 0.106 | 0.116 | 0.109 |
| Maximum 1-Hr. Concentration            | 0.170 | 0.200 | 0.190 | 0.170 | 0.180 | 0.170 | 0.170 | 0.165 | 0.160 | 0.160 | 0.155 | 0.173 | 0.126 | 0.124 | 0.137 | 0.136 | 0.141 | 0.125 | 0.139 | 0.126 |
| Days Above State 8-Hr. Std.            | 116   | 122   | 143   | 107   | 110   | 105   | 113   | 102   | 86    | 99    | 79    | 68    | 80    | 92    | 103   | 104   | 94    | 101   | 87    | 85    |
| Days Above Nat. 8-Hr. Std.             | 72    | 70    | 90    | 56    | 62    | 66    | 64    | 39    | 34    | 52    | 26    | 31    | 23    | 30    | 43    | 50    | 46    | 37    | 39    | 26    |
| Days Above State 1-Hr. Std.            | 85    | 99    | 117   | 82    | 80    | 82    | 82    | 78    | 56    | 61    | 45    | 42    | 33    | 43    | 56    | 54    | 60    | 46    | 43    | 37    |
| PM <sub>10</sub> (µg/m <sup>3</sup> )  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       | 115   | 712   | 520   | 340   | 175   | 125   | 97    | 199   | 215   | 182   | 158   | 119   | 201   | 604   | 276   | 302   | 161   | 106   | 222   |
| Max. 24-Hr. Concentration (Nat)        |       | 115   | 712   | 520   | 340   | 175   | 125   | 97    | 199   | 215   | 182   | 158   | 119   | 201   | 604   | 276   | 309   | 161   | 106   | 226   |
| Max. Annual Average (State)            |       |       | 44.6  | 80.3  | 69.1  | 43.8  | 46.4  | 48.3  | 52.0  | 55.2  |       | 48.4  | 28.9  | 55.4  | 59.0  | 53.9  | 56.1  | 40.6  | 45.4  | 27.8  |
| Max. Annual Average (Nat)              |       | 47.6  | 89.9  | 80.3  | 69.3  | 43.1  | 46.5  | 48.3  | 52.3  | 55.6  | 53.9  | 48.1  | 52.7  | 55.2  | 59.5  | 53.8  | 56.7  | 40.2  | 44.9  | 39.8  |
| Calc Days Above State 24-Hr Std        |       |       | 104   | 254   | 230   | 115   | 151   | 136   | 162   | 189   |       | 146   | 19    | 183   | 171   | 174   | 158   | 74    | 122   | 20    |
| Calc Days Above Nat 24-Hr Std          |       |       | 26    | 26    | 19    | 6     | 0     | 0     | 7     | 13    | 13    | 3     | 0     | 9     | 18    | 9     | 9     | 3     | 0     | 7     |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       |       |       |       |       |       |       |       |       |       |       |       | 29.6  | 28.6  | 44.7  | 42.3  | 26.8  | 28.5  | 44.3  | 26.4  |
| Max. 24-Hr. Concentration (Nat)        |       |       |       |       |       |       |       |       |       |       |       |       | 29.6  | 28.6  | 44.7  | 42.3  | 26.8  | 28.5  | 44.3  | 24.7  |
| 98th Percentile of 24-Hr Conc.         |       |       |       |       |       |       |       |       |       |       |       |       |       | 26.2  | 33.0  | 23.3  | 24.9  | 26.8  |       | 19.0  |
| Annual Average (State)                 |       |       |       |       |       |       |       |       |       |       |       |       |       | 11.2  |       | 10.0  | 11.4  | 9.7   |       |       |
| Avg. of Qtrly. Means (Nat)             |       |       |       |       |       |       |       |       |       |       |       |       |       | 11.2  | 12.2  | 11.9  | 11.4  | 10.7  |       | 9.5   |
| CARBON MONOXIDE (ppm)                  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 8-Hr. Indicator                   | 2.6   | 2.5   | 2.4   | 2.3   | 2.3   | 2.2   | 2.1   | 1.9   | 1.7   | 1.6   | 1.5   | 1.5   | 1.6   | 1.7   | 1.7   | 1.6   | 1.4   | 1.1   | 0.9   | 0.8   |
| Max. 1-Hr. Concentration               | 5.0   | 4.0   | 6.0   | 5.0   | 5.0   | 5.0   | 6.0   | 3.9   | 3.3   | 3.2   | 2.7   | 3.1   | 2.9   | 2.7   | 2.2   | 1.9   | 3.3   | 2.1   | 2.1   | 2.3   |
| Max. 8-Hr. Concentration               | 2.9   | 2.1   | 2.9   | 2.3   | 2.5   | 2.4   | 2.0   | 2.0   | 1.5   | 1.6   | 1.3   | 1.7   | 1.8   | 1.6   | 1.6   | 1.1   | 1.3   | 0.8   | 0.8   | 0.9   |
| Days Above State 8-Hr. Std.            | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above Nat. 8-Hr. Std.             | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| NITROGEN DIOXIDE (ppm)                 | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.083 | 0.084 | 0.089 | 0.092 | 0.091 | 0.088 | 0.088 | 0.088 | 0.088 | 0.084 | 0.082 | 0.077 | 0.075 | 0.073 | 0.071 | 0.069 | 0.070 | 0.069 | 0.068 | 0.067 |
| Max. 1-Hr. Concentration               | 0.080 | 0.110 | 0.090 | 0.090 | 0.090 | 0.090 | 0.090 | 0.080 | 0.082 | 0.080 | 0.069 | 0.070 | 0.068 | 0.064 | 0.081 | 0.068 | 0.067 | 0.066 | 0.059 | 0.093 |
| Max. Annual Average (Nat)              | 0.019 | 0.022 | 0.024 | 0.021 | 0.021 |       | 0.019 | 0.021 | 0.021 | 0.020 | 0.015 | 0.016 | 0.018 | 0.016 | 0.017 | 0.016 | 0.016 | 0.013 | 0.012 | 0.010 |
| Max. Annual Average (State)            | 0.019 | 0.022 | 0.024 | 0.021 | 0.021 |       | 0.019 | 0.021 | 0.021 | 0.020 |       | 0.016 | 0.018 | 0.016 | 0.017 | 0.016 | 0.016 | 0.013 | 0.012 | 0.010 |
| SULFUR DIOXIDE (ppm)                   | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Max. Annual Average                    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Max. 24-Hr. Concentration              |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

*No Monitoring Data Available*

# San Diego Air Basin

County: San Diego

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.144 | 0.138 | 0.142 | 0.146 | 0.141 | 0.135 | 0.128 | 0.124 | 0.126 | 0.122 | 0.117 | 0.119 | 0.117 | 0.116 | 0.104 | 0.106 | 0.104 | 0.101 | 0.097 | 0.099 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.124 | 0.121 | 0.125 | 0.129 | 0.125 | 0.118 | 0.112 | 0.109 | 0.108 | 0.104 | 0.099 | 0.102 | 0.099 | 0.100 | 0.094 | 0.095 | 0.093 | 0.089 | 0.086 | 0.088 |
| Peak 1-Hour Indicator (State)         | 0.179 | 0.179 | 0.187 | 0.181 | 0.171 | 0.162 | 0.152 | 0.151 | 0.149 | 0.142 | 0.132 | 0.133 | 0.133 | 0.131 | 0.118 | 0.117 | 0.116 | 0.111 | 0.110 | 0.111 |
| 4th High 1-Hr. in 3 Yrs2              | 0.180 | 0.180 | 0.190 | 0.190 | 0.170 | 0.170 | 0.154 | 0.150 | 0.146 | 0.141 | 0.137 | 0.133 | 0.131 | 0.130 | 0.118 | 0.118 | 0.118 | 0.115 | 0.112 | 0.113 |
| Max. 8-Hr. Concentration              | 0.196 | 0.156 | 0.193 | 0.145 | 0.145 | 0.133 | 0.154 | 0.121 | 0.122 | 0.117 | 0.112 | 0.141 | 0.100 | 0.106 | 0.116 | 0.100 | 0.103 | 0.095 | 0.089 | 0.100 |
| Maximum 1-Hr. Concentration           | 0.290 | 0.250 | 0.250 | 0.200 | 0.210 | 0.170 | 0.187 | 0.147 | 0.162 | 0.138 | 0.136 | 0.164 | 0.124 | 0.124 | 0.141 | 0.121 | 0.125 | 0.129 | 0.113 | 0.121 |
| Days Above State 8-Hr. Std.           | 160   | 189   | 189   | 167   | 144   | 133   | 127   | 122   | 127   | 89    | 73    | 88    | 74    | 75    | 64    | 56    | 59    | 43    | 51    | 68    |
| Days Above Nat. 8-Hr. Std.            | 99    | 119   | 122   | 96    | 67    | 66    | 58    | 46    | 48    | 31    | 16    | 35    | 17    | 16    | 17    | 13    | 6     | 8     | 5     | 14    |
| Days Above State 1-Hr. Std.           | 127   | 160   | 159   | 139   | 106   | 97    | 90    | 79    | 96    | 51    | 43    | 54    | 27    | 24    | 29    | 15    | 24    | 12    | 16    | 23    |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      | 80   | 90   | 115  | 81   | 67   | 159  | 129  | 121  | 93   | 125  | 89   | 119  | 136  | 106  | 131  | 289  | 138  | 154  | 134  |
| Max. 24-Hr. Concentration (Nat)       |      | 80   | 90   | 115  | 81   | 67   | 159  | 129  | 121  | 93   | 125  | 89   | 121  | 139  | 107  | 130  | 280  | 137  | 155  | 133  |
| Max. Annual Average (State)           |      |      | 44.4 | 32.8 | 40.7 | 29.0 | 45.8 | 50.7 | 47.1 | 30.2 | 46.6 | 42.5 | 50.9 | 44.5 | 47.4 | 52.4 | 52.6 | 51.7 | 28.6 | 54.1 |
| Max. Annual Average (Nat)             |      | 40.0 | 43.8 | 37.6 | 40.6 | 35.9 | 45.9 | 50.7 | 46.8 | 38.5 | 46.6 | 42.5 | 52.2 | 45.2 | 49.1 | 54.9 | 52.1 | 51.2 | 49.8 | 53.7 |
| Calc Days Above State 24-Hr Std       |      |      | 114  | 38   | 84   | 12   | 134  | 134  | 122  | 12   | 125  | 107  | 124  | 109  | 129  | 173  | 151  | 175  | 13   | 159  |
| Calc Days Above Nat 24-Hr Std         |      |      | 0    | 0    | 0    | 0    | 6    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 6    | 0    | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003  | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 64.3 | 66.3 | 60.0 | 53.6 | 239.2 | 67.3 | 44.1 | 63.3 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 64.3 | 66.3 | 60.0 | 53.6 | 239.2 | 67.3 | 44.1 | 63.3 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      | 45.1 | 48.7 | 40.8 | 39.3 | 46.9  | 37.4 | 30.2 | 28.4 |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 15.5 | 14.4  | 14.1 |      | 13.1 |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      | 18.0 | 15.8 | 17.7 | 16.0 | 15.5  | 14.1 | 11.8 | 13.1 |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | 10.4 | 10.2 | 10.3 | 10.2 | 10.0 | 8.6  | 7.8  | 7.7  | 7.3  | 7.3  | 6.3  | 6.3  | 5.6  | 5.3  | 5.4  | 5.3  | 5.0  | 4.6  | 4.4  | 3.8  |
| Max. 1-Hr. Concentration    | 14.0 | 17.0 | 17.0 | 18.0 | 14.0 | 14.0 | 11.4 | 11.0 | 9.9  | 12.4 | 9.3  | 10.2 | 9.9  | 9.3  | 8.5  | 8.5  | 12.7 | 6.9  | 7.9  | 10.8 |
| Max. 8-Hr. Concentration    | 9.4  | 10.3 | 10.5 | 9.1  | 7.9  | 7.9  | 7.5  | 7.5  | 6.3  | 7.1  | 5.4  | 4.8  | 6.0  | 5.9  | 5.1  | 4.7  | 10.6 | 4.1  | 4.7  | 3.6  |
| Days Above State 8-Hr. Std. | 1    | 5    | 6    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0    |
| Days Above Nat. 8-Hr. Std.  | 0    | 2    | 5    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0    |

| NITROGEN DIOXIDE (ppm)      | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 1-Hr. Indicator        | 0.203 | 0.215 | 0.233 | 0.210 | 0.189 | 0.169 | 0.155 | 0.145 | 0.129 | 0.129 | 0.126 | 0.116 | 0.122 | 0.117 | 0.126 | 0.122 | 0.130 | 0.119 | 0.121 | 0.108 |
| Max. 1-Hr. Concentration    | 0.260 | 0.280 | 0.230 | 0.180 | 0.160 | 0.190 | 0.130 | 0.157 | 0.140 | 0.124 | 0.142 | 0.132 | 0.172 | 0.117 | 0.148 | 0.126 | 0.148 | 0.125 | 0.109 | 0.097 |
| Max. Annual Average (Nat)   | 0.032 | 0.035 | 0.031 | 0.029 | 0.029 | 0.027 | 0.023 | 0.024 | 0.026 | 0.022 | 0.024 | 0.023 | 0.026 | 0.024 | 0.022 | 0.022 | 0.021 | 0.023 | 0.024 | 0.024 |
| Max. Annual Average (State) | 0.032 | 0.035 | 0.031 | 0.029 | 0.029 | 0.027 | 0.023 | 0.024 | 0.026 | 0.022 | 0.024 | 0.023 | 0.026 | 0.024 | 0.022 | 0.022 | 0.021 | 0.023 | 0.018 | 0.024 |

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      | 0.06 | 0.07 | 0.07 | 0.07 | 0.06 | 0.08 | 0.09 | 0.09 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.07 | 0.06 | 0.05 | 0.04 | 0.03 | 0.04 | 0.04 |
| Max. Annual Average       | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 |
| Max. 24-Hr. Concentration | 0.04 | 0.02 | 0.02 | 0.02 | 0.02 | 0.04 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | 0.02 | 0.01 | 0.01 | 0.02 | 0.01 | 0.01 |

Table A-76

*San Francisco Bay Area Air Basin***County: Alameda**

| OZONE (ppm)                            | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)          | 0.110 | 0.109 | 0.111 | 0.107 | 0.102 | 0.100 | 0.098 | 0.095 | 0.107 | 0.116 | 0.114 | 0.114 | 0.111 | 0.114 | 0.095 | 0.099 | 0.101 | 0.098 | 0.094 | 0.097 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat)  | 0.089 | 0.087 | 0.089 | 0.087 | 0.084 | 0.082 | 0.081 | 0.082 | 0.087 | 0.093 | 0.090 | 0.089 | 0.086 | 0.087 | 0.066 | 0.081 | 0.084 | 0.083 | 0.078 | 0.080 |
| Peak 1-Hour Indicator (State)          | 0.139 | 0.142 | 0.138 | 0.137 | 0.130 | 0.130 | 0.126 | 0.121 | 0.136 | 0.151 | 0.149 | 0.151 | 0.143 | 0.144 | 0.122 | 0.125 | 0.129 | 0.127 | 0.122 | 0.123 |
| 4th High 1-Hr. in 3 Yrs2               | 0.140 | 0.140 | 0.140 | 0.130 | 0.130 | 0.120 | 0.120 | 0.120 | 0.138 | 0.138 | 0.138 | 0.138 | 0.139 | 0.139 | 0.113 | 0.124 | 0.123 | 0.123 | 0.113 | 0.118 |
| Max. 8-Hr. Concentration               | 0.116 | 0.096 | 0.101 | 0.105 | 0.092 | 0.091 | 0.102 | 0.092 | 0.115 | 0.112 | 0.084 | 0.110 | 0.116 | 0.114 | 0.089 | 0.106 | 0.094 | 0.080 | 0.090 | 0.101 |
| Maximum 1-Hr. Concentration            | 0.160 | 0.150 | 0.140 | 0.130 | 0.140 | 0.130 | 0.130 | 0.129 | 0.155 | 0.138 | 0.114 | 0.146 | 0.146 | 0.152 | 0.113 | 0.160 | 0.128 | 0.113 | 0.120 | 0.127 |
| Days Above State 8-Hr. Std.            | 23    | 27    | 20    | 9     | 15    | 16    | 11    | 8     | 22    | 24    | 7     | 22    | 22    | 7     | 14    | 14    | 13    | 7     | 7     | 16    |
| Days Above Nat. 8-Hr. Std.             | 11    | 8     | 5     | 4     | 2     | 3     | 4     | 3     | 12    | 10    | 0     | 10    | 5     | 2     | 3     | 6     | 4     | 0     | 1     | 5     |
| Days Above State 1-Hr. Std.            | 21    | 27    | 14    | 9     | 19    | 16    | 8     | 7     | 21    | 23    | 6     | 22    | 15    | 9     | 9     | 11    | 11    | 6     | 6     | 14    |
| PM <sub>10</sub> (µg/m <sup>3</sup> )  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       | 69    | 108   | 137   | 155   | 99    | 84    | 97    | 52    | 71    | 63    | 66    | 90    | 74    | 114   | 66    | 37    | 49    | 54    | 69    |
| Max. 24-Hr. Concentration (Nat)        |       | 69    | 108   | 137   | 155   | 99    | 84    | 97    | 52    | 71    | 65    | 63    | 88    | 71    | 109   | 64    | 37    | 47    | 52    | 68    |
| Max. Annual Average (State)            |       |       | 37.2  | 32.5  | 36.5  | 29.0  | 25.5  | 24.9  | 22.3  | 22.6  | 24.3  | 22.5  | 25.9  | 22.2  | 25.1  | 25.0  | 18.9  | 20.0  | 18.8  | 21.8  |
| Max. Annual Average (Nat)              |       | 29.6  | 37.1  | 32.6  | 36.1  | 29.0  | 25.9  | 24.9  | 22.3  | 22.6  | 24.3  | 21.8  | 25.6  | 21.5  | 24.6  | 24.5  | 18.6  | 19.7  | 18.5  | 21.5  |
| Calc Days Above State 24-Hr Std        |       |       | 76    | 59    | 85    | 30    | 18    | 18    | 6     | 6     | 12    | 12    | 18    | 12    | 24    | 12    | 0     | 0     | 6     | 17    |
| Calc Days Above Nat 24-Hr Std          |       |       | 0     | 0     | 3     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       |       |       |       |       |       |       |       |       |       |       |       | 63.1  | 56.4  | 107.5 | 84.5  | 42.0  | 49.6  | 55.6  | 51.5  |
| Max. 24-Hr. Concentration (Nat)        |       |       |       |       |       |       |       |       |       |       |       |       | 63.1  | 56.4  | 107.5 | 61.6  | 42.0  | 40.8  | 33.4  | 50.8  |
| 98th Percentile of 24-Hr Conc.         |       |       |       |       |       |       |       |       |       |       |       |       | 63.1  | 38.3  | 57.1  | 50.5  | 24.2  | 35.3  | 28.7  | 36.6  |
| Annual Average (State)                 |       |       |       |       |       |       |       |       |       |       |       |       |       | 10.5  | 12.4  | 13.8  | 9.0   | 11.4  | 10.2  | 11.1  |
| Avg. of Qtrly. Means (Nat)             |       |       |       |       |       |       |       |       |       |       |       |       |       | 11.2  | 12.4  | 13.8  | 9.0   | 10.2  | 9.0   |       |
| CARBON MONOXIDE (ppm)                  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 8-Hr. Indicator                   | 6.4   | 6.6   | 6.6   | 6.8   | 7.0   | 6.4   | 5.8   | 4.8   | 4.8   | 4.9   | 4.4   | 4.5   | 4.7   | 4.6   | 4.4   | 5.5   | 5.5   | 3.0   | 2.7   | 2.0   |
| Max. 1-Hr. Concentration               | 10.0  | 10.0  | 10.0  | 8.0   | 9.0   | 7.0   | 7.0   | 8.7   | 5.5   | 6.9   | 7.9   | 6.3   | 6.4   | 5.4   | 5.8   | 7.7   | 6.0   | 3.5   | 3.4   | 3.3   |
| Max. 8-Hr. Concentration               | 5.0   | 5.6   | 7.5   | 6.1   | 6.8   | 4.6   | 4.9   | 5.6   | 3.8   | 3.9   | 3.6   | 4.6   | 5.2   | 3.4   | 4.0   | 5.1   | 4.4   | 2.6   | 2.4   | 1.8   |
| Days Above State 8-Hr. Std.            | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above Nat. 8-Hr. Std.             | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| NITROGEN DIOXIDE (ppm)                 | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.138 | 0.139 | 0.138 | 0.138 | 0.133 | 0.120 | 0.112 | 0.092 | 0.091 | 0.090 | 0.089 | 0.087 | 0.094 | 0.090 | 0.090 | 0.077 | 0.075 | 0.067 | 0.065 | 0.062 |
| Max. 1-Hr. Concentration               | 0.150 | 0.140 | 0.150 | 0.130 | 0.150 | 0.110 | 0.110 | 0.097 | 0.086 | 0.088 | 0.086 | 0.098 | 0.112 | 0.081 | 0.078 | 0.080 | 0.076 | 0.063 | 0.072 | 0.064 |
| Max. Annual Average (Nat)              | 0.025 | 0.026 | 0.025 | 0.023 | 0.024 | 0.022 | 0.022 | 0.022 | 0.021 | 0.022 | 0.020 | 0.020 | 0.022 | 0.020 | 0.019 | 0.019 | 0.017 | 0.015 | 0.015 | 0.015 |
| Max. Annual Average (State)            | 0.022 | 0.026 | 0.026 | 0.023 | 0.024 | 0.022 | 0.022 | 0.022 | 0.021 | 0.022 | 0.020 | 0.020 | 0.022 | 0.020 | 0.019 | 0.019 | 0.017 | 0.015 | 0.015 | 0.015 |
| SULFUR DIOXIDE (ppm)                   | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 0.02  | 0.02  |       |       |       |
| Max. Annual Average                    |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 0.00  | 0.00  | 0.00  |       |       |       |
| Max. 24-Hr. Concentration              |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 0.00  | 0.01  | 0.01  |       |       |       |

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# San Francisco Bay Area Air Basin

## County: Contra Costa

| OZONE (ppm)                            | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)          | 0.106 | 0.103 | 0.106 | 0.099 | 0.096 | 0.094 | 0.094 | 0.094 | 0.098 | 0.103 | 0.101 | 0.103 | 0.104 | 0.103 | 0.097 | 0.094 | 0.095 | 0.094 | 0.088 | 0.090 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat)  | 0.088 | 0.086 | 0.088 | 0.086 | 0.083 | 0.081 | 0.079 | 0.079 | 0.081 | 0.085 | 0.083 | 0.083 | 0.084 | 0.084 | 0.082 | 0.078 | 0.081 | 0.079 | 0.073 | 0.074 |
| Peak 1-Hour Indicator (State)          | 0.129 | 0.129 | 0.129 | 0.115 | 0.113 | 0.112 | 0.112 | 0.113 | 0.124 | 0.126 | 0.123 | 0.127 | 0.128 | 0.127 | 0.120 | 0.112 | 0.114 | 0.109 | 0.103 | 0.107 |
| 4th High 1-Hr. in 3 Yrs2               | 0.130 | 0.130 | 0.130 | 0.110 | 0.110 | 0.110 | 0.110 | 0.121 | 0.130 | 0.127 | 0.127 | 0.119 | 0.126 | 0.130 | 0.126 | 0.114 | 0.106 | 0.100 | 0.098 | 0.107 |
| Max. 8-Hr. Concentration               | 0.105 | 0.095 | 0.097 | 0.105 | 0.088 | 0.092 | 0.096 | 0.097 | 0.114 | 0.100 | 0.081 | 0.109 | 0.122 | 0.094 | 0.102 | 0.096 | 0.085 | 0.083 | 0.080 | 0.093 |
| Maximum 1-Hr. Concentration            | 0.150 | 0.140 | 0.110 | 0.120 | 0.110 | 0.110 | 0.130 | 0.121 | 0.152 | 0.137 | 0.108 | 0.147 | 0.156 | 0.138 | 0.134 | 0.111 | 0.101 | 0.105 | 0.098 | 0.117 |
| Days Above State 8-Hr. Std.            | 39    | 20    | 19    | 11    | 13    | 10    | 16    | 10    | 19    | 22    | 5     | 20    | 17    | 11    | 14    | 13    | 12    | 8     | 2     | 15    |
| Days Above Nat. 8-Hr. Std.             | 15    | 5     | 7     | 5     | 2     | 2     | 2     | 2     | 6     | 5     | 0     | 8     | 7     | 1     | 2     | 5     | 1     | 0     | 0     | 4     |
| Days Above State 1-Hr. Std.            | 22    | 12    | 12    | 7     | 5     | 7     | 10    | 6     | 12    | 15    | 4     | 16    | 8     | 2     | 7     | 10    | 5     | 3     | 1     | 12    |
| PM <sub>10</sub> (µg/m <sup>3</sup> )  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       |       | 115   | 147   | 123   | 73    | 81    | 87    | 73    | 76    | 78    | 71    | 104   | 65    | 112   | 77    | 59    | 64    | 64    | 84    |
| Max. 24-Hr. Concentration (Nat)        |       |       | 115   | 147   | 123   | 73    | 81    | 87    | 73    | 76    | 78    | 67    | 101   | 62    | 106   | 73    | 58    | 62    | 62    | 84    |
| Max. Annual Average (State)            |       |       | 30.3  | 29.3  | 33.4  | 26.1  | 25.3  | 24.7  | 23.3  | 21.1  | 22.3  | 20.6  | 26.0  | 20.4  | 23.6  | 24.5  | 19.4  | 21.7  | 20.1  | 19.9  |
| Max. Annual Average (Nat)              |       |       | 30.3  | 29.3  | 33.2  | 26.5  | 25.1  | 24.5  | 23.3  | 21.1  | 22.3  | 20.1  | 25.3  | 19.8  | 22.7  | 23.8  | 20.2  | 21.1  | 19.5  | 19.4  |
| Calc Days Above State 24-Hr Std        |       |       | 53    | 41    | 79    | 47    | 37    | 24    | 18    | 6     | 12    | 17    | 37    | 12    | 25    | 18    | 6     | 6     | 6     | 18    |
| Calc Days Above Nat 24-Hr Std          |       |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       |       |       |       |       |       |       |       |       |       |       |       | 56.6  | 52.6  | 103.6 | 76.7  | 49.7  | 73.7  | 48.9  | 62.1  |
| Max. 24-Hr. Concentration (Nat)        |       |       |       |       |       |       |       |       |       |       |       |       | 56.6  | 52.6  | 85.4  | 76.7  | 49.7  | 73.7  | 48.9  | 62.1  |
| 98th Percentile of 24-Hr Conc.         |       |       |       |       |       |       |       |       |       |       |       |       | 44.1  | 44.8  | 43.3  | 57.3  | 33.8  | 38.1  | 40.9  | 33.6  |
| Annual Average (State)                 |       |       |       |       |       |       |       |       |       |       |       |       | 10.9  | 12.9  | 13.7  | 9.7   | 11.5  | 9.3   | 10.0  |       |
| Avg. of Qtrly. Means (Nat)             |       |       |       |       |       |       |       |       |       |       |       |       | 11.1  | 10.9  | 13.0  | 9.7   |       |       | 9.1   | 9.3   |
| CARBON MONOXIDE (ppm)                  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 8-Hr. Indicator                   | 5.8   | 6.3   | 6.1   | 6.1   | 6.1   | 5.7   | 5.2   | 4.5   | 4.1   | 3.6   | 3.2   | 3.3   | 3.4   | 3.3   | 3.1   | 2.8   | 2.6   | 2.4   | 2.0   | 2.0   |
| Max. 1-Hr. Concentration               | 12.0  | 15.0  | 12.0  | 11.0  | 9.0   | 9.0   | 9.0   | 7.7   | 6.5   | 6.8   | 5.7   | 5.7   | 7.8   | 4.9   | 5.2   | 6.2   | 3.4   | 4.1   | 3.3   | 3.3   |
| Max. 8-Hr. Concentration               | 5.5   | 6.6   | 5.6   | 5.8   | 5.4   | 5.4   | 5.0   | 4.2   | 2.9   | 2.9   | 3.2   | 3.8   | 3.3   | 2.7   | 2.7   | 2.5   | 2.0   | 2.0   | 1.7   | 1.9   |
| Days Above State 8-Hr. Std.            | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above Nat. 8-Hr. Std.             | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| NITROGEN DIOXIDE (ppm)                 | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.113 | 0.112 | 0.110 | 0.098 | 0.099 | 0.096 | 0.097 | 0.084 | 0.082 | 0.079 | 0.077 | 0.070 | 0.075 | 0.073 | 0.074 | 0.062 | 0.062 | 0.059 | 0.056 | 0.052 |
| Max. 1-Hr. Concentration               | 0.130 | 0.130 | 0.110 | 0.100 | 0.120 | 0.110 | 0.100 | 0.081 | 0.087 | 0.085 | 0.076 | 0.066 | 0.087 | 0.074 | 0.065 | 0.069 | 0.070 | 0.065 | 0.058 | 0.055 |
| Max. Annual Average (Nat)              | 0.023 | 0.023 | 0.023 | 0.021 | 0.023 | 0.020 | 0.020 | 0.020 | 0.019 | 0.017 | 0.016 | 0.016 | 0.018 | 0.016 | 0.015 | 0.015 | 0.013 | 0.013 | 0.012 | 0.013 |
| Max. Annual Average (State)            | 0.023 | 0.023 | 0.023 | 0.021 | 0.023 | 0.020 | 0.020 | 0.020 | 0.019 | 0.017 | 0.016 | 0.016 | 0.018 | 0.016 | 0.015 | 0.015 | 0.013 | 0.013 | 0.012 | 0.013 |
| SULFUR DIOXIDE (ppm)                   | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.08  | 0.07  | 0.06  | 0.06  | 0.05  | 0.05  | 0.04  | 0.05  | 0.04  | 0.04  | 0.05  | 0.05  | 0.05  | 0.06  | 0.06  | 0.05  | 0.04  | 0.05  | 0.03  | 0.03  |
| Max. Annual Average                    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Max. 24-Hr. Concentration              | 0.03  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.02  | 0.04  | 0.03  | 0.02  | 0.02  | 0.01  | 0.01  | 0.01  | 0.01  |

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*San Francisco Bay Area Air Basin***County: Marin**

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.070 | 0.070 | 0.070 | 0.066 | 0.064 | 0.060 | 0.057 | 0.060 | 0.066 | 0.067 | 0.064 | 0.060 | 0.061 | 0.061 | 0.061 | 0.055 | 0.057 | 0.057 | 0.057 | 0.056 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.059 | 0.058 | 0.057 | 0.053 | 0.054 | 0.051 | 0.047 | 0.050 | 0.055 | 0.057 | 0.055 | 0.051 | 0.051 | 0.050 | 0.051 | 0.047 | 0.048 | 0.049 | 0.051 | 0.050 |
| Peak 1-Hour Indicator (State)         | 0.094 | 0.094 | 0.095 | 0.085 | 0.075 | 0.066 | 0.075 | 0.081 | 0.089 | 0.089 | 0.087 | 0.081 | 0.085 | 0.083 | 0.081 | 0.070 | 0.072 | 0.076 | 0.076 | 0.077 |
| 4th High 1-Hr. in 3 Yrs2              | 0.090 | 0.090 | 0.090 | 0.080 | 0.080 | 0.066 | 0.080 | 0.080 | 0.082 | 0.088 | 0.088 | 0.081 | 0.092 | 0.085 | 0.087 | 0.075 | 0.077 | 0.077 | 0.081 | 0.081 |
| Max. 8-Hr. Concentration              | 0.076 | 0.076 | 0.068 | 0.062 | 0.067 | 0.055 | 0.061 | 0.061 | 0.072 | 0.081 | 0.073 | 0.058 | 0.080 | 0.058 | 0.065 | 0.056 | 0.067 | 0.063 | 0.059 | 0.058 |
| Maximum 1-Hr. Concentration           | 0.100 | 0.100 | 0.080 | 0.080 | 0.080 | 0.070 | 0.080 | 0.089 | 0.088 | 0.105 | 0.106 | 0.074 | 0.102 | 0.071 | 0.087 | 0.077 | 0.087 | 0.091 | 0.081 | 0.089 |
| Days Above State 8-Hr. Std.           | 1     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 1     | 1     | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above Nat. 8-Hr. Std.            | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above State 1-Hr. Std.           | 1     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 2     | 1     | 0     | 2     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      | 91   | 73   | 115  | 115  | 63   | 69   | 72   | 74   | 50   | 72   | 55   | 78   | 42   | 83   | 73   | 41   | 52   | 39   | 68   |
| Max. 24-Hr. Concentration (Nat)       |      | 91   | 73   | 115  | 115  | 63   | 69   | 72   | 74   | 50   | 72   | 52   | 76   | 40   | 79   | 70   | 39   | 51   | 37   | 65   |
| Max. Annual Average (State)           |      |      | 29.7 | 25.8 | 30.6 | 24.4 | 23.4 | 24.2 | 20.9 | 21.7 | 21.9 | 20.9 | 22.8 |      | 21.1 | 22.2 | 17.6 | 17.9 | 16.5 | 18.1 |
| Max. Annual Average (Nat)             |      | 23.3 | 29.5 | 25.7 | 30.2 | 24.4 | 23.4 | 24.2 | 20.8 | 21.7 | 21.9 | 20.1 | 22.0 | 19.5 | 20.4 | 21.4 | 17.0 | 17.4 | 16.0 | 17.6 |
| Calc Days Above State 24-Hr Std       |      |      | 41   | 23   | 63   | 29   | 6    | 24   | 6    | 0    | 12   | 6    | 12   |      | 18   | 18   | 0    | 6    | 0    | 6    |
| Calc Days Above Nat 24-Hr Std         |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      |      | 41.7 | 53.1 | 69.9 | 31.9 | 52.2 | 43.0 | 20.5 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | 5.4  | 5.4  | 4.7  | 4.9  | 5.3  | 5.4  | 5.1  | 3.9  | 3.5  | 3.3  | 3.2  | 3.3  | 3.1  | 2.9  | 2.6  | 2.3  | 2.2  | 2.0  | 1.7  | 1.7  |
| Max. 1-Hr. Concentration    | 12.0 | 10.0 | 9.0  | 8.0  | 10.0 | 8.0  | 9.0  | 6.4  | 6.1  | 7.1  | 6.0  | 5.9  | 5.6  | 4.2  | 5.2  | 4.1  | 3.8  | 3.2  | 3.0  | 2.6  |
| Max. 8-Hr. Concentration    | 4.5  | 5.0  | 4.0  | 5.0  | 5.7  | 5.0  | 4.0  | 3.0  | 3.2  | 4.0  | 2.6  | 3.3  | 2.9  | 2.3  | 2.4  | 1.9  | 2.0  | 2.0  | 1.7  | 1.5  |
| Days Above State 8-Hr. Std. | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Days Above Nat. 8-Hr. Std.  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| NITROGEN DIOXIDE (ppm)      | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 1-Hr. Indicator        | 0.099 | 0.104 | 0.102 | 0.096 | 0.091 | 0.084 | 0.085 | 0.077 | 0.075 | 0.068 | 0.065 | 0.064 | 0.068 | 0.065 | 0.066 | 0.059 | 0.060 | 0.058 | 0.056 | 0.055 |
| Max. 1-Hr. Concentration    | 0.130 | 0.140 | 0.100 | 0.070 | 0.090 | 0.080 | 0.080 | 0.079 | 0.060 | 0.068 | 0.067 | 0.062 | 0.087 | 0.057 | 0.061 | 0.057 | 0.066 | 0.057 | 0.054 | 0.054 |
| Max. Annual Average (Nat)   | 0.023 | 0.022 | 0.022 | 0.021 | 0.021 | 0.021 | 0.021 | 0.020 | 0.018 | 0.018 | 0.016 | 0.017 | 0.018 | 0.016 | 0.017 | 0.017 | 0.016 | 0.015 | 0.013 | 0.014 |
| Max. Annual Average (State) | 0.023 | 0.022 | 0.022 | 0.021 | 0.021 | 0.021 | 0.021 | 0.020 | 0.018 | 0.018 | 0.016 | 0.017 | 0.018 | 0.016 | 0.017 | 0.017 | 0.016 | 0.015 | 0.014 | 0.014 |

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*



# San Francisco Bay Area Air Basin

## County: Napa

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.084 | 0.085 | 0.088 | 0.080 | 0.076 | 0.073 | 0.078 | 0.079 | 0.088 | 0.086 | 0.083 | 0.079 | 0.083 | 0.083 | 0.078 | 0.073 | 0.077 | 0.078 | 0.073 | 0.070 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.068 | 0.070 | 0.071 | 0.066 | 0.064 | 0.063 | 0.066 | 0.066 | 0.073 | 0.071 | 0.067 | 0.063 | 0.067 | 0.069 | 0.066 | 0.063 | 0.065 | 0.066 | 0.061 | 0.060 |
| Peak 1-Hour Indicator (State)         | 0.107 | 0.107 | 0.109 | 0.099 | 0.098 | 0.093 | 0.098 | 0.098 | 0.107 | 0.107 | 0.104 | 0.101 | 0.106 | 0.106 | 0.099 | 0.090 | 0.095 | 0.095 | 0.090 | 0.089 |
| 4th High 1-Hr. in 3 Yrs2              | 0.110 | 0.100 | 0.100 | 0.090 | 0.100 | 0.090 | 0.100 | 0.091 | 0.105 | 0.095 | 0.095 | 0.091 | 0.103 | 0.103 | 0.099 | 0.082 | 0.099 | 0.092 | 0.092 | 0.091 |
| Max. 8-Hr. Concentration              | 0.080 | 0.088 | 0.085 | 0.072 | 0.075 | 0.070 | 0.083 | 0.075 | 0.096 | 0.075 | 0.071 | 0.099 | 0.090 | 0.063 | 0.078 | 0.082 | 0.083 | 0.072 | 0.067 | 0.072 |
| Maximum 1-Hr. Concentration           | 0.110 | 0.100 | 0.100 | 0.090 | 0.110 | 0.090 | 0.120 | 0.092 | 0.130 | 0.090 | 0.084 | 0.125 | 0.115 | 0.077 | 0.099 | 0.116 | 0.105 | 0.092 | 0.091 | 0.096 |
| Days Above State 8-Hr. Std.           | 7     | 6     | 3     | 1     | 3     | 0     | 4     | 3     | 8     | 3     | 1     | 3     | 6     | 0     | 1     | 2     | 3     | 3     | 0     | 2     |
| Days Above Nat. 8-Hr. Std.            | 0     | 1     | 1     | 0     | 0     | 0     | 0     | 0     | 1     | 0     | 0     | 1     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above State 1-Hr. Std.           | 6     | 1     | 2     | 0     | 3     | 0     | 2     | 0     | 4     | 0     | 0     | 3     | 4     | 0     | 1     | 1     | 2     | 0     | 0     | 1     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      | 97   | 117  | 100  | 74   | 70   | 86   | 69   |      |      |      |      |      | 96   | 70   | 31   |      | 14   |      |
| Max. 24-Hr. Concentration (Nat)       |      |      | 97   | 117  | 100  | 74   | 70   | 86   | 69   | 57   | 78   | 60   | 66   | 45   | 91   | 67   | 29   |      | 13   |      |
| Max. Annual Average (State)           |      |      | 31.7 | 33.7 | 33.0 | 27.1 | 25.8 |      | 20.2 |      |      |      |      |      | 24.8 | 26.4 |      |      |      |      |
| Max. Annual Average (Nat)             |      |      | 31.7 | 33.5 | 33.1 | 27.1 | 25.7 | 23.6 | 20.3 | 20.2 | 18.7 | 16.9 | 18.6 | 16.3 | 24.0 | 25.4 | 17.7 |      | 2.4  |      |
| Calc Days Above State 24-Hr Std       |      |      | 53   | 47   | 67   | 30   | 18   |      | 6    |      |      |      |      |      | 18   | 24   |      |      |      |      |
| Calc Days Above Nat 24-Hr Std         |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      |      |      |      |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)        |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 98th Percentile of 24-Hr Conc.         |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Annual Average (State)                 |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | 6.4  | 6.4  | 6.4  | 6.3  | 6.2  | 6.0  | 5.7  | 5.2  | 5.0  | 4.5  | 4.1  | 4.1  | 4.0  | 3.7  | 3.5  | 2.8  | 2.6  | 2.3  | 2.3  | 2.4  |
| Max. 1-Hr. Concentration    | 12.0 | 11.0 | 12.0 | 10.0 | 9.0  | 8.0  | 7.0  | 7.4  | 7.6  | 5.6  | 5.7  | 5.8  | 5.5  | 4.7  | 5.7  | 4.2  | 4.7  | 3.7  | 3.2  | 3.5  |
| Max. 8-Hr. Concentration    | 5.6  | 6.0  | 5.4  | 7.1  | 5.8  | 5.3  | 4.4  | 4.6  | 3.5  | 3.8  | 3.9  | 3.9  | 4.2  | 2.8  | 3.0  | 2.4  | 2.5  | 2.0  | 2.0  | 2.8  |
| Days Above State 8-Hr. Std. | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Days Above Nat. 8-Hr. Std.  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| NITROGEN DIOXIDE (ppm)      | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 1-Hr. Indicator        | 0.093 | 0.095 | 0.090 | 0.084 | 0.087 | 0.081 | 0.082 | 0.072 | 0.071 | 0.065 | 0.063 | 0.058 | 0.066 | 0.061 | 0.064 | 0.055 | 0.058 | 0.056 | 0.055 | 0.052 |
| Max. 1-Hr. Concentration    | 0.090 | 0.080 | 0.090 | 0.070 | 0.090 | 0.060 | 0.080 | 0.065 | 0.059 | 0.077 | 0.075 | 0.061 | 0.086 | 0.054 | 0.059 | 0.052 | 0.066 | 0.056 | 0.060 | 0.055 |
| Max. Annual Average (Nat)   | 0.018 | 0.018 | 0.017 | 0.017 | 0.017 | 0.015 | 0.015 | 0.015 | 0.014 | 0.014 | 0.012 | 0.012 | 0.014 | 0.012 | 0.013 | 0.013 | 0.012 | 0.011 | 0.010 | 0.011 |
| Max. Annual Average (State) | 0.018 | 0.018 | 0.017 | 0.017 | 0.017 | 0.015 | 0.015 | 0.015 | 0.014 | 0.014 | 0.012 | 0.012 | 0.014 | 0.012 | 0.013 | 0.013 | 0.012 | 0.011 | 0.010 | 0.011 |

| SULFUR DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

Table A-80

*San Francisco Bay Area Air Basin*

## County: San Francisco

| OZONE (ppm)                            | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)          | 0.059 | 0.059 | 0.059 | 0.057 | 0.054 | 0.052 | 0.049 | 0.050 | 0.052 | 0.052 | 0.052 | 0.049 | 0.050 | 0.049 | 0.051 | 0.050 | 0.053 | 0.054 | 0.054 | 0.051 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat)  | 0.037 | 0.052 | 0.051 | 0.049 | 0.045 | 0.043 | 0.042 | 0.042 | 0.044 | 0.046 | 0.045 | 0.043 | 0.044 | 0.044 | 0.046 | 0.044 | 0.047 | 0.047 | 0.048 | 0.045 |
| Peak 1-Hour Indicator (State)          | 0.073 | 0.075 | 0.076 | 0.070 | 0.063 | 0.058 | 0.060 | 0.063 | 0.066 | 0.064 | 0.067 | 0.059 | 0.059 | 0.057 | 0.060 | 0.057 | 0.062 | 0.067 | 0.067 | 0.057 |
| 4th High 1-Hr. in 3 Yrs2               | 0.070 | 0.080 | 0.080 | 0.070 | 0.060 | 0.060 | 0.060 | 0.060 | 0.080 | 0.071 | 0.071 | 0.061 | 0.067 | 0.061 | 0.063 | 0.059 | 0.061 | 0.096 | 0.096 | 0.058 |
| Max. 8-Hr. Concentration               | 0.070 | 0.070 | 0.063 | 0.051 | 0.047 | 0.052 | 0.052 | 0.045 | 0.067 | 0.050 | 0.059 | 0.046 | 0.057 | 0.043 | 0.054 | 0.049 | 0.059 | 0.059 | 0.055 | 0.046 |
| Maximum 1-Hr. Concentration            | 0.090 | 0.090 | 0.080 | 0.060 | 0.050 | 0.080 | 0.080 | 0.055 | 0.088 | 0.071 | 0.068 | 0.053 | 0.079 | 0.058 | 0.082 | 0.054 | 0.085 | 0.096 | 0.058 | 0.053 |
| Days Above State 8-Hr. Std.            | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above Nat. 8-Hr. Std.             | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above State 1-Hr. Std.            | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 0     | 0     |
| PM <sub>10</sub> (µg/m <sup>3</sup> )  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       | 117   | 101   | 165   | 109   | 81    | 69    | 93    | 50    | 71    | 81    | 56    | 82    | 67    | 70    | 79    | 52    | 54    | 46    | 61    |
| Max. 24-Hr. Concentration (Nat)        |       | 117   | 101   | 165   | 109   | 81    | 69    | 93    | 50    | 71    | 81    | 52    | 78    | 63    | 67    | 74    | 51    | 52    | 45    | 58    |
| Max. Annual Average (State)            |       |       | 35.8  | 33.6  | 34.9  |       | 28.8  | 28.2  | 24.8  | 24.3  | 24.9  | 22.9  | 27.5  | 25.1  | 27.8  | 26.0  | 22.7  | 22.5  | 20.1  | 22.9  |
| Max. Annual Average (Nat)              |       | 25.3  | 35.9  | 33.8  | 35.2  | 31.7  | 28.8  | 28.0  | 24.8  | 24.3  | 24.9  | 21.7  | 26.4  | 24.0  | 25.9  | 24.7  | 21.8  | 21.6  | 19.2  | 22.0  |
| Calc Days Above State 24-Hr Std        |       |       | 75    | 70    | 91    |       | 30    | 36    | 0     | 12    | 18    | 6     | 37    | 12    | 48    | 24    | 6     | 6     | 0     | 17    |
| Calc Days Above Nat 24-Hr Std          |       |       | 0     | 6     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       |       |       |       |       |       |       |       |       |       |       |       | 71.2  | 47.9  | 76.6  | 70.2  | 41.6  | 54.9  | 44.2  | 54.3  |
| Max. 24-Hr. Concentration (Nat)        |       |       |       |       |       |       |       |       |       |       |       |       | 71.2  | 47.9  | 76.6  | 70.2  | 41.6  | 45.8  | 43.6  | 54.3  |
| 98th Percentile of 24-Hr Conc.         |       |       |       |       |       |       |       |       |       |       |       |       | 48.3  |       | 51.3  | 57.5  | 33.0  | 32.2  | 32.6  |       |
| Annual Average (State)                 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 13.1  | 10.2  | 11.2  | 9.5   | 8.7   |
| Avg. of Qtrly. Means (Nat)             |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 11.5  | 13.1  | 10.2  | 9.9   | 9.5   |       |
| CARBON MONOXIDE (ppm)                  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 8-Hr. Indicator                   | 8.6   | 8.3   | 7.7   | 7.8   | 7.2   | 6.7   | 6.4   | 5.8   | 5.6   | 4.7   | 4.5   | 4.2   | 4.2   | 3.8   | 3.7   | 2.9   | 2.8   | 2.6   | 2.6   | 2.2   |
| Max. 1-Hr. Concentration               | 17.0  | 15.0  | 14.0  | 12.0  | 14.0  | 10.0  | 10.0  | 7.5   | 8.5   | 8.6   | 8.0   | 7.1   | 8.6   | 5.5   | 5.2   | 6.8   | 8.6   | 3.7   | 4.1   | 2.7   |
| Max. 8-Hr. Concentration               | 10.0  | 12.8  | 9.0   | 6.9   | 8.4   | 7.4   | 6.9   | 5.3   | 5.3   | 5.6   | 5.7   | 4.0   | 4.6   | 3.2   | 3.3   | 2.6   | 3.6   | 2.7   | 3.1   | 2.1   |
| Days Above State 8-Hr. Std.            | 1     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above Nat. 8-Hr. Std.             | 1     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| NITROGEN DIOXIDE (ppm)                 | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.112 | 0.116 | 0.122 | 0.120 | 0.112 | 0.108 | 0.099 | 0.092 | 0.089 | 0.088 | 0.083 | 0.076 | 0.083 | 0.084 | 0.083 | 0.074 | 0.074 | 0.071 | 0.067 | 0.069 |
| Max. 1-Hr. Concentration               | 0.150 | 0.120 | 0.140 | 0.110 | 0.100 | 0.090 | 0.080 | 0.091 | 0.088 | 0.081 | 0.067 | 0.080 | 0.103 | 0.074 | 0.073 | 0.075 | 0.072 | 0.063 | 0.066 | 0.107 |
| Max. Annual Average (Nat)              | 0.024 | 0.026 | 0.026 | 0.021 | 0.024 | 0.022 | 0.024 | 0.022 | 0.021 | 0.021 | 0.020 | 0.020 | 0.021 | 0.020 | 0.019 | 0.019 | 0.018 | 0.017 | 0.016 | 0.016 |
| Max. Annual Average (State)            | 0.024 | 0.026 |       |       | 0.024 | 0.022 | 0.023 | 0.022 | 0.021 | 0.021 | 0.020 | 0.020 | 0.021 | 0.020 | 0.019 | 0.019 | 0.018 | 0.017 | 0.016 | 0.016 |
| SULFUR DIOXIDE (ppm)                   | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   |       | 0.03  | 0.04  | 0.03  | 0.04  | 0.04  | 0.04  | 0.03  | 0.03  | 0.03  | 0.03  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.04  | 0.02  |
| Max. Annual Average                    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Max. 24-Hr. Concentration              | 0.01  | 0.01  | 0.02  | 0.01  | 0.02  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  |

Table A-81

# San Francisco Bay Area Air Basin

## County: San Mateo

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.069 | 0.071 | 0.073 | 0.069 | 0.063 | 0.056 | 0.057 | 0.056 | 0.067 | 0.069 | 0.069 | 0.060 | 0.056 | 0.054 | 0.057 | 0.060 | 0.067 | 0.068 | 0.066 | 0.059 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.060 | 0.060 | 0.065 | 0.058 | 0.053 | 0.049 | 0.050 | 0.049 | 0.058 | 0.061 | 0.062 | 0.053 | 0.049 | 0.047 | 0.049 | 0.052 | 0.058 | 0.060 | 0.057 | 0.053 |
| Peak 1-Hour Indicator (State)         | 0.099 | 0.097 | 0.099 | 0.089 | 0.078 | 0.071 | 0.076 | 0.078 | 0.093 | 0.098 | 0.099 | 0.078 | 0.072 | 0.071 | 0.074 | 0.079 | 0.085 | 0.087 | 0.079 | 0.074 |
| 4th High 1-Hr. in 3 Yrs2              | 0.110 | 0.100 | 0.100 | 0.090 | 0.080 | 0.070 | 0.080 | 0.084 | 0.103 | 0.103 | 0.103 | 0.090 | 0.079 | 0.080 | 0.081 | 0.081 | 0.090 | 0.090 | 0.090 | 0.084 |
| Max. 8-Hr. Concentration              | 0.074 | 0.076 | 0.072 | 0.050 | 0.056 | 0.065 | 0.076 | 0.066 | 0.099 | 0.067 | 0.073 | 0.053 | 0.063 | 0.063 | 0.067 | 0.063 | 0.078 | 0.071 | 0.061 | 0.063 |
| Maximum 1-Hr. Concentration           | 0.120 | 0.100 | 0.100 | 0.080 | 0.080 | 0.090 | 0.100 | 0.084 | 0.140 | 0.097 | 0.090 | 0.066 | 0.082 | 0.083 | 0.105 | 0.090 | 0.113 | 0.097 | 0.084 | 0.085 |
| Days Above State 8-Hr. Std.           | 2     | 2     | 1     | 0     | 0     | 0     | 1     | 0     | 5     | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 3     | 1     | 0     | 0     |
| Days Above Nat. 8-Hr. Std.            | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 2     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above State 1-Hr. Std.           | 2     | 2     | 1     | 0     | 0     | 0     | 1     | 0     | 5     | 1     | 0     | 0     | 0     | 0     | 1     | 0     | 1     | 1     | 0     | 0     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      | 90   | 137  | 90   | 80   | 76   | 76   | 48   | 48   | 70   | 56   | 95   | 61   | 68   | 56   | 38   | 65   | 81   | 70   |
| Max. 24-Hr. Concentration (Nat)       |      |      | 90   | 137  | 90   | 80   | 76   | 76   | 48   | 48   | 70   | 49   | 85   | 53   | 65   | 53   | 37   | 62   | 78   | 66   |
| Max. Annual Average (State)           |      |      | 33.1 | 27.9 | 32.1 | 28.5 | 26.5 | 24.8 | 21.0 | 21.0 | 23.9 | 24.5 | 28.3 | 24.0 | 24.8 | 24.6 | 19.8 | 20.5 | 20.9 | 19.8 |
| Max. Annual Average (Nat)             |      |      | 33.0 | 28.3 | 32.1 | 28.5 | 26.5 | 24.9 | 21.0 | 21.1 | 23.9 | 22.4 | 24.6 | 21.2 | 22.5 | 22.1 | 19.3 | 19.7 | 19.5 | 19.2 |
| Calc Days Above State 24-Hr Std       |      |      | 59   | 47   | 73   | 41   | 31   | 36   | 0    | 0    | 12   | 12   | 31   | 18   | 18   | 6    | 0    | 6    | 10   | 10   |
| Calc Days Above Nat 24-Hr Std         |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 59.7 | 47.0 | 70.9 | 43.0 | 31.9 | 43.2 | 48.4 | 75.3 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 59.7 | 47.0 | 67.9 | 43.0 | 31.9 | 35.8 | 30.9 | 75.3 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      | 53.4 | 43.0 | 46.1 | 36.3 | 26.1 | 27.9 | 29.4 |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 11.5 | 8.9  | 9.3  | 8.8  | 9.5  |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 11.3 | 11.5 | 8.9  | 9.3  | 8.8  |      |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | 6.9  | 6.1  | 5.8  | 5.9  | 5.9  | 5.8  | 5.8  | 5.4  | 4.9  | 4.4  | 3.9  | 4.2  | 4.3  | 4.4  | 4.2  | 3.7  | 3.3  | 2.9  | 2.6  | 2.5  |
| Max. 1-Hr. Concentration    | 13.0 | 13.0 | 13.0 | 12.0 | 11.0 | 12.0 | 10.0 | 12.0 | 10.1 | 8.6  | 10.7 | 8.7  | 8.0  | 9.8  | 7.1  | 5.8  | 5.4  | 4.8  | 4.5  | 5.5  |
| Max. 8-Hr. Concentration    | 5.5  | 5.4  | 5.3  | 5.9  | 6.5  | 4.8  | 5.8  | 5.4  | 3.9  | 3.6  | 4.2  | 4.1  | 3.8  | 4.4  | 3.9  | 2.8  | 2.6  | 2.1  | 2.3  | 2.4  |
| Days Above State 8-Hr. Std. | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Days Above Nat. 8-Hr. Std.  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| NITROGEN DIOXIDE (ppm)      | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 1-Hr. Indicator        | 0.137 | 0.140 | 0.132 | 0.128 | 0.122 | 0.116 | 0.110 | 0.101 | 0.096 | 0.092 | 0.081 | 0.077 | 0.079 | 0.076 | 0.077 | 0.066 | 0.068 | 0.064 | 0.064 | 0.063 |
| Max. 1-Hr. Concentration    | 0.120 | 0.130 | 0.120 | 0.120 | 0.120 | 0.100 | 0.090 | 0.106 | 0.077 | 0.090 | 0.084 | 0.063 | 0.104 | 0.065 | 0.074 | 0.066 | 0.081 | 0.061 | 0.062 | 0.069 |
| Max. Annual Average (Nat)   | 0.022 | 0.024 | 0.024 | 0.022 | 0.023 | 0.021 | 0.022 | 0.021 | 0.019 | 0.020 | 0.018 | 0.018 | 0.019 | 0.018 | 0.017 | 0.017 | 0.015 | 0.015 | 0.015 | 0.014 |
| Max. Annual Average (State) |       | 0.024 | 0.024 | 0.022 | 0.023 | 0.021 | 0.022 | 0.021 | 0.019 | 0.020 | 0.019 | 0.018 | 0.019 | 0.018 | 0.017 | 0.017 | 0.015 | 0.015 | 0.014 | 0.014 |

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

Table A-82

*San Francisco Bay Area Air Basin*

## County: Santa Clara

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.120 | 0.116 | 0.116 | 0.108 | 0.098 | 0.094 | 0.096 | 0.095 | 0.105 | 0.103 | 0.102 | 0.102 | 0.101 | 0.105 | 0.093 | 0.100 | 0.101 | 0.100 | 0.089 | 0.092 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.092 | 0.092 | 0.097 | 0.088 | 0.082 | 0.078 | 0.080 | 0.080 | 0.083 | 0.088 | 0.085 | 0.085 | 0.080 | 0.081 | 0.076 | 0.082 | 0.086 | 0.084 | 0.075 | 0.076 |
| Peak 1-Hour Indicator (State)         | 0.150 | 0.147 | 0.149 | 0.130 | 0.117 | 0.116 | 0.119 | 0.116 | 0.126 | 0.126 | 0.126 | 0.128 | 0.126 | 0.130 | 0.121 | 0.122 | 0.118 | 0.116 | 0.107 | 0.109 |
| 4th High 1-Hr. in 3 Yrs2              | 0.150 | 0.140 | 0.140 | 0.120 | 0.120 | 0.130 | 0.120 | 0.118 | 0.130 | 0.129 | 0.129 | 0.118 | 0.125 | 0.125 | 0.117 | 0.119 | 0.116 | 0.112 | 0.105 | 0.110 |
| Max. 8-Hr. Concentration              | 0.108 | 0.101 | 0.102 | 0.096 | 0.108 | 0.101 | 0.112 | 0.095 | 0.109 | 0.103 | 0.084 | 0.111 | 0.102 | 0.101 | 0.096 | 0.099 | 0.101 | 0.084 | 0.087 | 0.105 |
| Maximum 1-Hr. Concentration           | 0.170 | 0.140 | 0.130 | 0.130 | 0.130 | 0.130 | 0.130 | 0.130 | 0.145 | 0.129 | 0.114 | 0.147 | 0.125 | 0.113 | 0.123 | 0.121 | 0.124 | 0.102 | 0.113 | 0.123 |
| Days Above State 8-Hr. Std.           | 45    | 37    | 24    | 13    | 14    | 24    | 18    | 12    | 23    | 30    | 7     | 19    | 15    | 9     | 12    | 15    | 13    | 9     | 5     | 16    |
| Days Above Nat. 8-Hr. Std.            | 25    | 19    | 7     | 4     | 5     | 3     | 4     | 2     | 14    | 8     | 0     | 8     | 4     | 1     | 3     | 6     | 6     | 0     | 1     | 8     |
| Days Above State 1-Hr. Std.           | 41    | 34    | 17    | 10    | 12    | 15    | 14    | 8     | 22    | 24    | 3     | 22    | 12    | 4     | 9     | 10    | 11    | 1     | 4     | 10    |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      | 146  | 147  | 127  | 120  | 112  | 93   | 93   | 60   | 76   | 78   | 100  | 117  | 80   | 82   | 73   | 60   | 65   | 71   | 106  |
| Max. 24-Hr. Concentration (Nat)       |      | 146  | 150  | 165  | 153  | 112  | 101  | 93   | 60   | 76   | 95   | 92   | 114  | 76   | 77   | 70   | 57   | 63   | 69   | 104  |
| Max. Annual Average (State)           |      |      | 37.7 | 35.1 | 37.9 | 33.9 | 28.1 | 28.3 | 25.7 | 24.8 | 25.8 | 25.8 | 30.0 | 27.8 | 29.7 |      | 24.8 | 26.0 | 24.2 | 35.0 |
| Max. Annual Average (Nat)             |      | 33.3 | 40.8 | 35.1 | 38.3 | 33.7 | 28.4 | 28.6 | 28.4 | 24.9 | 25.8 | 25.1 | 28.7 | 26.8 | 28.9 | 30.6 | 24.2 | 25.3 | 23.5 | 34.1 |
| Calc Days Above State 24-Hr Std       |      |      | 76   | 65   | 85   | 53   | 31   | 36   | 24   | 12   | 18   | 18   | 31   | 42   | 30   |      | 18   | 25   | 23   | 77   |
| Calc Days Above Nat 24-Hr Std         |      |      | 0    | 2    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 77.0 | 67.2 | 85.6 | 57.6 | 56.1 | 51.5 | 54.6 | 64.4 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 77.0 | 67.2 | 85.6 | 57.6 | 56.1 | 51.5 | 54.6 | 64.4 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      | 63.2 | 55.3 | 56.2 | 52.0 | 37.4 | 42.7 | 41.2 | 42.8 |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 12.4 | 12.0 | 11.7 | 11.6 | 11.8 |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      | 16.8 | 13.6 | 12.8 | 12.0 | 11.7 | 10.4 | 10.5 |      |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | 13.4 | 10.7 | 11.8 | 12.6 | 12.5 | 11.1 | 9.3  | 8.1  | 7.8  | 7.4  | 6.5  | 6.7  | 6.5  | 7.1  | 6.9  | 6.0  | 3.9  | 3.8  | 3.7  | 3.5  |
| Max. 1-Hr. Concentration    | 13.0 | 15.0 | 19.0 | 18.0 | 15.0 | 11.0 | 14.0 | 12.0 | 8.9  | 8.8  | 9.9  | 8.6  | 9.0  | 8.9  | 7.6  | 5.9  | 5.5  | 4.4  | 4.3  | 4.1  |
| Max. 8-Hr. Concentration    | 7.4  | 10.4 | 12.0 | 11.0 | 11.0 | 7.8  | 6.9  | 8.8  | 5.8  | 7.0  | 6.1  | 6.3  | 6.3  | 7.0  | 5.1  | 4.5  | 4.0  | 3.0  | 3.1  | 2.9  |
| Days Above State 8-Hr. Std. | 0    | 3    | 8    | 4    | 4    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Days Above Nat. 8-Hr. Std.  | 0    | 3    | 7    | 2    | 3    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| NITROGEN DIOXIDE (ppm)      | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003 | 2004  | 2005  | 2006  |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| Peak 1-Hr. Indicator        | 0.188 | 0.167 | 0.162 | 0.156 | 0.160 | 0.155 | 0.141 | 0.116 | 0.119 | 0.114 | 0.111 | 0.101 | 0.108 | 0.105 | 0.109 | 0.100 |      | 0.079 | 0.080 | 0.079 |
| Max. 1-Hr. Concentration    | 0.170 | 0.160 | 0.150 | 0.150 | 0.140 | 0.100 | 0.120 | 0.107 | 0.116 | 0.108 | 0.118 | 0.083 | 0.128 | 0.114 | 0.108 | 0.069 |      | 0.073 | 0.074 | 0.074 |
| Max. Annual Average (Nat)   | 0.031 | 0.032 | 0.032 | 0.030 | 0.031 | 0.027 | 0.027 | 0.028 | 0.027 | 0.025 | 0.025 | 0.025 | 0.026 | 0.025 | 0.024 |       |      |       | 0.019 | 0.018 |
| Max. Annual Average (State) | 0.031 | 0.032 | 0.032 | 0.030 | 0.031 | 0.027 | 0.027 | 0.028 | 0.027 | 0.025 | 0.025 | 0.025 | 0.026 | 0.025 | 0.024 |       |      |       | 0.019 |       |

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

# San Francisco Bay Area Air Basin

## County: Solano

| OZONE (ppm)                            | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |      |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| Peak 8-Hour Indicator (State)          | 0.099 | 0.100 | 0.101 | 0.090 | 0.087 | 0.085 | 0.086 | 0.085 | 0.092 | 0.097 | 0.096 | 0.097 | 0.102 | 0.103 | 0.096 | 0.091 | 0.090 | 0.089 | 0.084 | 0.087 |      |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat)  | 0.077 | 0.077 | 0.078 | 0.074 | 0.074 | 0.074 | 0.074 | 0.073 | 0.077 | 0.079 | 0.078 | 0.077 | 0.081 | 0.080 | 0.075 | 0.062 | 0.065 | 0.071 | 0.068 | 0.069 |      |
| Peak 1-Hour Indicator (State)          | 0.114 | 0.112 | 0.118 | 0.107 | 0.103 | 0.100 | 0.102 | 0.103 | 0.112 | 0.115 | 0.114 | 0.116 | 0.122 | 0.125 | 0.117 | 0.110 | 0.105 | 0.105 | 0.098 | 0.104 |      |
| 4th High 1-Hr. in 3 Yrs2               | 0.110 | 0.110 | 0.110 | 0.110 | 0.100 | 0.100 | 0.100 | 0.100 | 0.109 | 0.113 | 0.113 | 0.110 | 0.117 | 0.117 | 0.111 | 0.103 | 0.101 | 0.101 | 0.091 | 0.097 |      |
| Max. 8-Hr. Concentration               | 0.092 | 0.093 | 0.086 | 0.087 | 0.087 | 0.086 | 0.096 | 0.082 | 0.099 | 0.095 | 0.083 | 0.097 | 0.101 | 0.076 | 0.084 | 0.083 | 0.077 | 0.077 | 0.073 | 0.087 |      |
| Maximum 1-Hr. Concentration            | 0.120 | 0.130 | 0.120 | 0.110 | 0.110 | 0.100 | 0.130 | 0.107 | 0.133 | 0.113 | 0.103 | 0.121 | 0.129 | 0.096 | 0.102 | 0.109 | 0.101 | 0.104 | 0.090 | 0.106 |      |
| Days Above State 8-Hr. Std.            | 18    | 9     | 7     | 4     | 5     | 4     | 7     | 5     | 13    | 11    | 2     | 12    | 11    | 2     | 3     | 8     | 6     | 3     | 2     | 8     |      |
| Days Above Nat. 8-Hr. Std.             | 5     | 2     | 1     | 1     | 1     | 2     | 2     | 0     | 5     | 3     | 0     | 3     | 4     | 0     | 0     | 0     | 0     | 0     | 0     | 1     |      |
| Days Above State 1-Hr. Std.            | 14    | 6     | 4     | 2     | 5     | 4     | 4     | 3     | 13    | 8     | 1     | 9     | 9     | 1     | 3     | 4     | 2     | 1     | 0     | 3     |      |
| PM <sub>10</sub> (µg/m <sup>3</sup> )  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |      |
| Max. 24-Hr. Concentration (State)      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 84    | 39    | 51    | 52    | 50    |      |
| Max. 24-Hr. Concentration (Nat)        |       |       |       |       |       |       |       | 63    | 59    | 49    | 85    | 71    | 84    | 53    | 86    | 80    | 38    | 51    | 49    | 47    |      |
| Max. Annual Average (State)            |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 22.2  | 17.3  | 19.6  |       | 19.8  |      |
| Max. Annual Average (Nat)              |       |       |       |       |       |       |       | 16.1  | 18.7  | 17.2  | 18.3  | 17.2  | 19.3  | 15.0  | 19.5  | 21.4  | 16.8  | 18.9  | 16.8  | 19.1  |      |
| Calc Days Above State 24-Hr Std        |       |       |       |       |       |       |       |       |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |      |
| Calc Days Above Nat 24-Hr Std          |       |       |       |       |       |       |       |       |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |      |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |      |
| Max. 24-Hr. Concentration (State)      |       |       |       |       |       |       |       |       |       |       |       |       |       | 90.5  | 60.1  | 90.1  | 72.3  | 30.8  | 49.3  | 47.2  | 44.0 |
| Max. 24-Hr. Concentration (Nat)        |       |       |       |       |       |       |       |       |       |       |       |       |       | 90.5  | 60.1  | 90.1  | 72.3  | 30.8  | 39.7  | 43.8  | 42.2 |
| 98th Percentile of 24-Hr Conc.         |       |       |       |       |       |       |       |       |       |       |       |       |       | 52.3  | 44.0  | 56.0  | 55.4  | 25.1  | 36.9  | 35.6  | 34.3 |
| Annual Average (State)                 |       |       |       |       |       |       |       |       |       |       |       |       |       | 11.6  | 12.5  | 14.0  | 9.4   | 12.7  |       | 12.4  |      |
| Avg. of Qtrly. Means (Nat)             |       |       |       |       |       |       |       |       |       |       |       |       |       | 11.6  | 12.5  | 14.0  | 9.4   | 11.1  | 9.7   |       |      |
| CARBON MONOXIDE (ppm)                  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |      |
| Peak 8-Hr. Indicator                   | 10.3  | 10.3  | 10.1  | 10.4  | 10.3  | 9.3   | 8.4   | 7.5   | 7.1   | 6.2   | 5.6   | 5.4   | 5.7   | 5.5   | 5.3   | 4.6   | 4.1   | 4.0   | 3.7   | 3.5   |      |
| Max. 1-Hr. Concentration               | 13.0  | 14.0  | 13.0  | 12.0  | 13.0  | 11.0  | 12.0  | 8.7   | 7.0   | 6.4   | 6.5   | 7.2   | 6.6   | 6.5   | 5.6   | 5.8   | 4.0   | 4.0   | 3.9   | 3.7   |      |
| Max. 8-Hr. Concentration               | 9.4   | 10.6  | 11.5  | 9.0   | 9.6   | 6.6   | 7.9   | 6.5   | 5.3   | 4.9   | 4.9   | 5.3   | 5.5   | 5.1   | 4.1   | 3.9   | 2.9   | 3.4   | 3.1   | 2.9   |      |
| Days Above State 8-Hr. Std.            | 1     | 1     | 2     | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |      |
| Days Above Nat. 8-Hr. Std.             | 0     | 1     | 2     | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |      |
| NITROGEN DIOXIDE (ppm)                 | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |      |
| Peak 1-Hr. Indicator                   | 0.090 | 0.090 | 0.094 | 0.094 | 0.096 | 0.090 | 0.087 | 0.075 | 0.072 | 0.069 | 0.065 | 0.064 | 0.068 | 0.067 | 0.066 | 0.056 | 0.055 | 0.054 | 0.056 | 0.055 |      |
| Max. 1-Hr. Concentration               | 0.080 | 0.090 | 0.130 | 0.080 | 0.090 | 0.070 | 0.070 | 0.066 | 0.070 | 0.071 | 0.068 | 0.064 | 0.083 | 0.064 | 0.057 | 0.051 | 0.067 | 0.049 | 0.070 | 0.055 |      |
| Max. Annual Average (Nat)              | 0.018 | 0.019 | 0.018 | 0.018 | 0.018 | 0.017 | 0.016 | 0.016 | 0.015 | 0.015 | 0.013 | 0.014 | 0.014 | 0.013 | 0.013 | 0.013 | 0.012 | 0.012 | 0.011 | 0.012 |      |
| Max. Annual Average (State)            | 0.018 | 0.019 | 0.018 | 0.018 | 0.018 | 0.017 | 0.016 | 0.016 | 0.015 | 0.015 | 0.013 | 0.014 | 0.014 | 0.013 | 0.013 | 0.013 | 0.012 | 0.012 | 0.011 | 0.012 |      |
| SULFUR DIOXIDE (ppm)                   | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |      |
| Peak 1-Hr. Indicator                   | 0.03  | 0.04  | 0.04  | 0.04  | 0.04  | 0.04  | 0.03  | 0.03  | 0.03  | 0.03  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.01  | 0.01  | 0.01  | 0.02  |      |
| Max. Annual Average                    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |      |
| Max. 24-Hr. Concentration              | 0.02  | 0.01  | 0.01  | 0.01  | 0.01  | 0.02  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |      |

Table A-84

A portion of Solano County lies within the Sacramento Valley Air Basin.

## San Francisco Bay Area Air Basin

### County: Sonoma

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.091 | 0.090 | 0.096 | 0.089 | 0.087 | 0.079 | 0.076 | 0.072 | 0.066 | 0.073 | 0.066 | 0.061 | 0.064 | 0.064 | 0.064 | 0.058 | 0.060 | 0.058 | 0.056 | 0.053 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.069 | 0.071 | 0.076 | 0.072 | 0.072 | 0.067 | 0.063 | 0.058 | 0.057 | 0.058 | 0.054 | 0.052 | 0.054 | 0.055 | 0.055 | 0.052 | 0.054 | 0.051 | 0.049 | 0.047 |
| Peak 1-Hour Indicator (State)         | 0.102 | 0.101 | 0.105 | 0.103 | 0.103 | 0.096 | 0.091 | 0.084 | 0.089 | 0.086 | 0.085 | 0.079 | 0.086 | 0.083 | 0.084 | 0.070 | 0.074 | 0.071 | 0.070 | 0.069 |
| 4th High 1-Hr. in 3 Yrs2              | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.086 | 0.084 | 0.084 | 0.085 | 0.077 | 0.090 | 0.086 | 0.086 | 0.077 | 0.086 | 0.076 | 0.072 | 0.069 |
| Max. 8-Hr. Concentration              | 0.097 | 0.096 | 0.083 | 0.073 | 0.078 | 0.080 | 0.062 | 0.072 | 0.077 | 0.077 | 0.080 | 0.054 | 0.076 | 0.056 | 0.063 | 0.060 | 0.079 | 0.060 | 0.051 | 0.058 |
| Maximum 1-Hr. Concentration           | 0.110 | 0.110 | 0.100 | 0.090 | 0.100 | 0.090 | 0.080 | 0.086 | 0.097 | 0.089 | 0.093 | 0.068 | 0.095 | 0.078 | 0.086 | 0.077 | 0.096 | 0.076 | 0.072 | 0.077 |
| Days Above State 8-Hr. Std.           | 9     | 7     | 9     | 1     | 4     | 1     | 0     | 1     | 2     | 1     | 1     | 0     | 2     | 0     | 0     | 0     | 1     | 0     | 0     | 0     |
| Days Above Nat. 8-Hr. Std.            | 2     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above State 1-Hr. Std.           | 2     | 2     | 3     | 0     | 3     | 0     | 0     | 0     | 1     | 0     | 0     | 0     | 1     | 0     | 0     | 0     | 1     | 0     | 0     | 0     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      |      |      |      |      |      |      |      |      | 38   | 85   | 56   | 57   | 48   | 78   | 64   | 36   | 48   | 39   | 90   |
| Max. 24-Hr. Concentration (Nat)       |      |      |      |      |      |      |      | 61   | 46   | 38   | 85   | 53   | 54   | 46   | 74   | 60   | 34   | 47   | 37   | 87   |
| Max. Annual Average (State)           |      |      |      |      |      |      |      |      |      |      | 18.7 |      |      | 18.2 | 21.9 | 20.4 | 16.9 | 18.0 | 15.9 | 18.8 |
| Max. Annual Average (Nat)             |      |      |      |      |      |      |      | 19.6 | 15.4 | 16.9 | 18.6 | 18.2 | 20.4 | 17.6 | 21.0 | 19.7 | 16.4 | 17.3 | 15.4 | 18.3 |
| Calc Days Above State 24-Hr Std       |      |      |      |      |      |      |      |      |      |      | 12   |      |      | 0    | 18   | 12   | 0    | 0    | 0    | 12   |
| Calc Days Above Nat 24-Hr Std         |      |      |      |      |      |      |      |      | 0    | 0    | 0    | 0    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 54.9 | 40.1 | 75.9 | 50.7 | 38.8 | 26.6 | 33.6 | 59.0 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 54.9 | 40.1 | 75.9 | 50.7 | 38.8 | 26.6 | 33.6 | 59.0 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      | 44.5 | 36.8 | 41.4 | 42.4 | 29.8 | 25.2 | 29.7 |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      | 10.5 | 10.8 |      | 8.7  | 8.3  | 7.6  |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      | 10.5 | 10.8 | 10.5 | 8.7  | 8.3  | 7.6  |      |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | 5.5  | 5.2  | 5.5  | 5.6  | 5.2  | 4.4  | 4.3  | 3.8  | 3.6  | 3.1  | 3.0  | 3.1  | 3.3  | 3.2  | 3.1  | 2.7  | 2.4  | 2.1  | 1.9  | 1.8  |
| Max. 1-Hr. Concentration    | 7.0  | 9.0  | 9.0  | 7.0  | 6.0  | 6.0  | 6.0  | 5.1  | 4.9  | 5.6  | 5.4  | 5.2  | 5.7  | 4.5  | 4.8  | 3.7  | 3.1  | 2.7  | 2.5  | 2.4  |
| Max. 8-Hr. Concentration    | 4.3  | 5.1  | 6.1  | 5.1  | 4.0  | 4.0  | 3.8  | 3.4  | 2.8  | 3.0  | 3.3  | 3.2  | 3.4  | 3.1  | 2.4  | 2.1  | 1.8  | 1.6  | 2.0  | 1.7  |
| Days Above State 8-Hr. Std. | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Days Above Nat. 8-Hr. Std.  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| NITROGEN DIOXIDE (ppm)      | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 1-Hr. Indicator        | 0.110 | 0.103 | 0.097 | 0.094 | 0.083 | 0.083 | 0.082 | 0.080 | 0.076 | 0.067 | 0.064 | 0.057 | 0.062 | 0.060 | 0.061 | 0.055 | 0.056 | 0.054 | 0.051 | 0.047 |
| Max. 1-Hr. Concentration    | 0.090 | 0.120 | 0.090 | 0.090 | 0.090 | 0.100 | 0.090 | 0.084 | 0.066 | 0.062 | 0.061 | 0.057 | 0.074 | 0.054 | 0.057 | 0.054 | 0.055 | 0.048 | 0.047 | 0.044 |
| Max. Annual Average (Nat)   | 0.016 | 0.016 | 0.015 | 0.014 | 0.015 | 0.015 | 0.016 | 0.015 | 0.015 | 0.014 | 0.013 | 0.015 | 0.014 | 0.013 | 0.013 | 0.013 | 0.012 | 0.011 | 0.011 | 0.011 |
| Max. Annual Average (State) | 0.016 | 0.016 |       | 0.014 | 0.015 | 0.015 |       | 0.016 | 0.015 | 0.014 | 0.013 | 0.014 | 0.014 | 0.013 | 0.013 | 0.013 | 0.012 | 0.011 | 0.011 | 0.011 |

| SULFUR DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

Table A-85

A portion of Sonoma County lies within the North Coast Air Basin.

# San Joaquin Valley Air Basin

County: Fresno

| OZONE (ppm)                            | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)          | 0.134 | 0.135 | 0.136 | 0.124 | 0.134 | 0.129 | 0.131 | 0.120 | 0.126 | 0.125 | 0.125 | 0.131 | 0.131 | 0.132 | 0.123 | 0.124 | 0.126 | 0.127 | 0.118 | 0.111 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat)  | 0.118 | 0.121 | 0.115 | 0.110 | 0.108 | 0.108 | 0.111 | 0.107 | 0.108 | 0.107 | 0.111 | 0.115 | 0.113 | 0.111 | 0.108 | 0.115 | 0.111 | 0.104 | 0.099 | 0.098 |
| Peak 1-Hour Indicator (State)          | 0.172 | 0.171 | 0.171 | 0.158 | 0.165 | 0.162 | 0.163 | 0.158 | 0.153 | 0.154 | 0.152 | 0.162 | 0.160 | 0.159 | 0.146 | 0.151 | 0.152 | 0.151 | 0.138 | 0.140 |
| 4th High 1-Hr. in 3 Yrs2               | 0.170 | 0.170 | 0.170 | 0.150 | 0.160 | 0.160 | 0.160 | 0.150 | 0.144 | 0.146 | 0.146 | 0.161 | 0.161 | 0.161 | 0.146 | 0.151 | 0.151 | 0.151 | 0.135 | 0.130 |
| Max. 8-Hr. Concentration               | 0.150 | 0.125 | 0.121 | 0.117 | 0.130 | 0.121 | 0.121 | 0.111 | 0.126 | 0.123 | 0.127 | 0.134 | 0.123 | 0.131 | 0.120 | 0.132 | 0.116 | 0.103 | 0.111 | 0.113 |
| Maximum 1-Hr. Concentration            | 0.200 | 0.190 | 0.150 | 0.150 | 0.180 | 0.160 | 0.160 | 0.144 | 0.173 | 0.154 | 0.147 | 0.169 | 0.155 | 0.165 | 0.149 | 0.164 | 0.152 | 0.126 | 0.134 | 0.138 |
| Days Above State 8-Hr. Std.            | 175   | 171   | 151   | 122   | 129   | 123   | 120   | 108   | 121   | 138   | 141   | 111   | 150   | 140   | 178   | 172   | 154   | 97    | 76    | 93    |
| Days Above Nat. 8-Hr. Std.             | 112   | 113   | 92    | 55    | 81    | 69    | 59    | 55    | 63    | 78    | 75    | 69    | 83    | 79    | 94    | 95    | 97    | 23    | 29    | 48    |
| Days Above State 1-Hr. Std.            | 127   | 130   | 109   | 79    | 94    | 86    | 81    | 65    | 81    | 96    | 95    | 79    | 95    | 92    | 108   | 106   | 108   | 29    | 51    | 63    |
| PM <sub>10</sub> (µg/m <sup>3</sup> )  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       | 162   | 204   | 297   | 152   | 125   | 190   | 127   | 126   | 144   | 124   | 149   | 164   | 139   | 204   | 111   | 93    | 79    | 109   | 139   |
| Max. 24-Hr. Concentration (Nat)        |       | 162   | 204   | 297   | 152   | 125   | 190   | 127   | 126   | 144   | 124   | 141   | 162   | 138   | 193   | 106   | 109   | 79    | 106   | 132   |
| Max. Annual Average (State)            |       |       | 49.3  | 65.5  | 60.0  | 52.1  | 53.0  | 38.1  | 48.9  | 39.8  | 46.7  | 39.8  | 46.9  | 41.0  | 43.3  | 43.4  | 44.0  | 40.5  | 39.1  | 38.2  |
| Max. Annual Average (Nat)              |       | 45.8  | 73.9  | 67.6  | 60.0  | 52.2  | 53.1  | 49.7  | 48.8  | 39.3  | 46.7  | 39.3  | 47.5  | 41.4  | 50.2  | 52.5  | 43.4  | 40.0  | 38.7  | 43.3  |
| Calc Days Above State 24-Hr Std        |       |       | 176   | 196   | 185   | 178   | 152   | 72    | 137   | 89    | 107   | 91    | 119   | 72    | 98    | 123   | 128   | 94    | 113   | 80    |
| Calc Days Above Nat 24-Hr Std          |       |       | 0     | 26    | 0     | 0     | 6     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 6     | 0     | 0     | 0     | 0     | 0     |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       |       |       |       |       |       |       |       |       |       |       |       | 136.0 | 160.0 | 110.0 | 99.7  | 79.9  | 77.0  | 86.0  | 88.1  |
| Max. 24-Hr. Concentration (Nat)        |       |       |       |       |       |       |       |       |       |       |       |       | 136.0 | 160.0 | 110.0 | 84.0  | 63.0  | 71.0  | 86.0  | 87.0  |
| 98th Percentile of 24-Hr Conc.         |       |       |       |       |       |       |       |       |       |       |       |       | 120.0 | 90.0  | 75.0  | 75.0  | 56.0  | 52.4  | 71.2  | 55.0  |
| Annual Average (State)                 |       |       |       |       |       |       |       |       |       |       |       |       | 23.4  |       |       | 21.3  | 17.8  | 17.0  | 19.7  | 21.2  |
| Avg. of Qtrly. Means (Nat)             |       |       |       |       |       |       |       |       |       |       |       |       | 27.6  | 18.4  | 19.8  | 21.5  | 18.5  | 17.0  | 16.9  | 17.6  |
| CARBON MONOXIDE (ppm)                  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 8-Hr. Indicator                   | 13.5  | 13.8  | 13.7  | 13.9  | 10.2  | 10.2  | 10.0  | 10.0  | 10.9  | 9.9   | 9.0   | 8.3   | 8.5   | 8.4   | 5.8   | 5.3   | 4.8   | 4.1   | 3.6   | 3.4   |
| Max. 1-Hr. Concentration               | 15.0  | 19.0  | 23.0  | 15.0  | 15.0  | 13.0  | 13.0  | 15.0  | 12.0  | 10.1  | 9.9   | 10.3  | 11.9  | 9.0   | 6.7   | 6.1   | 5.0   | 3.9   | 4.1   | 4.0   |
| Max. 8-Hr. Concentration               | 10.9  | 16.5  | 13.1  | 10.3  | 10.4  | 7.6   | 9.3   | 8.9   | 9.1   | 6.8   | 7.5   | 8.0   | 7.7   | 6.2   | 4.6   | 4.5   | 4.1   | 2.9   | 3.0   | 3.3   |
| Days Above State 8-Hr. Std.            | 3     | 3     | 17    | 3     | 1     | 0     | 2     | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above Nat. 8-Hr. Std.             | 3     | 4     | 13    | 3     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| NITROGEN DIOXIDE (ppm)                 | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.145 | 0.144 | 0.151 | 0.156 | 0.129 | 0.123 | 0.121 | 0.124 | 0.124 | 0.115 | 0.107 | 0.100 | 0.107 | 0.106 | 0.102 | 0.093 | 0.095 | 0.090 | 0.087 | 0.080 |
| Max. 1-Hr. Concentration               | 0.150 | 0.210 | 0.190 | 0.160 | 0.120 | 0.110 | 0.120 | 0.119 | 0.111 | 0.109 | 0.103 | 0.112 | 0.108 | 0.094 | 0.090 | 0.089 | 0.092 | 0.077 | 0.084 | 0.076 |
| Max. Annual Average (Nat)              | 0.030 | 0.032 | 0.032 | 0.026 | 0.025 | 0.023 | 0.023 | 0.023 | 0.022 | 0.021 | 0.021 | 0.020 | 0.024 | 0.021 | 0.021 | 0.020 | 0.020 | 0.018 | 0.017 | 0.017 |
| Max. Annual Average (State)            | 0.030 | 0.033 | 0.031 | 0.026 | 0.025 | 0.023 | 0.023 | 0.023 | 0.023 | 0.021 | 0.021 | 0.020 | 0.024 | 0.021 | 0.021 | 0.020 | 0.020 | 0.018 | 0.017 | 0.017 |
| SULFUR DIOXIDE (ppm)                   | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.04  | 0.03  | 0.03  | 0.03  | 0.03  | 0.03  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  |       |       |       |       |       |       |       |       |       |
| Max. Annual Average                    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |       |       |       |       |       | 0.00  |       |       |       |
| Max. 24-Hr. Concentration              | 0.01  | 0.02  | 0.01  | 0.02  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  |       |       |       |       |       | 0.00  |       |       |       |

Table A-86

*San Joaquin Valley Air Basin*

## County: Kern

|  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| OZONE (ppm)                            | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 8-Hour Indicator (State)          | 0.144 | 0.144 | 0.137 | 0.132 | 0.132 | 0.127 | 0.126 | 0.127 | 0.134 | 0.136 | 0.139 | 0.134 | 0.132 | 0.139 | 0.121 | 0.122 | 0.128 | 0.127 | 0.124 | 0.119 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat)  | 0.116 | 0.118 | 0.116 | 0.112 | 0.118 | 0.115 | 0.112 | 0.111 | 0.119 | 0.119 | 0.115 | 0.115 | 0.111 | 0.111 | 0.109 | 0.112 | 0.115 | 0.116 | 0.113 | 0.110 |
| Peak 1-Hour Indicator (State)          | 0.163 | 0.167 | 0.167 | 0.164 | 0.166 | 0.160 | 0.153 | 0.159 | 0.164 | 0.163 | 0.166 | 0.160 | 0.152 | 0.151 | 0.142 | 0.143 | 0.147 | 0.145 | 0.144 | 0.139 |
| 4th High 1-Hr. in 3 Yrs2               | 0.160 | 0.170 | 0.180 | 0.170 | 0.160 | 0.160 | 0.160 | 0.160 | 0.164 | 0.165 | 0.164 | 0.158 | 0.154 | 0.154 | 0.138 | 0.142 | 0.150 | 0.151 | 0.149 | 0.135 |
| Max. 8-Hr. Concentration               | 0.131 | 0.127 | 0.136 | 0.123 | 0.120 | 0.115 | 0.125 | 0.129 | 0.134 | 0.137 | 0.118 | 0.136 | 0.112 | 0.117 | 0.115 | 0.120 | 0.127 | 0.126 | 0.113 | 0.121 |
| Maximum 1-Hr. Concentration            | 0.170 | 0.170 | 0.180 | 0.170 | 0.160 | 0.150 | 0.160 | 0.175 | 0.168 | 0.165 | 0.146 | 0.165 | 0.140 | 0.151 | 0.138 | 0.151 | 0.156 | 0.155 | 0.133 | 0.141 |
| Days Above State 8-Hr. Std.            | 158   | 174   | 163   | 165   | 158   | 154   | 162   | 151   | 153   | 146   | 131   | 115   | 142   | 141   | 153   | 146   | 161   | 162   | 116   | 136   |
| Days Above Nat. 8-Hr. Std.             | 112   | 124   | 112   | 96    | 107   | 100   | 98    | 101   | 104   | 109   | 55    | 75    | 88    | 82    | 85    | 89    | 116   | 103   | 54    | 70    |
| Days Above State 1-Hr. Std.            | 124   | 134   | 132   | 120   | 119   | 106   | 110   | 114   | 115   | 114   | 66    | 81    | 105   | 95    | 95    | 95    | 122   | 102   | 69    | 80    |
| PM <sub>10</sub> (µg/m <sup>3</sup> )  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       | 206   | 237   | 287   | 189   | 186   | 131   | 192   | 195   | 153   | 137   | 166   | 186   | 153   | 216   | 194   | 134   | 93    | 109   | 162   |
| Max. 24-Hr. Concentration (Nat)        |       | 206   | 237   | 287   | 189   | 186   | 131   | 192   | 195   | 153   | 137   | 159   | 183   | 145   | 205   | 189   | 136   | 95    | 107   | 162   |
| Max. Annual Average (State)            |       |       |       | 80.1  | 70.0  | 62.4  | 55.8  | 41.5  | 57.9  | 54.1  | 42.9  | 40.5  | 60.1  | 53.9  | 51.3  | 59.9  | 52.3  | 43.0  | 43.4  | 56.5  |
| Max. Annual Average (Nat)              |       | 74.3  | 79.3  | 79.3  | 76.3  | 55.2  | 56.9  | 46.4  | 58.2  | 54.1  | 46.1  | 38.7  | 59.5  | 53.1  | 54.4  | 59.2  | 52.4  | 43.1  | 43.2  | 55.4  |
| Calc Days Above State 24-Hr Std        |       |       |       | 292   | 225   | 246   | 178   | 106   | 184   | 204   | 80    | 95    | 173   | 158   | 133   | 256   | 167   | 113   | 119   | 167   |
| Calc Days Above Nat 24-Hr Std          |       |       | 23    | 31    | 18    | 0     | 0     | 0     | 3     | 0     | 0     | 0     | 8     | 0     | 12    | 6     | 0     | 0     | 0     | 7     |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       |       |       |       |       |       |       |       |       |       |       |       | 134.8 | 112.7 | 154.7 | 104.3 | 84.5  | 72.8  | 102.1 | 81.0  |
| Max. 24-Hr. Concentration (Nat)        |       |       |       |       |       |       |       |       |       |       |       |       | 134.8 | 112.7 | 154.7 | 89.6  | 67.8  | 70.0  | 85.7  | 78.6  |
| 98th Percentile of 24-Hr Conc.         |       |       |       |       |       |       |       |       |       |       |       |       | 98.0  | 93.9  | 95.9  | 80.4  | 51.9  | 61.5  | 74.9  | 64.7  |
| Annual Average (State)                 |       |       |       |       |       |       |       |       |       |       |       |       |       | 22.6  | 20.8  | 24.1  | 24.8  | 18.2  | 22.4  | 21.6  |
| Avg. of Qtrly. Means (Nat)             |       |       |       |       |       |       |       |       |       |       |       |       | 27.4  | 22.6  | 21.8  | 24.1  | 19.6  | 18.9  | 19.8  | 19.3  |
| CARBON MONOXIDE (ppm)                  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 8-Hr. Indicator                   | 7.0   | 7.4   | 8.8   | 9.5   | 9.5   | 8.5   | 6.8   | 5.4   | 5.3   | 5.1   | 4.7   | 4.1   | 4.2   | 5.3   | 4.8   | 4.6   | 3.0   | 2.7   | 2.5   | 2.2   |
| Max. 1-Hr. Concentration               | 10.0  | 12.0  | 14.0  | 13.0  | 13.0  | 11.0  | 8.0   | 8.8   | 7.8   | 8.7   | 6.1   | 5.7   | 5.8   | 10.1  | 8.1   | 4.5   | 4.5   | 4.1   | 3.2   | 3.3   |
| Max. 8-Hr. Concentration               | 6.9   | 8.9   | 11.0  | 8.6   | 8.1   | 5.8   | 6.1   | 6.4   | 6.2   | 7.7   | 4.0   | 3.9   | 4.5   | 5.4   | 3.5   | 2.5   | 3.7   | 2.6   | 2.2   | 2.2   |
| Days Above State 8-Hr. Std.            | 0     | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above Nat. 8-Hr. Std.             | 0     | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| NITROGEN DIOXIDE (ppm)                 | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.125 | 0.128 | 0.133 | 0.136 | 0.131 | 0.120 | 0.114 | 0.110 | 0.109 | 0.105 | 0.103 | 0.096 | 0.098 | 0.100 | 0.109 | 0.107 | 0.106 | 0.094 | 0.087 | 0.084 |
| Max. 1-Hr. Concentration               | 0.100 | 0.120 | 0.130 | 0.140 | 0.110 | 0.110 | 0.100 | 0.089 | 0.109 | 0.110 | 0.081 | 0.100 | 0.107 | 0.089 | 0.115 | 0.107 | 0.085 | 0.083 | 0.078 | 0.100 |
| Max. Annual Average (Nat)              | 0.029 | 0.032 | 0.033 | 0.031 | 0.030 | 0.027 | 0.027 | 0.017 | 0.029 | 0.029 | 0.024 | 0.024 | 0.027 | 0.024 | 0.022 | 0.024 | 0.023 | 0.019 | 0.021 | 0.021 |
| Max. Annual Average (State)            | 0.029 | 0.032 | 0.033 | 0.032 | 0.030 | 0.027 | 0.017 | 0.017 | 0.029 | 0.029 | 0.024 | 0.022 | 0.027 | 0.024 | 0.022 | 0.024 | 0.020 | 0.017 | 0.021 | 0.021 |
| SULFUR DIOXIDE (ppm)                   | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.08  | 0.07  | 0.06  | 0.06  | 0.04  | 0.04  | 0.03  | 0.02  | 0.02  | 0.03  | 0.03  |       | 0.01  | 0.02  | 0.02  |       |       |       |       |       |
| Max. Annual Average                    | 0.01  | 0.01  | 0.01  | 0.01  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |       | 0.00  | 0.00  | 0.00  |       |       |       |       |       |
| Max. 24-Hr. Concentration              | 0.02  | 0.03  | 0.02  | 0.02  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  |       | 0.01  | 0.00  | 0.01  |       |       |       |       |       |

Table A-87

A portion of Kern County lies within the Mojave Desert Air Basin.



# San Joaquin Valley Air Basin

County: Kings

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.110 | 0.106 | 0.105 | 0.103 | 0.100 | 0.094 | 0.095 | 0.102 | 0.098 | 0.126 | 0.125 | 0.123 | 0.109 | 0.115 | 0.113 | 0.114 | 0.107 | 0.106 | 0.100 | 0.096 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.088 | 0.088 | 0.096 | 0.091 | 0.088 | 0.080 | 0.080 |       |       | 0.096 | 0.097 | 0.105 | 0.099 | 0.102 | 0.098 | 0.099 | 0.095 | 0.093 | 0.088 | 0.086 |
| Peak 1-Hour Indicator (State)         | 0.125 | 0.127 | 0.123 | 0.119 | 0.112 | 0.106 | 0.108 | 0.110 | 0.104 | 0.136 | 0.136 | 0.137 | 0.123 | 0.127 | 0.124 | 0.126 | 0.120 | 0.119 | 0.112 | 0.109 |
| 4th High 1-Hr. in 3 Yrs2              | 0.130 | 0.140 | 0.130 | 0.130 | 0.110 | 0.100 | 0.110 | 0.113 | 0.110 | 0.138 | 0.138 | 0.138 | 0.128 | 0.128 | 0.124 | 0.124 | 0.121 | 0.121 | 0.113 | 0.112 |
| Max. 8-Hr. Concentration              | 0.104 | 0.107 | 0.112 | 0.092 | 0.093 | 0.078 | 0.093 | 0.102 | 0.085 | 0.121 | 0.106 | 0.113 | 0.111 | 0.110 | 0.107 | 0.105 | 0.100 | 0.094 | 0.098 | 0.101 |
| Maximum 1-Hr. Concentration           | 0.130 | 0.150 | 0.130 | 0.100 | 0.110 | 0.100 | 0.110 | 0.119 | 0.096 | 0.144 | 0.126 | 0.143 | 0.140 | 0.124 | 0.127 | 0.125 | 0.120 | 0.121 | 0.120 | 0.127 |
| Days Above State 8-Hr. Std.           | 33    | 101   | 57    | 29    | 40    | 8     | 18    | 71    | 26    | 142   | 88    | 66    | 95    | 112   | 64    | 86    | 71    | 55    | 38    | 57    |
| Days Above Nat. 8-Hr. Std.            | 14    | 28    | 10    | 3     | 9     | 0     | 2     | 12    | 1     | 81    | 26    | 31    | 25    | 51    | 18    | 27    | 15    | 9     | 4     | 4     |
| Days Above State 1-Hr. Std.           | 19    | 34    | 13    | 4     | 15    | 1     | 2     | 9     | 2     | 78    | 23    | 27    | 28    | 48    | 21    | 29    | 19    | 7     | 6     | 7     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      | 170  | 213  | 439  | 279  | 178  | 239  | 129  | 279  | 143  | 199  | 149  | 185  | 137  | 221  | 174  | 150  | 219  | 137  | 255  |
| Max. 24-Hr. Concentration (Nat)       |      | 170  | 213  | 439  | 279  | 178  | 239  | 129  | 279  | 143  | 199  | 146  | 174  | 129  | 212  | 171  | 150  | 217  | 131  | 254  |
| Max. Annual Average (State)           |      |      | 67.0 | 58.8 | 62.9 | 54.7 | 56.3 | 49.6 | 52.9 | 40.9 | 47.3 |      | 53.1 | 51.3 |      | 55.4 | 47.5 | 43.6 | 42.6 | 46.8 |
| Max. Annual Average (Nat)             |      | 58.0 | 67.0 | 63.9 | 67.0 | 56.7 | 56.3 | 50.1 | 52.9 | 52.0 | 48.2 | 34.8 | 52.2 | 50.2 | 57.4 | 53.5 | 46.7 | 47.9 | 40.3 | 51.4 |
| Calc Days Above State 24-Hr Std       |      |      | 208  | 157  | 189  | 172  | 170  | 166  | 174  | 115  | 102  |      | 135  | 132  |      | 172  | 149  | 100  | 126  | 125  |
| Calc Days Above Nat 24-Hr Std         |      |      | 29   | 14   | 14   | 18   | 20   | 0    | 12   | 0    | 6    |      | 6    | 0    | 14   | 6    | 0    | 7    | 0    | 13   |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001  | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 53.0 | 76.0 | 123.2 | 90.7 | 55.1 | 61.0 | 92.5 | 74.2 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 53.0 | 76.0 | 123.2 | 90.7 | 55.1 | 61.0 | 92.5 | 74.2 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      | 53.0 | 55.1 | 89.5  | 65.1 | 42.2 | 49.4 | 74.5 | 50.1 |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      | 16.2 |      | 17.5 |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      | 16.4 | 19.2  | 21.5 | 16.2 | 17.4 | 17.5 | 16.9 |

| CARBON MONOXIDE (ppm)       | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| NITROGEN DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|-----------------------------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 1-Hr. Indicator        |      |      |      |      |      |      |      | 0.087 | 0.094 | 0.091 | 0.091 | 0.081 | 0.084 | 0.073 | 0.068 | 0.073 | 0.073 | 0.072 | 0.071 | 0.073 |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      | 0.082 | 0.094 | 0.066 | 0.080 | 0.086 | 0.086 | 0.072 | 0.096 | 0.067 | 0.076 | 0.069 | 0.072 | 0.073 |
| Max. Annual Average (Nat)   |      |      |      |      |      |      |      | 0.015 | 0.015 | 0.014 | 0.014 | 0.014 | 0.016 | 0.014 |       | 0.014 | 0.013 | 0.012 | 0.012 | 0.012 |
| Max. Annual Average (State) |      |      |      |      |      |      |      | 0.015 | 0.015 |       | 0.014 | 0.014 |       | 0.014 |       | 0.014 | 0.013 | 0.012 | 0.012 | 0.012 |

| SULFUR DIOXIDE (ppm)      | 1987                                | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      | <i>No Monitoring Data Available</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |                                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

Table A-88

*San Joaquin Valley Air Basin***County: Madera**

| OZONE (ppm)                           | 1987 | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         |      |       | 0.108 | 0.107 | 0.107 | 0.103 | 0.111 | 0.111 | 0.114 | 0.111 |       | 0.110 | 0.106 | 0.105 | 0.101 | 0.102 | 0.101 | 0.102 | 0.096 | 0.090 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |      |       |       |       | 0.093 | 0.091 | 0.096 | 0.091 | 0.093 | 0.093 |       |       | 0.083 | 0.089 | 0.088 | 0.091 | 0.093 | 0.089 | 0.082 | 0.078 |
| Peak 1-Hour Indicator (State)         |      |       | 0.119 | 0.113 | 0.117 | 0.113 | 0.125 | 0.124 | 0.127 | 0.122 |       | 0.122 | 0.115 | 0.110 | 0.105 | 0.111 | 0.114 | 0.115 | 0.106 | 0.097 |
| 4th High 1-Hr. in 3 Yrs2              |      | 0.130 | 0.120 | 0.120 | 0.120 | 0.120 | 0.130 | 0.130 | 0.130 | 0.121 | 0.085 | 0.123 | 0.118 | 0.117 | 0.104 | 0.115 | 0.119 | 0.119 | 0.103 | 0.097 |
| Max. 8-Hr. Concentration              |      | 0.106 | 0.101 | 0.098 | 0.101 | 0.097 | 0.110 | 0.086 | 0.102 | 0.111 | 0.080 | 0.116 | 0.095 | 0.096 | 0.093 | 0.110 | 0.102 | 0.084 | 0.081 | 0.095 |
| Maximum 1-Hr. Concentration           |      | 0.130 | 0.120 | 0.110 | 0.130 | 0.120 | 0.150 | 0.103 | 0.117 | 0.134 | 0.085 | 0.127 | 0.118 | 0.104 | 0.115 | 0.141 | 0.120 | 0.097 | 0.095 | 0.113 |
| Days Above State 8-Hr. Std.           |      | 33    | 62    | 33    | 69    | 61    | 72    | 26    | 52    | 76    | 4     | 45    | 46    | 50    | 53    | 66    | 67    | 25    | 19    | 35    |
| Days Above Nat. 8-Hr. Std.            |      | 8     | 15    | 13    | 17    | 12    | 26    | 1     | 15    | 28    | 0     | 12    | 10    | 9     | 13    | 18    | 14    | 0     | 0     | 1     |
| Days Above State 1-Hr. Std.           |      | 11    | 15    | 6     | 24    | 15    | 28    | 4     | 16    | 28    | 0     | 15    | 12    | 8     | 15    | 21    | 15    | 3     | 1     | 4     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      | 108  | 162  | 174  | 118  | 96   | 128  | 105  | 111  | 89   |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)       |      | 108  | 162  | 174  | 118  | 96   | 128  | 105  | 111  | 89   |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (State)           |      | 52.7 | 53.7 |      | 51.7 | 43.6 | 47.1 | 40.4 | 41.9 |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average (Nat)             |      | 52.7 | 53.7 | 53.5 | 52.0 | 43.6 | 47.1 | 40.1 | 41.9 | 36.8 |      |      |      |      |      |      |      |      |      |      |
| Calc Days Above State 24-Hr Std       |      | 159  | 148  |      | 165  | 118  | 138  | 78   | 125  |      |      |      |      |      |      |      |      |      |      |      |
| Calc Days Above Nat 24-Hr Std         |      | 0    | 6    | 7    | 0    | 0    | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

| NITROGEN DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 1-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      | 0.088 | 0.053 | 0.068 | 0.066 | 0.066 | 0.060 | 0.056 | 0.055 | 0.053 | 0.052 |
| Max. 1-Hr. Concentration    |      |      |      |      |      |      |      |      |      |      | 0.077 | 0.060 | 0.084 | 0.060 | 0.060 | 0.058 | 0.054 | 0.053 | 0.057 | 0.051 |
| Max. Annual Average (Nat)   |      |      |      |      |      |      |      |      |      |      |       | 0.011 | 0.014 | 0.013 | 0.011 | 0.012 | 0.010 | 0.010 | 0.010 | 0.011 |
| Max. Annual Average (State) |      |      |      |      |      |      |      |      |      |      |       | 0.011 | 0.014 | 0.013 | 0.011 | 0.012 | 0.010 |       | 0.010 | 0.011 |

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

# San Joaquin Valley Air Basin

County: Merced

| OZONE (ppm)                           | 1987 | 1988 | 1989 | 1990 | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         |      |      |      |      |       | 0.112 | 0.111 | 0.111 | 0.113 | 0.114 | 0.114 | 0.118 | 0.123 | 0.120 | 0.113 | 0.114 | 0.118 | 0.119 | 0.115 | 0.100 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) |      |      |      |      |       |       | 0.098 | 0.098 | 0.100 | 0.102 | 0.094 | 0.096 | 0.097 | 0.106 | 0.101 | 0.101 | 0.102 | 0.102 | 0.095 | 0.088 |
| Peak 1-Hour Indicator (State)         |      |      |      |      |       | 0.126 | 0.124 | 0.122 | 0.124 | 0.127 | 0.129 | 0.132 | 0.134 | 0.132 | 0.122 | 0.125 | 0.124 | 0.124 | 0.119 | 0.106 |
| 4th High 1-Hr. in 3 Yrs2              |      |      |      |      |       | 0.130 | 0.130 | 0.120 | 0.125 | 0.125 | 0.125 | 0.131 | 0.132 | 0.132 | 0.120 | 0.121 | 0.122 | 0.122 | 0.118 | 0.106 |
| Max. 8-Hr. Concentration              |      |      |      |      | 0.111 | 0.107 | 0.110 | 0.107 | 0.114 | 0.116 | 0.095 | 0.129 | 0.117 | 0.112 | 0.105 | 0.125 | 0.110 | 0.109 | 0.093 | 0.091 |
| Maximum 1-Hr. Concentration           |      |      |      |      | 0.130 | 0.120 | 0.130 | 0.123 | 0.130 | 0.131 | 0.102 | 0.143 | 0.132 | 0.120 | 0.113 | 0.138 | 0.122 | 0.114 | 0.100 | 0.102 |
| Days Above State 8-Hr. Std.           |      |      |      |      | 17    | 93    | 73    | 91    | 94    | 101   | 10    | 77    | 110   | 95    | 88    | 118   | 113   | 74    | 37    | 33    |
| Days Above Nat. 8-Hr. Std.            |      |      |      |      | 12    | 40    | 19    | 26    | 36    | 44    | 1     | 35    | 40    | 37    | 29    | 56    | 54    | 15    | 3     | 4     |
| Days Above State 1-Hr. Std.           |      |      |      |      | 13    | 39    | 22    | 31    | 38    | 44    | 1     | 37    | 42    | 32    | 26    | 55    | 54    | 14    | 6     | 4     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      | 93   | 148  | 211  | 145  | 98   | 121  | 131  | 100  | 61   |      |      | 143  | 112  | 117  | 88   | 75   | 57   | 75   | 98   |
| Max. 24-Hr. Concentration (Nat)       |      | 93   | 148  | 211  | 145  | 98   | 121  | 131  | 100  | 61   |      |      | 134  | 104  | 113  | 85   | 74   | 56   | 70   | 94   |
| Max. Annual Average (State)           |      |      | 52.0 | 53.4 | 52.4 | 45.8 | 42.5 | 39.4 | 38.7 |      |      |      |      | 36.1 |      | 39.6 | 32.7 | 28.7 | 28.6 | 32.5 |
| Max. Annual Average (Nat)             |      | 33.8 | 52.0 | 53.2 | 52.4 | 45.9 | 42.5 | 39.2 | 38.7 | 30.8 |      |      | 47.7 | 34.9 | 39.1 | 38.8 | 32.1 | 27.9 | 28.2 | 32.0 |
| Calc Days Above State 24-Hr Std       |      |      | 107  | 148  | 152  | 139  | 109  | 61   | 96   |      |      |      |      | 70   |      | 85   | 44   | 12   | 29   | 47   |
| Calc Days Above Nat 24-Hr Std         |      |      | 0    | 6    | 0    | 0    | 0    | 0    | 0    |      |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999  | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 108.7 | 86.1 | 80.3 | 66.0 | 46.7 | 53.1 | 53.9 | 55.8 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 108.7 | 86.1 | 80.3 | 66.0 | 46.7 | 53.1 | 53.9 | 55.8 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      | 91.9  | 60.0 | 49.3 | 55.1 | 44.2 | 43.0 | 48.3 | 43.8 |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      | 18.7 | 15.7 | 15.2 | 14.1 | 14.8 |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      |       | 16.7 | 14.5 | 18.7 | 15.7 | 15.2 | 14.1 | 14.8 |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 1-Hr. Concentration    |      |      |      |      | 10.0 | 9.0  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 8-Hr. Concentration    |      |      |      |      | 5.4  | 4.8  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above State 8-Hr. Std. |      |      |      |      | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Days Above Nat. 8-Hr. Std.  |      |      |      |      | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

| NITROGEN DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000 | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|-----------------------------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|
| Peak 1-Hr. Indicator        |      |      |      |      |       | 0.075 | 0.080 | 0.080 | 0.078 | 0.076 | 0.076 | 0.075 | 0.074 |      | 0.079 | 0.072 | 0.070 | 0.066 | 0.063 | 0.059 |
| Max. 1-Hr. Concentration    |      |      |      |      | 0.090 | 0.070 | 0.090 | 0.076 | 0.073 | 0.071 | 0.072 | 0.063 | 0.078 |      | 0.066 | 0.068 | 0.063 | 0.059 | 0.062 | 0.062 |
| Max. Annual Average (Nat)   |      |      |      |      |       | 0.015 | 0.014 | 0.013 | 0.012 | 0.012 | 0.013 | 0.012 | 0.011 |      |       | 0.012 | 0.012 | 0.011 | 0.011 | 0.010 |
| Max. Annual Average (State) |      |      |      |      |       |       | 0.014 | 0.013 | 0.012 | 0.012 | 0.013 | 0.011 |       |      |       | 0.012 | 0.012 | 0.011 | 0.011 | 0.010 |

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Annual Average       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. 24-Hr. Concentration |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

*No Monitoring Data Available*

Table A-90

*San Joaquin Valley Air Basin*

## County: San Joaquin

| OZONE (ppm)                            | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)          | 0.114 | 0.111 | 0.109 | 0.103 | 0.104 | 0.102 | 0.102 | 0.101 | 0.113 | 0.107 | 0.107 | 0.102 | 0.108 | 0.108 | 0.104 | 0.100 | 0.100 | 0.099 | 0.087 | 0.110 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat)  | 0.097 | 0.098 | 0.093 | 0.090 | 0.087 | 0.088 | 0.088 | 0.087 | 0.086 | 0.085 | 0.087 | 0.087 | 0.087 | 0.088 | 0.084 | 0.081 | 0.081 | 0.081 | 0.073 | 0.076 |
| Peak 1-Hour Indicator (State)          | 0.135 | 0.134 | 0.133 | 0.134 | 0.121 | 0.119 | 0.118 | 0.119 | 0.122 | 0.120 | 0.122 | 0.124 | 0.123 | 0.121 | 0.118 | 0.113 | 0.114 | 0.115 | 0.100 | 0.122 |
| 4th High 1-Hr. in 3 Yrs2               | 0.140 | 0.140 | 0.130 | 0.130 | 0.120 | 0.120 | 0.110 | 0.119 | 0.124 | 0.124 | 0.119 | 0.115 | 0.118 | 0.118 | 0.118 | 0.111 | 0.104 | 0.104 | 0.099 | 0.120 |
| Max. 8-Hr. Concentration               | 0.110 | 0.103 | 0.103 | 0.102 | 0.095 | 0.090 | 0.097 | 0.101 | 0.107 | 0.096 | 0.099 | 0.100 | 0.113 | 0.094 | 0.092 | 0.096 | 0.089 | 0.097 | 0.086 | 0.103 |
| Maximum 1-Hr. Concentration            | 0.160 | 0.130 | 0.120 | 0.130 | 0.120 | 0.110 | 0.130 | 0.128 | 0.134 | 0.140 | 0.119 | 0.126 | 0.144 | 0.122 | 0.114 | 0.108 | 0.104 | 0.109 | 0.099 | 0.121 |
| Days Above State 8-Hr. Std.            | 83    | 48    | 19    | 22    | 45    | 41    | 26    | 33    | 30    | 56    | 14    | 31    | 33    | 19    | 19    | 26    | 23    | 10    | 10    | 30    |
| Days Above Nat. 8-Hr. Std.             | 30    | 21    | 4     | 7     | 10    | 10    | 4     | 6     | 9     | 14    | 3     | 7     | 10    | 3     | 2     | 3     | 2     | 1     | 1     | 9     |
| Days Above State 1-Hr. Std.            | 54    | 37    | 10    | 17    | 26    | 21    | 12    | 16    | 16    | 26    | 6     | 19    | 16    | 9     | 9     | 12    | 6     | 5     | 3     | 15    |
| PM <sub>10</sub> (µg/m <sup>3</sup> )  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       | 115   | 146   | 251   | 140   | 145   | 104   | 109   | 109   | 127   | 130   | 115   | 155   | 110   | 147   | 91    | 90    | 61    | 84    | 85    |
| Max. 24-Hr. Concentration (Nat)        |       | 115   | 146   | 251   | 140   | 145   | 104   | 109   | 109   | 127   | 130   | 106   | 150   | 104   | 140   | 87    | 88    | 60    | 79    | 94    |
| Max. Annual Average (State)            |       |       |       | 51.4  |       |       |       | 37.0  |       | 27.4  | 29.7  | 30.1  | 37.7  | 33.7  | 36.6  | 36.1  | 28.4  | 29.4  | 29.8  | 33.4  |
| Max. Annual Average (Nat)              |       | 37.2  | 50.4  | 51.2  | 52.4  | 44.8  | 39.1  | 36.9  | 23.2  | 29.2  | 29.7  | 29.1  | 36.3  | 32.2  | 35.9  | 35.5  | 28.1  | 28.6  | 28.9  | 32.6  |
| Calc Days Above State 24-Hr Std        |       |       |       | 128   |       |       |       | 63    |       | 19    | 30    | 50    | 67    | 60    | 64    | 58    | 20    | 18    | 47    | 63    |
| Calc Days Above Nat 24-Hr Std          |       |       | 0     | 6     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       |       |       |       |       |       |       |       |       |       |       |       | 101.0 | 78.0  | 76.0  | 64.0  | 45.0  | 41.0  | 70.0  | 53.3  |
| Max. 24-Hr. Concentration (Nat)        |       |       |       |       |       |       |       |       |       |       |       |       | 101.0 | 78.0  | 76.0  | 64.0  | 45.0  | 41.0  | 63.0  | 47.0  |
| 98th Percentile of 24-Hr Conc.         |       |       |       |       |       |       |       |       |       |       |       |       | 79.0  | 55.0  | 58.0  | 50.0  | 41.0  | 36.0  | 44.0  | 42.0  |
| Annual Average (State)                 |       |       |       |       |       |       |       |       |       |       |       |       | 19.7  |       |       | 16.7  | 13.6  | 13.2  | 12.5  | 13.5  |
| Avg. of Qtrly. Means (Nat)             |       |       |       |       |       |       |       |       |       |       |       |       | 19.7  | 15.5  | 13.9  | 16.7  | 13.6  | 13.2  | 12.5  | 13.1  |
| CARBON MONOXIDE (ppm)                  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 8-Hr. Indicator                   | 13.9  | 14.1  | 12.2  | 13.7  | 13.2  | 11.5  | 9.2   | 7.6   | 7.5   | 7.3   | 6.2   | 6.1   | 6.2   | 6.9   | 4.8   | 4.1   | 3.7   | 3.3   | 2.9   | 2.7   |
| Max. 1-Hr. Concentration               | 16.0  | 14.0  | 16.0  | 17.0  | 15.0  | 11.0  | 10.0  | 11.3  | 10.3  | 11.0  | 7.7   | 10.2  | 11.3  | 8.1   | 8.4   | 6.0   | 5.8   | 3.7   | 4.3   | 4.4   |
| Max. 8-Hr. Concentration               | 12.9  | 11.4  | 11.0  | 11.5  | 11.4  | 8.3   | 6.9   | 7.8   | 6.2   | 7.6   | 4.2   | 7.9   | 7.8   | 6.6   | 6.0   | 3.2   | 3.1   | 2.5   | 2.9   | 2.3   |
| Days Above State 8-Hr. Std.            | 1     | 1     | 6     | 7     | 2     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above Nat. 8-Hr. Std.             | 1     | 1     | 4     | 6     | 2     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| NITROGEN DIOXIDE (ppm)                 | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.122 | 0.126 | 0.122 | 0.130 | 0.134 | 0.132 | 0.132 | 0.131 | 0.127 | 0.113 | 0.102 | 0.097 | 0.103 | 0.102 | 0.100 | 0.085 | 0.086 | 0.082 | 0.082 | 0.077 |
| Max. 1-Hr. Concentration               | 0.100 | 0.110 | 0.130 | 0.120 | 0.110 | 0.190 | 0.160 | 0.144 | 0.119 | 0.088 | 0.090 | 0.102 | 0.106 | 0.099 | 0.087 | 0.077 | 0.088 | 0.079 | 0.087 | 0.072 |
| Max. Annual Average (Nat)              | 0.025 | 0.026 | 0.025 | 0.026 | 0.025 | 0.023 | 0.024 | 0.024 | 0.022 | 0.023 | 0.022 | 0.023 | 0.024 | 0.021 | 0.019 | 0.021 | 0.018 | 0.017 | 0.017 | 0.018 |
| Max. Annual Average (State)            | 0.025 | 0.026 | 0.026 | 0.026 | 0.025 | 0.023 | 0.024 | 0.024 | 0.022 | 0.023 | 0.022 | 0.023 | 0.015 | 0.021 | 0.019 | 0.021 | 0.018 | 0.017 | 0.017 | 0.018 |
| SULFUR DIOXIDE (ppm)                   | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.03  | 0.04  | 0.03  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Max. Annual Average                    | 0.00  | 0.00  | 0.00  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Max. 24-Hr. Concentration              | 0.02  | 0.01  | 0.01  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

Table A-91

# San Joaquin Valley Air Basin

## County: Stanislaus

| OZONE (ppm)                            | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)          | 0.122 | 0.120 | 0.121 | 0.117 | 0.114 | 0.109 | 0.107 | 0.106 | 0.114 | 0.112 | 0.114 | 0.116 | 0.116 | 0.117 | 0.108 | 0.114 | 0.109 | 0.106 | 0.103 | 0.102 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat)  | 0.100 | 0.097 | 0.102 | 0.099 | 0.095 | 0.092 | 0.086 | 0.093 | 0.095 | 0.096 | 0.096 | 0.098 | 0.095 | 0.096 | 0.091 | 0.095 | 0.096 | 0.094 | 0.086 | 0.086 |
| Peak 1-Hour Indicator (State)          | 0.149 | 0.143 | 0.142 | 0.131 | 0.128 | 0.121 | 0.119 | 0.120 | 0.128 | 0.129 | 0.132 | 0.132 | 0.131 | 0.127 | 0.116 | 0.124 | 0.125 | 0.122 | 0.111 | 0.112 |
| 4th High 1-Hr. in 3 Yrs2               | 0.150 | 0.150 | 0.150 | 0.130 | 0.130 | 0.120 | 0.130 | 0.120 | 0.125 | 0.125 | 0.125 | 0.131 | 0.131 | 0.131 | 0.111 | 0.123 | 0.119 | 0.119 | 0.111 | 0.109 |
| Max. 8-Hr. Concentration               | 0.127 | 0.126 | 0.120 | 0.110 | 0.102 | 0.102 | 0.108 | 0.100 | 0.111 | 0.111 | 0.100 | 0.125 | 0.104 | 0.107 | 0.100 | 0.113 | 0.100 | 0.089 | 0.094 | 0.097 |
| Maximum 1-Hr. Concentration            | 0.150 | 0.140 | 0.130 | 0.150 | 0.120 | 0.120 | 0.130 | 0.123 | 0.131 | 0.129 | 0.120 | 0.153 | 0.119 | 0.131 | 0.124 | 0.135 | 0.119 | 0.106 | 0.115 | 0.120 |
| Days Above State 8-Hr. Std.            | 105   | 94    | 67    | 61    | 51    | 55    | 37    | 49    | 50    | 68    | 37    | 59    | 33    | 41    | 38    | 61    | 63    | 28    | 33    | 39    |
| Days Above Nat. 8-Hr. Std.             | 68    | 44    | 26    | 22    | 13    | 11    | 13    | 12    | 21    | 20    | 8     | 29    | 12    | 10    | 11    | 25    | 18    | 4     | 6     | 13    |
| Days Above State 1-Hr. Std.            | 77    | 64    | 41    | 32    | 33    | 27    | 19    | 28    | 28    | 39    | 15    | 35    | 19    | 16    | 16    | 31    | 21    | 6     | 15    | 18    |
| PM <sub>10</sub> (µg/m <sup>3</sup> )  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       |       | 148   | 171   | 157   | 150   | 154   | 160   | 120   | 133   | 119   | 135   | 162   | 119   | 160   | 97    | 88    | 79    | 97    | 102   |
| Max. 24-Hr. Concentration (Nat)        |       |       | 148   | 171   | 157   | 150   | 154   | 160   | 240   | 133   | 119   | 125   | 157   | 112   | 158   | 93    | 87    | 80    | 93    | 97    |
| Max. Annual Average (State)            |       |       |       | 49.6  | 53.0  | 43.6  | 42.0  | 41.1  | 41.2  | 32.0  | 37.1  | 31.9  | 42.8  | 35.0  | 40.5  | 37.2  | 31.4  | 30.7  | 29.8  | 31.9  |
| Max. Annual Average (Nat)              |       |       | 49.4  | 49.1  | 53.7  | 43.6  | 52.4  | 41.1  | 41.3  | 32.0  | 37.1  | 35.4  | 41.1  | 34.9  | 39.7  | 36.9  | 30.6  | 30.0  | 29.3  | 34.7  |
| Calc Days Above State 24-Hr Std        |       |       |       | 135   | 148   | 106   | 98    | 89    | 100   | 47    | 56    | 47    | 90    | 60    | 61    | 76    | 48    | 36    | 51    | 46    |
| Calc Days Above Nat 24-Hr Std          |       |       |       | 6     | 6     | 0     | 0     | 6     | 0     | 0     | 0     | 0     | 0     | 0     | 3     | 0     | 0     | 0     | 0     | 0     |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       |       |       |       |       |       |       |       |       |       |       |       | 108.0 | 77.0  | 95.0  | 87.1  | 66.9  | 67.3  | 89.2  | 72.8  |
| Max. 24-Hr. Concentration (Nat)        |       |       |       |       |       |       |       |       |       |       |       |       | 108.0 | 77.0  | 95.0  | 83.0  | 64.0  | 53.0  | 80.0  | 71.0  |
| 98th Percentile of 24-Hr Conc.         |       |       |       |       |       |       |       |       |       |       |       |       | 100.0 | 71.0  | 69.0  | 69.0  | 47.0  | 45.0  | 55.0  | 52.0  |
| Annual Average (State)                 |       |       |       |       |       |       |       |       |       |       |       |       |       | 18.7  | 15.6  | 18.7  | 14.5  | 13.6  | 14.5  | 15.9  |
| Avg. of Qtrly. Means (Nat)             |       |       |       |       |       |       |       |       |       |       |       |       | 24.9  | 18.7  | 15.6  | 18.7  | 14.5  | 13.6  | 13.9  | 14.8  |
| CARBON MONOXIDE (ppm)                  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 8-Hr. Indicator                   | 10.5  | 10.6  | 11.9  | 12.4  | 12.4  | 10.1  | 9.0   | 7.7   | 7.4   | 7.0   | 6.0   | 5.5   | 6.1   | 7.0   | 6.4   | 5.3   | 4.5   | 4.2   | 3.7   | 3.4   |
| Max. 1-Hr. Concentration               | 12.0  | 17.0  | 17.0  | 17.0  | 19.0  | 10.0  | 11.0  | 9.5   | 11.4  | 9.2   | 7.1   | 9.4   | 11.4  | 8.0   | 7.8   | 5.2   | 5.3   | 4.6   | 3.7   | 6.9   |
| Max. 8-Hr. Concentration               | 8.6   | 13.1  | 13.4  | 10.9  | 10.8  | 6.5   | 8.6   | 6.4   | 5.7   | 6.5   | 5.0   | 7.3   | 6.4   | 6.0   | 6.0   | 4.5   | 3.8   | 3.0   | 2.9   | 3.7   |
| Days Above State 8-Hr. Std.            | 0     | 2     | 11    | 2     | 2     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above Nat. 8-Hr. Std.             | 0     | 1     | 8     | 2     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| NITROGEN DIOXIDE (ppm)                 | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.126 | 0.129 | 0.126 | 0.128 | 0.119 | 0.109 | 0.108 | 0.102 | 0.102 | 0.095 | 0.096 | 0.089 | 0.103 | 0.098 | 0.100 | 0.081 | 0.087 | 0.080 | 0.080 | 0.066 |
| Max. 1-Hr. Concentration               | 0.120 | 0.130 | 0.140 | 0.100 | 0.110 | 0.100 | 0.110 | 0.093 | 0.093 | 0.087 | 0.093 | 0.088 | 0.103 | 0.079 | 0.087 | 0.083 | 0.091 | 0.065 | 0.072 | 0.058 |
| Max. Annual Average (Nat)              | 0.024 | 0.027 | 0.027 | 0.026 | 0.024 | 0.022 | 0.023 | 0.023 | 0.022 | 0.022 | 0.021 | 0.018 | 0.022 | 0.019 | 0.018 | 0.017 | 0.017 | 0.015 | 0.014 | 0.013 |
| Max. Annual Average (State)            | 0.024 | 0.027 |       | 0.026 | 0.024 | 0.022 | 0.023 | 0.022 | 0.022 | 0.022 | 0.021 | 0.018 | 0.021 | 0.019 | 0.019 | 0.017 | 0.017 | 0.015 | 0.014 | 0.013 |
| SULFUR DIOXIDE (ppm)                   | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.02  | 0.03  | 0.03  | 0.02  | 0.02  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Max. Annual Average                    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Max. 24-Hr. Concentration              | 0.01  | 0.01  | 0.01  | 0.00  | 0.01  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

Table A-92

*San Joaquin Valley Air Basin*

County: Tulare

| OZONE (ppm)                            | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)          | 0.126 | 0.125 | 0.124 | 0.120 | 0.120 | 0.112 | 0.122 | 0.126 | 0.123 | 0.120 | 0.115 | 0.119 | 0.118 | 0.117 | 0.114 | 0.115 | 0.120 | 0.119 | 0.119 | 0.114 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat)  | 0.108 | 0.111 | 0.111 | 0.106 | 0.104 | 0.101 | 0.103 | 0.106 | 0.107 | 0.105 | 0.100 | 0.102 | 0.102 | 0.102 | 0.104 | 0.105 | 0.107 | 0.105 | 0.105 | 0.103 |
| Peak 1-Hour Indicator (State)          | 0.145 | 0.145 | 0.142 | 0.135 | 0.132 | 0.124 | 0.136 | 0.145 | 0.144 | 0.140 | 0.130 | 0.135 | 0.134 | 0.130 | 0.123 | 0.125 | 0.126 | 0.125 | 0.125 | 0.122 |
| 4th High 1-Hr. in 3 Yrs2               | 0.150 | 0.150 | 0.150 | 0.140 | 0.140 | 0.130 | 0.140 | 0.150 | 0.150 | 0.140 | 0.132 | 0.139 | 0.127 | 0.129 | 0.126 | 0.126 | 0.126 | 0.126 | 0.126 | 0.117 |
| Max. 8-Hr. Concentration               | 0.133 | 0.117 | 0.121 | 0.115 | 0.111 | 0.106 | 0.125 | 0.119 | 0.112 | 0.111 | 0.106 | 0.122 | 0.112 | 0.108 | 0.111 | 0.117 | 0.115 | 0.103 | 0.112 | 0.109 |
| Maximum 1-Hr. Concentration            | 0.180 | 0.150 | 0.160 | 0.140 | 0.130 | 0.130 | 0.150 | 0.154 | 0.132 | 0.140 | 0.125 | 0.148 | 0.127 | 0.129 | 0.135 | 0.140 | 0.129 | 0.133 | 0.127 | 0.118 |
| Days Above State 8-Hr. Std.            | 173   | 153   | 135   | 135   | 129   | 133   | 137   | 138   | 131   | 131   | 118   | 104   | 155   | 136   | 154   | 147   | 155   | 132   | 106   | 111   |
| Days Above Nat. 8-Hr. Std.             | 120   | 97    | 70    | 64    | 66    | 65    | 69    | 82    | 59    | 78    | 54    | 58    | 88    | 76    | 71    | 93    | 92    | 78    | 59    | 63    |
| Days Above State 1-Hr. Std.            | 121   | 100   | 76    | 63    | 65    | 63    | 76    | 78    | 66    | 81    | 50    | 63    | 84    | 78    | 73    | 86    | 91    | 60    | 54    | 64    |
| PM <sub>10</sub> (µg/m <sup>3</sup> )  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       | 145   | 206   | 285   | 177   | 122   | 108   | 105   | 128   | 115   | 96    | 167   | 160   | 136   | 151   | 111   | 99    | 82    | 124   | 151   |
| Max. 24-Hr. Concentration (Nat)        |       | 145   | 206   | 285   | 177   | 122   | 108   | 105   | 128   | 115   | 96    | 160   | 152   | 130   | 143   | 110   | 100   | 82    | 122   | 145   |
| Max. Annual Average (State)            |       |       |       |       |       |       | 52.8  |       | 52.7  | 44.5  | 41.6  | 40.4  | 55.8  | 53.7  | 52.3  | 52.4  | 43.0  | 41.4  | 44.5  | 47.4  |
| Max. Annual Average (Nat)              |       | 63.2  | 69.2  | 79.2  | 64.7  | 50.5  | 52.8  | 47.5  | 53.0  | 44.5  | 41.5  | 39.9  | 54.9  | 52.7  | 51.9  | 51.6  | 42.6  | 41.2  | 44.3  | 47.2  |
| Calc Days Above State 24-Hr Std        |       |       |       |       |       |       | 183   |       | 163   | 148   | 65    | 102   | 182   | 196   | 168   | 179   | 108   | 91    | 146   | 156   |
| Calc Days Above Nat 24-Hr Std          |       |       | 17    | 29    |       |       | 0     | 0     | 0     | 0     | 0     | 6     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       |       |       |       |       |       |       |       |       |       |       |       | 123.0 | 105.0 | 97.0  | 82.0  | 58.9  | 68.6  | 95.5  | 78.0  |
| Max. 24-Hr. Concentration (Nat)        |       |       |       |       |       |       |       |       |       |       |       |       | 123.0 | 105.0 | 97.0  | 76.0  | 49.0  | 60.0  | 84.0  | 65.0  |
| 98th Percentile of 24-Hr Conc.         |       |       |       |       |       |       |       |       |       |       |       |       | 114.0 | 103.0 | 96.0  | 70.0  | 47.0  | 54.0  | 65.0  | 50.0  |
| Annual Average (State)                 |       |       |       |       |       |       |       |       |       |       |       |       |       | 23.9  |       | 23.2  | 19.7  |       | 19.9  | 19.7  |
| Avg. of Qtrly. Means (Nat)             |       |       |       |       |       |       |       |       |       |       |       |       | 27.6  | 23.9  | 22.5  | 23.2  | 18.2  | 17.0  | 18.8  | 18.8  |
| CARBON MONOXIDE (ppm)                  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 8-Hr. Indicator                   | 5.9   | 6.1   | 6.4   | 6.5   | 6.5   | 6.0   | 5.2   | 4.4   | 4.5   | 4.5   | 4.2   | 4.0   | 4.1   | 4.1   | 4.0   | 3.5   | 3.0   | 2.7   | 2.5   |       |
| Max. 1-Hr. Concentration               | 13.0  | 14.0  | 12.0  | 11.0  | 14.0  | 10.0  | 7.0   | 8.7   | 9.3   | 5.3   | 7.3   | 7.4   | 7.9   | 5.9   | 5.7   | 4.9   | 4.7   | 3.7   | 3.8   |       |
| Max. 8-Hr. Concentration               | 5.8   | 8.0   | 6.4   | 6.7   | 6.1   | 4.8   | 4.0   | 4.4   | 4.4   | 4.0   | 4.1   | 3.8   | 4.1   | 4.2   | 3.7   | 2.9   | 3.0   | 2.2   | 2.6   |       |
| Days Above State 8-Hr. Std.            | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above Nat. 8-Hr. Std.             | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| NITROGEN DIOXIDE (ppm)                 | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.114 | 0.118 | 0.138 | 0.137 | 0.130 | 0.109 | 0.111 | 0.113 | 0.115 | 0.119 | 0.115 | 0.089 | 0.100 | 0.098 | 0.096 | 0.092 | 0.096 | 0.097 | 0.084 | 0.074 |
| Max. 1-Hr. Concentration               | 0.110 | 0.170 | 0.210 | 0.100 | 0.130 | 0.100 | 0.120 | 0.142 | 0.112 | 0.077 | 0.095 | 0.081 | 0.092 | 0.079 | 0.075 | 0.095 | 0.087 | 0.078 | 0.069 | 0.063 |
| Max. Annual Average (Nat)              | 0.019 | 0.022 | 0.020 | 0.021 | 0.022 | 0.020 | 0.023 | 0.023 | 0.023 | 0.018 | 0.019 | 0.017 | 0.021 | 0.018 | 0.018 | 0.019 | 0.018 | 0.016 | 0.016 | 0.014 |
| Max. Annual Average (State)            | 0.019 | 0.022 | 0.020 |       | 0.023 | 0.020 | 0.023 |       | 0.023 | 0.018 | 0.019 | 0.017 | 0.020 | 0.018 | 0.018 | 0.019 | 0.018 | 0.016 | 0.016 | 0.014 |
| SULFUR DIOXIDE (ppm)                   | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.04  | 0.02  | 0.02  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Max. Annual Average                    | 0.00  | 0.00  | 0.00  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Max. 24-Hr. Concentration              | 0.02  | 0.01  | 0.01  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

Table A-93

# South Central Coast Air Basin

## County: San Luis Obispo

| OZONE (ppm)                           | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)         | 0.087 | 0.088 | 0.098 | 0.095 | 0.094 | 0.089 | 0.084 | 0.084 | 0.086 | 0.100 | 0.100 | 0.106 | 0.103 | 0.104 | 0.080 | 0.084 | 0.082 | 0.082 | 0.082 | 0.096 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat) | 0.072 | 0.075 | 0.073 | 0.075 | 0.083 | 0.078 | 0.075 | 0.074 | 0.074 | 0.080 | 0.079 | 0.086 | 0.082 | 0.081 | 0.072 | 0.073 | 0.074 | 0.073 | 0.071 | 0.071 |
| Peak 1-Hour Indicator (State)         | 0.098 | 0.099 | 0.108 | 0.105 | 0.105 | 0.101 | 0.101 | 0.100 | 0.098 | 0.108 | 0.108 | 0.115 | 0.114 | 0.114 | 0.093 | 0.094 | 0.094 | 0.092 | 0.093 | 0.108 |
| 4th High 1-Hr. in 3 Yrs2              | 0.100 | 0.100 | 0.120 | 0.110 | 0.110 | 0.100 | 0.100 | 0.098 | 0.097 | 0.107 | 0.107 | 0.114 | 0.113 | 0.113 | 0.092 | 0.092 | 0.092 | 0.092 | 0.092 | 0.127 |
| Max. 8-Hr. Concentration              | 0.111 | 0.086 | 0.122 | 0.082 | 0.101 | 0.098 | 0.088 | 0.089 | 0.087 | 0.117 | 0.077 | 0.113 | 0.083 | 0.080 | 0.081 | 0.083 | 0.089 | 0.076 | 0.085 | 0.095 |
| Maximum 1-Hr. Concentration           | 0.130 | 0.100 | 0.150 | 0.100 | 0.110 | 0.110 | 0.100 | 0.101 | 0.108 | 0.141 | 0.090 | 0.129 | 0.099 | 0.084 | 0.094 | 0.093 | 0.097 | 0.086 | 0.099 | 0.128 |
| Days Above State 8-Hr. Std.           | 18    | 18    | 38    | 22    | 20    | 8     | 13    | 14    | 25    | 41    | 8     | 76    | 15    | 5     | 13    | 15    | 12    | 7     | 5     | 52    |
| Days Above Nat. 8-Hr. Std.            | 2     | 1     | 8     | 0     | 2     | 1     | 2     | 1     | 1     | 10    | 0     | 21    | 0     | 0     | 0     | 0     | 1     | 0     | 1     | 7     |
| Days Above State 1-Hr. Std.           | 3     | 6     | 8     | 2     | 4     | 3     | 4     | 2     | 7     | 14    | 0     | 25    | 2     | 0     | 0     | 0     | 2     | 0     | 1     | 6     |

| PM <sub>10</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)     |      | 63   | 63   | 79   | 75   | 135  | 141  | 78   | 73   | 48   | 75   | 55   | 58   | 80   | 70   | 55   | 70   | 146  | 66   | 135  |
| Max. 24-Hr. Concentration (Nat)       |      | 63   | 63   | 79   | 75   | 135  | 141  | 78   | 73   | 98   | 99   | 70   | 90   | 111  | 115  | 178  | 78   | 146  | 63   | 131  |
| Max. Annual Average (State)           |      |      |      | 21.0 | 24.4 | 30.4 | 28.8 | 22.3 | 21.4 | 18.7 | 20.9 | 17.7 | 19.0 | 21.3 | 24.8 | 21.1 | 20.2 | 31.4 | 19.2 | 26.6 |
| Max. Annual Average (Nat)             |      | 23.8 | 29.2 | 26.3 | 26.5 | 43.1 | 42.8 | 22.4 | 39.9 | 31.7 | 23.9 | 25.2 | 27.2 | 33.8 | 29.1 | 43.2 | 24.5 | 31.4 | 18.6 | 25.5 |
| Calc Days Above State 24-Hr Std       |      |      | 0    | 6    | 51   | 53   | 6    | 18   | 0    | 7    | 6    | 0    | 13   | 18   | 7    | 6    | 61   | 0    | 30   |      |
| Calc Days Above Nat 24-Hr Std         |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. 24-Hr. Concentration (State)      |      |      |      |      |      |      |      |      |      |      |      |      | 27.5 | 52.7 | 57.7 | 28.0 | 29.2 | 30.7 | 29.2 | 27.2 |
| Max. 24-Hr. Concentration (Nat)        |      |      |      |      |      |      |      |      |      |      |      |      | 27.2 | 50.9 | 57.6 | 28.0 | 29.2 | 30.7 | 29.2 | 25.4 |
| 98th Percentile of 24-Hr Conc.         |      |      |      |      |      |      |      |      |      |      |      |      | 26.9 | 41.0 | 50.7 | 25.7 | 21.4 | 19.6 | 25.2 | 22.2 |
| Annual Average (State)                 |      |      |      |      |      |      |      |      |      |      |      |      | 9.6  |      | 10.1 | 9.2  | 8.2  | 8.3  | 7.1  |      |
| Avg. of Qtrly. Means (Nat)             |      |      |      |      |      |      |      |      |      |      |      |      | 9.6  | 10.3 | 10.1 | 9.2  | 8.2  | 8.3  | 7.4  | 8.4  |

| CARBON MONOXIDE (ppm)       | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 8-Hr. Indicator        | 5.2  | 4.7  | 4.9  | 5.1  | 4.8  | 4.2  | 3.6  | 3.2  | 2.9  | 2.9  | 2.6  | 2.6  | 2.7  | 2.7  | 2.7  | 2.2  | 2.0  | 1.8  | 1.7  |      |
| Max. 1-Hr. Concentration    | 10.0 | 10.0 | 10.0 | 10.0 | 8.0  | 8.0  | 9.0  | 6.1  | 5.7  | 5.0  | 6.4  | 4.4  | 5.3  | 3.9  | 8.3  | 3.5  | 3.1  | 2.6  | 2.6  | 1.1  |
| Max. 8-Hr. Concentration    | 3.9  | 4.3  | 6.3  | 4.1  | 3.3  | 3.1  | 3.2  | 3.2  | 3.1  | 2.9  | 2.6  | 2.3  | 3.1  | 2.4  | 2.0  | 2.4  | 1.5  | 1.5  | 1.3  | 0.8  |
| Days Above State 8-Hr. Std. | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Days Above Nat. 8-Hr. Std.  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| NITROGEN DIOXIDE (ppm)      | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 1-Hr. Indicator        | 0.090 | 0.085 | 0.085 | 0.084 | 0.078 | 0.074 | 0.072 | 0.070 | 0.070 | 0.065 | 0.063 | 0.064 | 0.073 | 0.070 | 0.069 | 0.060 | 0.062 | 0.061 | 0.057 | 0.057 |
| Max. 1-Hr. Concentration    | 0.080 | 0.090 | 0.090 | 0.070 | 0.080 | 0.060 | 0.070 | 0.069 | 0.069 | 0.060 | 0.071 | 0.061 | 0.070 | 0.059 | 0.061 | 0.060 | 0.064 | 0.051 | 0.052 | 0.056 |
| Max. Annual Average (Nat)   | 0.015 | 0.016 | 0.016 | 0.014 | 0.017 | 0.015 | 0.014 | 0.014 | 0.013 | 0.013 | 0.013 | 0.012 | 0.014 | 0.012 | 0.012 | 0.011 | 0.009 | 0.009 | 0.007 | 0.009 |
| Max. Annual Average (State) | 0.015 | 0.016 | 0.016 | 0.010 | 0.011 | 0.015 | 0.014 | 0.014 | 0.013 | 0.012 | 0.012 | 0.012 | 0.014 | 0.012 | 0.012 | 0.011 | 0.009 | 0.009 | 0.007 | 0.008 |

| SULFUR DIOXIDE (ppm)      | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak 1-Hr. Indicator      | 0.32 | 0.25 | 0.16 | 0.16 | 0.14 | 0.13 | 0.13 | 0.03 | 0.16 | 0.17 | 0.16 | 0.16 | 0.14 | 0.14 | 0.14 | 0.16 | 0.14 | 0.13 | 0.14 | 0.14 |
| Max. Annual Average       | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Max. 24-Hr. Concentration | 0.03 | 0.04 | 0.02 | 0.09 | 0.02 | 0.02 | 0.05 | 0.01 | 0.04 | 0.03 | 0.03 | 0.04 | 0.03 | 0.03 | 0.04 | 0.02 | 0.02 | 0.03 | 0.01 | 0.03 |

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*South Central Coast Air Basin***County: Santa Barbara**

| OZONE (ppm)                            | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |      |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| Peak 8-Hour Indicator (State)          | 0.109 | 0.107 | 0.109 | 0.111 | 0.112 | 0.108 | 0.104 | 0.104 | 0.107 | 0.113 | 0.110 | 0.101 | 0.092 | 0.091 | 0.090 | 0.092 | 0.095 | 0.093 | 0.090 | 0.084 |      |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat)  | 0.087 | 0.095 | 0.097 | 0.099 | 0.099 | 0.096 | 0.091 | 0.092 | 0.090 | 0.094 | 0.089 | 0.087 | 0.082 | 0.081 | 0.080 | 0.082 | 0.084 | 0.082 | 0.078 | 0.075 |      |
| Peak 1-Hour Indicator (State)          | 0.138 | 0.131 | 0.139 | 0.139 | 0.136 | 0.129 | 0.121 | 0.121 | 0.122 | 0.131 | 0.124 | 0.116 | 0.103 | 0.102 | 0.100 | 0.103 | 0.105 | 0.102 | 0.097 | 0.091 |      |
| 4th High 1-Hr. in 3 Yrs2               | 0.160 | 0.130 | 0.179 | 0.171 | 0.165 | 0.137 | 0.123 | 0.129 | 0.126 | 0.130 | 0.130 | 0.125 | 0.108 | 0.107 | 0.101 | 0.101 | 0.103 | 0.101 | 0.100 | 0.092 |      |
| Max. 8-Hr. Concentration               | 0.141 | 0.102 | 0.176 | 0.141 | 0.113 | 0.125 | 0.110 | 0.116 | 0.118 | 0.122 | 0.108 | 0.120 | 0.110 | 0.087 | 0.106 | 0.090 | 0.102 | 0.102 | 0.082 | 0.082 |      |
| Maximum 1-Hr. Concentration            | 0.185 | 0.130 | 0.220 | 0.165 | 0.134 | 0.140 | 0.135 | 0.142 | 0.143 | 0.134 | 0.137 | 0.130 | 0.135 | 0.128 | 0.117 | 0.113 | 0.107 | 0.109 | 0.091 | 0.102 |      |
| Days Above State 8-Hr. Std.            | 82    | 104   | 105   | 94    | 101   | 72    | 63    | 54    | 60    | 61    | 48    | 50    | 34    | 40    | 34    | 37    | 42    | 20    | 13    | 16    |      |
| Days Above Nat. 8-Hr. Std.             | 25    | 28    | 28    | 27    | 25    | 17    | 13    | 11    | 16    | 19    | 4     | 6     | 2     | 2     | 3     | 5     | 5     | 2     | 0     | 0     |      |
| Days Above State 1-Hr. Std.            | 37    | 43    | 42    | 40    | 38    | 27    | 23    | 23    | 24    | 23    | 10    | 15    | 3     | 6     | 5     | 3     | 7     | 2     | 0     | 1     |      |
| PM <sub>10</sub> (µg/m <sup>3</sup> )  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |      |
| Max. 24-Hr. Concentration (State)      |       | 132   | 119   | 96    | 96    | 89    | 90    | 139   | 129   | 78    | 168   | 75    | 52    | 54    | 68    | 50    | 98    | 52    | 87    | 56    |      |
| Max. 24-Hr. Concentration (Nat)        |       | 132   | 119   | 96    | 96    | 89    | 90    | 139   | 129   | 78    | 168   | 73    | 99    | 53    | 66    | 50    | 96    | 52    | 83    | 108   |      |
| Max. Annual Average (State)            |       | 28.7  | 33.8  | 36.9  | 25.7  | 32.6  | 29.3  | 26.8  | 25.4  | 28.6  | 29.7  | 26.1  | 29.5  | 26.6  | 27.4  | 24.3  | 25.2  | 24.7  | 22.1  | 22.5  |      |
| Max. Annual Average (Nat)              |       | 28.7  | 35.9  | 36.6  | 36.8  | 32.6  | 32.9  | 32.5  | 31.1  | 28.6  | 29.8  | 25.0  | 28.5  | 25.8  | 26.5  | 23.5  | 24.4  | 24.1  | 27.7  | 29.7  |      |
| Calc Days Above State 24-Hr Std        |       | 19    | 26    | 25    | 6     | 57    | 41    | 7     | 13    | 18    | 12    | 18    | 12    | 18    | 18    | 0     | 6     | 6     | 6     | 6     |      |
| Calc Days Above Nat 24-Hr Std          |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 6     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |      |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |      |
| Max. 24-Hr. Concentration (State)      |       |       |       |       |       |       |       |       |       |       |       |       |       | 24.3  | 28.7  | 43.2  | 21.3  | 24.0  | 27.5  | 29.8  | 27.9 |
| Max. 24-Hr. Concentration (Nat)        |       |       |       |       |       |       |       |       |       |       |       |       |       | 24.3  | 28.7  | 43.2  | 21.3  | 24.0  | 27.5  | 29.8  | 27.9 |
| 98th Percentile of 24-Hr Conc.         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 23.4  | 19.4  | 16.1  | 12.9  | 23.9  |      |
| Annual Average (State)                 |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 10.4  | 9.5   | 8.6   | 7.5   |       | 7.5   |      |
| Avg. of Qtrly. Means (Nat)             |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 10.4  | 9.5   | 8.6   | 7.5   |       | 10.1  |      |
| CARBON MONOXIDE (ppm)                  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |      |
| Peak 8-Hr. Indicator                   | 10.1  | 9.0   | 8.8   | 8.2   | 7.5   | 6.4   | 5.5   | 5.9   | 6.0   | 5.8   | 5.0   | 4.8   | 4.5   | 4.7   | 1.6   | 1.7   | 2.4   | 2.1   | 1.9   | 1.9   |      |
| Max. 1-Hr. Concentration               | 14.0  | 15.0  | 11.0  | 11.0  | 9.0   | 12.0  | 9.0   | 10.7  | 7.8   | 12.6  | 8.2   | 8.5   | 8.2   | 5.8   | 5.4   | 3.4   | 5.9   | 4.7   | 4.0   | 4.1   |      |
| Max. 8-Hr. Concentration               | 7.5   | 7.4   | 7.4   | 5.8   | 6.4   | 5.9   | 4.8   | 6.5   | 5.8   | 4.9   | 4.1   | 4.6   | 4.2   | 3.1   | 1.9   | 1.8   | 2.3   | 1.9   | 1.7   | 1.8   |      |
| Days Above State 8-Hr. Std.            | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |      |
| Days Above Nat. 8-Hr. Std.             | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |      |
| NITROGEN DIOXIDE (ppm)                 | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |      |
| Peak 1-Hr. Indicator                   | 0.108 | 0.094 | 0.119 | 0.119 | 0.120 | 0.104 | 0.099 | 0.089 | 0.091 | 0.091 | 0.085 | 0.081 | 0.078 | 0.081 | 0.058 | 0.052 | 0.063 | 0.058 | 0.057 | 0.057 |      |
| Max. 1-Hr. Concentration               | 0.140 | 0.160 | 0.120 | 0.110 | 0.160 | 0.100 | 0.090 | 0.100 | 0.113 | 0.107 | 0.065 | 0.089 | 0.096 | 0.124 | 0.113 | 0.063 | 0.059 | 0.063 | 0.062 | 0.063 |      |
| Max. Annual Average (Nat)              | 0.017 | 0.016 | 0.027 | 0.022 | 0.024 | 0.022 | 0.022 | 0.022 | 0.021 | 0.019 | 0.019 | 0.021 | 0.022 | 0.018 | 0.010 | 0.011 | 0.011 | 0.013 | 0.012 | 0.008 |      |
| Max. Annual Average (State)            | 0.017 | 0.012 | 0.027 | 0.015 | 0.024 | 0.022 | 0.022 | 0.022 | 0.021 | 0.019 | 0.019 | 0.021 | 0.022 | 0.012 | 0.010 | 0.011 | 0.011 | 0.013 | 0.012 | 0.008 |      |
| SULFUR DIOXIDE (ppm)                   | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |      |
| Peak 1-Hr. Indicator                   | 0.08  | 0.07  | 0.07  | 0.06  | 0.05  | 0.04  | 0.03  | 0.03  | 0.03  | 0.03  | 0.02  | 0.02  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  |      |
| Max. Annual Average                    | 0.01  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |      |
| Max. 24-Hr. Concentration              | 0.04  | 0.02  | 0.01  | 0.01  | 0.01  | 0.01  | 0.02  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.00  | 0.00  | 0.01  | 0.00  | 0.00  | 0.00  |      |

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# South Central Coast Air Basin

## County: Ventura

| OZONE (ppm)                            | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)          | 0.153 | 0.152 | 0.150 | 0.152 | 0.148 | 0.138 | 0.137 | 0.126 | 0.138 | 0.140 | 0.138 | 0.129 | 0.119 | 0.116 | 0.111 | 0.110 | 0.107 | 0.104 | 0.102 | 0.101 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat)  | 0.129 | 0.131 | 0.132 | 0.130 | 0.127 | 0.118 | 0.115 | 0.112 | 0.117 | 0.119 | 0.115 | 0.112 | 0.106 | 0.105 | 0.101 | 0.097 | 0.095 | 0.094 | 0.091 | 0.090 |
| Peak 1-Hour Indicator (State)          | 0.173 | 0.178 | 0.173 | 0.174 | 0.165 | 0.159 | 0.159 | 0.150 | 0.162 | 0.161 | 0.154 | 0.144 | 0.136 | 0.131 | 0.125 | 0.125 | 0.124 | 0.118 | 0.116 | 0.113 |
| 4th High 1-Hr. in 3 Yrs2               | 0.180 | 0.180 | 0.170 | 0.170 | 0.170 | 0.150 | 0.150 | 0.146 | 0.157 | 0.158 | 0.152 | 0.144 | 0.134 | 0.132 | 0.128 | 0.124 | 0.124 | 0.118 | 0.118 | 0.121 |
| Max. 8-Hr. Concentration               | 0.153 | 0.142 | 0.166 | 0.143 | 0.140 | 0.123 | 0.129 | 0.132 | 0.144 | 0.127 | 0.114 | 0.151 | 0.112 | 0.108 | 0.113 | 0.109 | 0.114 | 0.098 | 0.100 | 0.104 |
| Maximum 1-Hr. Concentration            | 0.180 | 0.180 | 0.230 | 0.170 | 0.170 | 0.150 | 0.146 | 0.164 | 0.169 | 0.158 | 0.134 | 0.174 | 0.132 | 0.128 | 0.129 | 0.132 | 0.130 | 0.122 | 0.121 | 0.130 |
| Days Above State 8-Hr. Std.            | 161   | 173   | 154   | 139   | 161   | 122   | 92    | 129   | 128   | 128   | 117   | 78    | 83    | 82    | 81    | 63    | 97    | 78    | 62    | 54    |
| Days Above Nat. 8-Hr. Std.             | 88    | 110   | 94    | 70    | 92    | 57    | 46    | 64    | 67    | 65    | 46    | 30    | 23    | 30    | 24    | 15    | 31    | 17    | 11    | 17    |
| Days Above State 1-Hr. Std.            | 123   | 135   | 116   | 99    | 107   | 68    | 58    | 88    | 90    | 80    | 59    | 41    | 33    | 38    | 34    | 22    | 41    | 22    | 17    | 18    |
| PM <sub>10</sub> (µg/m <sup>3</sup> )  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       | 118   | 92    | 133   | 90    | 84    | 118   | 86    | 94    | 93    | 321   | 111   | 86    | 102   | 77    | 100   | 169   | 69    | 74    | 119   |
| Max. 24-Hr. Concentration (Nat)        |       | 118   | 92    | 133   | 90    | 84    | 118   | 86    | 94    | 93    | 321   | 110   | 84    | 100   | 78    | 97    | 168   | 69    | 76    | 119   |
| Max. Annual Average (State)            |       | 40.3  | 41.6  | 36.1  | 40.0  | 33.0  | 29.1  | 31.6  | 30.9  | 29.3  | 36.5  | 24.4  | 28.8  | 31.2  | 28.8  | 28.6  | 30.0  | 28.8  | 25.6  | 27.9  |
| Max. Annual Average (Nat)              |       | 40.1  | 41.5  | 35.2  | 39.9  | 33.2  | 29.1  | 31.6  | 28.4  | 29.9  | 37.0  | 24.4  | 31.3  | 31.0  | 31.5  | 28.9  | 30.7  | 28.1  | 24.9  | 27.3  |
| Calc Days Above State 24-Hr Std        |       | 102   | 139   | 66    | 99    | 43    | 30    | 24    | 57    | 29    | 47    | 12    | 13    | 39    | 18    | 19    | 31    | 7     | 12    | 24    |
| Calc Days Above Nat 24-Hr Std          |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 6     | 0     | 0     | 0     | 0     | 0     | 6     | 0     | 0     | 0     |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       |       |       |       |       |       |       |       |       |       |       |       | 64.6  | 55.3  | 50.0  | 46.4  | 116.0 | 91.9  | 51.1  | 119.5 |
| Max. 24-Hr. Concentration (Nat)        |       |       |       |       |       |       |       |       |       |       |       |       | 64.6  | 55.3  | 50.0  | 46.4  | 116.0 | 41.2  | 42.4  | 31.7  |
| 98th Percentile of 24-Hr Conc.         |       |       |       |       |       |       |       |       |       |       |       |       | 35.4  | 42.4  | 41.7  | 35.2  | 33.4  | 36.7  | 26.3  | 27.6  |
| Annual Average (State)                 |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 14.9  |       | 12.4  | 12.5  | 11.7  | 10.3  |
| Avg. of Qtrly. Means (Nat)             |       |       |       |       |       |       |       |       |       |       |       |       | 13.7  | 13.5  | 14.9  | 14.6  | 14.2  | 12.5  | 11.2  | 10.3  |
| CARBON MONOXIDE (ppm)                  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 8-Hr. Indicator                   | 5.7   | 5.7   | 4.9   | 4.9   | 4.7   | 4.5   | 3.9   | 3.6   | 4.0   | 4.0   | 3.9   | 3.6   | 3.3   | 3.4   | 3.1   | 2.7   | 2.7   | 2.4   |       |       |
| Max. 1-Hr. Concentration               | 12.0  | 9.0   | 10.0  | 10.0  | 9.0   | 7.0   | 9.0   | 7.7   | 8.9   | 7.8   | 7.4   | 7.2   | 6.8   | 6.2   | 4.4   | 5.7   | 7.2   | 4.2   |       |       |
| Max. 8-Hr. Concentration               | 5.7   | 4.4   | 4.1   | 5.0   | 4.3   | 3.0   | 3.7   | 4.2   | 4.3   | 3.4   | 3.8   | 3.5   | 3.6   | 4.3   | 3.4   | 2.3   | 3.7   | 2.6   |       |       |
| Days Above State 8-Hr. Std.            | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |       |       |
| Days Above Nat. 8-Hr. Std.             | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |       |       |
| NITROGEN DIOXIDE (ppm)                 | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.130 | 0.123 | 0.117 | 0.119 | 0.120 | 0.114 | 0.104 | 0.104 | 0.112 | 0.114 | 0.110 | 0.097 | 0.089 | 0.086 | 0.083 | 0.079 | 0.073 | 0.069 | 0.066 | 0.062 |
| Max. 1-Hr. Concentration               | 0.150 | 0.110 | 0.120 | 0.160 | 0.110 | 0.100 | 0.110 | 0.133 | 0.127 | 0.110 | 0.115 | 0.097 | 0.099 | 0.095 | 0.080 | 0.064 | 0.103 | 0.071 | 0.070 | 0.055 |
| Max. Annual Average (Nat)              | 0.021 | 0.024 | 0.027 | 0.025 | 0.024 | 0.022 | 0.023 | 0.024 | 0.024 | 0.022 | 0.020 | 0.019 | 0.022 | 0.020 | 0.019 | 0.017 | 0.015 | 0.014 | 0.015 | 0.013 |
| Max. Annual Average (State)            | 0.016 | 0.024 | 0.027 | 0.025 | 0.024 | 0.012 | 0.023 | 0.020 | 0.024 | 0.015 | 0.020 | 0.019 | 0.017 | 0.020 | 0.019 | 0.017 | 0.015 | 0.014 | 0.015 | 0.013 |
| SULFUR DIOXIDE (ppm)                   | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.03  | 0.03  | 0.03  | 0.03  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.01  | 0.01  |       |       |
| Max. Annual Average                    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |       |       |
| Max. 24-Hr. Concentration              | 0.01  | 0.02  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.00  | 0.00  | 0.00  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.00  | 0.00  | 0.00  |       |       |

Table A-96

*South Coast Air Basin*

## County: Los Angeles

| OZONE (ppm)                            | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)          | 0.257 | 0.241 | 0.224 | 0.225 | 0.222 | 0.211 | 0.212 | 0.202 | 0.183 | 0.173 | 0.171 | 0.165 | 0.146 | 0.147 | 0.134 | 0.146 | 0.153 | 0.149 | 0.146 | 0.130 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat)  | 0.217 | 0.205 | 0.192 | 0.186 | 0.179 | 0.177 | 0.177 | 0.168 | 0.156 | 0.145 | 0.135 | 0.133 | 0.118 | 0.115 | 0.105 | 0.111 | 0.126 | 0.125 | 0.120 | 0.112 |
| Peak 1-Hour Indicator (State)          | 0.341 | 0.317 | 0.317 | 0.310 | 0.304 | 0.286 | 0.284 | 0.279 | 0.249 | 0.230 | 0.229 | 0.217 | 0.194 | 0.193 | 0.166 | 0.171 | 0.182 | 0.180 | 0.174 | 0.158 |
| 4th High 1-Hr. in 3 Yrs2               | 0.350 | 0.340 | 0.330 | 0.330 | 0.310 | 0.300 | 0.300 | 0.280 | 0.250 | 0.223 | 0.209 | 0.200 | 0.188 | 0.188 | 0.184 | 0.169 | 0.184 | 0.171 | 0.173 | 0.164 |
| Max. 8-Hr. Concentration               | 0.210 | 0.258 | 0.235 | 0.177 | 0.183 | 0.218 | 0.185 | 0.208 | 0.158 | 0.150 | 0.130 | 0.171 | 0.108 | 0.146 | 0.134 | 0.144 | 0.152 | 0.133 | 0.141 | 0.128 |
| Maximum 1-Hr. Concentration            | 0.330 | 0.340 | 0.340 | 0.290 | 0.320 | 0.300 | 0.280 | 0.300 | 0.216 | 0.205 | 0.170 | 0.222 | 0.154 | 0.174 | 0.190 | 0.169 | 0.194 | 0.158 | 0.173 | 0.175 |
| Days Above State 8-Hr. Std.            | 188   | 201   | 192   | 157   | 151   | 172   | 156   | 138   | 132   | 114   | 101   | 71    | 58    | 76    | 79    | 106   | 113   | 102   | 90    | 101   |
| Days Above Nat. 8-Hr. Std.             | 158   | 181   | 150   | 131   | 128   | 139   | 108   | 118   | 92    | 68    | 43    | 46    | 19    | 27    | 35    | 56    | 80    | 59    | 51    | 48    |
| Days Above State 1-Hr. Std.            | 190   | 205   | 192   | 168   | 159   | 174   | 158   | 142   | 127   | 109   | 89    | 68    | 43    | 57    | 70    | 86    | 101   | 80    | 74    | 73    |
| PM <sub>10</sub> (µg/m <sup>3</sup> )  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       | 138   | 172   | 161   | 151   | 222   | 104   | 127   | 157   | 138   | 116   | 87    | 103   | 105   | 106   | 121   | 117   | 83    | 131   | 117   |
| Max. 24-Hr. Concentration (Nat)        |       | 138   | 172   | 161   | 151   | 222   | 104   | 127   | 157   | 138   | 116   | 87    | 103   | 105   | 106   | 121   | 119   | 83    | 131   | 117   |
| Max. Annual Average (State)            |       |       | 63.8  | 54.9  | 54.9  | 48.7  | 47.4  | 45.3  | 48.6  | 45.4  | 46.1  | 37.8  | 56.3  | 40.0  | 44.2  | 37.2  | 43.1  | 38.1  | 43.4  | 32.0  |
| Max. Annual Average (Nat)              |       | 67.9  | 63.8  | 55.0  | 65.9  | 48.8  | 47.4  | 45.3  | 47.7  | 45.5  | 46.1  | 40.6  | 56.3  | 46.3  | 45.3  | 45.8  | 44.4  | 38.1  | 43.5  | 45.0  |
| Calc Days Above State 24-Hr Std        |       |       | 249   | 187   | 183   | 146   | 155   | 145   | 143   | 153   | 149   | 67    | 213   | 92    | 119   | 71    | 118   | 76    | 112   | 47    |
| Calc Days Above Nat 24-Hr Std          |       |       | 6     | 6     | 0     | 11    | 0     | 0     | 6     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       |       |       |       |       |       |       |       |       |       |       |       | 85.6  | 92.5  | 104.0 | 80.2  | 121.2 | 75.6  | 132.6 | 72.2  |
| Max. 24-Hr. Concentration (Nat)        |       |       |       |       |       |       |       |       |       |       |       |       | 85.6  | 92.5  | 94.7  | 72.4  | 121.2 | 75.6  | 132.6 | 72.2  |
| 98th Percentile of 24-Hr Conc.         |       |       |       |       |       |       |       |       |       |       |       |       | 64.2  | 83.0  | 69.4  | 57.9  | 61.3  | 54.3  | 58.2  | 44.4  |
| Annual Average (State)                 |       |       |       |       |       |       |       |       |       |       |       |       |       | 24.0  | 24.8  | 24.0  | 20.3  | 16.6  | 17.8  | 16.6  |
| Avg. of Qtrly. Means (Nat)             |       |       |       |       |       |       |       |       |       |       |       |       | 25.7  | 24.0  | 25.2  | 24.0  | 22.1  | 20.0  | 17.8  | 16.7  |
| CARBON MONOXIDE (ppm)                  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 8-Hr. Indicator                   | 21.7  | 21.9  | 22.5  | 21.9  | 19.0  | 17.7  | 16.5  | 16.7  | 15.6  | 16.1  | 15.5  | 15.4  | 13.7  | 12.6  | 11.2  | 9.4   | 8.7   | 8.3   | 7.1   | 6.4   |
| Max. 1-Hr. Concentration               | 26.0  | 32.0  | 31.0  | 24.0  | 30.0  | 28.0  | 21.0  | 24.9  | 16.8  | 22.5  | 19.2  | 17.0  | 19.0  | 13.5  | 11.7  | 15.8  | 12.2  | 10.4  | 7.4   | 8.4   |
| Max. 8-Hr. Concentration               | 19.6  | 27.5  | 21.8  | 16.8  | 17.4  | 18.8  | 14.6  | 18.2  | 13.8  | 17.5  | 17.1  | 13.3  | 11.2  | 10.1  | 7.6   | 10.1  | 7.3   | 6.5   | 5.9   | 6.2   |
| Days Above State 8-Hr. Std.            | 50    | 70    | 70    | 49    | 51    | 39    | 29    | 27    | 17    | 26    | 18    | 13    | 11    | 6     | 0     | 1     | 0     | 0     | 0     | 0     |
| Days Above Nat. 8-Hr. Std.             | 40    | 63    | 67    | 41    | 41    | 34    | 19    | 19    | 14    | 19    | 13    | 10    | 7     | 3     | 0     | 1     | 0     | 0     | 0     | 0     |
| NITROGEN DIOXIDE (ppm)                 | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.311 | 0.335 | 0.322 | 0.324 | 0.312 | 0.311 | 0.285 | 0.241 | 0.229 | 0.242 | 0.237 | 0.202 | 0.180 | 0.168 | 0.166 | 0.162 | 0.157 | 0.150 | 0.142 | 0.120 |
| Max. 1-Hr. Concentration               | 0.420 | 0.540 | 0.340 | 0.280 | 0.380 | 0.300 | 0.260 | 0.247 | 0.239 | 0.250 | 0.200 | 0.170 | 0.212 | 0.173 | 0.251 | 0.262 | 0.163 | 0.157 | 0.136 | 0.137 |
| Max. Annual Average (Nat)              | 0.055 | 0.061 | 0.057 | 0.055 | 0.055 | 0.051 | 0.050 | 0.050 | 0.046 | 0.042 | 0.043 | 0.043 | 0.051 | 0.044 | 0.041 | 0.040 | 0.035 | 0.034 | 0.031 | 0.031 |
| Max. Annual Average (State)            | 0.055 | 0.061 | 0.057 | 0.056 | 0.055 | 0.051 | 0.050 | 0.050 | 0.046 | 0.042 | 0.043 | 0.043 | 0.050 | 0.044 | 0.041 | 0.040 | 0.036 | 0.033 | 0.031 | 0.031 |
| SULFUR DIOXIDE (ppm)                   | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.07  | 0.07  | 0.06  | 0.06  | 0.06  | 0.11  | 0.10  | 0.10  | 0.06  | 0.05  | 0.06  | 0.05  | 0.05  | 0.05  | 0.05  | 0.04  | 0.04  | 0.03  | 0.04  | 0.04  |
| Max. Annual Average                    | 0.01  | 0.01  | 0.00  | 0.00  | 0.00  | 0.01  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.01  | 0.01  | 0.00  |
| Max. 24-Hr. Concentration              | 0.02  | 0.04  | 0.02  | 0.04  | 0.02  | 0.03  | 0.01  | 0.01  | 0.02  | 0.01  | 0.01  | 0.01  | 0.02  | 0.02  | 0.02  | 0.02  | 0.01  | 0.02  | 0.01  | 0.01  |

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A portion of Los Angeles County lies within the Mojave Desert Air Basin.

# South Coast Air Basin

## County: Orange

| OZONE (ppm)                            | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)          | 0.183 | 0.171 | 0.167 | 0.162 | 0.152 | 0.145 | 0.139 | 0.141 | 0.125 | 0.116 | 0.105 | 0.105 | 0.097 | 0.098 | 0.098 | 0.095 | 0.100 | 0.101 | 0.100 | 0.099 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat)  | 0.152 | 0.142 | 0.141 | 0.138 | 0.127 | 0.120 | 0.114 | 0.117 | 0.107 | 0.100 | 0.088 | 0.088 | 0.084 | 0.084 | 0.077 | 0.080 | 0.086 | 0.087 | 0.086 | 0.084 |
| Peak 1-Hour Indicator (State)          | 0.267 | 0.246 | 0.235 | 0.227 | 0.219 | 0.205 | 0.197 | 0.192 | 0.165 | 0.156 | 0.137 | 0.141 | 0.131 | 0.131 | 0.116 | 0.117 | 0.123 | 0.123 | 0.121 | 0.118 |
| 4th High 1-Hr. in 3 Yrs2               | 0.260 | 0.240 | 0.240 | 0.240 | 0.220 | 0.210 | 0.190 | 0.190 | 0.170 | 0.156 | 0.138 | 0.144 | 0.130 | 0.132 | 0.119 | 0.125 | 0.131 | 0.131 | 0.127 | 0.118 |
| Max. 8-Hr. Concentration               | 0.165 | 0.195 | 0.167 | 0.142 | 0.145 | 0.158 | 0.122 | 0.172 | 0.109 | 0.103 | 0.100 | 0.115 | 0.091 | 0.110 | 0.097 | 0.093 | 0.105 | 0.097 | 0.085 | 0.114 |
| Maximum 1-Hr. Concentration            | 0.240 | 0.290 | 0.260 | 0.210 | 0.250 | 0.220 | 0.190 | 0.252 | 0.160 | 0.150 | 0.134 | 0.182 | 0.116 | 0.137 | 0.125 | 0.136 | 0.165 | 0.120 | 0.125 | 0.146 |
| Days Above State 8-Hr. Std.            | 80    | 88    | 80    | 77    | 66    | 66    | 57    | 44    | 38    | 35    | 17    | 26    | 11    | 17    | 19    | 15    | 37    | 59    | 13    | 25    |
| Days Above Nat. 8-Hr. Std.             | 54    | 50    | 44    | 39    | 36    | 35    | 25    | 15    | 8     | 9     | 3     | 6     | 1     | 6     | 4     | 1     | 10    | 12    | 1     | 7     |
| Days Above State 1-Hr. Std.            | 81    | 96    | 81    | 80    | 71    | 63    | 59    | 46    | 39    | 27    | 13    | 22    | 8     | 14    | 12    | 9     | 19    | 23    | 4     | 17    |
| PM <sub>10</sub> (µg/m <sup>3</sup> )  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       |       | 88    | 158   | 146   | 88    | 115   | 106   | 172   | 101   | 91    | 81    | 122   | 126   | 93    | 78    | 96    | 74    | 65    | 103   |
| Max. 24-Hr. Concentration (Nat)        |       |       | 88    | 158   | 146   | 88    | 115   | 106   | 172   | 101   | 91    | 81    | 122   | 126   | 93    | 80    | 96    | 74    | 65    | 104   |
| Max. Annual Average (State)            |       |       | 41.7  |       | 45.5  | 34.4  | 38.3  | 37.5  | 43.3  | 35.2  | 38.8  | 35.8  | 36.7  | 39.9  | 26.4  | 33.5  | 32.8  | 34.0  | 28.1  |       |
| Max. Annual Average (Nat)              |       |       | 41.7  | 48.1  | 45.9  | 40.0  | 38.3  | 37.5  | 43.5  | 35.2  | 38.8  | 35.8  | 36.7  | 39.6  | 26.5  | 33.5  | 32.8  | 33.9  | 28.2  | 33.3  |
| Calc Days Above State 24-Hr Std        |       |       | 122   |       | 89    | 31    | 78    | 67    | 86    | 37    | 66    | 72    | 37    | 48    | 18    | 30    | 38    | 42    | 18    |       |
| Calc Days Above Nat 24-Hr Std          |       |       | 0     | 6     | 0     | 0     | 0     | 0     | 7     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       |       |       |       |       |       |       |       |       |       |       |       | 68.6  | 113.9 | 70.8  | 68.6  | 115.5 | 58.9  | 54.7  | 56.2  |
| Max. 24-Hr. Concentration (Nat)        |       |       |       |       |       |       |       |       |       |       |       |       | 68.6  | 113.9 | 70.8  | 68.6  | 115.5 | 58.9  | 54.7  | 56.2  |
| 98th Percentile of 24-Hr Conc.         |       |       |       |       |       |       |       |       |       |       |       |       | 63.7  | 66.3  | 60.2  | 48.1  | 51.8  | 48.2  | 41.8  | 40.5  |
| Annual Average (State)                 |       |       |       |       |       |       |       |       |       |       |       |       |       | 14.7  |       | 18.6  |       |       | 10.6  |       |
| Avg. of Qtrly. Means (Nat)             |       |       |       |       |       |       |       |       |       |       |       |       |       | 20.3  | 18.5  | 18.6  | 17.3  | 17.0  | 14.7  | 14.0  |
| CARBON MONOXIDE (ppm)                  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 8-Hr. Indicator                   | 11.3  | 10.9  | 11.5  | 11.5  | 10.8  | 9.4   | 8.8   | 8.7   | 8.2   | 8.5   | 7.3   | 6.7   | 6.4   | 6.7   | 6.6   | 5.8   | 4.6   | 4.4   | 4.1   | 3.5   |
| Max. 1-Hr. Concentration               | 21.0  | 20.0  | 24.0  | 19.0  | 21.0  | 21.0  | 15.0  | 16.1  | 12.7  | 12.9  | 11.9  | 15.0  | 11.4  | 13.8  | 10.7  | 10.2  | 8.4   | 7.4   | 6.8   | 6.0   |
| Max. 8-Hr. Concentration               | 10.6  | 12.0  | 12.1  | 11.7  | 8.6   | 9.4   | 7.7   | 8.6   | 8.0   | 7.4   | 6.0   | 7.1   | 6.4   | 6.7   | 4.7   | 5.3   | 5.9   | 4.1   | 3.3   | 3.0   |
| Days Above State 8-Hr. Std.            | 3     | 9     | 13    | 6     | 0     | 3     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above Nat. 8-Hr. Std.             | 2     | 7     | 12    | 5     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| NITROGEN DIOXIDE (ppm)                 | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.240 | 0.238 | 0.241 | 0.235 | 0.231 | 0.221 | 0.220 | 0.201 | 0.196 | 0.188 | 0.171 | 0.141 | 0.143 | 0.149 | 0.150 | 0.124 | 0.129 | 0.119 | 0.115 | 0.096 |
| Max. 1-Hr. Concentration               | 0.220 | 0.280 | 0.280 | 0.220 | 0.200 | 0.210 | 0.200 | 0.230 | 0.192 | 0.160 | 0.145 | 0.135 | 0.165 | 0.139 | 0.130 | 0.116 | 0.158 | 0.122 | 0.090 | 0.114 |
| Max. Annual Average (Nat)              | 0.042 | 0.046 | 0.047 | 0.047 | 0.045 | 0.039 | 0.039 | 0.041 | 0.039 | 0.035 | 0.033 | 0.034 | 0.035 | 0.029 | 0.027 | 0.025 | 0.028 | 0.025 | 0.025 | 0.022 |
| Max. Annual Average (State)            | 0.042 | 0.046 | 0.047 | 0.047 | 0.045 | 0.039 | 0.039 | 0.041 | 0.039 | 0.035 | 0.033 | 0.034 | 0.035 | 0.029 | 0.027 | 0.024 | 0.027 | 0.025 | 0.024 | 0.022 |
| SULFUR DIOXIDE (ppm)                   | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.05  | 0.05  | 0.04  | 0.04  | 0.04  | 0.03  | 0.03  | 0.02  | 0.02  | 0.01  | 0.02  | 0.01  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  |
| Max. Annual Average                    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Max. 24-Hr. Concentration              | 0.02  | 0.02  | 0.02  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.00  | 0.01  | 0.01  | 0.00  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.00  |

Table A-98

*South Coast Air Basin***County: Riverside**

| OZONE (ppm)                            | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)          | 0.222 | 0.216 | 0.217 | 0.209 | 0.207 | 0.204 | 0.198 | 0.178 | 0.170 | 0.157 | 0.153 | 0.158 | 0.149 | 0.147 | 0.136 | 0.131 | 0.137 | 0.137 | 0.139 | 0.131 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat)  | 0.191 | 0.180 | 0.180 | 0.177 | 0.175 | 0.169 | 0.165 | 0.157 | 0.149 | 0.140 | 0.129 | 0.127 | 0.124 | 0.114 | 0.111 | 0.113 | 0.118 | 0.117 | 0.119 | 0.112 |
| Peak 1-Hour Indicator (State)          | 0.298 | 0.276 | 0.269 | 0.263 | 0.261 | 0.251 | 0.240 | 0.225 | 0.208 | 0.193 | 0.187 | 0.188 | 0.176 | 0.171 | 0.153 | 0.155 | 0.159 | 0.155 | 0.156 | 0.145 |
| 4th High 1-Hr. in 3 Yrs2               | 0.290 | 0.270 | 0.270 | 0.270 | 0.270 | 0.250 | 0.240 | 0.240 | 0.220 | 0.200 | 0.187 | 0.187 | 0.170 | 0.166 | 0.149 | 0.149 | 0.157 | 0.157 | 0.157 | 0.141 |
| Max. 8-Hr. Concentration               | 0.186 | 0.241 | 0.213 | 0.181 | 0.196 | 0.193 | 0.195 | 0.208 | 0.161 | 0.162 | 0.148 | 0.169 | 0.123 | 0.126 | 0.135 | 0.130 | 0.146 | 0.116 | 0.132 | 0.122 |
| Maximum 1-Hr. Concentration            | 0.290 | 0.280 | 0.270 | 0.290 | 0.240 | 0.260 | 0.260 | 0.253 | 0.213 | 0.203 | 0.187 | 0.195 | 0.144 | 0.164 | 0.152 | 0.160 | 0.169 | 0.156 | 0.149 | 0.169 |
| Days Above State 8-Hr. Std.            | 178   | 198   | 190   | 163   | 166   | 180   | 171   | 163   | 145   | 141   | 160   | 119   | 123   | 129   | 136   | 127   | 129   | 123   | 116   | 114   |
| Days Above Nat. 8-Hr. Std.             | 151   | 152   | 148   | 122   | 132   | 135   | 124   | 127   | 99    | 84    | 106   | 65    | 56    | 70    | 73    | 67    | 85    | 62    | 54    | 65    |
| Days Above State 1-Hr. Std.            | 175   | 191   | 182   | 150   | 155   | 159   | 157   | 144   | 134   | 107   | 128   | 80    | 83    | 93    | 97    | 93    | 102   | 84    | 73    | 87    |
| PM <sub>10</sub> (µg/m <sup>3</sup> )  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       | 252   | 252   | 250   | 179   | 126   | 231   | 161   | 219   | 162   | 163   | 116   | 153   | 139   | 219   | 126   | 159   | 133   | 119   | 120   |
| Max. 24-Hr. Concentration (Nat)        |       | 252   | 252   | 250   | 179   | 126   | 231   | 161   | 219   | 162   | 163   | 116   | 153   | 139   | 219   | 130   | 164   | 137   | 123   | 125   |
| Max. Annual Average (State)            |       |       | 94.0  | 78.2  | 76.0  | 62.0  | 72.5  | 65.5  | 68.8  | 61.5  | 65.3  |       | 72.2  | 60.1  | 62.9  | 56.2  | 55.1  | 53.5  | 50.4  | 62.3  |
| Max. Annual Average (Nat)              |       | 103.7 | 93.0  | 78.2  | 76.1  | 62.6  | 72.5  | 65.5  | 68.8  | 62.8  | 65.6  | 58.7  | 72.2  | 59.1  | 63.3  | 58.1  | 55.6  | 54.8  | 51.8  | 64.0  |
| Calc Days Above State 24-Hr Std        |       |       | 305   | 275   | 250   | 233   | 251   | 244   | 226   | 251   | 257   |       | 261   | 248   | 240   | 228   | 201   | 210   | 198   | 241   |
| Calc Days Above Nat 24-Hr Std          |       |       | 34    | 18    | 12    | 0     | 18    | 6     | 25    | 6     | 6     | 0     | 0     | 0     | 6     | 0     | 6     | 0     | 0     | 0     |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       |       |       |       |       |       |       |       |       |       |       |       | 111.2 | 119.6 | 98.0  | 77.6  | 104.3 | 93.8  | 98.7  | 68.4  |
| Max. 24-Hr. Concentration (Nat)        |       |       |       |       |       |       |       |       |       |       |       |       | 111.2 | 119.6 | 98.0  | 77.6  | 104.3 | 93.8  | 98.7  | 68.4  |
| 98th Percentile of 24-Hr Conc.         |       |       |       |       |       |       |       |       |       |       |       |       | 75.4  | 77.1  | 74.3  | 66.3  | 76.6  | 59.5  | 58.3  | 54.4  |
| Annual Average (State)                 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 24.8  |       | 21.0  |       |
| Avg. of Qtrly. Means (Nat)             |       |       |       |       |       |       |       |       |       |       |       |       | 30.2  | 28.3  | 31.0  | 27.5  | 24.8  | 22.1  | 20.9  | 20.8  |
| CARBON MONOXIDE (ppm)                  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 8-Hr. Indicator                   | 8.7   | 8.7   | 8.5   | 8.1   | 8.0   | 6.9   | 6.6   | 6.3   | 6.2   | 6.2   | 5.9   | 5.3   | 4.7   | 4.7   | 4.4   | 4.7   | 3.9   | 3.3   | 3.2   | 2.9   |
| Max. 1-Hr. Concentration               | 13.0  | 17.0  | 14.0  | 15.0  | 14.0  | 11.0  | 10.0  | 11.0  | 9.0   | 9.1   | 10.7  | 6.4   | 7.4   | 8.8   | 5.8   | 6.5   | 4.6   | 4.3   | 4.0   | 3.8   |
| Max. 8-Hr. Concentration               | 7.6   | 10.0  | 10.3  | 7.3   | 7.4   | 6.1   | 7.1   | 7.3   | 6.3   | 5.3   | 5.6   | 4.8   | 4.4   | 4.2   | 4.5   | 3.8   | 3.7   | 3.0   | 2.5   | 2.4   |
| Days Above State 8-Hr. Std.            | 0     | 1     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above Nat. 8-Hr. Std.             | 0     | 1     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| NITROGEN DIOXIDE (ppm)                 | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.163 | 0.170 | 0.176 | 0.174 | 0.172 | 0.168 | 0.159 | 0.138 | 0.134 | 0.133 | 0.127 | 0.167 | 0.185 | 0.213 | 0.216 | 0.200 | 0.161 | 0.109 | 0.090 | 0.082 |
| Max. 1-Hr. Concentration               | 0.210 | 0.190 | 0.160 | 0.160 | 0.210 | 0.230 | 0.140 | 0.181 | 0.147 | 0.110 | 0.200 | 0.255 | 0.307 | 0.214 | 0.237 | 0.149 | 0.099 | 0.092 | 0.077 | 0.107 |
| Max. Annual Average (Nat)              | 0.027 | 0.037 | 0.036 | 0.034 | 0.035 | 0.030 | 0.030 | 0.031 | 0.030 | 0.029 | 0.026 | 0.022 | 0.025 | 0.022 | 0.024 | 0.023 | 0.021 | 0.017 | 0.022 | 0.020 |
| Max. Annual Average (State)            | 0.027 |       | 0.036 | 0.034 | 0.035 | 0.030 |       | 0.031 | 0.030 | 0.029 | 0.026 | 0.017 | 0.025 | 0.022 | 0.024 | 0.017 | 0.021 | 0.017 | 0.022 | 0.020 |
| SULFUR DIOXIDE (ppm)                   | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.01  | 0.01  | 0.02  | 0.02  | 0.03  | 0.03  | 0.03  | 0.02  | 0.02  | 0.02  | 0.02  |
| Max. Annual Average                    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Max. 24-Hr. Concentration              | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.00  | 0.00  | 0.00  | 0.00  | 0.01  | 0.01  | 0.04  | 0.01  | 0.00  | 0.01  | 0.02  | 0.01  | 0.00  |

Table A-99

Portions of Riverside County lie within the Mojave Desert and Salton Sea Air Basins.

# South Coast Air Basin

County: San Bernardino

| OZONE (ppm)                            | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak 8-Hour Indicator (State)          | 0.241 | 0.223 | 0.215 | 0.214 | 0.209 | 0.209 | 0.209 | 0.195 | 0.196 | 0.183 | 0.177 | 0.190 | 0.187 | 0.186 | 0.151 | 0.151 | 0.151 | 0.150 | 0.152 | 0.141 |
| Avg. of 4th High 8-Hr. in 3 Yrs (Nat)  | 0.200 | 0.195 | 0.188 | 0.185 | 0.182 | 0.180 | 0.177 | 0.171 | 0.165 | 0.161 | 0.148 | 0.154 | 0.147 | 0.146 | 0.129 | 0.128 | 0.131 | 0.127 | 0.127 | 0.121 |
| Peak 1-Hour Indicator (State)          | 0.303 | 0.285 | 0.277 | 0.272 | 0.267 | 0.266 | 0.252 | 0.254 | 0.234 | 0.234 | 0.223 | 0.222 | 0.209 | 0.211 | 0.171 | 0.172 | 0.181 | 0.171 | 0.171 | 0.155 |
| 4th High 1-Hr. in 3 Yrs2               | 0.320 | 0.290 | 0.280 | 0.280 | 0.270 | 0.270 | 0.250 | 0.250 | 0.234 | 0.231 | 0.215 | 0.217 | 0.211 | 0.211 | 0.170 | 0.169 | 0.167 | 0.163 | 0.163 | 0.163 |
| Max. 8-Hr. Concentration               | 0.198 | 0.250 | 0.252 | 0.193 | 0.203 | 0.211 | 0.185 | 0.192 | 0.203 | 0.173 | 0.143 | 0.206 | 0.142 | 0.149 | 0.144 | 0.139 | 0.153 | 0.145 | 0.145 | 0.142 |
| Maximum 1-Hr. Concentration            | 0.290 | 0.350 | 0.320 | 0.330 | 0.290 | 0.280 | 0.270 | 0.265 | 0.256 | 0.239 | 0.205 | 0.244 | 0.174 | 0.184 | 0.184 | 0.161 | 0.176 | 0.163 | 0.182 | 0.166 |
| Days Above State 8-Hr. Std.            | 182   | 190   | 201   | 177   | 170   | 192   | 192   | 173   | 148   | 147   | 145   | 124   | 130   | 123   | 135   | 132   | 132   | 138   | 119   | 112   |
| Days Above Nat. 8-Hr. Std.             | 163   | 174   | 169   | 145   | 143   | 164   | 157   | 142   | 110   | 110   | 93    | 88    | 87    | 75    | 79    | 85    | 86    | 73    | 71    | 68    |
| Days Above State 1-Hr. Std.            | 179   | 193   | 192   | 161   | 160   | 176   | 170   | 158   | 135   | 132   | 122   | 100   | 98    | 101   | 99    | 94    | 106   | 88    | 87    | 87    |
| PM <sub>10</sub> (µg/m <sup>3</sup> )  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       | 287   | 271   | 475   | 163   | 649   | 143   | 147   | 178   | 136   | 208   | 114   | 183   | 124   | 166   | 98    | 145   | 114   | 104   | 135   |
| Max. 24-Hr. Concentration (Nat)        |       | 287   | 271   | 475   | 163   | 649   | 143   | 210   | 178   | 136   | 208   | 114   | 183   | 124   | 166   | 102   | 149   | 118   | 108   | 142   |
| Max. Annual Average (State)            |       |       | 79.7  | 77.3  | 68.5  | 79.0  | 58.2  | 60.0  | 60.8  | 54.9  | 53.6  | 50.2  | 60.1  | 52.6  | 52.4  | 48.2  | 43.2  | 46.9  | 48.4  | 51.1  |
| Max. Annual Average (Nat)              |       | 80.6  | 79.7  | 77.3  | 68.5  | 79.0  | 58.3  | 59.9  | 60.8  | 54.9  | 53.6  | 50.2  | 65.8  | 52.6  | 52.2  | 50.1  | 44.9  | 48.6  | 50.4  | 53.7  |
| Calc Days Above State 24-Hr Std        |       |       | 293   | 265   | 250   | 243   | 231   | 232   | 209   | 211   | 174   | 171   | 223   | 195   | 208   | 194   | 129   | 158   | 166   | 176   |
| Calc Days Above Nat 24-Hr Std          |       |       | 18    | 19    | 6     | 12    | 0     | 3     | 21    | 0     | 6     | 0     | 6     | 0     | 6     | 0     | 0     | 0     | 0     | 0     |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Max. 24-Hr. Concentration (State)      |       |       |       |       |       |       |       |       |       |       |       |       | 121.4 | 89.8  | 78.5  | 82.1  | 98.1  | 93.4  | 106.2 | 55.0  |
| Max. 24-Hr. Concentration (Nat)        |       |       |       |       |       |       |       |       |       |       |       |       | 121.4 | 89.8  | 78.5  | 82.1  | 98.1  | 93.4  | 106.2 | 55.0  |
| 98th Percentile of 24-Hr Conc.         |       |       |       |       |       |       |       |       |       |       |       |       | 85.6  | 70.3  | 69.5  | 66.3  | 66.9  | 72.4  | 49.5  | 49.0  |
| Annual Average (State)                 |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 25.0  | 25.8  | 23.8  |       |       |       |
| Avg. of Qtrly. Means (Nat)             |       |       |       |       |       |       |       |       |       |       |       |       | 25.7  | 25.9  | 26.5  | 25.8  | 23.8  | 21.9  | 18.8  | 18.4  |
| CARBON MONOXIDE (ppm)                  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 8-Hr. Indicator                   | 7.1   | 7.5   | 7.8   | 7.7   | 7.4   | 6.7   | 6.1   | 5.5   | 6.4   | 6.3   | 6.1   | 5.1   | 4.9   | 4.9   | 4.1   | 3.5   | 3.6   | 3.5   | 3.2   | 2.6   |
| Max. 1-Hr. Concentration               | 11.0  | 9.0   | 11.0  | 9.0   | 8.0   | 7.0   | 7.0   | 7.6   | 7.7   | 5.8   | 7.6   | 6.3   | 5.5   | 4.8   | 4.1   | 4.5   | 5.1   | 4.1   | 3.8   | 2.8   |
| Max. 8-Hr. Concentration               | 6.7   | 7.6   | 8.1   | 6.6   | 7.0   | 5.9   | 6.0   | 6.4   | 6.3   | 4.5   | 5.9   | 4.7   | 4.1   | 4.1   | 3.3   | 3.2   | 4.5   | 3.2   | 2.5   | 2.2   |
| Days Above State 8-Hr. Std.            | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Days Above Nat. 8-Hr. Std.             | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| NITROGEN DIOXIDE (ppm)                 | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.183 | 0.193 | 0.195 | 0.192 | 0.187 | 0.174 | 0.167 | 0.160 | 0.178 | 0.180 | 0.178 | 0.143 | 0.139 | 0.137 | 0.131 | 0.123 | 0.125 | 0.118 | 0.117 | 0.107 |
| Max. 1-Hr. Concentration               | 0.200 | 0.210 | 0.200 | 0.200 | 0.210 | 0.140 | 0.160 | 0.177 | 0.199 | 0.163 | 0.153 | 0.154 | 0.149 | 0.143 | 0.129 | 0.122 | 0.117 | 0.118 | 0.102 | 0.100 |
| Max. Annual Average (Nat)              | 0.047 | 0.047 | 0.045 | 0.041 | 0.043 | 0.040 | 0.042 | 0.041 | 0.046 | 0.038 | 0.036 | 0.036 | 0.039 | 0.038 | 0.037 | 0.036 | 0.034 | 0.031 | 0.031 | 0.031 |
| Max. Annual Average (State)            | 0.047 | 0.047 | 0.045 | 0.041 | 0.043 | 0.040 | 0.042 | 0.041 | 0.046 | 0.038 | 0.036 | 0.036 | 0.039 | 0.038 | 0.037 | 0.036 | 0.034 | 0.031 | 0.031 | 0.031 |
| SULFUR DIOXIDE (ppm)                   | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Peak 1-Hr. Indicator                   | 0.05  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.01  | 0.01  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  |
| Max. Annual Average                    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Max. 24-Hr. Concentration              | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.00  | 0.01  | 0.01  | 0.01  | 0.00  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.00  | 0.00  | 0.00  | 0.00  |

Table A-100

A portion of San Bernardino County lies within the Mojave Desert Air Basin.

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# APPENDIX B

**Air Quality Trend Data by Pollutant:**

**Ozone, PM<sub>10</sub>, PM<sub>2.5</sub>, CO, NO<sub>2</sub>, NO<sub>x</sub>, SO<sub>2</sub>**

**Appendix B: Air Quality Trend Data by Pollutant: Ozone, PM<sub>10</sub>, PM<sub>2.5</sub>, CO, NO<sub>2</sub>, NO<sub>x</sub>, SO<sub>2</sub>**

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## *Introduction*

This appendix contains air quality trend data for each of California's 15 air basins, organized by pollutant. The seven pollutants included are ozone, particulate matter (PM<sub>10</sub> & PM<sub>2.5</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), oxides of nitrogen (NO<sub>x</sub>), and sulfur dioxide (SO<sub>2</sub>). The statistics are the same as those presented in Chapter 4, and the time period covered is 1987 through 2006 for ozone, CO, NO<sub>2</sub>, NO<sub>x</sub>, and SO<sub>2</sub>, 1988 through 2006 for PM<sub>10</sub>, and 1999 to 2006 for PM<sub>2.5</sub>.

Air quality statistics can fluctuate from year-to-year because of the influence of meteorology and/or changes in emissions. However, the statistics can also vary because of a change in monitoring site. The peak and maximum value statistics listed here reflect the highest value for the statistic at any site in the area. As a result, the statistic may not reflect the same site during the entire trend period. For example, the maximum 8-hour carbon monoxide concentrations in Imperial County in the Salton Sea Air Basin were below the levels of the State and national standards from 1984 through 1993. In 1994, however, the concentrations show a significant increase, and both the State and national standards were violated. The CO concentrations in the Salton Sea Air Basin did not suddenly increase during 1994. Instead, monitoring began at a new site in Calexico, and the concentrations at the new site were higher than at the existing sites in the air basin. Information about the time periods for which air quality data are available for different pollutants at sites in California and Baja, Mexico is available on the web at [www.arb.ca.gov/aqd/netrpt/netrpt.htm](http://www.arb.ca.gov/aqd/netrpt/netrpt.htm).

Since the peak and maximum air quality statistics reflect the highest values in the area, the monitoring sites represented also may not be consistent among the various statistics during a particular year. For

example, the monitoring site reflected in the maximum 1-hour ozone concentration may not be the same as the monitoring site reflected in the maximum 8-hour ozone concentration.

In contrast to the peak and maximum statistics, the counts of days above a standard reflect composite, basinwide values (in other words, a count of the total number of days an exceedance occurred at any site in the air basin). The exception is PM<sub>10</sub>, these data reflect the estimated number of exceedances at the one site with the highest total in the air basin.

This year, we have added a table of population-weighted exposure to concentrations above the State 1-hour ozone standard to this appendix. The next section provides additional information on the exposure indicator.

## *Population-Weighted Exposure Over the State Ozone Standard*

In contrast to the peak indicator, which provides an indication of the potential for acute adverse health impacts, the population-weighted exposure provides an indication of the potential for chronic adverse health impacts. For the purposes of computing the exposures in this almanac, individuals are presumed to have been exposed to concentrations measured by the ambient (outdoor) air quality monitoring network. However, daily activity patterns (for example, being inside a building or exercising outdoors) may diminish or increase exposures to some outdoor concentrations that exceed the State standard. While many indicators characterize air quality at an individual monitoring location, the exposure indicator provides an integrated regional perspective. For each day, the calculations simultaneously consider daily ozone data from all of the monitors in a region. People living in areas where the daily maximum 8-hour ozone concentration exceeds the standard are then included in the population-weighted exposure for that day. These daily population-weighted exposures are then aggregated into an annual population-weighted exposure for each year and each basin.

The following example shows a simple 8-hour ozone exposure calculation. A daily maximum 8-hour ozone concentration of 0.090 ppm represents an exposure of 0.160 ppm-hours above the State 8-hour ozone standard of 0.070 ppm:

$$(0.090 \text{ ppm} - 0.070 \text{ ppm}) \times 8 \text{ hours} = 0.160 \text{ ppm-hours}$$

Additionally, when the daily maximum 8-hour ozone concentration is equal to or below the level of the State 8-hour standard of 0.070 ppm, the exposure is zero. The population associated with these “zero” exposures are not included in the exposure calculations in this almanac because including population with the zero exposures dilutes the real impact of the ozone concentrations that are above the State standard and are, therefore, adversely affecting public health.

The 1-hour ozone exposures are calculated in a similar way using the hourly ozone data instead of using the daily maximum 8-hour ozone data. For example, a measured hourly ozone concentration of 0.110 ppm for one hour represents an exposure of 0.020 ppm-hours above the State 1-hour ozone standard of 0.090 ppm:

$$(0.110 \text{ ppm} - 0.090 \text{ ppm}) \times 1 \text{ hour} = 0.020 \text{ ppm-hours}$$

In contrast to this example, when the hourly ozone concentration is equal to or below the level of the State 1-hour standard of 0.090 ppm, the exposure is zero. Similarly, the population associated with these “zero” exposures are not included in the exposure calculations.

The calculations for the exposure indicators are based on all concentrations measured in the area that satisfies the specified data requirements. The population is based on census tract data, and the calculation is performed at the census tract level and then aggregated to the regional level. Exposures for the years 1986 through 1999 use census information for 1990, while exposures for the years 2000 through 2006 use census information for the year of 2000. General details about these computational procedures can be found in the ARB publication entitled: *“Guidance for Using Air Quality-Related Indicators in Reporting Progress in Attaining the State Ambient Air Quality Standards”* (September 1993).

Page B-26 of the appendix provides estimates of 1-hour ozone exposures. Estimates of 8-hour ozone exposures are provided in Chapter 3.

## Ozone

### Peak 1-Hour Indicator (ppm)

| AIR BASIN              | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GREAT BASIN VALLEYS    | 0.100 | 0.100 | 0.100 | 0.099 | 0.097 | 0.115 | 0.110 | 0.108 | 0.097 | 0.100 | 0.097 | 0.097 | 0.089 | 0.089 | 0.106 | 0.106 | 0.097 | 0.093 | 0.092 | 0.091 |
| LAKE COUNTY            | 0.081 | 0.080 | 0.083 | 0.074 | 0.075 | 0.077 | 0.077 | 0.083 | 0.082 | 0.082 | 0.073 | 0.075 | 0.087 | 0.083 | 0.080 | 0.081 | 0.080 | 0.081 | 0.076 | 0.076 |
| LAKE TAHOE             | 0.085 | 0.089 | 0.092 | 0.092 | 0.093 | 0.088 | 0.079 | 0.079 | 0.083 | 0.084 | 0.083 | 0.082 | 0.081 | 0.081 | 0.081 | 0.082 | 0.081 | 0.079 | 0.072 | 0.079 |
| MOJAVE DESERT          | 0.230 | 0.233 | 0.204 | 0.215 | 0.223 | 0.219 | 0.193 | 0.191 | 0.194 | 0.186 | 0.172 | 0.176 | 0.162 | 0.154 | 0.136 | 0.140 | 0.137 | 0.139 | 0.138 | 0.132 |
| MOUNTAIN COUNTIES      | 0.120 | 0.155 | 0.134 | 0.134 | 0.118 | 0.128 | 0.122 | 0.127 | 0.128 | 0.137 | 0.140 | 0.147 | 0.143 | 0.143 | 0.136 | 0.142 | 0.146 | 0.143 | 0.130 | 0.122 |
| NORTH CENTRAL COAST    | 0.145 | 0.137 | 0.132 | 0.115 | 0.113 | 0.113 | 0.112 | 0.107 | 0.106 | 0.112 | 0.111 | 0.112 | 0.102 | 0.106 | 0.101 | 0.103 | 0.103 | 0.102 | 0.097 | 0.095 |
| NORTH COAST            | 0.084 | 0.059 | 0.057 | 0.066 | 0.066 | 0.085 | 0.088 | 0.088 | 0.088 | 0.086 | 0.091 | 0.104 | 0.110 | 0.106 | 0.093 | 0.083 | 0.082 | 0.082 | 0.077 | 0.075 |
| NORTHEAST PLATEAU      | 0.081 | 0.081 | 0.083 | 0.082 | 0.084 | 0.080 | 0.073 | 0.075 | 0.074 | 0.075 | 0.073 | 0.075 | 0.077 | 0.079 | 0.081 | 0.085 | 0.082 | 0.082 | 0.078 | 0.078 |
| SACRAMENTO VALLEY      | 0.164 | 0.168 | 0.164 | 0.162 | 0.153 | 0.158 | 0.159 | 0.151 | 0.148 | 0.152 | 0.138 | 0.159 | 0.154 | 0.152 | 0.139 | 0.136 | 0.137 | 0.133 | 0.131 | 0.130 |
| SALTON SEA             | 0.184 | 0.182 | 0.180 | 0.181 | 0.175 | 0.168 | 0.159 | 0.162 | 0.164 | 0.157 | 0.155 | 0.153 | 0.149 | 0.149 | 0.153 | 0.142 | 0.136 | 0.132 | 0.131 | 0.131 |
| SAN DIEGO              | 0.179 | 0.179 | 0.187 | 0.181 | 0.171 | 0.162 | 0.152 | 0.151 | 0.149 | 0.142 | 0.132 | 0.133 | 0.133 | 0.131 | 0.118 | 0.117 | 0.116 | 0.111 | 0.110 | 0.111 |
| SAN FRANCISCO BAY AREA | 0.150 | 0.147 | 0.149 | 0.137 | 0.130 | 0.130 | 0.126 | 0.121 | 0.136 | 0.151 | 0.149 | 0.151 | 0.143 | 0.144 | 0.122 | 0.125 | 0.129 | 0.127 | 0.122 | 0.123 |
| SAN JOAQUIN VALLEY     | 0.172 | 0.171 | 0.171 | 0.164 | 0.166 | 0.162 | 0.163 | 0.159 | 0.164 | 0.163 | 0.166 | 0.162 | 0.160 | 0.159 | 0.146 | 0.151 | 0.152 | 0.151 | 0.144 | 0.140 |
| SOUTH CENTRAL COAST    | 0.173 | 0.178 | 0.173 | 0.174 | 0.165 | 0.159 | 0.159 | 0.150 | 0.162 | 0.161 | 0.154 | 0.144 | 0.136 | 0.131 | 0.125 | 0.125 | 0.124 | 0.118 | 0.116 | 0.113 |
| SOUTH COAST            | 0.341 | 0.317 | 0.317 | 0.310 | 0.304 | 0.286 | 0.284 | 0.279 | 0.249 | 0.234 | 0.229 | 0.222 | 0.209 | 0.211 | 0.171 | 0.172 | 0.182 | 0.180 | 0.174 | 0.158 |

Table B-1

### Peak 8-Hour Indicator (ppm)

| AIR BASIN              | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GREAT BASIN VALLEYS    | 0.098 | 0.096 | 0.094 | 0.096 | 0.091 | 0.100 | 0.097 | 0.096 | 0.090 | 0.090 | 0.085 | 0.089 | 0.089 | 0.087 | 0.095 | 0.095 | 0.089 | 0.088 | 0.090 | 0.090 |
| LAKE COUNTY            | 0.077 | 0.078 | 0.074 | 0.062 | 0.066 | 0.066 | 0.069 | 0.074 | 0.074 | 0.074 | 0.064 | 0.066 | 0.078 | 0.076 | 0.074 | 0.075 | 0.073 | 0.073 | 0.067 | 0.068 |
| LAKE TAHOE             | 0.080 | 0.083 | 0.084 | 0.085 | 0.086 | 0.083 | 0.072 | 0.076 | 0.078 | 0.079 | 0.077 | 0.077 | 0.077 | 0.077 | 0.075 | 0.075 | 0.075 | 0.075 | 0.071 | 0.074 |
| MOJAVE DESERT          | 0.201 | 0.198 | 0.169 | 0.178 | 0.177 | 0.172 | 0.162 | 0.154 | 0.157 | 0.154 | 0.152 | 0.151 | 0.138 | 0.130 | 0.118 | 0.120 | 0.121 | 0.122 | 0.121 | 0.119 |
| MOUNTAIN COUNTIES      | 0.106 | 0.128 | 0.125 | 0.119 | 0.112 | 0.114 | 0.114 | 0.113 | 0.117 | 0.122 | 0.119 | 0.125 | 0.124 | 0.126 | 0.119 | 0.124 | 0.127 | 0.126 | 0.116 | 0.111 |
| NORTH CENTRAL COAST    | 0.120 | 0.114 | 0.110 | 0.095 | 0.095 | 0.097 | 0.095 | 0.091 | 0.091 | 0.097 | 0.097 | 0.099 | 0.093 | 0.094 | 0.089 | 0.092 | 0.092 | 0.091 | 0.084 | 0.085 |
| NORTH COAST            | 0.073 | 0.055 | 0.051 | 0.064 | 0.064 | 0.070 | 0.074 | 0.072 | 0.075 | 0.074 | 0.082 | 0.091 | 0.097 | 0.093 | 0.081 | 0.071 | 0.071 | 0.070 | 0.065 | 0.067 |
| NORTHEAST PLATEAU      | 0.077 | 0.076 | 0.076 | 0.076 | 0.077 | 0.073 | 0.069 | 0.069 | 0.066 | 0.066 | 0.068 | 0.071 | 0.071 | 0.072 | 0.070 | 0.074 | 0.075 | 0.075 | 0.074 | 0.073 |
| SACRAMENTO VALLEY      | 0.132 | 0.134 | 0.133 | 0.132 | 0.128 | 0.129 | 0.130 | 0.121 | 0.123 | 0.126 | 0.120 | 0.130 | 0.128 | 0.122 | 0.119 | 0.119 | 0.116 | 0.117 | 0.116 | 0.115 |
| SALTON SEA             | 0.155 | 0.146 | 0.148 | 0.146 | 0.146 | 0.140 | 0.136 | 0.132 | 0.130 | 0.128 | 0.126 | 0.128 | 0.118 | 0.116 | 0.114 | 0.123 | 0.125 | 0.121 | 0.120 | 0.119 |
| SAN DIEGO              | 0.144 | 0.138 | 0.142 | 0.146 | 0.141 | 0.135 | 0.128 | 0.124 | 0.126 | 0.122 | 0.117 | 0.119 | 0.117 | 0.116 | 0.104 | 0.106 | 0.104 | 0.101 | 0.097 | 0.099 |
| SAN FRANCISCO BAY AREA | 0.120 | 0.116 | 0.116 | 0.108 | 0.102 | 0.100 | 0.098 | 0.095 | 0.107 | 0.116 | 0.114 | 0.114 | 0.111 | 0.114 | 0.097 | 0.100 | 0.101 | 0.100 | 0.094 | 0.097 |
| SAN JOAQUIN VALLEY     | 0.144 | 0.144 | 0.137 | 0.132 | 0.134 | 0.129 | 0.131 | 0.127 | 0.134 | 0.136 | 0.139 | 0.134 | 0.132 | 0.139 | 0.123 | 0.124 | 0.128 | 0.127 | 0.124 | 0.119 |
| SOUTH CENTRAL COAST    | 0.153 | 0.152 | 0.150 | 0.152 | 0.148 | 0.138 | 0.137 | 0.126 | 0.138 | 0.140 | 0.138 | 0.129 | 0.119 | 0.116 | 0.111 | 0.110 | 0.107 | 0.104 | 0.102 | 0.101 |
| SOUTH COAST            | 0.257 | 0.241 | 0.224 | 0.225 | 0.222 | 0.211 | 0.212 | 0.202 | 0.196 | 0.183 | 0.177 | 0.190 | 0.187 | 0.186 | 0.151 | 0.151 | 0.153 | 0.150 | 0.152 | 0.141 |

Table B-2

## Ozone

### 4<sup>th</sup> Highest 1-Hour Concentration in 3 Years (ppm)

| AIR BASIN              | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GREAT BASIN VALLEYS    | 0.100 | 0.100 | 0.100 | 0.100 | 0.090 | 0.140 | 0.140 | 0.130 | 0.100 | 0.100 | 0.092 | 0.091 | 0.089 | 0.090 | 0.100 | 0.100 | 0.100 | 0.090 | 0.090 | 0.090 |
| LAKE COUNTY            | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.070 | 0.070 |
| LAKE TAHOE             | 0.090 | 0.090 | 0.090 | 0.090 | 0.090 | 0.090 | 0.080 | 0.083 | 0.086 | 0.083 | 0.083 | 0.081 | 0.081 | 0.081 | 0.083 | 0.083 | 0.083 | 0.079 | 0.073 | 0.086 |
| MOJAVE DESERT          | 0.230 | 0.230 | 0.210 | 0.220 | 0.230 | 0.230 | 0.200 | 0.190 | 0.210 | 0.182 | 0.175 | 0.167 | 0.166 | 0.164 | 0.135 | 0.143 | 0.138 | 0.138 | 0.138 | 0.134 |
| MOUNTAIN COUNTIES      | 0.145 | 0.160 | 0.160 | 0.160 | 0.150 | 0.150 | 0.120 | 0.124 | 0.124 | 0.136 | 0.145 | 0.145 | 0.145 | 0.144 | 0.144 | 0.148 | 0.148 | 0.145 | 0.139 | 0.126 |
| NORTH CENTRAL COAST    | 0.146 | 0.140 | 0.140 | 0.120 | 0.110 | 0.110 | 0.110 | 0.110 | 0.104 | 0.114 | 0.114 | 0.114 | 0.109 | 0.107 | 0.100 | 0.104 | 0.106 | 0.104 | 0.095 | 0.095 |
| NORTH COAST            | 0.090 | 0.060 | 0.059 | 0.070 | 0.060 | 0.080 | 0.090 | 0.090 | 0.090 | 0.090 | 0.090 | 0.110 | 0.110 | 0.110 | 0.100 | 0.083 | 0.083 | 0.083 | 0.080 | 0.080 |
| NORTHEAST PLATEAU      | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.070 | 0.070 | 0.070 | 0.070 | 0.070 | 0.078 | 0.077 | 0.081 | 0.082 | 0.082 | 0.087 | 0.081 | 0.077 | 0.076 |
| SACRAMENTO VALLEY      | 0.160 | 0.160 | 0.160 | 0.160 | 0.150 | 0.160 | 0.150 | 0.142 | 0.145 | 0.145 | 0.143 | 0.149 | 0.149 | 0.149 | 0.138 | 0.134 | 0.138 | 0.138 | 0.131 | 0.134 |
| SALTON SEA             | 0.180 | 0.180 | 0.180 | 0.180 | 0.180 | 0.170 | 0.170 | 0.152 | 0.205 | 0.192 | 0.180 | 0.155 | 0.160 | 0.157 | 0.166 | 0.147 | 0.142 | 0.131 | 0.130 | 0.127 |
| SAN DIEGO              | 0.180 | 0.180 | 0.190 | 0.190 | 0.170 | 0.170 | 0.154 | 0.150 | 0.146 | 0.141 | 0.137 | 0.133 | 0.131 | 0.130 | 0.118 | 0.118 | 0.118 | 0.115 | 0.112 | 0.113 |
| SAN FRANCISCO BAY AREA | 0.150 | 0.140 | 0.140 | 0.130 | 0.130 | 0.130 | 0.120 | 0.121 | 0.138 | 0.138 | 0.138 | 0.138 | 0.139 | 0.139 | 0.126 | 0.124 | 0.123 | 0.123 | 0.113 | 0.118 |
| SAN JOAQUIN VALLEY     | 0.170 | 0.170 | 0.180 | 0.170 | 0.160 | 0.160 | 0.160 | 0.160 | 0.164 | 0.165 | 0.164 | 0.161 | 0.161 | 0.161 | 0.146 | 0.151 | 0.151 | 0.151 | 0.149 | 0.135 |
| SOUTH CENTRAL COAST    | 0.180 | 0.180 | 0.179 | 0.171 | 0.170 | 0.150 | 0.150 | 0.146 | 0.157 | 0.158 | 0.152 | 0.144 | 0.134 | 0.132 | 0.128 | 0.124 | 0.124 | 0.118 | 0.118 | 0.127 |
| SOUTH COAST            | 0.350 | 0.340 | 0.330 | 0.330 | 0.310 | 0.300 | 0.300 | 0.280 | 0.250 | 0.231 | 0.215 | 0.217 | 0.211 | 0.211 | 0.184 | 0.169 | 0.184 | 0.171 | 0.173 | 0.164 |

Table B-3

### Average of 4<sup>th</sup> Highest 8-Hour Concentration in 3 Years (ppm)

| AIR BASIN              | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GREAT BASIN VALLEYS    | 0.084 | 0.086 | 0.081 | 0.081 | 0.076 | 0.081 | 0.078 | 0.082 | 0.079 | 0.079 | 0.077 | 0.079 | 0.079 | 0.080 | 0.079 | 0.081 | 0.081 | 0.080 | 0.081 | 0.082 |
| LAKE COUNTY            | 0.065 | 0.065 | 0.058 | 0.054 | 0.055 | 0.055 | 0.057 | 0.059 | 0.061 | 0.060 | 0.058 | 0.057 | 0.061 | 0.062 | 0.064 | 0.064 | 0.064 | 0.065 | 0.061 | 0.061 |
| LAKE TAHOE             | 0.071 | 0.074 | 0.076 | 0.075 | 0.076 | 0.075 |       | 0.061 | 0.070 | 0.071 | 0.068 | 0.069 | 0.069 | 0.069 | 0.067 | 0.066 | 0.066 | 0.062 |       |       |
| MOJAVE DESERT          | 0.163 | 0.165 | 0.153 | 0.151 | 0.151 | 0.147 | 0.139 | 0.138 | 0.133 | 0.131 | 0.124 | 0.127 | 0.118 | 0.110 | 0.102 | 0.106 | 0.106 | 0.107 | 0.105 | 0.103 |
| MOUNTAIN COUNTIES      |       |       | 0.090 | 0.090 | 0.092 | 0.089 | 0.096 | 0.097 | 0.099 | 0.103 | 0.099 | 0.103 | 0.103 | 0.107 | 0.104 | 0.106 | 0.107 | 0.102 | 0.098 | 0.097 |
| NORTH CENTRAL COAST    | 0.082 | 0.079 | 0.090 | 0.084 | 0.083 | 0.084 | 0.083 | 0.081 | 0.081 | 0.085 | 0.084 | 0.086 | 0.082 | 0.082 | 0.079 | 0.081 | 0.081 | 0.081 | 0.076 | 0.075 |
| NORTH COAST            | 0.056 |       | 0.042 | 0.046 | 0.044 | 0.051 | 0.050 | 0.066 | 0.069 | 0.069 | 0.072 | 0.077 | 0.082 | 0.076 | 0.069 | 0.063 | 0.062 | 0.061 | 0.057 | 0.057 |
| NORTHEAST PLATEAU      | 0.069 | 0.069 | 0.069 | 0.067 | 0.059 | 0.057 | 0.051 | 0.058 | 0.057 | 0.059 | 0.058 | 0.061 | 0.062 | 0.063 | 0.053 | 0.055 | 0.057 | 0.065 | 0.064 | 0.064 |
| SACRAMENTO VALLEY      | 0.114 | 0.114 | 0.114 | 0.107 | 0.105 | 0.105 | 0.110 | 0.104 | 0.106 | 0.106 | 0.097 | 0.095 | 0.101 | 0.105 | 0.101 | 0.101 | 0.100 | 0.097 | 0.097 | 0.097 |
| SALTON SEA             | 0.131 | 0.130 | 0.129 | 0.126 | 0.125 | 0.121 | 0.118 | 0.113 | 0.110 | 0.111 | 0.107 | 0.107 | 0.100 | 0.099 | 0.100 | 0.105 | 0.108 | 0.104 | 0.104 | 0.102 |
| SAN DIEGO              | 0.124 | 0.121 | 0.125 | 0.129 | 0.125 | 0.118 | 0.112 | 0.109 | 0.108 | 0.104 | 0.099 | 0.102 | 0.099 | 0.100 | 0.094 | 0.095 | 0.093 | 0.089 | 0.086 | 0.088 |
| SAN FRANCISCO BAY AREA | 0.092 | 0.092 | 0.097 | 0.088 | 0.084 | 0.082 | 0.081 | 0.082 | 0.087 | 0.093 | 0.090 | 0.089 | 0.086 | 0.087 | 0.082 | 0.082 | 0.086 | 0.084 | 0.078 | 0.080 |
| SAN JOAQUIN VALLEY     | 0.118 | 0.121 | 0.116 | 0.112 | 0.118 | 0.115 | 0.112 | 0.111 | 0.119 | 0.119 | 0.115 | 0.115 | 0.113 | 0.111 | 0.109 | 0.115 | 0.115 | 0.116 | 0.113 | 0.110 |
| SOUTH CENTRAL COAST    | 0.129 | 0.131 | 0.132 | 0.130 | 0.127 | 0.118 | 0.115 | 0.112 | 0.117 | 0.119 | 0.115 | 0.112 | 0.106 | 0.105 | 0.101 | 0.097 | 0.095 | 0.094 | 0.091 | 0.090 |
| SOUTH COAST            | 0.217 | 0.205 | 0.192 | 0.186 | 0.182 | 0.180 | 0.177 | 0.171 | 0.165 | 0.161 | 0.148 | 0.154 | 0.147 | 0.146 | 0.129 | 0.128 | 0.131 | 0.127 | 0.127 | 0.121 |

Table B-4

## Ozone

### Maximum 1-Hour Concentration (ppm)

| AIR BASIN              | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GREAT BASIN VALLEYS    | 0.100 | 0.100 | 0.080 | 0.100 | 0.090 | 0.150 | 0.090 | 0.120 | 0.110 | 0.095 | 0.092 | 0.092 | 0.094 | 0.090 | 0.099 | 0.100 | 0.089 | 0.092 | 0.105 | 0.092 |
| LAKE COUNTY            | 0.090 | 0.070 | 0.060 | 0.090 | 0.080 | 0.080 | 0.080 | 0.090 | 0.070 | 0.090 | 0.080 | 0.080 | 0.090 | 0.080 | 0.070 | 0.090 | 0.080 | 0.080 | 0.070 | 0.080 |
| LAKE TAHOE             | 0.090 | 0.090 | 0.100 | 0.090 | 0.090 | 0.100 | 0.090 | 0.086 | 0.092 | 0.083 | 0.095 | 0.081 | 0.095 | 0.083 | 0.088 | 0.083 | 0.086 | 0.066 | 0.073 | 0.086 |
| MOJAVE DESERT          | 0.220 | 0.270 | 0.220 | 0.270 | 0.240 | 0.230 | 0.200 | 0.188 | 0.240 | 0.175 | 0.187 | 0.202 | 0.137 | 0.163 | 0.146 | 0.157 | 0.163 | 0.138 | 0.145 | 0.148 |
| MOUNTAIN COUNTIES      | 0.145 | 0.160 | 0.130 | 0.150 | 0.110 | 0.130 | 0.120 | 0.130 | 0.146 | 0.138 | 0.145 | 0.163 | 0.165 | 0.134 | 0.148 | 0.156 | 0.145 | 0.137 | 0.128 | 0.134 |
| NORTH CENTRAL COAST    | 0.146 | 0.127 | 0.140 | 0.120 | 0.140 | 0.110 | 0.110 | 0.101 | 0.138 | 0.120 | 0.112 | 0.124 | 0.107 | 0.098 | 0.108 | 0.115 | 0.111 | 0.093 | 0.107 | 0.105 |
| NORTH COAST            | 0.090 | 0.090 | 0.050 | 0.070 | 0.060 | 0.090 | 0.090 | 0.100 | 0.100 | 0.080 | 0.100 | 0.130 | 0.100 | 0.090 | 0.090 | 0.092 | 0.090 | 0.090 | 0.088 | 0.081 |
| NORTHEAST PLATEAU      | 0.090 | 0.080 | 0.080 | 0.080 | 0.050 | 0.080 | 0.070 | 0.080 | 0.070 | 0.070 | 0.082 | 0.078 | 0.070 | 0.082 | 0.049 | 0.087 | 0.089 | 0.077 | 0.070 | 0.080 |
| SACRAMENTO VALLEY      | 0.180 | 0.180 | 0.170 | 0.150 | 0.190 | 0.170 | 0.150 | 0.145 | 0.156 | 0.157 | 0.143 | 0.160 | 0.160 | 0.138 | 0.142 | 0.139 | 0.140 | 0.131 | 0.134 | 0.143 |
| SALTON SEA             | 0.170 | 0.200 | 0.190 | 0.170 | 0.180 | 0.170 | 0.210 | 0.180 | 0.232 | 0.180 | 0.160 | 0.236 | 0.171 | 0.169 | 0.167 | 0.156 | 0.144 | 0.125 | 0.139 | 0.129 |
| SAN DIEGO              | 0.290 | 0.250 | 0.250 | 0.200 | 0.210 | 0.170 | 0.187 | 0.147 | 0.162 | 0.138 | 0.136 | 0.164 | 0.124 | 0.124 | 0.141 | 0.121 | 0.125 | 0.129 | 0.113 | 0.121 |
| SAN FRANCISCO BAY AREA | 0.170 | 0.150 | 0.140 | 0.130 | 0.140 | 0.130 | 0.130 | 0.130 | 0.155 | 0.138 | 0.114 | 0.147 | 0.156 | 0.152 | 0.134 | 0.160 | 0.128 | 0.113 | 0.120 | 0.127 |
| SAN JOAQUIN VALLEY     | 0.200 | 0.190 | 0.180 | 0.170 | 0.180 | 0.160 | 0.160 | 0.175 | 0.173 | 0.165 | 0.147 | 0.169 | 0.155 | 0.165 | 0.149 | 0.164 | 0.156 | 0.155 | 0.134 | 0.141 |
| SOUTH CENTRAL COAST    | 0.185 | 0.180 | 0.230 | 0.170 | 0.170 | 0.150 | 0.146 | 0.164 | 0.169 | 0.158 | 0.137 | 0.174 | 0.135 | 0.128 | 0.129 | 0.132 | 0.130 | 0.122 | 0.121 | 0.130 |
| SOUTH COAST            | 0.330 | 0.350 | 0.340 | 0.330 | 0.320 | 0.300 | 0.280 | 0.300 | 0.256 | 0.239 | 0.205 | 0.244 | 0.174 | 0.184 | 0.190 | 0.169 | 0.194 | 0.163 | 0.182 | 0.175 |

Table B-5

### Maximum 8-Hour Concentration (ppm)

| AIR BASIN              | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GREAT BASIN VALLEYS    | 0.091 | 0.098 | 0.077 | 0.091 | 0.073 | 0.103 | 0.077 | 0.092 | 0.101 | 0.090 | 0.080 | 0.085 | 0.089 | 0.080 | 0.095 | 0.088 | 0.084 | 0.083 | 0.101 | 0.088 |
| LAKE COUNTY            | 0.080 | 0.061 | 0.053 | 0.063 | 0.066 | 0.057 | 0.072 | 0.075 | 0.063 | 0.070 | 0.065 | 0.076 | 0.072 | 0.073 | 0.065 | 0.077 | 0.065 | 0.066 | 0.066 | 0.071 |
| LAKE TAHOE             | 0.082 | 0.085 | 0.085 | 0.080 | 0.081 | 0.082 | 0.071 | 0.079 | 0.089 | 0.073 | 0.071 | 0.077 | 0.079 | 0.072 | 0.077 | 0.079 | 0.070 | 0.061 | 0.067 | 0.075 |
| MOJAVE DESERT          | 0.161 | 0.167 | 0.161 | 0.198 | 0.173 | 0.165 | 0.147 | 0.155 | 0.170 | 0.146 | 0.133 | 0.144 | 0.122 | 0.132 | 0.117 | 0.123 | 0.130 | 0.119 | 0.123 | 0.124 |
| MOUNTAIN COUNTIES      | 0.111 | 0.138 | 0.110 | 0.115 | 0.102 | 0.112 | 0.111 | 0.108 | 0.113 | 0.113 | 0.112 | 0.127 | 0.118 | 0.113 | 0.109 | 0.137 | 0.122 | 0.124 | 0.120 | 0.115 |
| NORTH CENTRAL COAST    | 0.113 | 0.096 | 0.100 | 0.095 | 0.108 | 0.090 | 0.087 | 0.092 | 0.102 | 0.101 | 0.091 | 0.097 | 0.085 | 0.084 | 0.088 | 0.094 | 0.088 | 0.083 | 0.085 | 0.088 |
| NORTH COAST            | 0.076 | 0.076 | 0.042 | 0.060 | 0.051 | 0.072 | 0.073 | 0.080 | 0.090 | 0.071 | 0.091 | 0.106 | 0.087 | 0.077 | 0.073 | 0.072 | 0.080 | 0.077 | 0.060 | 0.069 |
| NORTHEAST PLATEAU      | 0.081 | 0.071 | 0.076 | 0.076 | 0.046 | 0.073 | 0.070 | 0.068 | 0.062 | 0.063 | 0.074 | 0.071 | 0.067 | 0.071 | 0.038 | 0.075 | 0.074 | 0.071 | 0.064 | 0.072 |
| SACRAMENTO VALLEY      | 0.127 | 0.130 | 0.133 | 0.127 | 0.140 | 0.122 | 0.120 | 0.121 | 0.128 | 0.126 | 0.107 | 0.137 | 0.129 | 0.108 | 0.108 | 0.120 | 0.118 | 0.101 | 0.117 | 0.114 |
| SALTON SEA             | 0.141 | 0.137 | 0.160 | 0.130 | 0.148 | 0.128 | 0.128 | 0.130 | 0.132 | 0.125 | 0.120 | 0.136 | 0.110 | 0.113 | 0.113 | 0.124 | 0.110 | 0.106 | 0.116 | 0.109 |
| SAN DIEGO              | 0.196 | 0.156 | 0.193 | 0.145 | 0.145 | 0.133 | 0.154 | 0.121 | 0.122 | 0.117 | 0.112 | 0.141 | 0.100 | 0.106 | 0.116 | 0.100 | 0.103 | 0.095 | 0.089 | 0.100 |
| SAN FRANCISCO BAY AREA | 0.116 | 0.101 | 0.102 | 0.105 | 0.108 | 0.101 | 0.112 | 0.097 | 0.115 | 0.112 | 0.084 | 0.111 | 0.122 | 0.114 | 0.102 | 0.106 | 0.101 | 0.084 | 0.090 | 0.105 |
| SAN JOAQUIN VALLEY     | 0.150 | 0.127 | 0.136 | 0.123 | 0.130 | 0.121 | 0.125 | 0.129 | 0.134 | 0.137 | 0.127 | 0.136 | 0.123 | 0.131 | 0.120 | 0.132 | 0.127 | 0.126 | 0.113 | 0.121 |
| SOUTH CENTRAL COAST    | 0.153 | 0.142 | 0.176 | 0.143 | 0.140 | 0.125 | 0.129 | 0.132 | 0.144 | 0.127 | 0.114 | 0.151 | 0.112 | 0.108 | 0.113 | 0.109 | 0.114 | 0.102 | 0.100 | 0.104 |
| SOUTH COAST            | 0.210 | 0.258 | 0.252 | 0.193 | 0.203 | 0.218 | 0.195 | 0.208 | 0.203 | 0.173 | 0.148 | 0.206 | 0.142 | 0.149 | 0.144 | 0.144 | 0.153 | 0.145 | 0.145 | 0.142 |

Table B-6

*Ozone***Days Above National 8-Hour Standard**

| AIR BASIN              | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| GREAT BASIN VALLEYS    | 2    | 6    | 0    | 3    | 0    | 9    | 0    | 6    | 2    | 1    | 0    | 1    | 1    | 0    | 4    | 2    | 0    | 0    | 4    | 2    |
| LAKE COUNTY            | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| LAKE TAHOE             | 0    | 1    | 2    | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| MOJAVE DESERT          | 144  | 142  | 137  | 120  | 122  | 134  | 124  | 129  | 109  | 91   | 78   | 68   | 73   | 72   | 65   | 66   | 74   | 49   | 55   | 50   |
| MOUNTAIN COUNTIES      | 22   | 43   | 38   | 22   | 33   | 47   | 34   | 49   | 47   | 59   | 28   | 54   | 65   | 56   | 44   | 59   | 56   | 32   | 38   | 44   |
| NORTH CENTRAL COAST    | 26   | 6    | 3    | 5    | 3    | 4    | 4    | 1    | 3    | 9    | 1    | 6    | 1    | 0    | 2    | 5    | 2    | 0    | 1    | 2    |
| NORTH COAST            | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 1    | 5    | 2    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| NORTHEAST PLATEAU      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| SACRAMENTO VALLEY      | 73   | 68   | 37   | 44   | 60   | 56   | 22   | 48   | 40   | 44   | 15   | 60   | 43   | 35   | 37   | 34   | 40   | 20   | 25   | 39   |
| SALTON SEA             | 72   | 70   | 90   | 56   | 65   | 75   | 80   | 75   | 79   | 62   | 63   | 40   | 35   | 33   | 54   | 55   | 47   | 37   | 43   | 32   |
| SAN DIEGO              | 99   | 119  | 122  | 96   | 67   | 66   | 58   | 46   | 48   | 31   | 16   | 35   | 17   | 16   | 17   | 13   | 6    | 8    | 5    | 14   |
| SAN FRANCISCO BAY AREA | 29   | 20   | 13   | 7    | 6    | 6    | 5    | 4    | 18   | 14   | 0    | 16   | 9    | 4    | 7    | 7    | 7    | 0    | 1    | 12   |
| SAN JOAQUIN VALLEY     | 148  | 140  | 133  | 104  | 121  | 119  | 103  | 108  | 109  | 114  | 95   | 84   | 117  | 103  | 109  | 125  | 134  | 109  | 72   | 86   |
| SOUTH CENTRAL COAST    | 91   | 113  | 97   | 76   | 94   | 63   | 53   | 65   | 70   | 68   | 46   | 41   | 24   | 30   | 25   | 16   | 35   | 18   | 12   | 22   |
| SOUTH COAST            | 179  | 194  | 181  | 161  | 160  | 173  | 161  | 148  | 120  | 115  | 118  | 93   | 93   | 94   | 92   | 96   | 109  | 88   | 83   | 85   |

Table B-7



# Ozone

## Days Above State 1-Hour Standard

| AIR BASIN              | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| GREAT BASIN VALLEYS    | 4    | 3    | 0    | 2    | 0    | 5    | 0    | 4    | 2    | 1    | 0    | 0    | 0    | 0    | 4    | 2    | 0    | 0    | 1    | 0    |
| LAKE COUNTY            | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| LAKE TAHOE             | 0    | 0    | 2    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 1    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| MOJAVE DESERT          | 158  | 152  | 158  | 136  | 135  | 150  | 135  | 137  | 119  | 108  | 101  | 77   | 83   | 86   | 72   | 75   | 93   | 75   | 66   | 61   |
| MOUNTAIN COUNTIES      | 27   | 51   | 39   | 22   | 23   | 54   | 35   | 57   | 49   | 65   | 29   | 52   | 66   | 51   | 50   | 62   | 56   | 33   | 41   | 50   |
| NORTH CENTRAL COAST    | 37   | 14   | 10   | 11   | 12   | 9    | 12   | 6    | 8    | 16   | 1    | 10   | 3    | 3    | 3    | 8    | 3    | 0    | 2    | 2    |
| NORTH COAST            | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 0    | 2    | 7    | 4    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| NORTHEAST PLATEAU      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| SACRAMENTO VALLEY      | 94   | 98   | 68   | 50   | 68   | 74   | 34   | 60   | 50   | 58   | 25   | 62   | 59   | 41   | 44   | 46   | 51   | 29   | 33   | 44   |
| SALTON SEA             | 85   | 107  | 119  | 83   | 86   | 100  | 113  | 126  | 124  | 98   | 91   | 72   | 88   | 54   | 81   | 68   | 66   | 48   | 54   | 51   |
| SAN DIEGO              | 127  | 160  | 159  | 139  | 106  | 97   | 90   | 79   | 96   | 51   | 43   | 54   | 27   | 24   | 29   | 15   | 24   | 12   | 16   | 23   |
| SAN FRANCISCO BAY AREA | 46   | 41   | 22   | 14   | 23   | 23   | 19   | 13   | 28   | 34   | 8    | 29   | 20   | 12   | 15   | 16   | 19   | 7    | 9    | 18   |
| SAN JOAQUIN VALLEY     | 156  | 156  | 148  | 131  | 133  | 127  | 125  | 118  | 124  | 120  | 110  | 90   | 123  | 114  | 123  | 127  | 137  | 106  | 83   | 90   |
| SOUTH CENTRAL COAST    | 126  | 138  | 117  | 105  | 112  | 75   | 63   | 90   | 95   | 82   | 59   | 54   | 33   | 38   | 34   | 24   | 45   | 23   | 17   | 24   |
| SOUTH COAST            | 196  | 216  | 211  | 185  | 184  | 190  | 185  | 165  | 153  | 141  | 144  | 107  | 111  | 115  | 121  | 116  | 125  | 105  | 99   | 102  |

Table B-8

## Days Above State 8-Hour Standard

| AIR BASIN              | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| GREAT BASIN VALLEYS    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| LAKE COUNTY            |      |      | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| LAKE TAHOE             | 87   | 80   | 67   | 39   | 24   | 13   | 12   | 9    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| MOJAVE DESERT          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| MOUNTAIN COUNTIES      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| NORTH CENTRAL COAST    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| NORTH COAST            | 0    | 0    | 0    | 0    |      | 0    | 0    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| NORTHEAST PLATEAU      | 1    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| SACRAMENTO VALLEY      | 5    | 12   | 22   | 14   | 9    | 0    | 2    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| SALTON SEA             | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 10   | 17   | 11   | 15   | 12   | 13   | 8    | 6    | 4    | 0    | 1    | 0    | 1    |
| SAN DIEGO              | 1    | 5    | 6    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    |
| SAN FRANCISCO BAY AREA | 2    | 4    | 10   | 4    | 5    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| SAN JOAQUIN VALLEY     | 4    | 5    | 24   | 10   | 3    | 0    | 2    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| SOUTH CENTRAL COAST    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| SOUTH COAST            | 50   | 73   | 71   | 50   | 51   | 39   | 29   | 27   | 17   | 26   | 18   | 13   | 11   | 6    | 0    | 1    | 0    | 0    | 0    | 0    |

Table B-9

**PM<sub>10</sub>****Maximum 24-Hour Concentration (State) (ug/m<sup>3</sup>)**

| AIR BASIN              | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003  | 2004 | 2005 | 2006 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|
| GREAT BASIN VALLEYS    |      | 166  | 227  | 866  | 150  | 493  | 981  | 388  | 692  | 309  | 402  | 1022 | 2708 | 9967 | 3643 | 7401 | 15641 | 4797 | 1720 | 7709 |
| LAKE COUNTY            |      |      | 29   | 30   | 31   | 22   | 30   | 21   | 30   | 26   | 18   | 34   | 40   | 21   | 23   | 85   | 32    | 22   | 20   | 33   |
| LAKE TAHOE             |      |      |      |      |      | 52   | 92   | 78   | 71   | 72   | 55   | 50   | 36   | 44   | 50   | 46   | 52    | 41   | 33   |      |
| MOJAVE DESERT          |      | 63   | 191  | 462  | 780  | 80   | 79   | 140  | 143  | 138  | 130  | 159  | 109  | 90   | 112  | 194  | 169   | 83   | 70   | 77   |
| MOUNTAIN COUNTIES      |      | 113  | 144  | 209  | 350  | 120  | 130  | 115  | 118  | 114  | 138  | 92   | 115  | 89   | 277  | 72   | 58    | 124  | 73   | 97   |
| NORTH CENTRAL COAST    |      | 65   | 58   | 56   | 55   | 41   | 102  | 106  | 152  | 115  | 113  | 78   | 106  | 77   | 74   | 81   | 90    | 83   | 69   | 65   |
| NORTH COAST            |      | 101  | 92   | 266  | 78   | 58   | 54   | 77   | 68   | 87   | 66   | 52   | 95   | 53   | 72   | 72   | 71    | 64   | 71   | 154  |
| NORTHEAST PLATEAU      |      |      | 59   | 63   | 60   | 74   | 60   | 101  | 78   | 188  | 97   | 63   | 93   | 74   | 91   | 73   | 31    | 29   | 28   | 44   |
| SACRAMENTO VALLEY      |      | 100  | 147  | 153  | 136  | 111  | 113  | 154  | 145  | 98   | 126  | 130  | 179  | 90   | 112  | 96   | 123   | 171  | 109  | 111  |
| SALTON SEA             |      | 368  | 712  | 520  | 340  | 175  | 175  | 258  | 229  | 359  | 532  | 181  | 238  | 279  | 634  | 361  | 848   | 195  | 220  | 261  |
| SAN DIEGO              |      | 80   | 90   | 115  | 81   | 67   | 159  | 129  | 121  | 93   | 125  | 89   | 119  | 136  | 106  | 131  | 289   | 138  | 154  | 134  |
| SAN FRANCISCO BAY AREA |      | 146  | 147  | 165  | 155  | 112  | 93   | 97   | 74   | 76   | 85   | 100  | 117  | 80   | 114  | 84   | 60    | 65   | 81   | 106  |
| SAN JOAQUIN VALLEY     |      | 206  | 237  | 439  | 279  | 186  | 239  | 192  | 279  | 153  | 199  | 167  | 186  | 153  | 221  | 194  | 150   | 219  | 137  | 255  |
| SOUTH CENTRAL COAST    |      | 132  | 119  | 133  | 96   | 135  | 141  | 139  | 129  | 93   | 321  | 111  | 86   | 102  | 77   | 100  | 169   | 146  | 87   | 135  |
| SOUTH COAST            |      | 287  | 271  | 475  | 179  | 649  | 231  | 161  | 219  | 162  | 208  | 116  | 183  | 139  | 219  | 126  | 159   | 133  | 131  | 135  |

Table B-10 \* Salton Sea PM<sub>10</sub> statistics exclude data from the Calexico - East site because data from this site do not represent widespread exposure.

**Maximum 24-Hour Concentration (National) (ug/m<sup>3</sup>)**

| AIR BASIN              | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000  | 2001 | 2002 | 2003  | 2004 | 2005 | 2006 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|-------|------|------|------|
| GREAT BASIN VALLEYS    |      | 394  | 1861 | 866  | 181  | 526  | 981  | 1381 | 3929 | 2383 | 2229 | 1464 | 2901 | 10466 | 4482 | 7915 | 16619 | 5225 | 3988 | 8299 |
| LAKE COUNTY            |      |      | 29   | 30   | 31   | 22   | 30   | 21   | 30   | 26   | 18   | 35   | 43   | 22    | 21   |      |       |      |      |      |
| LAKE TAHOE             |      |      |      |      |      | 52   | 92   | 78   | 71   | 72   | 55   | 59   | 41   | 50    | 58   | 51   | 87    | 81   | 38   | 67   |
| MOJAVE DESERT          |      | 63   | 191  | 462  | 780  | 80   | 79   | 140  | 235  | 138  | 130  | 165  | 166  | 163   | 172  | 522  | 361   | 199  | 131  | 184  |
| MOUNTAIN COUNTIES      |      | 113  | 144  | 209  | 350  | 120  | 130  | 115  | 118  | 114  | 179  | 114  | 125  | 98    | 312  | 76   | 66    | 133  | 127  | 167  |
| NORTH CENTRAL COAST    |      | 65   | 58   | 57   | 58   | 45   | 102  | 106  | 152  | 115  | 113  | 76   | 103  | 74    | 72   | 77   | 87    | 80   | 66   | 63   |
| NORTH COAST            |      | 101  | 92   | 266  | 78   | 58   | 54   | 77   | 68   | 87   | 66   | 50   | 100  | 51    | 73   | 74   | 68    | 61   | 67   | 161  |
| NORTHEAST PLATEAU      |      |      | 59   | 63   | 60   | 74   | 60   | 101  | 78   | 188  | 97   | 66   | 100  | 80    | 105  | 86   | 33    | 32   | 29   | 50   |
| SACRAMENTO VALLEY      |      | 100  | 147  | 153  | 136  | 111  | 113  | 204  | 287  | 98   | 126  | 130  | 275  | 109   | 123  | 145  | 89    | 169  | 110  | 160  |
| SALTON SEA             |      | 368  | 712  | 520  | 340  | 175  | 175  | 258  | 278  | 359  | 532  | 185  | 227  | 268   | 647  | 373  | 840   | 201  | 211  | 248  |
| SAN DIEGO              |      | 80   | 90   | 115  | 81   | 67   | 159  | 129  | 121  | 93   | 125  | 89   | 121  | 139   | 107  | 130  | 280   | 137  | 155  | 133  |
| SAN FRANCISCO BAY AREA |      | 146  | 150  | 165  | 155  | 112  | 101  | 97   | 75   | 77   | 95   | 92   | 119  | 76    | 109  | 80   | 58    | 63   | 78   | 104  |
| SAN JOAQUIN VALLEY     |      | 206  | 237  | 439  | 279  | 186  | 239  | 192  | 279  | 153  | 228  | 160  | 183  | 145   | 212  | 189  | 150   | 217  | 131  | 304  |
| SOUTH CENTRAL COAST    |      | 132  | 119  | 133  | 96   | 135  | 141  | 139  | 129  | 98   | 321  | 110  | 99   | 111   | 115  | 178  | 168   | 146  | 83   | 131  |
| SOUTH COAST            |      | 287  | 271  | 475  | 179  | 649  | 231  | 210  | 219  | 185  | 208  | 116  | 183  | 139   | 219  | 130  | 164   | 137  | 131  | 142  |

Table B-11 \* Salton Sea PM<sub>10</sub> statistics exclude data from the Calexico - East site because data from this site do not represent widespread exposure.

# PM<sub>10</sub>

## Maximum Annual Average (State) (ug/m<sup>3</sup>)

| AIR BASIN              | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000  | 2001 | 2002  | 2003  | 2004 | 2005 | 2006 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|-------|-------|------|------|------|
| GREAT BASIN VALLEYS    |      |      | 27.1 | 29.4 | 23.2 | 37.0 | 34.2 | 29.8 | 32.3 | 21.5 | 26.4 | 57.8 | 13.6 | 116.8 | 63.1 | 159.3 | 130.4 | 68.3 | 30.1 | 63.1 |
| LAKE COUNTY            |      |      | 12.9 |      |      | 11.9 | 11.3 | 11.0 | 10.8 | 10.2 | 8.6  |      |      | 10.6  | 10.2 | 13.1  | 10.0  | 10.0 | 9.7  | 11.7 |
| LAKE TAHOE             |      |      |      |      |      |      |      | 27.1 | 22.5 |      | 21.6 | 19.8 | 16.9 | 17.3  | 16.9 | 17.1  | 15.0  |      | 14.8 |      |
| MOJAVE DESERT          |      |      | 42.5 |      |      | 39.7 | 35.1 | 27.9 |      | 29.0 | 27.4 | 15.6 | 32.2 | 33.6  | 29.7 | 34.0  | 27.9  | 18.3 | 26.1 | 30.5 |
| MOUNTAIN COUNTIES      |      |      |      |      | 48.4 |      | 18.4 | 33.9 | 24.2 | 21.5 | 28.3 | 25.3 | 25.3 | 19.9  | 29.6 | 25.9  | 21.0  | 17.3 | 18.0 | 17.6 |
| NORTH CENTRAL COAST    |      |      | 24.3 | 23.8 | 24.3 |      | 21.7 | 31.1 | 36.3 | 32.8 | 36.9 |      | 32.3 | 31.2  |      | 28.9  | 31.6  | 28.2 | 24.3 | 25.0 |
| NORTH COAST            |      |      | 31.4 | 28.0 | 25.4 | 21.9 | 23.2 | 24.3 | 26.0 | 24.4 | 23.4 | 22.1 | 24.3 | 23.5  | 25.4 | 22.9  | 22.2  | 20.6 | 18.6 | 21.9 |
| NORTHEAST PLATEAU      |      |      | 24.8 |      |      | 23.6 |      | 22.1 | 16.0 |      |      |      | 16.8 |       |      | 17.5  | 12.8  | 12.8 | 13.3 | 13.4 |
| SACRAMENTO VALLEY      |      |      | 41.9 | 38.5 | 39.2 | 35.2 | 31.2 | 33.3 | 29.9 | 29.9 | 28.8 | 29.9 | 39.4 | 27.9  | 30.5 | 31.8  | 28.8  | 35.2 | 27.9 | 28.8 |
| SALTON SEA             |      |      | 77.9 | 80.3 | 69.1 | 47.5 | 52.6 | 48.3 | 72.0 | 73.6 | 77.7 | 66.6 | 79.0 | 84.8  | 87.1 | 80.9  | 79.7  | 60.3 | 52.7 | 71.6 |
| SAN DIEGO              |      |      | 44.4 | 32.8 | 40.7 | 29.0 | 45.8 | 50.7 | 47.1 | 30.2 | 46.6 | 42.5 | 50.9 | 44.5  | 47.4 | 52.4  | 52.6  | 51.7 | 28.6 | 54.1 |
| SAN FRANCISCO BAY AREA |      |      | 37.7 | 35.1 | 37.9 | 33.9 | 28.8 | 28.3 | 25.7 | 24.8 | 25.8 | 25.8 | 30.0 | 27.8  | 29.7 | 26.4  | 24.8  | 26.0 | 24.2 | 35.0 |
| SAN JOAQUIN VALLEY     |      | 52.7 | 67.0 | 80.1 | 70.0 | 62.4 | 56.3 | 49.6 | 57.9 | 54.1 | 47.3 | 40.5 | 60.1 | 53.9  | 52.3 | 59.9  | 52.3  | 43.6 | 44.5 | 56.5 |
| SOUTH CENTRAL COAST    |      | 40.3 | 41.6 | 36.9 | 40.0 | 33.0 | 29.3 | 31.6 | 30.9 | 29.3 | 36.5 | 26.1 | 29.5 | 31.2  | 28.8 | 28.6  | 30.0  | 31.4 | 25.6 | 27.9 |
| SOUTH COAST            |      |      | 94.0 | 78.2 | 76.0 | 79.0 | 72.5 | 65.5 | 68.8 | 61.5 | 65.3 | 50.2 | 72.2 | 60.1  | 62.9 | 56.2  | 55.1  | 53.5 | 50.4 | 62.3 |

Table B-12 \* Salton Sea PM<sub>10</sub> statistics exclude data from the Calexico - East site because data from this site do not represent widespread exposure.

## Maximum Annual Average of Quarters (National) (ug/m<sup>3</sup>)

| AIR BASIN              | 1987  | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000  | 2001  | 2002  | 2003  | 2004  | 2005 | 2006 |
|------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|------|------|
| GREAT BASIN VALLEYS    |       | 36.1 | 91.0 | 48.3 | 28.6 | 37.3 | 59.4 | 43.6 | 69.9 | 54.2 | 36.8 | 53.8 | 55.2 | 121.2 | 230.8 | 147.5 | 147.3 | 105.7 | 83.5 | 93.2 |
| LAKE COUNTY            |       |      | 12.9 | 11.4 | 12.6 | 11.8 | 11.3 | 10.9 | 10.7 | 10.2 | 8.6  | 7.8  | 12.5 | 10.8  | 7.6   |       |       |       |      |      |
| LAKE TAHOE             |       |      |      |      |      | 5.9  | 26.0 | 27.1 | 22.5 | 23.4 | 21.6 | 23.4 | 19.9 | 20.4  | 19.8  | 19.9  | 17.8  | 22.6  | 17.5 | 17.1 |
| MOJAVE DESERT          |       | 34.7 | 42.5 | 49.5 | 58.0 | 39.4 | 35.2 | 42.1 | 25.5 | 29.0 | 29.4 | 27.8 | 32.1 | 33.6  | 29.8  | 34.3  | 33.2  | 28.7  | 28.9 | 33.0 |
| MOUNTAIN COUNTIES      |       | 28.1 | 77.9 | 40.9 | 47.8 | 37.5 | 35.4 | 34.6 | 28.0 | 32.2 | 38.3 | 32.5 | 27.9 | 26.3  | 33.3  | 28.5  | 23.1  | 32.3  | 29.9 | 29.0 |
| NORTH CENTRAL COAST    |       | 26.3 | 25.5 | 29.9 | 24.3 | 19.7 | 35.6 | 31.1 | 36.4 | 32.8 | 37.0 | 28.5 | 30.9 | 29.9  | 29.4  | 27.7  | 30.1  | 27.3  | 23.6 | 23.9 |
| NORTH COAST            |       | 27.1 | 31.4 | 28.0 | 25.3 | 21.8 | 22.6 | 24.3 | 26.1 | 24.6 | 23.4 | 24.7 | 25.3 | 22.4  | 24.1  | 22.2  | 21.4  | 20.7  | 18.0 | 25.8 |
| NORTHEAST PLATEAU      |       |      | 24.8 | 23.5 | 21.4 | 23.6 | 21.4 | 29.6 | 30.3 | 16.2 | 20.2 | 14.7 | 32.9 | 27.9  | 25.1  | 18.6  | 13.3  | 13.6  | 13.9 | 14.1 |
| SACRAMENTO VALLEY      |       | 51.2 | 46.0 | 51.9 | 46.4 | 42.3 | 36.9 | 34.5 | 40.7 | 32.6 | 28.6 | 29.0 | 38.4 | 27.9  | 30.2  | 30.9  | 28.4  | 34.5  | 27.2 | 37.8 |
| SALTON SEA             |       | 61.8 | 89.9 | 80.3 | 69.3 | 47.5 | 53.3 | 75.1 | 71.9 | 73.6 | 77.7 | 74.1 | 77.8 | 95.2  | 86.2  | 79.9  | 80.0  | 60.8  | 53.2 | 70.9 |
| SAN DIEGO              |       | 40.0 | 43.8 | 37.6 | 36.4 | 35.9 | 45.9 | 50.7 | 46.8 | 38.5 | 46.6 | 42.5 | 52.2 | 45.2  | 49.1  | 54.9  | 52.1  | 51.2  | 49.8 | 53.7 |
| SAN FRANCISCO BAY AREA |       | 33.8 | 40.8 | 35.2 | 38.3 | 33.7 | 28.8 | 28.6 | 28.4 | 24.9 | 25.8 | 25.1 | 28.7 | 26.8  | 28.9  | 30.6  | 24.2  | 25.3  | 23.5 | 34.1 |
| SAN JOAQUIN VALLEY     |       | 74.3 | 79.3 | 79.3 | 76.3 | 62.9 | 56.9 | 50.1 | 58.2 | 52.0 | 48.2 | 52.5 | 59.5 | 53.1  | 57.4  | 59.2  | 52.4  | 47.9  | 44.3 | 55.4 |
| SOUTH CENTRAL COAST    |       | 40.1 | 41.5 | 36.6 | 40.1 | 43.1 | 42.8 | 31.6 | 39.9 | 31.7 | 37.0 | 25.2 | 31.3 | 33.8  | 31.5  | 43.2  | 30.7  | 31.5  | 27.7 | 29.7 |
| SOUTH COAST            | 103.7 | 93.0 |      | 78.2 | 76.1 | 79.0 | 72.5 | 65.5 | 68.8 | 62.8 | 65.6 | 58.7 | 72.2 | 59.1  | 63.3  | 58.1  | 55.6  | 54.8  | 51.8 | 64.0 |

Table B-13 \* Salton Sea PM<sub>10</sub> statistics exclude data from the Calexico - East site because data from this site do not represent widespread exposure.

*PM<sub>10</sub>*

## Calculated Days Above State 24-Hour Standard

| AIR BASIN              | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| GREAT BASIN VALLEYS    |      |      | 36   | 18   | 12   | 83   | 62   | 64   | 37   | 7    | 36   | 80   | 0    | 58   | 41   | 93   | 44   | 35   | 36   | 38   |
| LAKE COUNTY            |      |      | 0    |      |      | 0    | 0    | 0    | 0    | 0    | 0    |      |      | 0    | 0    | 12   | 0    | 0    | 0    | 0    |
| LAKE TAHOE             |      |      |      |      |      |      |      | 42   | 18   |      | 13   | 0    | 0    | 0    | 0    | 0    | 6    |      |      | 0    |
| MOJAVE DESERT          |      |      | 72   |      |      | 84   | 58   | 6    |      | 18   | 6    | 0    | 31   | 37   | 18   | 55   | 18   | 0    | 19   | 26   |
| MOUNTAIN COUNTIES      |      |      |      |      | 95   |      | 6    | 87   | 12   | 6    | 41   | 19   | 24   | 25   | 37   | 18   | 6    | 0    | 6    | 0    |
| NORTH CENTRAL COAST    |      |      | 6    | 6    | 0    |      | 12   | 31   | 71   | 71   | 72   |      | 50   | 24   |      | 25   | 41   | 43   | 12   | 18   |
| NORTH COAST            |      |      | 40   | 29   | 23   | 6    | 13   | 13   | 13   | 12   | 6    | 6    | 36   | 7    | 24   | 12   | 25   | 0    | 0    | 12   |
| NORTHEAST PLATEAU      |      |      | 29   |      |      | 24   |      | 0    | 0    |      |      |      | 0    |      |      | 6    | 0    | 0    | 0    | 0    |
| SACRAMENTO VALLEY      |      |      | 82   | 74   | 104  | 70   | 63   | 36   | 57   | 44   | 22   | 60   | 64   | 43   | 50   | 41   | 31   | 80   | 42   | 53   |
| SALTON SEA             |      |      | 221  | 254  | 230  | 143  | 151  | 136  | 218  | 244  | 294  | 227  | 289  | 313  | 312  | 305  | 284  | 220  | 160  | 241  |
| SAN DIEGO              |      |      | 114  | 38   | 84   | 12   | 134  | 134  | 122  | 12   | 125  | 107  | 124  | 109  | 129  | 173  | 151  | 175  | 13   | 159  |
| SAN FRANCISCO BAY AREA |      |      | 76   | 70   | 91   | 53   | 37   | 36   | 24   | 12   | 18   | 18   | 37   | 42   | 48   | 24   | 18   | 25   | 23   | 77   |
| SAN JOAQUIN VALLEY     |      | 159  | 208  | 292  | 225  | 246  | 183  | 166  | 184  | 204  | 107  | 102  | 182  | 196  | 168  | 256  | 167  | 113  | 146  | 167  |
| SOUTH CENTRAL COAST    |      | 102  | 139  | 66   | 99   | 57   | 53   | 24   | 57   | 29   | 47   | 18   | 13   | 39   | 18   | 19   | 31   | 61   | 12   | 30   |
| SOUTH COAST            |      |      | 305  | 275  | 250  | 243  | 251  | 244  | 226  | 251  | 257  | 171  | 261  | 248  | 240  | 228  | 201  | 210  | 198  | 241  |

Table B-14

\* Salton Sea PM<sub>10</sub> statistics exclude data from the Calexico - East site because data from this site do not represent widespread exposure.

## Calculated Days Above National 24-Hour Standard

| AIR BASIN              | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| GREAT BASIN VALLEYS    |      | 13   | 27   | 12   | 0    | 19   | 8    | 4    | 14   | 8    | 17   | 22   | 5    | 32   | 17   | 39   | 31   | 23   | 14   | 13   |
| LAKE COUNTY            |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      | 0    |      |      |      |      |      |      |
| LAKE TAHOE             |      |      |      |      |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      | 0    | 0    |
| MOJAVE DESERT          |      |      | 6    | 6    | 13   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 7    | 8    | 0    | 0    | 0    |
| MOUNTAIN COUNTIES      |      |      |      | 10   | 14   | 0    | 0    | 0    | 0    | 0    | 2    | 0    | 0    | 0    | 6    | 0    | 0    | 0    | 0    | 1    |
| NORTH CENTRAL COAST    |      |      | 0    | 0    | 0    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| NORTH COAST            |      |      | 0    | 6    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| NORTHEAST PLATEAU      |      |      | 0    | 0    |      | 0    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| SACRAMENTO VALLEY      |      |      | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 7    | 0    | 0    | 0    | 0    | 6    | 0    | 0    |
| SALTON SEA             |      |      | 27   | 26   | 19   | 6    | 13   | 0    | 13   | 30   | 13   | 12   | 32   | 38   | 18   | 18   | 25   | 6    | 6    | 16   |
| SAN DIEGO              |      |      | 0    | 0    | 0    | 0    | 6    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 6    | 0    | 0    | 0    |
| SAN FRANCISCO BAY AREA |      |      | 0    | 6    | 3    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| SAN JOAQUIN VALLEY     |      | 0    | 29   | 31   | 18   | 18   | 20   | 6    | 12   | 0    | 6    | 6    | 8    | 0    | 14   | 6    | 0    | 7    | 0    | 13   |
| SOUTH CENTRAL COAST    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 6    | 0    | 0    | 0    | 0    | 0    | 6    | 0    | 0    | 0    |
| SOUTH COAST            |      |      | 34   | 19   | 12   | 12   | 18   | 6    | 25   | 6    | 6    | 0    | 6    | 0    | 6    | 0    | 6    | 0    | 0    | 0    |

Table B-15

\* Salton Sea PM<sub>10</sub> statistics exclude data from the Calexico - East site because data from this site do not represent widespread exposure.

## PM<sub>2.5</sub>

### Maximum 24-Hour Concentration (State) (ug/m<sup>3</sup>)

| AIR BASIN              | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GREAT BASIN VALLEYS    |      |      |      |      |      |      |      |      |      |      |      |       | 40.7  | 68.0  | 76.0  | 68.0  | 44.0  | 81.0  | 27.0  | 193.0 |
| LAKE COUNTY            |      |      |      |      |      |      |      |      |      |      |      |       | 14.5  | 10.0  | 15.1  | 74.7  | 21.9  | 18.1  | 11.3  | 21.6  |
| LAKE TAHOE             |      |      |      |      |      |      |      |      |      |      |      |       | 21.0  | 23.0  | 31.0  | 27.0  | 27.4  | 23.2  |       |       |
| MOJAVE DESERT          |      |      |      |      |      |      |      |      |      |      |      |       | 47.6  | 38.6  | 35.0  | 38.0  | 28.0  | 34.0  | 28.0  | 22.0  |
| MOUNTAIN COUNTIES      |      |      |      |      |      |      |      |      |      |      |      |       | 92.0  | 48.0  | 120.0 | 41.0  | 54.0  | 148.4 | 179.7 | 62.7  |
| NORTH CENTRAL COAST    |      |      |      |      |      |      |      |      |      |      |      |       | 31.4  | 26.4  | 25.6  | 23.5  | 15.9  | 22.6  | 21.7  | 13.0  |
| NORTH COAST            |      |      |      |      |      |      |      |      |      |      |      |       | 36.9  | 24.0  | 38.3  | 59.7  | 36.1  | 25.6  | 31.8  | 35.0  |
| NORTHEAST PLATEAU      |      |      |      |      |      |      |      |      |      |      |      |       | 40.0  | 38.0  | 35.0  | 5.0   | 10.0  |       | 26.0  | 22.0  |
| SACRAMENTO VALLEY      |      |      |      |      |      |      |      |      |      |      | 96.0 | 108.0 | 123.1 | 128.2 | 96.1  | 73.2  | 76.3  | 82.7  | 78.6  |       |
| SALTON SEA             |      |      |      |      |      |      |      |      |      |      |      |       | 52.5  | 84.2  | 60.2  | 142.7 | 153.6 | 76.0  | 85.2  | 80.8  |
| SAN DIEGO              |      |      |      |      |      |      |      |      |      |      |      |       | 64.3  | 66.3  | 60.0  | 53.6  | 239.2 | 67.3  | 44.1  | 63.3  |
| SAN FRANCISCO BAY AREA |      |      |      |      |      |      |      |      |      |      |      |       | 90.5  | 67.2  | 107.5 | 84.5  | 56.1  | 73.7  | 55.6  | 75.3  |
| SAN JOAQUIN VALLEY     |      |      |      |      |      |      |      |      |      |      |      |       | 136.0 | 160.0 | 154.7 | 104.3 | 84.5  | 77.0  | 102.1 | 88.1  |
| SOUTH CENTRAL COAST    |      |      |      |      |      |      |      |      |      |      |      |       | 64.6  | 55.3  | 57.7  | 46.4  | 116.0 | 91.9  | 51.1  | 119.5 |
| SOUTH COAST            |      |      |      |      |      |      |      |      |      |      |      |       | 121.4 | 119.6 | 104.0 | 82.1  | 121.2 | 93.8  | 132.6 | 72.2  |

Table B-16

### Maximum 24-Hour Concentration (National) (ug/m<sup>3</sup>)

| AIR BASIN              | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998  | 1999  | 2000  | 2001  | 2002 | 2003  | 2004 | 2005  | 2006  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|------|-------|------|-------|-------|
| GREAT BASIN VALLEYS    |      |      |      |      |      |      |      |      |      |      |      |       | 40.7  | 68.0  | 76.0  | 68.0 | 41.0  | 81.0 | 27.0  | 193.0 |
| LAKE COUNTY            |      |      |      |      |      |      |      |      |      |      |      |       | 14.5  | 10.0  | 15.1  | 74.7 | 21.9  | 18.1 | 11.3  | 21.6  |
| LAKE TAHOE             |      |      |      |      |      |      |      |      |      |      |      |       | 21.0  | 23.0  | 31.0  | 27.0 | 21.0  | 20.0 |       |       |
| MOJAVE DESERT          |      |      |      |      |      |      |      |      |      |      |      |       | 47.6  | 38.6  | 35.0  | 38.0 | 28.0  | 34.0 | 28.0  | 22.0  |
| MOUNTAIN COUNTIES      |      |      |      |      |      |      |      |      |      |      |      |       | 92.0  | 48.0  | 120.0 | 41.0 | 43.0  | 44.0 | 60.0  | 51.0  |
| NORTH CENTRAL COAST    |      |      |      |      |      |      |      |      |      |      |      |       | 31.4  | 26.4  | 25.6  | 23.5 | 15.9  | 22.6 | 21.7  | 13.0  |
| NORTH COAST            |      |      |      |      |      |      |      |      |      |      |      |       | 36.9  | 24.0  | 38.3  | 59.7 | 36.1  | 25.6 | 31.8  | 35.0  |
| NORTHEAST PLATEAU      |      |      |      |      |      |      |      |      |      |      |      |       | 40.0  | 38.0  | 35.0  | 5.0  | 10.0  |      | 26.0  | 22.0  |
| SACRAMENTO VALLEY      |      |      |      |      |      |      |      |      |      |      | 96.0 | 108.0 | 98.0  | 78.0  | 91.0  | 65.0 | 65.0  | 80.0 | 78.0  |       |
| SALTON SEA             |      |      |      |      |      |      |      |      |      |      |      |       | 52.5  | 84.2  | 60.2  | 46.5 | 65.1  | 74.2 | 67.6  | 68.8  |
| SAN DIEGO              |      |      |      |      |      |      |      |      |      |      |      |       | 64.3  | 66.3  | 60.0  | 53.6 | 239.2 | 67.3 | 44.1  | 63.3  |
| SAN FRANCISCO BAY AREA |      |      |      |      |      |      |      |      |      |      |      |       | 90.5  | 67.2  | 107.5 | 76.7 | 56.1  | 73.7 | 54.6  | 75.3  |
| SAN JOAQUIN VALLEY     |      |      |      |      |      |      |      |      |      |      |      |       | 136.0 | 160.0 | 154.7 | 90.7 | 67.8  | 71.0 | 92.5  | 87.0  |
| SOUTH CENTRAL COAST    |      |      |      |      |      |      |      |      |      |      |      |       | 64.6  | 55.3  | 57.6  | 46.4 | 116.0 | 41.2 | 42.4  | 31.7  |
| SOUTH COAST            |      |      |      |      |      |      |      |      |      |      |      |       | 121.4 | 119.6 | 98.0  | 82.1 | 121.2 | 93.8 | 132.6 | 72.2  |

Table B-17

*PM*<sub>2.5</sub>98<sup>th</sup> Percentile 24-Hour Concentration (ug/m<sup>3</sup>)

| AIR BASIN              | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999  | 2000  | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|------|------|------|------|------|------|
| GREAT BASIN VALLEYS    |      |      |      |      |      |      |      |      |      |      |      |      | 67.0  | 41.0  | 62.0 |      |      |      |      |      |
| LAKE COUNTY            |      |      |      |      |      |      |      |      |      |      |      |      | 9.4   | 11.3  | 46.3 | 15.1 | 9.0  | 10.5 | 21.4 |      |
| LAKE TAHOE             |      |      |      |      |      |      |      |      |      |      |      |      | 21.0  | 21.0  | 26.0 | 22.0 | 19.0 |      |      |      |
| MOJAVE DESERT          |      |      |      |      |      |      |      |      |      |      |      |      | 23.5  | 23.0  | 21.0 | 33.0 | 17.0 | 20.0 |      | 19.0 |
| MOUNTAIN COUNTIES      |      |      |      |      |      |      |      |      |      |      |      |      | 84.0  | 44.0  | 43.0 | 38.0 | 40.0 | 33.0 | 27.0 | 31.0 |
| NORTH CENTRAL COAST    |      |      |      |      |      |      |      |      |      |      |      |      |       | 21.5  | 23.1 | 22.8 | 14.0 | 15.5 | 14.2 |      |
| NORTH COAST            |      |      |      |      |      |      |      |      |      |      |      |      | 27.7  |       | 29.0 | 39.7 | 36.1 | 23.1 | 15.2 | 17.4 |
| NORTHEAST PLATEAU      |      |      |      |      |      |      |      |      |      |      |      |      | 27.0  | 37.0  |      |      |      |      |      |      |
| SACRAMENTO VALLEY      |      |      |      |      |      |      |      |      |      |      | 96.0 |      | 84.0  | 81.0  | 56.0 | 63.0 | 43.0 | 54.0 | 54.0 | 59.0 |
| SALTON SEA             |      |      |      |      |      |      |      |      |      |      |      |      | 43.2  | 56.0  | 50.4 | 44.1 | 44.3 | 31.9 | 41.1 | 46.0 |
| SAN DIEGO              |      |      |      |      |      |      |      |      |      |      |      |      | 45.1  | 48.7  | 40.8 | 39.3 | 46.9 | 37.4 | 30.2 | 28.4 |
| SAN FRANCISCO BAY AREA |      |      |      |      |      |      |      |      |      |      |      |      | 63.2  | 55.3  | 57.1 | 57.5 | 37.4 | 42.7 | 41.2 | 42.8 |
| SAN JOAQUIN VALLEY     |      |      |      |      |      |      |      |      |      |      |      |      | 120.0 | 103.0 | 96.0 | 80.4 | 56.0 | 61.5 | 74.9 | 64.7 |
| SOUTH CENTRAL COAST    |      |      |      |      |      |      |      |      |      |      |      |      | 35.4  | 42.4  | 50.7 | 35.2 | 33.4 | 36.7 | 26.3 | 27.6 |
| SOUTH COAST            |      |      |      |      |      |      |      |      |      |      |      |      | 85.6  | 83.0  | 74.3 | 66.3 | 76.6 | 72.4 | 58.3 | 54.4 |

Table B-18

# PM<sub>2.5</sub>

## Average of Quarterly Means (State) (ug/m<sup>3</sup>)

| AIR BASIN              | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| GREAT BASIN VALLEYS    |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 5.5  |      |      |      |      |      |
| LAKE COUNTY            |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 4.1  | 6.3  | 4.4  | 4.4  | 4.8  | 5.1  |
| LAKE TAHOE             |      |      |      |      |      |      |      |      |      |      |      |      | 8.3  | 7.8  | 8.2  |      | 7.2  |      |      |      |
| MOJAVE DESERT          |      |      |      |      |      |      |      |      |      |      |      |      | 11.2 |      | 11.5 | 13.9 | 9.4  | 10.8 | 8.9  | 10.3 |
| MOUNTAIN COUNTIES      |      |      |      |      |      |      |      |      |      |      |      |      | 11.1 | 9.0  | 8.1  | 9.9  | 8.6  | 11.7 | 10.6 | 8.6  |
| NORTH CENTRAL COAST    |      |      |      |      |      |      |      |      |      |      |      |      |      | 7.9  | 9.1  | 9.1  | 7.3  |      | 6.8  |      |
| NORTH COAST            |      |      |      |      |      |      |      |      |      |      |      |      | 9.1  |      | 9.4  | 9.1  | 7.4  | 7.0  | 6.2  | 6.8  |
| NORTHEAST PLATEAU      |      |      |      |      |      |      |      |      |      |      |      |      |      | 8.5  |      |      |      |      |      |      |
| SACRAMENTO VALLEY      |      |      |      |      |      |      |      |      |      |      |      |      | 17.5 | 15.8 | 11.9 | 15.1 | 15.9 | 16.5 | 13.8 | 15.2 |
| SALTON SEA             |      |      |      |      |      |      |      |      |      |      |      |      |      | 11.2 |      | 15.1 | 11.4 | 16.1 | 15.5 | 17.3 |
| SAN DIEGO              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 15.5 | 14.4 | 14.1 |      | 13.1 |
| SAN FRANCISCO BAY AREA |      |      |      |      |      |      |      |      |      |      |      |      |      | 11.6 | 12.9 | 14.0 | 11.7 | 12.7 | 11.8 | 12.4 |
| SAN JOAQUIN VALLEY     |      |      |      |      |      |      |      |      |      |      |      |      | 23.4 | 23.9 | 20.8 | 24.1 | 24.8 | 18.2 | 22.4 | 21.6 |
| SOUTH CENTRAL COAST    |      |      |      |      |      |      |      |      |      |      |      |      | 9.6  |      | 14.9 | 9.5  | 12.4 | 12.5 | 11.7 | 10.3 |
| SOUTH COAST            |      |      |      |      |      |      |      |      |      |      |      |      |      | 24.0 | 25.0 | 25.8 | 24.8 | 16.6 | 21.0 | 16.6 |

Table B-19

## Average of Quarterly Means (National) (ug/m<sup>3</sup>)

| AIR BASIN              | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| GREAT BASIN VALLEYS    |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 5.5  | 8.2  |      |      |      |      |
| LAKE COUNTY            |      |      |      |      |      |      |      |      |      |      |      |      |      | 4.3  | 4.1  | 6.3  | 4.4  | 4.4  | 4.8  | 5.1  |
| LAKE TAHOE             |      |      |      |      |      |      |      |      |      |      |      |      | 8.3  | 7.7  | 8.2  | 7.6  | 7.2  |      |      |      |
| MOJAVE DESERT          |      |      |      |      |      |      |      |      |      |      |      |      | 11.9 | 12.0 | 11.5 | 13.9 | 9.4  | 10.8 |      | 10.4 |
| MOUNTAIN COUNTIES      |      |      |      |      |      |      |      |      |      |      |      |      | 11.1 | 9.0  | 15.6 | 9.9  | 13.3 | 11.7 | 10.6 | 10.9 |
| NORTH CENTRAL COAST    |      |      |      |      |      |      |      |      |      |      |      |      |      | 7.9  | 9.1  | 9.1  | 7.4  | 7.0  | 6.8  |      |
| NORTH COAST            |      |      |      |      |      |      |      |      |      |      |      |      | 9.1  |      | 9.4  | 9.1  | 7.4  | 8.2  | 6.2  | 6.8  |
| NORTHEAST PLATEAU      |      |      |      |      |      |      |      |      |      |      |      |      | 7.9  | 8.5  |      |      |      |      |      |      |
| SACRAMENTO VALLEY      |      |      |      |      |      |      |      |      |      |      |      |      | 19.9 | 15.8 | 13.0 | 15.1 | 12.3 | 15.1 | 12.3 | 13.2 |
| SALTON SEA             |      |      |      |      |      |      |      |      |      |      |      |      | 15.2 | 16.9 | 14.9 | 15.1 | 11.4 | 11.8 | 9.4  | 12.5 |
| SAN DIEGO              |      |      |      |      |      |      |      |      |      |      |      |      | 18.0 | 15.8 | 17.7 | 16.0 | 15.5 | 14.1 | 11.8 | 13.1 |
| SAN FRANCISCO BAY AREA |      |      |      |      |      |      |      |      |      |      |      |      | 16.8 | 13.6 | 12.8 | 14.0 | 11.7 | 11.1 | 10.5 | 9.3  |
| SAN JOAQUIN VALLEY     |      |      |      |      |      |      |      |      |      |      |      |      | 27.6 | 23.9 | 22.5 | 24.1 | 19.6 | 18.9 | 19.8 | 19.3 |
| SOUTH CENTRAL COAST    |      |      |      |      |      |      |      |      |      |      |      |      | 13.7 | 13.5 | 14.9 | 14.6 | 14.2 | 12.5 | 11.2 | 10.3 |
| SOUTH COAST            |      |      |      |      |      |      |      |      |      |      |      |      | 30.2 | 28.3 | 31.0 | 27.5 | 24.8 | 22.1 | 20.9 | 20.8 |

Table B-20

*Carbon Monoxide***Peak 8-Hour Indicator (ppm)**

| AIR BASIN              | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| GREAT BASIN VALLEYS    | 7.0  | 5.9  | 5.8  | 5.7  | 5.6  | 3.5  | 5.0  | 4.7  | 4.6  | 4.0  | 4.0  | 3.9  |      | 2.9  | 2.5  | 2.5  |      |      |      |      |
| LAKE COUNTY            |      |      | 1.9  | 2.9  | 2.9  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| LAKE TAHOE             | 14.9 | 13.2 | 12.6 | 11.9 | 11.1 | 10.2 | 8.7  | 8.3  | 7.8  | 7.0  | 5.6  | 5.0  | 2.3  | 2.1  | 1.9  | 2.0  | 1.9  | 1.9  |      |      |
| MOJAVE DESERT          | 4.9  | 4.6  | 5.5  | 7.7  | 7.6  | 6.5  | 6.2  | 6.1  | 5.8  | 7.4  | 4.8  | 4.4  | 4.4  | 4.6  | 4.8  | 2.0  | 2.0  | 2.0  | 1.9  | 1.8  |
| MOUNTAIN COUNTIES      | 4.5  |      | 4.1  | 4.3  |      | 2.9  | 2.9  | 2.8  | 2.8  | 2.7  | 2.4  | 5.1  | 5.4  | 5.7  | 2.4  | 1.6  | 1.6  | 4.8  | 2.8  | 0.5  |
| NORTH CENTRAL COAST    | 2.5  | 2.5  | 2.5  | 2.5  | 2.5  | 2.5  | 2.4  | 2.3  | 2.2  | 2.2  | 2.0  | 2.0  | 2.0  | 1.6  | 1.6  | 1.5  | 1.4  | 1.2  | 1.2  | 1.1  |
| NORTH COAST            | 3.4  |      | 4.6  | 4.6  |      |      | 2.4  |      | 3.2  | 3.4  | 3.3  | 3.1  | 3.6  | 3.4  | 3.3  | 2.6  | 2.3  | 2.0  | 1.8  | 1.7  |
| NORTHEAST PLATEAU      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| SACRAMENTO VALLEY      | 14.4 | 13.4 | 14.0 | 14.7 | 14.8 | 12.9 | 10.7 | 9.6  | 9.3  | 8.5  | 7.7  | 7.3  | 7.0  | 7.0  | 7.3  | 6.0  | 4.4  | 4.2  | 4.4  | 4.2  |
| SALTON SEA             | 2.6  | 2.5  | 2.4  | 2.3  | 2.3  | 2.2  | 2.1  | 17.4 | 18.8 | 17.8 | 17.4 | 15.5 | 15.5 | 14.8 | 14.3 | 12.8 | 11.5 | 10.5 | 8.4  | 8.0  |
| SAN DIEGO              | 10.4 | 10.2 | 10.3 | 10.2 | 10.0 | 8.6  | 7.8  | 7.7  | 7.3  | 7.3  | 6.3  | 6.3  | 5.6  | 5.3  | 5.4  | 5.3  | 5.0  | 4.6  | 4.4  | 3.8  |
| SAN FRANCISCO BAY AREA | 13.4 | 10.7 | 11.8 | 12.6 | 12.5 | 11.1 | 9.3  | 8.1  | 7.8  | 7.4  | 6.5  | 6.7  | 6.5  | 7.1  | 6.9  | 6.0  | 5.5  | 4.0  | 3.7  | 3.5  |
| SAN JOAQUIN VALLEY     | 13.9 | 14.1 | 13.7 | 13.9 | 13.2 | 11.5 | 10.0 | 10.0 | 10.9 | 9.9  | 9.0  | 8.3  | 8.5  | 8.4  | 6.4  | 5.3  | 4.8  | 4.2  | 3.7  | 3.4  |
| SOUTH CENTRAL COAST    | 10.1 | 9.0  | 8.8  | 8.2  | 7.5  | 6.4  | 5.5  | 5.9  | 6.0  | 5.8  | 5.0  | 4.8  | 4.5  | 4.7  | 3.1  | 2.7  | 2.7  | 2.4  | 1.9  | 1.9  |
| SOUTH COAST            | 21.7 | 21.9 | 22.5 | 21.9 | 19.0 | 17.7 | 16.5 | 16.7 | 15.6 | 16.1 | 15.5 | 15.4 | 13.7 | 12.6 | 11.2 | 9.4  | 8.7  | 8.3  | 7.1  | 6.4  |

Table B-21



# Carbon Monoxide

## Maximum 1-Hour Concentration (ppm)

| AIR BASIN              | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| GREAT BASIN VALLEYS    | 9.0  | 13.0 | 12.0 | 10.0 | 11.0 | 11.0 | 13.0 | 9.0  | 10.0 | 6.0  | 8.2  | 6.7  |      | 4.2  | 15.4 | 3.8  |      |      |      |      |
| LAKE COUNTY            |      |      | 3.0  | 6.0  | 7.0  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| LAKE TAHOE             | 19.0 | 19.0 | 17.0 | 18.0 | 14.0 | 15.0 | 13.0 | 11.6 | 9.5  | 10.4 | 7.7  | 7.5  | 3.2  | 5.4  | 2.9  | 3.8  | 2.4  | 2.2  |      |      |
| MOJAVE DESERT          | 12.0 | 11.0 | 13.0 | 11.0 | 10.0 | 9.0  | 8.0  | 9.1  | 7.5  | 8.4  | 5.9  | 5.4  | 10.3 | 6.0  | 6.1  | 3.4  | 3.9  | 2.9  | 3.3  | 3.5  |
| MOUNTAIN COUNTIES      | 3.0  |      | 6.0  | 5.0  | 1.0  | 6.2  | 10.0 | 9.3  | 9.3  | 4.5  | 6.6  | 6.7  | 4.1  | 5.0  | 6.2  | 3.7  | 2.5  | 6.5  | 2.4  | 2.2  |
| NORTH CENTRAL COAST    | 5.0  | 6.0  | 5.0  | 5.0  | 4.0  | 4.0  | 4.0  | 4.6  | 3.2  | 5.5  | 4.4  | 3.8  | 3.8  | 3.5  | 3.3  | 2.3  | 2.8  | 2.1  | 2.1  | 2.5  |
| NORTH COAST            | 4.0  | 1.0  | 10.0 | 9.0  |      | 1.0  | 6.0  |      | 5.4  | 4.8  | 7.4  | 4.8  | 5.2  | 4.4  | 4.0  | 3.1  | 5.3  | 2.3  | 2.6  | 2.2  |
| NORTHEAST PLATEAU      | 12.0 | 4.0  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| SACRAMENTO VALLEY      | 15.0 | 17.0 | 18.0 | 17.0 | 15.0 | 14.0 | 12.0 | 10.8 | 9.8  | 8.7  | 9.5  | 7.9  | 7.7  | 10.0 | 17.2 | 7.8  | 8.5  | 7.3  | 8.0  | 7.5  |
| SALTON SEA             | 5.0  | 4.0  | 6.0  | 5.0  | 5.0  | 5.0  | 6.0  | 30.6 | 32.0 | 27.0 | 24.0 | 23.5 | 22.9 | 19.9 | 17.4 | 15.6 | 11.8 | 12.6 | 12.4 | 14.3 |
| SAN DIEGO              | 14.0 | 17.0 | 17.0 | 18.0 | 14.0 | 14.0 | 11.4 | 11.0 | 9.9  | 12.4 | 9.3  | 10.2 | 9.9  | 9.3  | 8.5  | 8.5  | 12.7 | 6.9  | 7.9  | 10.8 |
| SAN FRANCISCO BAY AREA | 17.0 | 15.0 | 19.0 | 18.0 | 15.0 | 12.0 | 14.0 | 12.0 | 10.1 | 8.8  | 10.7 | 8.7  | 9.0  | 9.8  | 7.6  | 7.7  | 8.6  | 4.8  | 4.5  | 5.5  |
| SAN JOAQUIN VALLEY     | 16.0 | 19.0 | 23.0 | 17.0 | 19.0 | 13.0 | 13.0 | 15.0 | 12.0 | 11.0 | 9.9  | 10.3 | 11.9 | 10.1 | 8.4  | 6.1  | 5.8  | 4.6  | 4.3  | 6.9  |
| SOUTH CENTRAL COAST    | 14.0 | 15.0 | 11.0 | 11.0 | 9.0  | 12.0 | 9.0  | 10.7 | 8.9  | 12.6 | 8.2  | 8.5  | 8.2  | 6.2  | 8.3  | 5.7  | 7.2  | 4.7  | 4.0  | 4.1  |
| SOUTH COAST            | 26.0 | 32.0 | 31.0 | 24.0 | 30.0 | 28.0 | 21.0 | 24.9 | 16.8 | 22.5 | 19.2 | 17.0 | 19.0 | 13.8 | 11.7 | 15.8 | 12.2 | 10.4 | 7.4  | 8.4  |

Table B-22

## Maximum 8-Hour Concentration (ppm)

| AIR BASIN              | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| GREAT BASIN VALLEYS    | 6.3  | 5.0  | 5.4  | 4.4  | 5.0  | 4.4  | 4.5  | 5.4  | 5.4  | 3.0  | 3.4  | 3.0  |      | 2.5  | 2.5  | 1.8  |      |      |      |      |
| LAKE COUNTY            |      |      | 2.2  | 2.6  | 3.1  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| LAKE TAHOE             | 13.0 | 12.5 | 11.3 | 10.1 | 9.2  | 9.9  | 7.5  | 7.1  | 6.3  | 5.1  | 3.8  | 4.3  | 2.4  | 1.9  | 1.9  | 3.0  | 1.5  | 1.2  |      |      |
| MOJAVE DESERT          | 4.0  | 5.9  | 7.1  | 8.3  | 7.1  | 5.4  | 5.9  | 5.6  | 5.1  | 7.5  | 4.0  | 3.6  | 5.4  | 4.3  | 3.3  | 2.2  | 2.1  | 1.7  | 1.6  | 1.6  |
| MOUNTAIN COUNTIES      | 2.3  |      | 4.6  | 3.5  | 0.1  | 4.5  | 5.4  | 5.4  | 3.4  | 2.6  | 1.9  | 5.5  | 3.0  | 1.6  | 4.3  | 1.5  | 1.9  | 5.7  | 1.2  | 0.6  |
| NORTH CENTRAL COAST    | 2.3  | 2.4  | 2.4  | 2.5  | 2.5  | 2.9  | 2.7  | 2.1  | 2.1  | 2.6  | 1.8  | 2.2  | 1.8  | 1.4  | 1.6  | 1.4  | 1.1  | 1.2  | 0.9  | 1.0  |
| NORTH COAST            | 3.0  | 1.0  | 4.5  | 3.5  |      | 0.6  | 2.4  |      | 3.2  | 2.7  | 3.2  | 3.5  | 3.7  | 2.6  | 2.3  | 2.5  | 2.2  | 1.8  | 1.5  | 1.6  |
| NORTHEAST PLATEAU      | 10.4 | 1.8  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| SACRAMENTO VALLEY      | 10.0 | 12.3 | 15.9 | 14.0 | 12.3 | 8.6  | 9.4  | 8.5  | 7.4  | 7.2  | 7.2  | 7.1  | 6.6  | 6.3  | 5.3  | 4.3  | 4.5  | 4.1  | 4.2  | 4.2  |
| SALTON SEA             | 2.9  | 2.1  | 2.9  | 2.3  | 2.5  | 2.4  | 2.0  | 13.1 | 22.9 | 22.1 | 17.8 | 14.4 | 17.9 | 15.5 | 12.3 | 11.6 | 8.8  | 10.3 | 9.0  | 9.8  |
| SAN DIEGO              | 9.4  | 10.3 | 10.5 | 9.1  | 7.9  | 7.9  | 7.5  | 7.5  | 6.3  | 7.1  | 5.4  | 4.8  | 6.0  | 5.9  | 5.1  | 4.7  | 10.6 | 4.1  | 4.7  | 3.6  |
| SAN FRANCISCO BAY AREA | 10.0 | 12.8 | 12.0 | 11.0 | 11.0 | 7.8  | 7.9  | 8.8  | 5.8  | 7.0  | 6.1  | 6.3  | 6.3  | 7.0  | 5.1  | 5.1  | 4.4  | 3.4  | 3.1  | 2.9  |
| SAN JOAQUIN VALLEY     | 12.9 | 16.5 | 13.4 | 11.5 | 11.4 | 8.3  | 9.3  | 8.9  | 9.1  | 7.7  | 7.5  | 8.0  | 7.8  | 6.6  | 6.0  | 4.5  | 4.1  | 3.0  | 3.0  | 3.7  |
| SOUTH CENTRAL COAST    | 7.5  | 7.4  | 7.4  | 5.8  | 6.4  | 5.9  | 4.8  | 6.5  | 5.8  | 4.9  | 4.1  | 4.6  | 4.2  | 4.3  | 3.4  | 2.4  | 3.7  | 2.6  | 1.7  | 1.8  |
| SOUTH COAST            | 19.6 | 27.5 | 21.8 | 16.8 | 17.4 | 18.8 | 14.6 | 18.2 | 13.8 | 17.5 | 17.1 | 13.3 | 11.2 | 10.1 | 7.6  | 10.1 | 7.3  | 6.5  | 5.9  | 6.2  |

Table B-23

## Carbon Monoxide

### Days Above State 8-Hour Standard

| AIR BASIN              | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| GREAT BASIN VALLEYS    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| LAKE COUNTY            |      |      | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| LAKE TAHOE             | 87   | 80   | 67   | 39   | 24   | 13   | 12   | 9    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| MOJAVE DESERT          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| MOUNTAIN COUNTIES      | 0    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| NORTH CENTRAL COAST    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| NORTH COAST            | 0    | 0    | 0    | 0    |      | 0    | 0    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| NORTHEAST PLATEAU      | 1    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| SACRAMENTO VALLEY      | 5    | 12   | 22   | 14   | 9    | 0    | 2    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| SALTON SEA             | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 10   | 17   | 11   | 15   | 12   | 13   | 8    | 6    | 4    | 0    | 1    | 0    | 1    |
| SAN DIEGO              | 1    | 5    | 6    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    |
| SAN FRANCISCO BAY AREA | 2    | 4    | 10   | 4    | 5    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| SAN JOAQUIN VALLEY     | 4    | 5    | 24   | 10   | 3    | 0    | 2    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| SOUTH CENTRAL COAST    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| SOUTH COAST            | 50   | 73   | 71   | 50   | 51   | 39   | 29   | 27   | 17   | 26   | 18   | 13   | 11   | 6    | 0    | 1    | 0    | 0    | 0    | 0    |

Table B-24

\* Data for Lake Tahoe reflects the number of days above the State 8-Hr. Lake Tahoe Standard of 6 parts per million.

### Days Above National 8-Hour Standard

| AIR BASIN              | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| GREAT BASIN VALLEYS    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| LAKE COUNTY            |      |      | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| LAKE TAHOE             | 12   | 9    | 5    | 5    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| MOJAVE DESERT          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| MOUNTAIN COUNTIES      | 0    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| NORTH CENTRAL COAST    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| NORTH COAST            | 0    | 0    | 0    | 0    |      | 0    | 0    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| NORTHEAST PLATEAU      | 1    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| SACRAMENTO VALLEY      | 3    | 9    | 22   | 12   | 6    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| SALTON SEA             | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 9    | 15   | 9    | 10   | 8    | 11   | 6    | 6    | 3    | 0    | 1    | 0    | 1    |
| SAN DIEGO              | 0    | 2    | 5    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    |
| SAN FRANCISCO BAY AREA | 1    | 4    | 9    | 2    | 4    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| SAN JOAQUIN VALLEY     | 4    | 6    | 18   | 9    | 3    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| SOUTH CENTRAL COAST    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| SOUTH COAST            | 40   | 65   | 67   | 42   | 41   | 34   | 19   | 19   | 14   | 19   | 13   | 10   | 7    | 3    | 0    | 1    | 0    | 0    | 0    | 0    |

Table B-25

# Nitrogen Dioxide

## Peak 1-Hour Indicator (ppm)

| AIR BASIN              | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GREAT BASIN VALLEYS    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| LAKE COUNTY            |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| LAKE TAHOE             | 0.076 | 0.073 | 0.074 | 0.078 | 0.076 | 0.078 | 0.062 | 0.061 | 0.062 | 0.062 | 0.061 | 0.060 | 0.057 | 0.058 | 0.057 | 0.056 | 0.055 | 0.054 |       |       |
| MOJAVE DESERT          | 0.134 | 0.112 | 0.100 | 0.181 | 0.259 | 0.277 | 0.289 | 0.202 | 0.124 | 0.119 | 0.097 | 0.102 | 0.105 | 0.106 | 0.099 | 0.096 | 0.092 | 0.092 | 0.090 | 0.088 |
| MOUNTAIN COUNTIES      | 0.046 |       |       |       |       |       |       |       |       |       |       |       |       |       | 0.068 | 0.063 | 0.062 | 0.062 |       | 0.006 |
| NORTH CENTRAL COAST    | 0.083 | 0.077 | 0.072 | 0.071 | 0.068 | 0.062 | 0.064 | 0.064 | 0.062 | 0.059 | 0.059 | 0.059 | 0.054 | 0.046 | 0.045 | 0.046 | 0.046 | 0.050 | 0.051 | 0.052 |
| NORTH COAST            |       |       |       |       |       |       | 0.054 | 0.053 | 0.053 | 0.053 | 0.049 | 0.050 | 0.054 | 0.053 | 0.052 | 0.042 | 0.045 | 0.044 | 0.039 | 0.039 |
| NORTHEAST PLATEAU      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| SACRAMENTO VALLEY      | 0.115 | 0.123 | 0.117 | 0.115 | 0.122 | 0.128 | 0.126 | 0.115 | 0.106 | 0.101 | 0.095 | 0.091 | 0.107 | 0.097 | 0.095 | 0.085 | 0.089 | 0.091 | 0.084 | 0.076 |
| SALTON SEA             | 0.083 | 0.084 | 0.089 | 0.092 | 0.091 | 0.088 | 0.088 | 0.153 | 0.182 | 0.178 | 0.178 | 0.150 | 0.145 | 0.170 | 0.161 | 0.153 | 0.147 | 0.128 | 0.113 | 0.102 |
| SAN DIEGO              | 0.203 | 0.216 | 0.233 | 0.210 | 0.189 | 0.169 | 0.155 | 0.145 | 0.129 | 0.129 | 0.126 | 0.116 | 0.122 | 0.117 | 0.126 | 0.122 | 0.130 | 0.119 | 0.121 | 0.108 |
| SAN FRANCISCO BAY AREA | 0.188 | 0.167 | 0.162 | 0.156 | 0.160 | 0.155 | 0.141 | 0.116 | 0.119 | 0.114 | 0.111 | 0.101 | 0.108 | 0.105 | 0.109 | 0.100 | 0.075 | 0.079 | 0.080 | 0.079 |
| SAN JOAQUIN VALLEY     | 0.145 | 0.144 | 0.151 | 0.156 | 0.134 | 0.132 | 0.132 | 0.131 | 0.127 | 0.119 | 0.115 | 0.100 | 0.107 | 0.106 | 0.109 | 0.107 | 0.106 | 0.097 | 0.087 | 0.084 |
| SOUTH CENTRAL COAST    | 0.130 | 0.123 | 0.119 | 0.119 | 0.120 | 0.114 | 0.104 | 0.104 | 0.112 | 0.114 | 0.110 | 0.097 | 0.089 | 0.086 | 0.083 | 0.079 | 0.073 | 0.069 | 0.066 | 0.062 |
| SOUTH COAST            | 0.311 | 0.335 | 0.322 | 0.324 | 0.312 | 0.311 | 0.285 | 0.241 | 0.229 | 0.242 | 0.237 | 0.202 | 0.185 | 0.213 | 0.216 | 0.200 | 0.161 | 0.150 | 0.142 | 0.120 |

Table B-26

## Maximum 1-Hour Concentration (ppm)

| AIR BASIN              | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GREAT BASIN VALLEYS    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| LAKE COUNTY            |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| LAKE TAHOE             | 0.080 | 0.070 | 0.070 | 0.150 | 0.060 | 0.060 | 0.060 | 0.057 | 0.059 | 0.061 | 0.051 | 0.052 | 0.060 | 0.052 | 0.054 | 0.055 | 0.052 | 0.055 |       |       |
| MOJAVE DESERT          | 0.130 | 0.100 | 0.120 | 0.190 | 0.350 | 0.240 | 0.360 | 0.138 | 0.140 | 0.087 | 0.107 | 0.196 | 0.113 | 0.105 | 0.102 | 0.101 | 0.095 | 0.103 | 0.087 | 0.082 |
| MOUNTAIN COUNTIES      | 0.040 |       |       |       |       |       |       |       |       |       |       |       |       | 0.086 | 0.090 | 0.088 | 0.059 | 0.068 |       | 0.006 |
| NORTH CENTRAL COAST    | 0.070 | 0.070 | 0.070 | 0.060 | 0.060 | 0.070 | 0.070 | 0.067 | 0.054 | 0.060 | 0.056 | 0.085 | 0.054 | 0.071 | 0.042 | 0.049 | 0.053 | 0.139 | 0.052 | 0.067 |
| NORTH COAST            |       | 0.030 |       |       |       |       | 0.080 | 0.050 | 0.079 | 0.078 | 0.044 | 0.061 | 0.052 | 0.066 | 0.042 | 0.052 | 0.080 | 0.053 | 0.037 | 0.040 |
| NORTHEAST PLATEAU      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| SACRAMENTO VALLEY      | 0.100 | 0.180 | 0.130 | 0.160 | 0.240 | 0.190 | 0.120 | 0.111 | 0.099 | 0.145 | 0.092 | 0.101 | 0.110 | 0.085 | 0.172 | 0.090 | 0.102 | 0.146 | 0.079 | 0.097 |
| SALTON SEA             | 0.080 | 0.110 | 0.090 | 0.090 | 0.090 | 0.090 | 0.090 | 0.227 | 0.217 | 0.164 | 0.128 | 0.257 | 0.286 | 0.192 | 0.139 | 0.138 | 0.189 | 0.108 | 0.131 | 0.101 |
| SAN DIEGO              | 0.260 | 0.280 | 0.230 | 0.180 | 0.160 | 0.190 | 0.130 | 0.157 | 0.140 | 0.124 | 0.142 | 0.132 | 0.172 | 0.117 | 0.148 | 0.126 | 0.148 | 0.125 | 0.109 | 0.097 |
| SAN FRANCISCO BAY AREA | 0.170 | 0.160 | 0.150 | 0.150 | 0.150 | 0.110 | 0.120 | 0.107 | 0.116 | 0.108 | 0.118 | 0.098 | 0.128 | 0.114 | 0.108 | 0.080 | 0.081 | 0.073 | 0.074 | 0.107 |
| SAN JOAQUIN VALLEY     | 0.150 | 0.210 | 0.210 | 0.160 | 0.130 | 0.190 | 0.160 | 0.144 | 0.119 | 0.110 | 0.103 | 0.112 | 0.108 | 0.099 | 0.115 | 0.107 | 0.092 | 0.083 | 0.087 | 0.100 |
| SOUTH CENTRAL COAST    | 0.150 | 0.160 | 0.120 | 0.160 | 0.160 | 0.100 | 0.110 | 0.133 | 0.127 | 0.110 | 0.115 | 0.097 | 0.099 | 0.124 | 0.113 | 0.064 | 0.103 | 0.071 | 0.070 | 0.063 |
| SOUTH COAST            | 0.420 | 0.540 | 0.340 | 0.280 | 0.380 | 0.300 | 0.260 | 0.247 | 0.239 | 0.250 | 0.200 | 0.255 | 0.307 | 0.214 | 0.251 | 0.262 | 0.163 | 0.157 | 0.136 | 0.137 |

Table B-27

## Nitrogen Dioxide

### Maximum Annual Average (State) (ppm)

| AIR BASIN              | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GREAT BASIN VALLEYS    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| LAKE COUNTY            |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| LAKE TAHOE             | 0.012 | 0.012 |       | 0.012 | 0.012 |       | 0.011 | 0.012 | 0.011 | 0.011 | 0.011 |       | 0.011 | 0.011 | 0.011 | 0.012 | 0.01  |       |       |       |
| MOJAVE DESERT          | 0.016 | 0.018 | 0.026 | 0.019 | 0.015 | 0.025 | 0.02  | 0.024 | 0.023 | 0.021 | 0.02  | 0.021 | 0.024 | 0.025 | 0.024 | 0.025 | 0.024 | 0.023 | 0.022 | 0.022 |
| MOUNTAIN COUNTIES      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| NORTH CENTRAL COAST    | 0.005 | 0.014 | 0.014 | 0.012 | 0.011 | 0.012 | 0.012 | 0.012 |       | 0.011 | 0.01  | 0.01  | 0.005 | 0.007 | 0.005 | 0.007 | 0.006 | 0.007 | 0.008 | 0.007 |
| NORTH COAST            |       |       |       |       |       |       |       | 0.008 | 0.009 |       | 0.01  | 0.01  | 0.01  | 0.011 | 0.01  | 0.009 | 0.009 | 0.009 | 0.008 | 0.009 |
| NORTHEAST PLATEAU      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| SACRAMENTO VALLEY      | 0.022 | 0.024 | 0.02  | 0.023 | 0.024 | 0.021 | 0.017 | 0.022 | 0.022 | 0.022 | 0.019 | 0.02  | 0.021 | 0.019 | 0.019 | 0.02  | 0.015 | 0.017 | 0.016 | 0.016 |
| SALTON SEA             | 0.019 | 0.022 | 0.024 | 0.021 | 0.021 |       | 0.019 | 0.021 | 0.021 | 0.02  |       | 0.016 | 0.018 | 0.016 | 0.017 | 0.016 | 0.016 | 0.015 | 0.015 | 0.014 |
| SAN DIEGO              | 0.032 | 0.035 | 0.031 | 0.029 | 0.029 | 0.027 | 0.023 | 0.024 | 0.026 | 0.022 | 0.024 | 0.023 | 0.026 | 0.024 | 0.022 | 0.022 | 0.021 | 0.023 | 0.018 | 0.024 |
| SAN FRANCISCO BAY AREA | 0.031 | 0.032 | 0.032 | 0.03  | 0.031 | 0.027 | 0.027 | 0.028 | 0.027 | 0.025 | 0.025 | 0.025 | 0.026 | 0.025 | 0.024 | 0.019 | 0.018 | 0.017 | 0.019 | 0.016 |
| SAN JOAQUIN VALLEY     | 0.03  | 0.033 | 0.033 | 0.032 | 0.03  | 0.027 | 0.024 | 0.024 | 0.029 | 0.029 | 0.024 | 0.023 | 0.027 | 0.024 | 0.022 | 0.024 | 0.02  | 0.018 | 0.021 | 0.021 |
| SOUTH CENTRAL COAST    | 0.017 | 0.024 | 0.027 | 0.025 | 0.024 | 0.022 | 0.023 | 0.022 | 0.024 | 0.019 | 0.02  | 0.021 | 0.022 | 0.02  | 0.019 | 0.017 | 0.015 | 0.014 | 0.015 | 0.013 |
| SOUTH COAST            | 0.055 | 0.061 | 0.057 | 0.056 | 0.055 | 0.051 | 0.05  | 0.05  | 0.046 | 0.042 | 0.043 | 0.043 | 0.05  | 0.044 | 0.041 | 0.04  | 0.036 | 0.033 | 0.031 | 0.031 |

Table B-28

### Maximum Annual Average (National) (ppm)

| AIR BASIN              | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GREAT BASIN VALLEYS    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| LAKE COUNTY            |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| LAKE TAHOE             | 0.012 | 0.012 | 0.012 | 0.012 | 0.012 | 0.011 | 0.011 | 0.012 | 0.011 | 0.011 | 0.011 | 0.01  | 0.011 | 0.011 | 0.011 | 0.012 | 0.01  |       |       |       |
| MOJAVE DESERT          | 0.016 | 0.023 | 0.026 | 0.024 | 0.028 | 0.026 | 0.026 | 0.027 | 0.023 | 0.021 | 0.02  | 0.022 | 0.024 | 0.025 | 0.024 | 0.025 | 0.024 | 0.023 | 0.022 | 0.022 |
| MOUNTAIN COUNTIES      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| NORTH CENTRAL COAST    | 0.013 | 0.014 | 0.014 | 0.012 | 0.011 | 0.012 | 0.012 | 0.012 | 0.011 | 0.011 | 0.01  | 0.01  | 0.01  | 0.007 | 0.007 | 0.007 | 0.006 | 0.007 | 0.008 | 0.007 |
| NORTH COAST            |       |       |       |       |       |       |       | 0.009 | 0.009 |       | 0.01  | 0.01  | 0.01  | 0.011 | 0.01  | 0.01  | 0.009 | 0.009 | 0.008 | 0.009 |
| NORTHEAST PLATEAU      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| SACRAMENTO VALLEY      | 0.022 | 0.025 | 0.021 | 0.023 | 0.024 | 0.021 | 0.022 | 0.022 | 0.022 | 0.022 | 0.019 | 0.021 | 0.021 | 0.019 | 0.019 | 0.02  | 0.018 | 0.017 | 0.016 | 0.016 |
| SALTON SEA             | 0.019 | 0.022 | 0.024 | 0.021 | 0.021 |       | 0.019 | 0.021 | 0.021 | 0.02  | 0.015 | 0.016 | 0.018 | 0.019 | 0.017 | 0.016 | 0.016 | 0.015 | 0.015 | 0.014 |
| SAN DIEGO              | 0.032 | 0.035 | 0.031 | 0.029 | 0.029 | 0.027 | 0.023 | 0.024 | 0.026 | 0.022 | 0.024 | 0.023 | 0.026 | 0.024 | 0.022 | 0.022 | 0.021 | 0.023 | 0.024 | 0.024 |
| SAN FRANCISCO BAY AREA | 0.031 | 0.032 | 0.032 | 0.03  | 0.031 | 0.027 | 0.027 | 0.028 | 0.027 | 0.025 | 0.025 | 0.025 | 0.026 | 0.025 | 0.024 | 0.019 | 0.018 | 0.017 | 0.019 | 0.018 |
| SAN JOAQUIN VALLEY     | 0.03  | 0.032 | 0.033 | 0.031 | 0.03  | 0.027 | 0.027 | 0.024 | 0.029 | 0.029 | 0.024 | 0.024 | 0.027 | 0.024 | 0.022 | 0.024 | 0.023 | 0.019 | 0.021 | 0.021 |
| SOUTH CENTRAL COAST    | 0.021 | 0.024 | 0.027 | 0.025 | 0.024 | 0.022 | 0.023 | 0.024 | 0.024 | 0.022 | 0.02  | 0.021 | 0.022 | 0.02  | 0.019 | 0.017 | 0.015 | 0.014 | 0.015 | 0.013 |
| SOUTH COAST            | 0.055 | 0.061 | 0.057 | 0.055 | 0.055 | 0.051 | 0.05  | 0.05  | 0.046 | 0.042 | 0.043 | 0.043 | 0.051 | 0.044 | 0.041 | 0.04  | 0.035 | 0.034 | 0.031 | 0.031 |

Table B-29

# Oxides of Nitrogen (NO<sub>x</sub>)

## Maximum 1-Hour Concentration (ppm)\*\*

| AIR BASIN              | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GREAT BASIN VALLEYS    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| LAKE COUNTY            |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| LAKE TAHOE             | 0.190 | 0.220 | 0.290 | 0.270 | 0.190 | 0.180 | 0.120 | 0.139 | 0.132 | 0.140 | 0.109 | 0.128 | 0.126 | 0.134 | 0.113 | 0.138 | 0.175 | 0.144 |       |       |
| MOJAVE DESERT          | 0.400 | 0.790 | 0.410 | 0.500 | 0.440 | 0.710 | 0.440 | 0.455 | 0.410 | 0.423 | 0.510 | 0.465 | 0.585 | 0.537 | 0.454 | 0.469 | 0.471 | 0.473 | 0.458 | 0.425 |
| MOUNTAIN COUNTIES      | 0.060 |       |       |       |       |       |       |       |       |       |       |       |       | 0.190 | 0.216 | 0.188 | 0.280 | 0.208 | 0.100 | 0.010 |
| NORTH CENTRAL COAST    | 0.230 | 0.310 | 0.240 | 0.220 | 0.220 | 0.240 | 0.210 | 0.239 | 0.277 | 0.295 | 0.257 | 0.223 | 0.238 | 0.143 | 0.154 | 0.164 | 0.140 | 0.224 | 0.091 | 0.103 |
| NORTH COAST            |       | 0.050 |       |       |       | 0.210 | 0.290 | 0.573 |       |       |       |       |       |       |       |       |       |       |       |       |
| NORTHEAST PLATEAU      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| SACRAMENTO VALLEY      | 0.390 | 0.790 | 0.788 | 0.920 | 0.700 | 0.770 | 0.730 | 0.737 | 0.571 | 0.604 | 0.698 | 0.618 | 0.582 | 0.541 | 0.648 | 0.991 | 0.520 | 0.392 | 0.424 | 0.460 |
| SALTON SEA             | 0.210 | 0.210 | 0.320 | 0.270 | 0.230 | 0.220 | 0.220 | 0.917 | 0.918 | 0.835 | 0.677 | 0.758 | 0.773 | 0.822 | 0.793 | 0.785 | 0.656 | 0.681 | 0.861 | 0.809 |
| SAN DIEGO              | 0.800 | 0.980 | 0.780 | 0.760 | 0.640 | 0.660 | 0.531 | 0.605 | 0.506 | 0.606 | 0.609 | 0.486 | 0.609 | 0.598 | 0.632 | 0.605 | 0.658 | 0.657 | 0.682 | 0.541 |
| SAN FRANCISCO BAY AREA | 0.720 | 0.750 | 0.870 | 0.850 | 0.760 | 0.630 | 0.810 | 0.625 | 0.548 | 0.831 | 0.593 | 0.544 | 0.586 | 0.560 | 0.519 | 0.420 | 0.398 | 0.424 | 0.392 | 0.379 |
| SAN JOAQUIN VALLEY     | 0.710 | 0.870 | 0.870 | 0.840 | 0.760 | 0.650 | 0.640 | 0.702 | 0.600 | 0.659 | 0.560 | 0.671 | 0.700 | 0.556 | 0.652 | 0.438 | 0.407 | 0.407 | 0.397 | 0.467 |
| SOUTH CENTRAL COAST    | 0.810 | 0.680 | 0.600 | 0.600 | 0.630 | 0.570 | 0.470 | 0.561 | 0.575 | 0.823 | 0.454 | 0.536 | 0.550 | 0.430 | 0.276 | 0.314 | 0.395 | 0.273 | 0.308 | 0.238 |
| SOUTH COAST            | 1.080 | 1.280 | 1.200 | 0.990 | 1.200 | 1.420 | 1.060 | 1.108 | 0.850 | 1.037 | 0.910 | 0.889 | 0.899 | 0.855 | 0.750 | 0.892 | 0.738 | 0.850 | 0.605 | 0.826 |

\* No NO<sub>x</sub> data available

\*\* All available data were used for the annual maximum 1-hour NO<sub>x</sub>.

\*\*\* SFB NO<sub>x</sub> for 1994-2003 was calculated using hourly NO + NO<sub>2</sub>

Table B-30

## Maximum Annual Average (ppm)

| AIR BASIN              | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GREAT BASIN VALLEYS    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| LAKE COUNTY            |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| LAKE TAHOE             | 0.022 | 0.021 |       | 0.022 | 0.022 |       |       | 0.018 | 0.016 | 0.015 | 0.015 | 0.012 | 0.014 | 0.015 | 0.015 | 0.015 | 0.013 |       |       |       |
| MOJAVE DESERT          | 0.027 | 0.044 | 0.049 | 0.022 | 0.032 | 0.046 | 0.037 | 0.048 | 0.047 | 0.043 | 0.037 | 0.047 | 0.055 | 0.051 | 0.049 | 0.053 | 0.050 | 0.049 | 0.048 | 0.046 |
| MOUNTAIN COUNTIES      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 0.004 |       |       |       |
| NORTH CENTRAL COAST    | 0.006 | 0.022 | 0.021 | 0.023 | 0.022 | 0.021 | 0.020 | 0.019 |       | 0.017 | 0.017 | 0.015 | 0.008 | 0.011 |       | 0.011 | 0.010 | 0.010 | 0.010 | 0.010 |
| NORTH COAST            |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| NORTHEAST PLATEAU      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| SACRAMENTO VALLEY      | 0.039 | 0.045 | 0.043 | 0.056 | 0.055 | 0.042 | 0.029 | 0.047 | 0.043 | 0.045 | 0.042 | 0.043 | 0.047 | 0.045 | 0.038 | 0.042 | 0.027 | 0.033 | 0.034 | 0.032 |
| SALTON SEA             | 0.023 | 0.028 | 0.030 | 0.026 | 0.026 |       | 0.025 | 0.026 | 0.033 | 0.028 |       | 0.021 | 0.037 | 0.021 | 0.022 | 0.033 | 0.028 | 0.030 | 0.030 | 0.030 |
| SAN DIEGO              | 0.068 | 0.077 | 0.066 | 0.061 | 0.058 | 0.058 | 0.050 | 0.053 | 0.046 | 0.047 | 0.050 | 0.045 | 0.055 | 0.049 |       | 0.044 | 0.041 | 0.041 | 0.032 | 0.045 |
| SAN FRANCISCO BAY AREA | 0.066 | 0.072 | 0.083 | 0.075 |       | 0.065 | 0.068 | 0.066 | 0.056 | 0.054 | 0.055 | 0.052 | 0.057 | 0.054 | 0.051 | 0.046 | 0.035 | 0.032 | 0.040 | 0.038 |
| SAN JOAQUIN VALLEY     | 0.080 | 0.074 | 0.078 | 0.078 | 0.068 | 0.058 | 0.047 | 0.049 | 0.050 | 0.052 | 0.045 | 0.044 | 0.051 | 0.049 | 0.043 | 0.045 | 0.040 | 0.035 | 0.036 | 0.036 |
| SOUTH CENTRAL COAST    | 0.028 | 0.040 | 0.061 | 0.039 | 0.051 | 0.052 | 0.049 | 0.052 | 0.041 | 0.042 | 0.043 | 0.045 | 0.048 | 0.034 | 0.018 | 0.027 | 0.025 | 0.022 | 0.022 | 0.020 |
| SOUTH COAST            | 0.118 | 0.132 | 0.137 | 0.121 | 0.118 | 0.121 | 0.106 | 0.129 | 0.108 | 0.106 | 0.127 | 0.119 | 0.133 | 0.115 | 0.102 | 0.098 | 0.089 | 0.081 | 0.079 | 0.081 |

\* No NO<sub>x</sub> data available

\*\* No Valid Annual Averages

\*\*\* SFB NO<sub>x</sub> for 1994-2003 was calculated using hourly NO + NO<sub>2</sub>

**Representative Days:** The data collected must be representative according to the following definition. There must be no more than two missing hours in any of the three consecutive eight hour periods within a day. For an entire day, no more than two consecutive hours can be missed. Therefore, for an entire day, if there were three consecutive hours missed, the day would be invalidated. Representative Days were used for all years except 1994-2003.

**Data Representativeness:** For representative statistics computed from all individual values, such as the mean of all hours, 75 percent of the values in the respective period are required. Data Representativeness of 75% was applied to daily (94-03), monthly, and annual values.

Table B-31

*Sulfur Dioxide***Peak 1-Hour Indicator (ppm)**

| AIR BASIN              | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| GREAT BASIN VALLEYS    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| LAKE COUNTY            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| LAKE TAHOE             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| MOJAVE DESERT          | 0.03 | 0.07 | 0.06 | 0.06 | 0.04 | 0.03 | 0.02 | 0.02 | 0.02 | 0.01 | 0.02 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| MOUNTAIN COUNTIES      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| NORTH CENTRAL COAST    | 0.01 | 0.02 | 0.02 | 0.02 | 0.01 | 0.01 | 0.03 | 0.04 | 0.05 | 0.04 | 0.03 | 0.01 | 0.01 | 0.01 | 0.02 | 0.03 | 0.03 | 0.03 | 0.02 | 0.02 |
| NORTH COAST            |      |      |      |      |      |      | 0.01 | 0.01 |      |      |      |      |      |      |      |      |      |      |      |      |
| NORTHEAST PLATEAU      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| SACRAMENTO VALLEY      |      | 0.05 | 0.05 | 0.04 | 0.04 | 0.03 | 0.03 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 |
| SALTON SEA             |      |      |      |      |      |      |      |      |      | 0.04 | 0.04 | 0.04 | 0.04 | 0.03 | 0.03 | 0.02 | 0.00 | 0.00 | 0.00 | 0.03 |
| SAN DIEGO              | 0.06 | 0.07 | 0.07 | 0.07 | 0.06 | 0.08 | 0.09 | 0.09 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.07 | 0.06 | 0.05 | 0.04 | 0.03 | 0.04 | 0.04 |
| SAN FRANCISCO BAY AREA | 0.08 | 0.07 | 0.06 | 0.06 | 0.05 | 0.05 | 0.04 | 0.05 | 0.04 | 0.04 | 0.05 | 0.05 | 0.05 | 0.06 | 0.06 | 0.05 | 0.04 | 0.05 | 0.04 | 0.03 |
| SAN JOAQUIN VALLEY     | 0.08 | 0.07 | 0.06 | 0.06 | 0.04 | 0.04 | 0.03 | 0.02 | 0.02 | 0.03 | 0.03 |      | 0.01 | 0.02 | 0.02 |      |      |      |      |      |
| SOUTH CENTRAL COAST    | 0.32 | 0.25 | 0.16 | 0.16 | 0.14 | 0.13 | 0.13 | 0.03 | 0.16 | 0.17 | 0.16 | 0.16 | 0.14 | 0.14 | 0.14 | 0.16 | 0.14 | 0.13 | 0.14 | 0.14 |
| SOUTH COAST            | 0.07 | 0.07 | 0.06 | 0.06 | 0.06 | 0.11 | 0.10 | 0.10 | 0.06 | 0.05 | 0.06 | 0.05 | 0.05 | 0.05 | 0.05 | 0.04 | 0.04 | 0.03 | 0.04 | 0.04 |

Table B-32

# Sulfur Dioxide

## Maximum 24-Hour Concentration (ppm)

| AIR BASIN              | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| GREAT BASIN VALLEYS    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| LAKE COUNTY            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| LAKE TAHOE             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| MOJAVE DESERT          | 0.00 | 0.02 | 0.03 | 0.05 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | 0.01 |
| MOUNTAIN COUNTIES      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| NORTH CENTRAL COAST    | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | 0.01 | 0.01 | 0.01 | 0.02 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 |
| NORTH COAST            |      | 0.01 |      |      |      | 0.01 | 0.00 | 0.00 |      |      |      |      |      |      |      |      |      |      |      | 0.00 |
| NORTHEAST PLATEAU      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| SACRAMENTO VALLEY      |      | 0.02 | 0.02 | 0.01 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.01 | 0.01 | 0.02 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 |
| SALTON SEA             |      |      |      |      |      |      |      | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 |
| SAN DIEGO              | 0.04 | 0.02 | 0.02 | 0.02 | 0.02 | 0.04 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | 0.02 | 0.01 | 0.01 | 0.02 | 0.01 | 0.01 |
| SAN FRANCISCO BAY AREA | 0.03 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.04 | 0.03 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 |
| SAN JOAQUIN VALLEY     | 0.02 | 0.03 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |      | 0.01 | 0.00 | 0.01 |      | 0.00 |      |      |      |
| SOUTH CENTRAL COAST    | 0.04 | 0.04 | 0.02 | 0.09 | 0.02 | 0.02 | 0.05 | 0.01 | 0.04 | 0.03 | 0.03 | 0.04 | 0.03 | 0.03 | 0.04 | 0.02 | 0.02 | 0.03 | 0.01 | 0.03 |
| SOUTH COAST            | 0.02 | 0.04 | 0.02 | 0.04 | 0.02 | 0.03 | 0.01 | 0.01 | 0.02 | 0.01 | 0.01 | 0.01 | 0.02 | 0.04 | 0.02 | 0.02 | 0.01 | 0.02 | 0.01 | 0.01 |

Table B-33

## Maximum Annual Average (ppm)

| AIR BASIN              | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| GREAT BASIN VALLEYS    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| LAKE COUNTY            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| LAKE TAHOE             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| MOJAVE DESERT          | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| MOUNTAIN COUNTIES      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| NORTH CENTRAL COAST    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| NORTH COAST            |      | 0.00 |      |      |      | 0.00 | 0.00 | 0.00 |      |      |      |      |      |      |      |      |      |      |      | 0.00 |
| NORTHEAST PLATEAU      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| SACRAMENTO VALLEY      |      | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SALTON SEA             |      |      |      |      |      |      |      | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SAN DIEGO              | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 |
| SAN FRANCISCO BAY AREA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SAN JOAQUIN VALLEY     | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |      | 0.00 | 0.00 | 0.00 |      | 0.00 |      |      |      |
| SOUTH CENTRAL COAST    | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SOUTH COAST            | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 |

Table B-34

| <b>Ozone Exposures Over the State 1-Hour Standard: Population-Weighted (ppm-hours / person)</b> |       |       |       |       |       |       |       |       |       |       |       |      |      |      |      |      |      |      |      |      |      |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|
|   | 1986  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| <b>South Coast Air Basin</b>  |       |       |       |       |       |       |       |       |       |       |       |      |      |      |      |      |      |      |      |      |      |
| Exposure  | 35.68 | 31.41 | 34.28 | 29.58 | 22.10 | 22.21 | 21.99 | 17.96 | 18.90 | 13.26 | 10.67 | 6.28 | 8.90 | 3.28 | 5.33 | 6.95 | 7.16 | 8.92 | 5.21 | 5.48 | 4.98 |
| % Pop. Represented*   | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 97%   | 100%  | 92%  | 98%  | 99%  | 100% | 88%  | 78%  | 91%  | 83%  | 77%  | 82%  |
| <b>San Francisco Bay Area Air Basin</b>   |       |       |       |       |       |       |       |       |       |       |       |      |      |      |      |      |      |      |      |      |      |
| Exposure  | 0.85  | 1.81  | 1.24  | 0.67  | 0.46  | 0.48  | 0.54  | 0.41  | 0.26  | 1.06  | 1.03  | 0.10 | 0.95 | 0.62 | 0.33 | 0.35 | 0.35 | 0.32 | 0.11 | 0.15 | 0.49 |
| % Pop. Represented  | 46%   | 72%   | 73%   | 53%   | 41%   | 45%   | 50%   | 72%   | 39%   | 81%   | 60%   | 48%  | 54%  | 65%  | 25%  | 48%  | 28%  | 62%  | 30%  | 40%  | 43%  |
| <b>San Joaquin Valley Air Basin</b>   |       |       |       |       |       |       |       |       |       |       |       |      |      |      |      |      |      |      |      |      |      |
| Exposure  | 10.00 | 10.09 | 9.38  | 7.12  | 5.21  | 6.09  | 5.64  | 6.18  | 6.43  | 6.10  | 6.96  | 3.73 | 6.63 | 4.51 | 4.63 | 4.75 | 5.84 | 5.24 | 3.28 | 2.39 | 2.98 |
| % Pop. Represented  | 95%   | 98%   | 99%   | 99%   | 99%   | 99%   | 99%   | 99%   | 99%   | 99%   | 99%   | 99%  | 99%  | 99%  | 99%  | 99%  | 99%  | 99%  | 97%  | 97%  | 99%  |
| <b>San Diego Air Basin</b>  |       |       |       |       |       |       |       |       |       |       |       |      |      |      |      |      |      |      |      |      |      |
| Exposure  | 5.16  | 5.64  | 7.40  | 7.29  | 6.35  | 3.92  | 3.31  | 2.74  | 2.28  | 2.41  | 1.19  | 0.83 | 1.93 | 0.60 | 0.52 | 0.71 | 0.38 | 0.45 | 0.24 | 0.16 | 0.47 |
| % Pop. Represented  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 79%   | 100%  | 98%   | 100% | 82%  | 69%  | 72%  | 89%  | 62%  | 36%  | 71%  | 10%  | 30%  |
| <b>Broader Sacramento Metropolitan Area</b>   |       |       |       |       |       |       |       |       |       |       |       |      |      |      |      |      |      |      |      |      |      |
| Exposure  | 2.57  | 3.19  | 4.22  | 1.83  | 2.14  | 2.47  | 2.35  | 1.10  | 1.76  | 2.20  | 1.85  | 0.51 | 1.98 | 1.45 | 1.15 | 1.08 | 1.52 | 1.15 | 0.43 | 0.99 | 1.33 |
| % Pop. Represented  | 94%   | 100%  | 100%  | 100%  | 100%  | 99%   | 100%  | 100%  | 95%   | 100%  | 100%  | 98%  | 100% | 100% | 99%  | 100% | 99%  | 97%  | 94%  | 99%  | 100% |

\* % Population Represented is the percent of the total population residing in an area exposed to an ozone concentration above the level of the State standard for at least one hour during the year.

Table B-35



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**APPENDIX C**  
**Emissions, Air Quality, and Health Risk**  
**for Ten Toxic Air Contaminants**

**Appendix C: *Emissions, Air Quality, and Health Risk for Ten Toxic Air Contaminants***

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| C-2  | Lake County Air Basin .....            | C-6  |
| C-3  | Lake Tahoe Air Basin.....              | C-6  |
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## Introduction

This appendix contains TAC emissions data for all counties in California. It also contains air quality and health risk data for the state as a whole, the five most populous air basins, and individual sites within these air basins. The five basins are the South Coast Air Basin, San Francisco Bay Area Air Basin, San Joaquin Valley Air Basin, San Diego Air Basin, and Sacramento Valley Air Basin. It is important to note that some counties are located in more than one air basin. For these counties, the data are provided for that portion of the county located in each air basin. The ten toxic air contaminants (TACs) presented here are the same as the TACs discussed in Chapter 5: acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, *para*-Dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (diesel PM). Based on available data, these TACs pose the most substantial ambient health risks in California. There may be other TACs that pose a substantial risk, but for which data are not available.

The countywide emissions data represent tons per year from the 2006 emission inventory year. The data for stationary sources include emissions data from the air toxics “Hot Spots” Program. The toxic air contaminant emissions for each area-wide and mobile source category are calculated by applying a speciation profile, maintained by ARB staff, to the total organic gas and total particulate matter criteria pollutant emissions associated with that category.

For all source categories associated with diesel fuel combustion, all “PM” emitted from these sources was considered “diesel PM.” The area-wide source emission estimates were made by either the local districts or the ARB staff. These estimates have been speciated for toxics. The other mobile source emission estimates are primarily from ARB’s OFFROAD model, speciated for toxics. For the categories not currently included in the model, the emission estimates have been developed by either local districts or ARB staff. Districts may also provide estimates for categories normally developed by ARB staff.

Finally, the on-road mobile source emission estimates are based on the current model, EMFAC 2007. Again, the emission estimates have been speciated for toxics.

Readers may note that the stationary source diesel PM emission estimates differ from those presented in previous editions of the almanac and in the ARB’s October 2000 report entitled: “*Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*” (Diesel Risk Reduction Plan). This is because they incorporate more recent data and have been calculated with updated methodologies developed for new regulations. These regulations are those that were recommended in the Diesel Risk Reduction Plan. The on-road mobile source emissions cited in the Diesel Risk Reduction Plan are based on an earlier version of EMFAC 2001 (EMFAC1.99(f) 6/26/00) and the other mobile inventory includes revised estimates for ship diesel PM emissions.

In addition to the emissions data, air quality and health risk data are available for 1990 through 2005. It is important to note that the data reflect concentrations measured at a specific location or, in the case of the air basin summary data, spatially averaged concentrations. Therefore, the ambient concentrations and health risks for other locations may be higher or lower. TAC air quality data are also collected by the local air districts and for special studies. However, for consistency, only data collected by the ARB are included here.

## County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin

### Great Basin Valleys Air Basin

| TAC                          | Alpine | Inyo  | Mono  |
|------------------------------|--------|-------|-------|
| Acetaldehyde                 | 4      | 28    | 28    |
| Benzene                      | 6      | 39    | 15    |
| 1,3-Butadiene                | 1      | 10    | 6     |
| Carbon Tetrachloride         | 0      | 0     | 0     |
| Chromium, Hexavalent         | < .01  | < .01 | < .01 |
| <i>para</i> -Dichlorobenzene | < 1    | < 1   | < 1   |
| Formaldehyde                 | 9      | 57    | 43    |
| Methylene Chloride           | < 1    | 2     | 1     |
| Perchloroethylene            | < 1    | 2     | 2     |
| Diesel PM                    | 6      | 51    | 36    |

Table C-1

### Lake County Air Basin

| TAC                          | Lake  |
|------------------------------|-------|
| Acetaldehyde                 | 49    |
| Benzene                      | 82    |
| 1,3-Butadiene                | 65    |
| Carbon Tetrachloride         | 0     |
| Chromium, Hexavalent         | < .01 |
| <i>para</i> -Dichlorobenzene | 3     |
| Formaldehyde                 | 101   |
| Methylene Chloride           | 8     |
| Perchloroethylene            | 9     |
| Diesel PM                    | 51    |

Table C-2

### Lake Tahoe Air Basin

| TAC                          | El Dorado <sup>1</sup> | Placer <sup>1</sup> |
|------------------------------|------------------------|---------------------|
| Acetaldehyde                 | 42                     | 21                  |
| Benzene                      | 24                     | 11                  |
| 1,3-Butadiene                | 7                      | 3                   |
| Carbon Tetrachloride         | < .01                  | 0                   |
| Chromium, Hexavalent         | < .01                  | < .01               |
| <i>para</i> -Dichlorobenzene | 2                      | < 1                 |
| Formaldehyde                 | 74                     | 30                  |
| Methylene Chloride           | 5                      | 4                   |
| Perchloroethylene            | 5                      | 2                   |
| Diesel PM                    | 42                     | 14                  |

Table C-3

<sup>1</sup> This Air Basin includes only a portion of this county.

## County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin

### Mojave Desert Air Basin

| TAC                          | Kern <sup>1</sup> | Los Angeles <sup>1</sup> | Riverside <sup>1</sup> | San Bernardino <sup>1</sup> |
|------------------------------|-------------------|--------------------------|------------------------|-----------------------------|
| Acetaldehyde                 | 189               | 92                       | 57                     | 387                         |
| Benzene                      | 113               | 91                       | 23                     | 425                         |
| 1,3-Butadiene                | 59                | 21                       | 4                      | 109                         |
| Carbon Tetrachloride         | 0.01              | < .01                    | 0                      | 0.03                        |
| Chromium, Hexavalent         | 0.29              | 0.03                     | < .01                  | 0.02                        |
| <i>para</i> -Dichlorobenzene | 6                 | 14                       | 1                      | 19                          |
| Formaldehyde                 | 495               | 219                      | 117                    | 915                         |
| Methylene Chloride           | 16                | 103                      | 5                      | 79                          |
| Perchloroethylene            | 16                | 39                       | 4                      | 94                          |
| Diesel PM                    | 583               | 334                      | 351                    | 1759                        |

Table C-4 <sup>1</sup> This Air Basin includes only a portion of this county.

### Mountain Counties Air Basin

| TAC                          | Amador | Calaveras | El Dorado | Mariposa | Nevada | Placer <sup>1</sup> | Plumas | Sierra | Tuolumne |
|------------------------------|--------|-----------|-----------|----------|--------|---------------------|--------|--------|----------|
| Acetaldehyde                 | 32     | 49        | 86        | 27       | 122    | 40                  | 51     | 14     | 63       |
| Benzene                      | 28     | 64        | 73        | 40       | 68     | 38                  | 54     | 36     | 88       |
| 1,3-Butadiene                | 7      | 26        | 18        | 15       | 20     | 22                  | 84     | 25     | 99       |
| Carbon Tetrachloride         | 0      | 0         | 0         | 0        | 0      | 0                   | 0      | 0      | 0        |
| Chromium, Hexavalent         | < .01  | < .01     | < .01     | < .01    | < .01  | < .01               | < .01  | < .01  | < .01    |
| <i>para</i> -Dichlorobenzene | 1      | 2         | 6         | < 1      | 4      | 1                   | < 1    | < 1    | 2        |
| Formaldehyde                 | 53     | 92        | 135       | 52       | 185    | 81                  | 91     | 36     | 129      |
| Methylene Chloride           | 5      | 5         | 17        | 2        | 21     | 7                   | 2      | < 1    | 9        |
| Perchloroethylene            | 5      | 3         | 18        | 2        | 6      | 4                   | 3      | < 1    | 8        |
| Diesel PM                    | 27     | 41        | 43        | 13       | 145    | 139                 | 46     | 5      | 52       |

Table C-5 <sup>1</sup> This Air Basin includes only a portion of this county.

### North Central Coast Air Basin

| TAC                          | Monterey | San Benito | Santa Cruz |
|------------------------------|----------|------------|------------|
| Acetaldehyde                 | 119      | 36         | 75         |
| Benzene                      | 179      | 28         | 87         |
| 1,3-Butadiene                | 74       | 17         | 16         |
| Carbon Tetrachloride         | 0        | 0          | < .01      |
| Chromium, Hexavalent         | < .01    | < .01      | < .01      |
| <i>para</i> -Dichlorobenzene | 17       | 2          | 11         |
| Formaldehyde                 | 279      | 76         | 141        |
| Methylene Chloride           | 73       | 9          | 56         |
| Perchloroethylene            | 60       | 8          | 38         |
| Diesel PM                    | 346      | 180        | 127        |

Table C-6

## County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin

### North Coast Air Basin

| TAC                          | Del Norte | Humboldt | Mendocino | Sonoma <sup>1</sup> | Trinity |
|------------------------------|-----------|----------|-----------|---------------------|---------|
| Acetaldehyde                 | 20        | 92       | 79        | 30                  | 24      |
| Benzene                      | 13        | 77       | 64        | 41                  | 25      |
| 1,3-Butadiene                | 31        | 77       | 16        | 9                   | 87      |
| Carbon Tetrachloride         | 0         | 0        | 0         | 0                   | 0       |
| Chromium, Hexavalent         | < .01     | < .01    | 0.01      | < .01               | < .01   |
| <i>para</i> -Dichlorobenzene | 1         | 5        | 4         | 2                   | < 1     |
| Formaldehyde                 | 31        | 155      | 138       | 62                  | 43      |
| Methylene Chloride           | 4         | 18       | 13        | 13                  | 2       |
| Perchloroethylene            | 4         | 18       | 14        | 9                   | 2       |
| Diesel PM                    | 18        | 187      | 183       | 78                  | 37      |

Table C-7

<sup>1</sup> This Air Basin includes only a portion of this county.

### Northeast Plateau Air Basin

| TAC                          | Lassen | Modoc | Siskiyou |
|------------------------------|--------|-------|----------|
| Acetaldehyde                 | 53     | 24    | 101      |
| Benzene                      | 43     | 9     | 58       |
| 1,3-Butadiene                | 26     | 22    | 98       |
| Carbon Tetrachloride         | 0      | 0     | 0        |
| Chromium, Hexavalent         | < .01  | < .01 | < .01    |
| <i>para</i> -Dichlorobenzene | 1      | < 1   | 2        |
| Formaldehyde                 | 88     | 40    | 169      |
| Methylene Chloride           | 4      | 1     | 6        |
| Perchloroethylene            | 5      | 1     | 6        |
| Diesel PM                    | 58     | 48    | 259      |

Table C-8

### Outer Continental Shelf Air Basin

| TAC                          | Del Norte | Humboldt | Los Angeles | Marin | Mendocino | Monterey | Orange | San Diego | San Francisco | San Luis Obispo | San Mateo | Santa Barbara | Santa Cruz | Sonoma | Ventura |
|------------------------------|-----------|----------|-------------|-------|-----------|----------|--------|-----------|---------------|-----------------|-----------|---------------|------------|--------|---------|
| Acetaldehyde                 | 0         | 5        | 41          | 0     | 3         | 9        | 0      | 20        | 1             | 4               | 1         | 11            | 0          | 3      | 11      |
| Benzene                      | 1         | 4        | 16          | 1     | 3         | 6        | 1      | 7         | 2             | 4               | 6         | 49            | 1          | 2      | 7       |
| 1,3-Butadiene                | < 1       | < 1      | 1           | < 1   | < 1       | < 1      | < 1    | < 1       | < 1           | < 1             | < 1       | < 1           | < 1        | 0      | 1       |
| Carbon Tetrachloride         | 0         | 0        | 0           | 0     | 0         | 0        | 0      | 0         | 0             | 0               | 0         | < .01         | 0          | 0      | 0       |
| Chromium (Hexavalent)        | < .01     | < .01    | < .01       | < .01 | < .01     | < .01    | < .01  | < .01     | < .01         | < .01           | < .01     | < .01         | < .01      | 0.00   | 0.00    |
| <i>para</i> -DiChlorobenzene | 0         | 0        | 0           | 0     | 0         | 0        | 0      | 0         | 0             | 0               | 0         | 0             | 0          | 0      | 0       |
| Formaldehyde                 | < 1       | 10       | 83          | < 1   | 7         | 18       | < 1    | 40        | 3             | 8               | 2         | 55            | < 1        | 6      | 24      |
| Methylene Chloride           | 0         | 0        | 0           | 0     | 0         | 0        | 0      | 0         | 0             | 0               | 0         | < 1           | 0          | 0      | 0       |
| Perchloroethylene            | 0         | 0        | 0           | 0     | 0         | 0        | 0      | 0         | 0             | 0               | 0         | 3             | 0          | 0      | 0       |
| Diesel PM                    | 125       | 351      | 734         | 112   | 303       | 474      | 150    | 570       | 211           | 364             | 697       | 2003          | 124        | 150    | 418     |

Table C-9



## County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin

### Sacramento Valley Air Basin

| TAC                          | Butte | Colusa | Glenn | Placer <sup>1</sup> | Sacramento | Shasta | Solano <sup>1</sup> | Sutter | Tehama | Yolo  | Yuba  |
|------------------------------|-------|--------|-------|---------------------|------------|--------|---------------------|--------|--------|-------|-------|
| Acetaldehyde                 | 119   | 29     | 31    | 95                  | 270        | 177    | 71                  | 55     | 75     | 76    | 49    |
| Benzene                      | 100   | 40     | 32    | 103                 | 325        | 139    | 72                  | 71     | 44     | 65    | 48    |
| 1,3-Butadiene                | 59    | 14     | 30    | 21                  | 64         | 57     | 15                  | 9      | 72     | 20    | 16    |
| Carbon Tetrachloride         | 0     | 0      | 0     | 0                   | 0.05       | 0      | 0                   | 0      | < .01  | 0     | 0     |
| Chromium, Hexavalent         | < .01 | < .01  | < .01 | < .01               | 0.01       | < .01  | < .01               | < .01  | < .01  | < .01 | < .01 |
| <i>para</i> -Dichlorobenzene | 9     | < 1    | 1     | 10                  | 55         | 7      | 5                   | 4      | 2      | 8     | 3     |
| Formaldehyde                 | 236   | 89     | 60    | 206                 | 583        | 320    | 155                 | 135    | 130    | 158   | 120   |
| Methylene Chloride           | 31    | 2      | 3     | 57                  | 182        | 21     | 19                  | 10     | 7      | 26    | 7     |
| Perchloroethylene            | 28    | 3      | 4     | 33                  | 251        | 24     | 14                  | 12     | 8      | 25    | 9     |
| Diesel PM                    | 284   | 130    | 125   | 180                 | 792        | 377    | 327                 | 252    | 254    | 369   | 68    |

Table C-10 <sup>1</sup> This Air Basin includes only a portion of this county.

### Salton Sea Air Basin

| TAC                          | Imperial | Riverside <sup>1</sup> |
|------------------------------|----------|------------------------|
| Acetaldehyde                 | 113      | 129                    |
| Benzene                      | 163      | 98                     |
| 1,3-Butadiene                | 27       | 22                     |
| Carbon Tetrachloride         | 0        | < .01                  |
| Chromium, Hexavalent         | 0.06     | < .01                  |
| <i>para</i> -Dichlorobenzene | 7        | 16                     |
| Formaldehyde                 | 273      | 281                    |
| Methylene Chloride           | 19       | 69                     |
| Perchloroethylene            | 22       | 51                     |
| Diesel PM                    | 451      | 807                    |

Table C-11 <sup>1</sup> This Air Basin includes only a portion of this county.

### San Diego Air Basin

| TAC                          | San Diego |
|------------------------------|-----------|
| Acetaldehyde                 | 589       |
| Benzene                      | 869       |
| 1,3-Butadiene                | 241       |
| Carbon Tetrachloride         | 0.09      |
| Chromium, Hexavalent         | 0.23      |
| <i>para</i> -Dichlorobenzene | 122       |
| Formaldehyde                 | 1426      |
| Methylene Chloride           | 367       |
| Perchloroethylene            | 422       |
| Diesel PM                    | 2083      |

Table C-12

## County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin

### San Francisco Bay Area Air Basin

| TAC                          | Alameda | Contra Costa | Marin | Napa  | San Francisco | San Mateo | Santa Clara | Solano <sup>1</sup> | Sonoma <sup>1</sup> |
|------------------------------|---------|--------------|-------|-------|---------------|-----------|-------------|---------------------|---------------------|
| Acetaldehyde                 | 381     | 209          | 56    | 44    | 146           | 156       | 298         | 122                 | 107                 |
| Benzene                      | 389     | 293          | 97    | 70    | 162           | 192       | 395         | 108                 | 130                 |
| 1,3-Butadiene                | 74      | 50           | 22    | 29    | 30            | 47        | 78          | 39                  | 26                  |
| Carbon Tetrachloride         | < .01   | 0.93         | < .01 | < .01 | 0             | < .01     | < .01       | < .01               | < .01               |
| Chromium, Hexavalent         | 0.01    | < .01        | < .01 | < .01 | < .01         | 0.01      | 0.02        | 0.02                | < .01               |
| <i>para</i> -Dichlorobenzene | 61      | 40           | 11    | 5     | 33            | 30        | 71          | 12                  | 17                  |
| Formaldehyde                 | 816     | 528          | 126   | 99    | 315           | 374       | 682         | 333                 | 214                 |
| Methylene Chloride           | 216     | 123          | 33    | 17    | 106           | 103       | 265         | 35                  | 65                  |
| Perchloroethylene            | 169     | 88           | 33    | 14    | 88            | 85        | 172         | 24                  | 37                  |
| Diesel PM                    | 1584    | 713          | 121   | 111   | 537           | 337       | 863         | 181                 | 249                 |

Table C-13

<sup>1</sup> This Air Basin includes only a portion of this county.

### San Joaquin Valley Air Basin

| TAC                          | Fresno | Kern <sup>1</sup> | Kings | Madera | Merced | San Joaquin | Stanislaus | Tulare |
|------------------------------|--------|-------------------|-------|--------|--------|-------------|------------|--------|
| Acetaldehyde                 | 351    | 393               | 148   | 87     | 159    | 286         | 168        | 169    |
| Benzene                      | 314    | 655               | 88    | 80     | 103    | 245         | 144        | 159    |
| 1,3-Butadiene                | 108    | 56                | 38    | 28     | 24     | 51          | 40         | 156    |
| Carbon Tetrachloride         | 0      | 0                 | 0     | 0      | 0      | 0           | 0          | 0      |
| Chromium, Hexavalent         | 0.04   | 0.02              | 0.12  | < .01  | < .01  | 0.01        | < .01      | < .01  |
| <i>para</i> -Dichlorobenzene | 36     | 25                | 6     | 6      | 10     | 27          | 21         | 17     |
| Formaldehyde                 | 746    | 1392              | 413   | 178    | 333    | 617         | 361        | 356    |
| Methylene Chloride           | 121    | 68                | 15    | 16     | 27     | 75          | 61         | 46     |
| Perchloroethylene            | 159    | 93                | 28    | 22     | 33     | 111         | 81         | 61     |
| Diesel PM                    | 1519   | 2099              | 445   | 343    | 825    | 1213        | 638        | 613    |

Table C-14

<sup>1</sup> This Air Basin includes only a portion of this county.

### South Central Coast Air Basin

| TAC                          | San Luis Obispo | Santa Barbara | Ventura |
|------------------------------|-----------------|---------------|---------|
| Acetaldehyde                 | 100             | 139           | 181     |
| Benzene                      | 124             | 214           | 297     |
| 1,3-Butadiene                | 55              | 58            | 70      |
| Carbon Tetrachloride         | 0               | < .01         | 0.05    |
| Chromium, Hexavalent         | < .01           | < .01         | 0.03    |
| <i>para</i> -Dichlorobenzene | 11              | 17            | 33      |
| Formaldehyde                 | 225             | 346           | 466     |
| Methylene Chloride           | 44              | 107           | 161     |
| Perchloroethylene            | 34              | 61            | 83      |
| Diesel PM                    | 215             | 355           | 575     |

Table C-15

*County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin*

**South Coast Air Basin**

| <b>TAC</b>                   | <b>Los Angeles<sup>1</sup></b> | <b>Orange</b> | <b>Riverside<sup>1</sup></b> | <b>San Bernardino<sup>1</sup></b> |
|------------------------------|--------------------------------|---------------|------------------------------|-----------------------------------|
| Acetaldehyde                 | 1343                           | 420           | 249                          | 290                               |
| Benzene                      | 2143                           | 683           | 353                          | 400                               |
| 1,3-Butadiene                | 437                            | 135           | 84                           | 110                               |
| Carbon Tetrachloride         | 0.07                           | 0.54          | 0.09                         | 0.06                              |
| Chromium, Hexavalent         | 0.07                           | 0.02          | 0.01                         | < .01                             |
| <i>para</i> -Dichlorobenzene | 383                            | 121           | 59                           | 60                                |
| Formaldehyde                 | 3350                           | 1064          | 584                          | 669                               |
| Methylene Chloride           | 2078                           | 938           | 226                          | 271                               |
| Perchloroethylene            | 1263                           | 419           | 199                          | 212                               |
| Diesel PM                    | 6525                           | 1587          | 1058                         | 1075                              |

Table C-16

<sup>1</sup> This Air Basin includes only a portion of this county.

## *Air Quality and Health Risk*

The air quality and health risk data in the following tables cover the time period of 1990 through 2006. Annual average concentrations and health risks are listed at the statewide level, the air basin level, and site level for California's five most populous air basins. The ten TACs presented here are ones that pose the most substantial ambient health risk in California based on available data: acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, *para*-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel PM. It is important to note that there may be other compounds that pose a substantial risk, but for which data are not available.

The ambient data for all TACs except diesel PM are based on concentrations measured at sites in California's TAC monitoring network. In order to calculate a valid annual average (a mean of monthly means), each month during the year must have at least one valid measurement. Therefore, if there are no valid data in any given month, data for the year will appear to be missing, even though some data may be available. The associated health risk is based on the annual average concentration and represents the estimated number of excess cancer cases per million people exposed to the specified concentration for 70 years.

For diesel PM, the ARB previously made a preliminary estimation of concentrations for the State's 15 air basins using a PM-based exposure method. The method uses the ARB emission inventory's PM<sub>10</sub> database, ambient PM<sub>10</sub> monitoring data, and the results from several studies with chemical speciation of ambient data. These data were used, along with receptor modeling techniques, to estimate statewide outdoor concentrations of diesel PM. Details on the method and the resulting estimates can be found in the ARB report entitled: "*Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles,*" (October 2000).

Numerous factors influence the ambient TAC measurements, and a number of assumptions are embodied in the summary statistics. These factors are described in Chapter 1 under the heading "Interpreting the Emission and Air Quality Statistics." These factors must be considered when using the statistics presented here. Finally, it is important to note that the data provided reflect concentrations measured at a specific location or, in the case of the air basin summary data, spatially averaged concentrations. The ambient concentrations and health risks for other locations may be higher or lower.

# California

## Statewide Summary

| TAC                          | Conc.1/Risk <sup>2</sup> | Annual Average Concentrations and Health Risks |       |      |       |       |        |       |       |       |       |       |       |       |       |       |       |       |
|------------------------------|--------------------------|--|-------|------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                              |                          | 1990   | 1991  | 1992 | 1993  | 1994  | 1995   | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Acetaldehyde                 | Annual Avg               | 1.73   | 1.97  | 1.54 | 1.76  | 1.52  | 0.61   | 1.34  | 1.16  | 1.08  | 1.29  | 1     | 1.1   | 1.18  | 1.19  | 1.12  | 1.32  | 1.03  |
|                              | Health Risk              | 8  | 10    | 7    | 9     | 7     | 3      | 6     | 6     | 5     | 6     | 5     | 5     | 6     | 6     | 5     | 6     | 5     |
| Benzene                      | Annual Avg               | 2.57   | 2.14  | 1.71 | 1.5   | 1.58  | 1.31   | 0.93  | 0.85  | 0.86  | 0.85  | 0.71  | 0.608 | 0.625 | 0.565 | 0.461 | 0.478 | 0.41  |
|                              | Health Risk              | 238  | 198   | 158  | 139   | 146   | 121    | 86    | 79    | 80    | 79    | 66    | 56    | 58    | 52    | 43    | 44    | 38    |
| 1,3-Butadiene                | Annual Avg               | 0.412  | 0.341 | 0.32 | 0.392 | 0.343 | 0.31   | 0.262 | 0.234 | 0.245 | 0.225 | 0.183 | 0.174 | 0.172 | 0.117 | 0.107 | 0.101 | 0.085 |
|                              | Health Risk              | 155  | 128   | 120  | 147   | 129   | 117    | 99    | 88    | 92    | 85    | 69    | 65    | 65    | 44    | 40    | 38    | 32    |
| Carbon Tetrachloride         | Annual Avg               | 0.131  | 0.128 |      | 0.106 |       | 0.1    | 0.078 |       | 0.114 |       | 0.094 | 0.087 | 0.091 | 0.094 |       |       |       |
|                              | Health Risk              | 34   | 34    |      | 28    |       | 26     | 21    |       | 30    |       | 25    | 23    | 24    | 25    |       |       |       |
| Chromium, Hexavalent         | Annual Avg               |  |       | 0.27 | 0.22  | 0.21  | 0.29   | 0.13  | 0.12  | 0.11  | 0.11  | 0.13  | 0.13  | 0.101 | 0.094 | 0.088 | 0.091 | 0.079 |
|                              | Health Risk              |  |       | 40   | 33    | 31    | 43     | 20    | 18    | 17    | 17    | 19    | 19    | 15    | 14    | 13    | 14    | 12    |
| <i>para</i> -Dichlorobenzene | Annual Avg               |  | 0.14  | 0.14 | 0.14  | 0.13  | 0.14   | 0.12  | 0.14  |       |       | 0.12  | 0.14  | 0.16  | 0.16  | 0.16  | 0.15  | 0.15  |
|                              | Health Risk              |  | 9     | 9    | 9     | 8     | 9      | 8     | 9     |       |       | 8     | 10    | 10    | 10    | 10    | 10    | 10    |
| Formaldehyde                 | Annual Avg               | 2.18   | 2.07  | 1.65 | 2.08  | 2.18  | 2.93   | 3.38  | 2.89  | 2.64  | 3.2   | 2.55  | 3.18  | 3.5   | 3.15  | 2.69  | 2.86  | 2.67  |
|                              | Health Risk              | 16   | 15    | 12   | 15    | 16    | 22     | 25    | 21    | 19    | 24    | 19    | 23    | 26    | 23    | 20    | 21    | 20    |
| Methylene Chloride           | Annual Avg               | 1.09   | 1.27  | 0.75 | 0.93  | 0.79  | 0.77   | 0.66  | 0.66  | 0.62  | 0.66  | 0.67  | 0.36  | 0.28  | 0.28  | 0.25  | 0.25  | 0.18  |
|                              | Health Risk              | 4  | 4     | 3    | 3     | 3     | 3      | 2     | 2     | 2     | 2     | 2     | 1     | 1     | 1     | <1    | <1    | <1    |
| Perchloroethylene            | Annual Avg               | 0.277  | 0.271 | 0.21 | 0.27  | 0.18  | 0.166  | 0.134 | 0.116 | 0.114 |       | 0.115 | 0.089 | 0.077 | 0.057 | 0.046 | 0.047 | 0.039 |
|                              | Health Risk              | 11   | 11    | 8    | 11    | 7     | 7      | 5     | 5     | 5     |       | 5     | 4     | 3     | 2     | 2     | 2     | 2     |
| Diesel PM <sup>3</sup>       | Annual Avg               | (3.0)  |       |      |       |       | (2.2)  |       |       |       |       | (1.8) |       |       |       |       |       |       |
|                              | Health Risk              | (900)  |       |      |       |       | (660)  |       |       |       |       | (540) |       |       |       |       |       |       |
| Average State Risk           | w/o Diesel PM            | 466  | 409   | 357  | 394   | 347   | 351    | 272   | 228   | 250   | 213   | 218   | 206   | 208   | 177   | 133   | 135   | 119   |
|                              | w/ Diesel PM             | (1366)   |       |      |       |       | (1011) |       |       |       |       | (758) |       |       |       |       |       |       |

1 Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

3 The Diesel PM concentrations are estimates based on receptor modeling, and they are available for selected years. Currently, the Diesel PM estimates are being reviewed.

Table C-17

## South Coast Air Basin

### Air Basin Summary

| TAC                          | Conc. <sup>1</sup> /Risk <sup>2</sup> | Annual Average Concentrations and Health Risks |       |       |       |       |        |       |       |       |       |        |       |       |       |       |       |       |
|------------------------------|---------------------------------------|--|-------|-------|-------|-------|--------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|
|                              |                                       | 1990   | 1991  | 1992  | 1993  | 1994  | 1995   | 1996  | 1997  | 1998  | 1999  | 2000   | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Acetaldehyde                 | Annual Avg                            | 2.46   | 3     | 2.46  | 2.67  | 2.3   | 0.97   | 2.08  | 1.77  | 1.54  | 1.63  | 1.26   | 1.47  | 1.41  | 1.47  | 1.46  | 1.79  | 1.17  |
|                              | Health Risk                           | 12   | 15    | 12    | 13    | 11    | 5      | 10    | 9     | 7     | 8     | 6      | 7     | 7     | 7     | 7     | 9     | 6     |
| Benzene                      | Annual Avg                            | 3.42   | 2.91  | 2.61  | 2.17  | 2.4   | 1.89   | 1.45  | 1.34  | 1.25  | 1.2   | 0.97   | 0.86  | 0.769 | 0.745 | 0.589 | 0.634 | 0.504 |
|                              | Health Risk                           | 317  | 269   | 242   | 201   | 222   | 175    | 134   | 124   | 116   | 111   | 90     | 80    | 71    | 69    | 55    | 59    | 47    |
| 1,3-Butadiene                | Annual Avg                            | 0.532  | 0.452 | 0.498 | 0.565 | 0.497 | 0.459  | 0.39  | 0.378 | 0.354 | 0.328 | 0.251  | 0.251 | 0.211 | 0.147 | 0.143 | 0.137 | 0.111 |
|                              | Health Risk                           | 200  | 170   | 187   | 212   | 187   | 173    | 146   | 142   | 133   | 123   | 94     | 94    | 79    | 55    | 54    | 51    | 42    |
| Carbon Tetrachloride         | Annual Avg                            | 0.136  | 0.134 |       | 0.105 |       | 0.102  | 0.079 |       | 0.114 |       | 0.096  | 0.086 | 0.092 | 0.093 |       |       |       |
|                              | Health Risk                           | 36   | 35    |       | 28    |       | 27     | 21    |       | 30    |       | 25     | 23    | 24    | 25    |       |       |       |
| Chromium, Hexavalent         | Annual Avg                            |  |       | 0.39  | 0.29  | 0.29  | 0.46   | 0.18  | 0.17  | 0.15  | 0.14  | 0.18   |       | 0.179 | 0.158 | 0.126 | 0.139 | 0.139 |
|                              | Health Risk                           |  |       | 59    | 43    | 43    | 69     | 27    | 25    | 22    | 22    | 27     |       | 27    | 24    | 19    | 21    | 21    |
| <i>para</i> -Dichlorobenzene | Annual Avg                            |  | 0.17  | 0.19  | 0.17  | 0.13  | 0.17   | 0.11  | 0.13  |       |       | 0.13   | 0.15  | 0.16  | 0.17  | 0.16  | 0.15  | 0.15  |
|                              | Health Risk                           |  | 11    | 13    | 11    | 8     | 11     | 7     | 9     |       |       | 9      | 10    | 11    | 11    | 11    | 10    | 10    |
| Formaldehyde                 | Annual Avg                            | 2.92   | 3.08  | 2.22  | 3.22  | 3.14  | 3.57   | 5.06  | 4.47  | 3.79  | 4.06  | 3.13   | 4.13  | 4.16  | 3.83  | 3.76  | 4.21  | 3.58  |
|                              | Health Risk                           | 22   | 23    | 16    | 24    | 23    | 26     | 37    | 33    | 28    | 30    | 23     | 30    | 31    | 28    | 28    | 31    | 26    |
| Methylene Chloride           | Annual Avg                            | 1.86   | 1.51  | 0.9   | 1.23  | 1.1   | 1.28   | 0.95  | 1.14  | 0.85  | 0.92  | 0.83   | 0.63  | 0.57  | 0.59  | 0.57  | 0.57  | 0.32  |
|                              | Health Risk                           | 6  | 5     | 3     | 4     | 4     | 4      | 3     | 4     | 3     | 3     | 3      | 2     | 2     | 2     | 2     | 2     | 1     |
| Perchloroethylene            | Annual Avg                            | 0.576  | 0.547 | 0.412 | 0.448 | 0.393 | 0.364  | 0.32  | 0.274 | 0.259 |       | 0.207  | 0.176 | 0.146 | 0.105 | 0.082 | 0.08  | 0.062 |
|                              | Health Risk                           | 23   | 22    | 16    | 18    | 16    | 15     | 13    | 11    | 10    |       | 8      | 7     | 6     | 4     | 3     | 3     | 2     |
| Diesel PM <sup>3</sup>       | Annual Avg                            | (3.6)  |       |       |       |       | (2.7)  |       |       |       |       | (2.4)  |       |       |       |       |       |       |
|                              | Health Risk                           |  |       |       |       |       | (810)  |       |       |       |       | (720)  |       |       |       |       |       |       |
| Average Basin Risk           | w/o Diesel PM                         | 616  | 550   | 548   | 554   | 514   | 505    | 398   | 357   | 349   | 297   | 285    | 253   | 258   | 225   | 179   | 186   | 155   |
|                              | w/ Diesel PM                          | (1696)   |       |       |       |       | (1315) |       |       |       |       | (1005) |       |       |       |       |       |       |

1 Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

3 The Diesel PM concentrations are estimates based on receptor modeling, and they are available for selected years. Currently, the Diesel PM estimates are being reviewed.

## South Coast Air Basin

### Los Angeles County: Azusa

| Annual Average Concentrations and Health Risks |                                       |                              |      |      |      |      |      |      |      |      |      |            |           |            |            |            |            |           |
|--|---------------------------------------|------------------------------|------|------|------|------|------|------|------|------|------|------------|-----------|------------|------------|------------|------------|-----------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000       | 2001      | 2002       | 2003       | 2004       | 2005       | 2006      |
| Acetaldehyde                                   | Annual Avg                            |                              |      |      |      |      |      |      |      |      |      | 1.1        | 1.31      |            | 1.25       | 1.53       | 1.86       |           |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |      |      | 5          | 6         |            | 6          | 7          | 9          |           |
| Benzene  | Annual Avg                            |                              |      |      |      |      |      |      |      |      |      | 0.69       |           | 0.621      | 0.598      | 0.432      | 0.512      | 0.376     |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |      |      | 64         |           | 57         | 55         | 40         | 47         | 35        |
| 1,3-Butadiene                                  | Annual Avg                            |                              |      |      |      |      |      |      |      |      |      | 0.146      |           | 0.135      | 0.076      | 0.076      | 0.078      | 0.061     |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |      |      | 55         |           | 51         | 29         | 29         | 29         | 23        |
| Carbon Tetrachloride                           | Annual Avg                            |                              |      |      |      |      |      |      |      |      |      | 0.093      |           | 0.09       | 0.095      |            |            |           |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |      |      | 24         |           | 24         | 25         |            |            |           |
| Chromium, Hexavalent                           | Annual Avg                            |                              |      |      |      |      |      |      |      |      |      | 0.12       |           |            | 0.09       | 0.073      | 0.08       |           |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |      |      | 19         |           |            | 14         | 11         | 12         |           |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              |      |      |      |      |      |      |      |      |      | 0.1        |           | 0.15       | 0.15       | 0.15       | 0.15       | 0.15      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |      |      | 7          |           | 10         | 10         | 10         | 10         | 10        |
| Formaldehyde                                   | Annual Avg                            |                              |      |      |      |      |      |      |      |      |      | 3.05       | 3.8       |            | 3.45       | 3.04       | 3.62       |           |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |      |      | 22         | 28        |            | 25         | 22         | 27         |           |
| Methylene Chloride                             | Annual Avg                            |                              |      |      |      |      |      |      |      |      |      | 1.32       |           | 1          | 0.96       | 1.43       | 1.26       | 0.56      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |      |      | 5          |           | 3          | 3          | 5          | 4          | 2         |
| Perchloroethylene                              | Annual Avg                            |                              |      |      |      |      |      |      |      |      |      | 0.183      |           | 0.153      | 0.109      | 0.063      | 0.076      | 0.05      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |      |      | 7          |           | 6          | 4          | 3          | 3          | 2         |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |      |      |      |      |      |      |      |      |      |            |           |            |            |            |            |           |
|  | Health Risk                           | No Monitoring Data Available |      |      |      |      |      |      |      |      |      |            |           |            |            |            |            |           |
| <b>Total Health Risk</b>                       |                                       |                              |      |      |      |      |      |      |      |      |      | <b>208</b> | <b>34</b> | <b>151</b> | <b>171</b> | <b>127</b> | <b>141</b> | <b>72</b> |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-19

*South Coast Air Basin*

## Los Angeles County: Burbank - West Palm Avenue

| Annual Average Concentrations and Health Risks |                                       |                              |            |            |            |            |            |            |            |            |            |            |            |            |      |            |            |            |
|--|---------------------------------------|------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------|------------|------------|------------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991       | 1992       | 1993       | 1994       | 1995       | 1996       | 1997       | 1998       | 1999       | 2000       | 2001       | 2002       | 2003 | 2004       | 2005       | 2006       |
| Acetaldehyde                                   | Annual Avg                            | 3.16                         | 3.89       |            | 3.06       | 2.46       | 0.79       |            |            | 1.94       | 2.7        | 1.7        | 1.93       | 1.96       |      | 1.77       | 2.15       | 1.74       |
|  | Health Risk                           | 15                           | 19         |            | 15         | 12         | 4          |            |            | 9          | 13         | 8          | 9          | 10         |      | 9          | 10         | 8          |
| Benzene  | Annual Avg                            | 4.79                         | 3.91       | 3.44       | 2.63       | 3.33       | 2.45       | 1.91       | 1.48       | 1.66       | 1.64       | 1.27       | 1.06       | 1.01       |      | 0.754      | 0.832      | 0.689      |
|  | Health Risk                           | 444                          | 362        | 319        | 244        | 308        | 227        | 177        | 137        | 154        | 151        | 117        | 98         | 93         |      | 70         | 77         | 64         |
| 1,3-Butadiene                                  | Annual Avg                            | 0.782                        | 0.623      | 0.725      | 0.749      | 0.752      | 0.605      | 0.512      | 0.421      | 0.483      | 0.483      | 0.345      | 0.328      | 0.283      |      | 0.18       | 0.196      | 0.169      |
|  | Health Risk                           | 294                          | 234        | 272        | 282        | 283        | 227        | 192        | 158        | 182        | 181        | 130        | 123        | 106        |      | 68         | 74         | 64         |
| Carbon Tetrachloride                           | Annual Avg                            | 0.141                        | 0.133      |            |            |            | 0.104      | 0.082      |            | 0.114      |            | 0.094      | 0.086      | 0.091      |      |            |            |            |
|  | Health Risk                           | 37                           | 35         |            |            |            | 28         | 22         |            | 30         |            | 25         | 23         | 24         |      |            |            |            |
| Chromium, Hexavalent                           | Annual Avg                            |                              |            | 0.65       | 0.37       | 0.43       | 1.24       |            |            | 0.23       | 0.2        | 0.19       |            | 0.123      |      | 0.113      | 0.113      | 0.115      |
|  | Health Risk                           |                              |            | 97         | 55         | 64         | 186        |            |            | 34         | 29         | 28         |            | 18         |      | 17         | 17         | 17         |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              | 0.23       | 0.22       | 0.19       | 0.14       | 0.2        | 0.1        | 0.11       |            |            | 0.13       | 0.15       | 0.17       |      | 0.17       | 0.15       | 0.15       |
|  | Health Risk                           |                              | 15         | 15         | 12         | 9          | 13         | 7          | 7          |            |            | 8          | 10         | 11         |      | 11         | 10         | 10         |
| Formaldehyde                                   | Annual Avg                            | 4.05                         | 3.59       |            | 3.66       | 3.92       | 4.58       |            |            | 4.72       | 6.07       | 4.14       | 4.87       | 5.48       |      | 3.85       | 4.42       | 3.95       |
|  | Health Risk                           | 30                           | 26         |            | 27         | 29         | 34         |            |            | 35         | 45         | 30         | 36         | 40         |      | 28         | 33         | 29         |
| Methylene Chloride                             | Annual Avg                            | 3.25                         | 1.69       | 1.42       | 2.01       | 1.94       | 1.82       | 1.41       | 1.11       | 1.07       |            | 0.8        | 0.6        | 0.6        |      | 0.41       | 0.42       | 0.3        |
|  | Health Risk                           | 11                           | 6          | 5          | 7          | 7          | 6          | 5          | 4          | 4          |            | 3          | 2          | 2          |      | 1          | 1          | 1          |
| Perchloroethylene                              | Annual Avg                            | 1.19                         | 0.785      | 0.609      | 0.62       | 0.663      | 0.487      | 0.44       | 0.365      | 0.503      |            | 0.368      | 0.296      | 0.247      |      | 0.151      | 0.135      | 0.094      |
|  | Health Risk                           | 48                           | 31         | 24         | 25         | 26         | 19         | 18         | 15         | 20         |            | 15         | 12         | 10         |      | 6          | 5          | 4          |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |            |            |            |            |            |            |            |            |            |            |            |            |      |            |            |            |
|  | Health Risk                           | No Monitoring Data Available |            |            |            |            |            |            |            |            |            |            |            |            |      |            |            |            |
| <b>Total Health Risk</b>                       |                                       | <b>879</b>                   | <b>728</b> | <b>732</b> | <b>667</b> | <b>738</b> | <b>744</b> | <b>421</b> | <b>321</b> | <b>468</b> | <b>419</b> | <b>364</b> | <b>313</b> | <b>314</b> |      | <b>210</b> | <b>227</b> | <b>197</b> |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.



## South Coast Air Basin

### Los Angeles County: North Main Street

| Annual Average Concentrations and Health Risks |                                       |                              |            |            |            |            |            |            |      |            |            |            |            |           |            |            |            |           |
|--|---------------------------------------|------------------------------|------------|------------|------------|------------|------------|------------|------|------------|------------|------------|------------|-----------|------------|------------|------------|-----------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991       | 1992       | 1993       | 1994       | 1995       | 1996       | 1997 | 1998       | 1999       | 2000       | 2001       | 2002      | 2003       | 2004       | 2005       | 2006      |
| Acetaldehyde                                   | Annual Avg                            | 2.68                         | 2.78       | 2.5        | 2.89       | 2.35       | 1.28       | 2.33       |      |            | 1.43       | 0.84       | 1.45       | 1.3       | 1.39       | 1.24       | 1.84       | 1.19      |
|  | Health Risk                           | 13                           | 13         | 12         | 14         | 11         | 6          | 11         |      |            | 7          | 4          | 7          | 6         | 7          | 6          | 9          | 6         |
| Benzene  | Annual Avg                            | 3.5                          | 3.25       | 2.97       | 2.54       | 2.45       | 2.24       | 1.86       |      | 1.36       | 1.5        | 1.04       | 1.03       |           | 0.853      | 0.677      | 0.722      |           |
|  | Health Risk                           | 324                          | 301        | 275        | 235        | 227        | 207        | 173        |      | 126        | 139        | 97         | 95         |           | 79         | 63         | 67         |           |
| 1,3-Butadiene                                  | Annual Avg                            | 0.6                          | 0.547      | 0.643      | 0.733      | 0.588      | 0.599      | 0.542      |      | 0.421      | 0.432      | 0.296      | 0.313      |           | 0.186      | 0.195      | 0.164      |           |
|  | Health Risk                           | 226                          | 206        | 242        | 276        | 221        | 225        | 204        |      | 158        | 162        | 111        | 118        |           | 70         | 73         | 62         |           |
| Carbon Tetrachloride                           | Annual Avg                            | 0.138                        | 0.134      |            |            |            | 0.103      | 0.079      |      | 0.112      |            | 0.098      | 0.086      |           | 0.095      |            |            |           |
|  | Health Risk                           | 36                           | 35         |            |            |            | 27         | 21         |      | 30         |            | 26         | 23         |           | 25         |            |            |           |
| Chromium, Hexavalent                           | Annual Avg                            |                              |            |            | 0.24       | 0.27       | 0.23       | 0.17       |      |            | 0.11       | 0.13       |            | 0.133     | 0.07       |            | 0.125      | 0.105     |
|  | Health Risk                           |                              |            |            | 36         | 40         | 35         | 25         |      |            | 16         | 19         |            | 20        | 11         |            | 19         | 16        |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              | 0.19       | 0.22       | 0.19       | 0.16       | 0.19       | 0.12       |      |            |            | 0.16       | 0.17       |           | 0.16       | 0.17       | 0.15       |           |
|  | Health Risk                           |                              | 13         | 14         | 12         | 10         | 13         | 8          |      |            |            | 11         | 11         |           | 10         | 11         | 10         |           |
| Formaldehyde                                   | Annual Avg                            | 3.5                          | 3          | 2.3        | 3.23       | 3.54       | 4.13       | 5.87       |      |            | 3.88       | 2.42       | 4.3        | 4.32      | 3.79       | 5.69       | 6.64       | 6.69      |
|  | Health Risk                           | 26                           | 22         | 17         | 24         | 26         | 30         | 43         |      |            | 29         | 18         | 32         | 32        | 28         | 42         | 49         | 49        |
| Methylene Chloride                             | Annual Avg                            | 1.28                         | 2.72       | 0.68       | 1.05       | 1.06       | 1.51       | 1.1        |      | 0.8        | 1.2        | 0.68       | 0.74       |           | 0.59       | 0.5        | 0.44       |           |
|  | Health Risk                           | 4                            | 9          | 2          | 4          | 4          | 5          | 4          |      | 3          | 4          | 2          | 3          |           | 2          | 2          | 2          |           |
| Perchloroethylene                              | Annual Avg                            | 0.551                        | 0.603      | 0.536      | 0.588      | 0.503      | 0.574      | 0.502      |      | 0.232      |            | 0.187      | 0.177      |           | 0.109      | 0.088      | 0.087      |           |
|  | Health Risk                           | 22                           | 24         | 21         | 24         | 20         | 23         | 20         |      | 9          |            | 7          | 7          |           | 4          | 4          | 3          |           |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |            |            |            |            |            |            |      |            |            |            |            |           |            |            |            |           |
|  | Health Risk                           | No Monitoring Data Available |            |            |            |            |            |            |      |            |            |            |            |           |            |            |            |           |
| <b>Total Health Risk</b>                       |                                       | <b>651</b>                   | <b>623</b> | <b>583</b> | <b>625</b> | <b>559</b> | <b>571</b> | <b>509</b> |      | <b>326</b> | <b>357</b> | <b>295</b> | <b>296</b> | <b>58</b> | <b>236</b> | <b>201</b> | <b>221</b> | <b>71</b> |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-21

*South Coast Air Basin*

## Los Angeles County: North Long Beach

| Annual Average Concentrations and Health Risks |                                       |                              |            |            |            |            |            |      |            |            |            |            |           |            |            |            |           |            |
|--|---------------------------------------|------------------------------|------------|------------|------------|------------|------------|------|------------|------------|------------|------------|-----------|------------|------------|------------|-----------|------------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991       | 1992       | 1993       | 1994       | 1995       | 1996 | 1997       | 1998       | 1999       | 2000       | 2001      | 2002       | 2003       | 2004       | 2005      | 2006       |
| Acetaldehyde                                   | Annual Avg                            | 2.49                         | 2.52       |            | 2.36       | 2.18       | 0.81       |      | 1.43       |            |            | 1.16       | 1.11      |            | 1.06       | 1.19       | 1.39      | 0.91       |
|  | Health Risk                           | 12                           | 12         |            | 11         | 11         | 4          |      | 7          |            |            | 6          | 5         |            | 5          | 6          | 7         | 4          |
| Benzene  | Annual Avg                            | 3.53                         | 2.45       | 2.6        | 1.99       | 2.04       | 1.69       |      | 1.24       | 1.16       | 1.11       | 1          |           | 0.705      | 0.705      | 0.554      |           | 0.484      |
|  | Health Risk                           | 327                          | 227        | 241        | 185        | 188        | 157        |      | 115        | 108        | 103        | 92         |           | 65         | 65         | 51         |           | 45         |
| 1,3-Butadiene                                  | Annual Avg                            | 0.592                        | 0.439      | 0.523      | 0.575      | 0.447      | 0.448      |      | 0.364      | 0.339      | 0.323      | 0.278      |           | 0.198      | 0.142      | 0.144      |           | 0.113      |
|  | Health Risk                           | 223                          | 165        | 197        | 216        | 168        | 169        |      | 137        | 127        | 121        | 104        |           | 75         | 53         | 54         |           | 42         |
| Carbon Tetrachloride                           | Annual Avg                            | 0.139                        | 0.129      |            |            |            | 0.099      |      |            | 0.118      |            | 0.097      |           | 0.092      | 0.092      |            |           |            |
|  | Health Risk                           | 37                           | 34         |            |            |            | 26         |      |            | 31         |            | 26         |           | 24         | 24         |            |           |            |
| Chromium, Hexavalent                           | Annual Avg                            |                              |            | 0.44       | 0.34       | 0.22       | 0.25       |      | 0.15       | 0.11       | 0.12       | 0.12       |           | 0.078      |            | 0.09       | 0.1       | 0.088      |
|  | Health Risk                           |                              |            | 66         | 51         | 33         | 38         |      | 22         | 16         | 18         | 18         |           | 12         |            | 14         | 15        | 13         |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              | 0.17       | 0.26       | 0.19       | 0.12       | 0.17       |      | 0.16       |            |            | 0.13       |           | 0.18       | 0.2        | 0.15       |           | 0.15       |
|  | Health Risk                           |                              | 11         | 17         | 13         | 8          | 11         |      | 10         |            |            | 8          |           | 12         | 13         | 10         |           | 10         |
| Formaldehyde                                   | Annual Avg                            | 2.97                         | 2.76       |            | 3.22       | 3.06       | 3.29       |      | 3.68       |            |            | 2.88       | 2.96      |            | 2.79       | 2.78       | 2.91      | 2.41       |
|  | Health Risk                           | 22                           | 20         |            | 24         | 23         | 24         |      | 27         |            |            | 21         | 22        |            | 21         | 20         | 21        | 18         |
| Methylene Chloride                             | Annual Avg                            | 2.05                         | 0.88       | 1          | 1.15       | 0.84       | 0.98       |      | 0.74       | 0.6        |            | 0.65       |           | 0.27       | 0.31       | 0.24       |           | 0.21       |
|  | Health Risk                           | 7                            | 3          | 3          | 4          | 3          | 3          |      | 3          | 2          |            | 2          |           | <1         | 1          | <1         |           | <1         |
| Perchloroethylene                              | Annual Avg                            | 0.477                        | 0.355      | 0.349      | 0.433      | 0.321      | 0.318      |      | 0.227      | 0.193      |            | 0.168      |           | 0.095      | 0.076      | 0.057      |           | 0.054      |
|  | Health Risk                           | 19                           | 14         | 14         | 17         | 13         | 13         |      | 9          | 8          |            | 7          |           | 4          | 3          | 2          |           | 2          |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |            |            |            |            |            |      |            |            |            |            |           |            |            |            |           |            |
|  | Health Risk                           | No Monitoring Data Available |            |            |            |            |            |      |            |            |            |            |           |            |            |            |           |            |
| <b>Total Health Risk</b>                       |                                       | <b>647</b>                   | <b>486</b> | <b>538</b> | <b>521</b> | <b>447</b> | <b>445</b> |      | <b>330</b> | <b>292</b> | <b>242</b> | <b>284</b> | <b>27</b> | <b>192</b> | <b>185</b> | <b>157</b> | <b>43</b> | <b>134</b> |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

## South Coast Air Basin

### Riverside County: Riverside - Rubidoux

| Annual Average Concentrations and Health Risks |                                       |                              |            |            |            |            |            |            |      |      |            |            |            |            |            |            |            |            |
|--|---------------------------------------|------------------------------|------------|------------|------------|------------|------------|------------|------|------|------------|------------|------------|------------|------------|------------|------------|------------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991       | 1992       | 1993       | 1994       | 1995       | 1996       | 1997 | 1998 | 1999       | 2000       | 2001       | 2002       | 2003       | 2004       | 2005       | 2006       |
| Acetaldehyde                                   | Annual Avg                            | 1.87                         | 2.54       | 1.86       | 2.19       | 2.08       | 0.89       | 1.84       |      |      | 1.36       | 1.49       | 1.58       | 1.66       | 1.66       | 1.59       | 1.7        | 0.97       |
|  | Health Risk                           | 9                            | 12         | 9          | 11         | 10         | 4          | 9          |      |      | 7          | 7          | 8          | 8          | 8          | 8          | 8          | 5          |
| Benzene  | Annual Avg                            | 2.55                         | 2.22       | 1.9        | 1.77       | 2.01       | 1.45       | 1.03       |      |      | 0.87       | 0.85       | 0.685      |            | 0.623      | 0.526      | 0.505      | 0.42       |
|  | Health Risk                           | 236                          | 206        | 176        | 164        | 186        | 134        | 95         |      |      | 80         | 79         | 63         |            | 58         | 49         | 47         | 39         |
| 1,3-Butadiene                                  | Annual Avg                            | 0.34                         | 0.312      | 0.292      | 0.379      | 0.363      | 0.332      | 0.267      |      |      | 0.208      | 0.193      | 0.175      |            | 0.118      | 0.121      | 0.112      | 0.083      |
|  | Health Risk                           | 128                          | 117        | 110        | 143        | 136        | 125        | 100        |      |      | 78         | 72         | 66         |            | 44         | 45         | 42         | 31         |
| Carbon Tetrachloride                           | Annual Avg                            | 0.131                        | 0.136      |            |            |            | 0.102      | 0.079      |      |      |            | 0.096      | 0.086      |            | 0.093      |            |            |            |
|  | Health Risk                           | 34                           | 36         |            |            |            | 27         | 21         |      |      |            | 25         | 23         |            | 24         |            |            |            |
| Chromium, Hexavalent                           | Annual Avg                            |                              |            | 0.33       | 0.33       | 0.36       | 0.38       | 0.22       |      |      | 0.19       | 0.35       |            | 0.41       | 0.348      |            |            |            |
|  | Health Risk                           |                              |            | 50         | 50         | 55         | 56         | 33         |      |      | 29         | 52         |            | 62         | 52         |            |            |            |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              | 0.13       | 0.13       | 0.16       | 0.12       | 0.17       | 0.11       |      |      |            | 0.14       | 0.15       |            | 0.17       | 0.16       | 0.15       | 0.15       |
|  | Health Risk                           |                              | 9          | 8          | 10         | 8          | 11         | 7          |      |      |            | 9          | 10         |            | 12         | 11         | 10         | 10         |
| Formaldehyde                                   | Annual Avg                            | 1.75                         | 2.7        | 1.53       | 2.73       | 2.5        | 2.65       | 4.15       |      |      | 3.55       | 3.17       | 4.73       | 4.36       | 4.18       | 3.46       | 3.47       | 2.55       |
|  | Health Risk                           | 13                           | 20         | 11         | 20         | 18         | 19         | 31         |      |      | 26         | 23         | 35         | 32         | 31         | 25         | 26         | 19         |
| Methylene Chloride                             | Annual Avg                            |                              | 0.69       | 0.6        | 1.1        | 0.93       | 0.98       | 0.83       |      |      | 0.58       | 0.69       | 0.44       |            | 0.45       | 0.29       | 0.3        | 0.18       |
|  | Health Risk                           |                              | 2          | 2          | 4          | 3          | 3          | 3          |      |      | 2          | 2          | 2          |            | 2          | 1          | 1          | <1         |
| Perchloroethylene                              | Annual Avg                            | 0.237                        | 0.276      | 0.201      | 0.198      | 0.191      | 0.177      | 0.175      |      |      |            | 0.129      | 0.112      |            | 0.06       | 0.051      | 0.046      | 0.038      |
|  | Health Risk                           | 9                            | 11         | 8          | 8          | 8          | 7          | 7          |      |      |            | 5          | 4          |            | 2          | 2          | 2          | 1          |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |            |            |            |            |            |            |      |      |            |            |            |            |            |            |            |            |
|  | Health Risk                           | No Monitoring Data Available |            |            |            |            |            |            |      |      |            |            |            |            |            |            |            |            |
| <b>Total Health Risk</b>                       |                                       | <b>429</b>                   | <b>413</b> | <b>374</b> | <b>410</b> | <b>424</b> | <b>386</b> | <b>306</b> |      |      | <b>222</b> | <b>274</b> | <b>211</b> | <b>102</b> | <b>233</b> | <b>141</b> | <b>136</b> | <b>105</b> |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-23

## South Coast Air Basin

### San Bernardino County: Fontana - Arrow Highway

| Annual Average Concentrations and Health Risks |                                       |                              |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |
|--|---------------------------------------|------------------------------|------|------|------|------|------|------|------|------------|------|------|------|------|------|------|------|------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998       | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| Acetaldehyde                                   | Annual Avg                            |                              |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |
| Benzene  | Annual Avg                            |                              |      |      |      |      |      |      |      | 0.98       |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      | 91         |      |      |      |      |      |      |      |      |
| 1,3-Butadiene                                  | Annual Avg                            |                              |      |      |      |      |      |      |      | 0.244      |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      | 92         |      |      |      |      |      |      |      |      |
| Carbon Tetrachloride                           | Annual Avg                            |                              |      |      |      |      |      |      |      | 0.114      |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      | 30         |      |      |      |      |      |      |      |      |
| Chromium, Hexavalent                           | Annual Avg                            |                              |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |
| Formaldehyde                                   | Annual Avg                            |                              |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |
| Methylene Chloride                             | Annual Avg                            |                              |      |      |      |      |      |      |      | 0.59       |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      | 2          |      |      |      |      |      |      |      |      |
| Perchloroethylene                              | Annual Avg                            |                              |      |      |      |      |      |      |      | 0.179      |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      | 7          |      |      |      |      |      |      |      |      |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |
| <b>Total Health Risk</b>                       |                                       |                              |      |      |      |      |      |      |      | <b>222</b> |      |      |      |      |      |      |      |      |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

## South Coast Air Basin

### San Bernardino County: Upland - San Bernardino Road

| Annual Average Concentrations and Health Risks |                                       |                              |            |            |            |            |            |            |            |      |      |      |      |      |      |      |      |      |
|--|---------------------------------------|------------------------------|------------|------------|------------|------------|------------|------------|------------|------|------|------|------|------|------|------|------|------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991       | 1992       | 1993       | 1994       | 1995       | 1996       | 1997       | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| Acetaldehyde                                   | Annual Avg                            | 2.12                         | 3.28       | 2.36       | 2.84       | 2.42       | 1.09       | 2.13       |            |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 10                           | 16         | 11         | 14         | 12         | 5          | 10         |            |      |      |      |      |      |      |      |      |      |
| Benzene  | Annual Avg                            | 2.73                         | 2.7        | 2.14       | 1.92       | 2.15       | 1.62       | 1.11       | 1.11       |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 253                          | 250        | 198        | 178        | 199        | 150        | 103        | 103        |      |      |      |      |      |      |      |      |      |
| 1,3-Butadiene                                  | Annual Avg                            | 0.348                        | 0.341      | 0.308      | 0.391      | 0.336      | 0.312      | 0.257      | 0.254      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 131                          | 128        | 116        | 147        | 126        | 117        | 97         | 95         |      |      |      |      |      |      |      |      |      |
| Carbon Tetrachloride                           | Annual Avg                            | 0.133                        | 0.137      |            | 0.103      |            | 0.1        | 0.075      |            |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 35                           | 36         |            | 27         |            | 26         | 20         |            |      |      |      |      |      |      |      |      |      |
| Chromium, Hexavalent                           | Annual Avg                            |                              |            | 0.22       | 0.16       | 0.16       | 0.2        | 0.12       |            |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |            | 33         | 24         | 24         | 30         | 17         |            |      |      |      |      |      |      |      |      |      |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              | 0.13       | 0.14       | 0.14       | 0.1        | 0.13       | 0.1        | 0.14       |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              | 9          | 9          | 9          | 7          | 9          | 7          | 9          |      |      |      |      |      |      |      |      |      |
| Formaldehyde                                   | Annual Avg                            | 2.35                         | 3.34       | 1.98       | 3.25       | 2.67       | 3.21       | 5.2        |            |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 17                           | 25         | 15         | 24         | 20         | 24         | 38         |            |      |      |      |      |      |      |      |      |      |
| Methylene Chloride                             | Annual Avg                            | 1.41                         | 1.59       | 0.82       | 0.87       | 0.72       | 1.13       | 0.66       | 1.7        |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 5                            | 6          | 3          | 3          | 3          | 4          | 2          | 6          |      |      |      |      |      |      |      |      |      |
| Perchloroethylene                              | Annual Avg                            | 0.423                        | 0.717      | 0.364      | 0.398      | 0.286      | 0.263      | 0.199      | 0.206      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 17                           | 29         | 15         | 16         | 11         | 11         | 8          | 8          |      |      |      |      |      |      |      |      |      |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |            |            |            |            |            |            |            |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | No Monitoring Data Available |            |            |            |            |            |            |            |      |      |      |      |      |      |      |      |      |
| <b>Total Health Risk</b>                       |                                       | <b>468</b>                   | <b>499</b> | <b>400</b> | <b>442</b> | <b>402</b> | <b>376</b> | <b>302</b> | <b>221</b> |      |      |      |      |      |      |      |      |      |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-25

## San Francisco Bay Area Air Basin

### Air Basin Summary

| TAC                          | Conc.1/Risk <sup>2</sup> | Annual Average Concentrations and Health Risks |       |       |       |       |       |       |       |       |      |       |       |       |       |       |       |       |
|------------------------------|--------------------------|--|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|
|                              |                          | 1990   | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999 | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Acetaldehyde                 | Annual Avg               | 1.3  | 1.4   | 1.03  | 1.31  | 1.17  | 0.42  | 0.83  | 0.73  | 0.65  | 0.76 | 0.68  | 0.73  | 0.63  | 0.74  | 0.74  | 0.71  | 0.66  |
|                              | Health Risk              | 6  | 7     | 5     | 6     | 6     | 2     | 4     | 4     | 3     | 4    | 3     | 4     | 3     | 4     | 4     | 3     | 3     |
| Benzene                      | Annual Avg               | 2.18   | 1.82  | 1.49  | 1.49  | 1.4   | 1.26  | 0.71  | 0.61  | 0.71  | 0.6  | 0.56  | 0.425 | 0.454 | 0.439 | 0.372 | 0.314 | 0.326 |
|                              | Health Risk              | 202  | 169   | 138   | 138   | 129   | 116   | 66    | 56    | 66    | 55   | 52    | 39    | 42    | 41    | 34    | 29    | 30    |
| 1,3-Butadiene                | Annual Avg               | 0.359  | 0.287 | 0.275 | 0.367 | 0.287 | 0.277 | 0.218 | 0.187 | 0.217 | 0.17 | 0.149 | 0.133 | 0.137 | 0.098 | 0.09  | 0.075 | 0.069 |
|                              | Health Risk              | 135  | 108   | 103   | 138   | 108   | 104   | 82    | 70    | 82    | 64   | 56    | 50    | 51    | 37    | 34    | 28    | 26    |
| Carbon Tetrachloride         | Annual Avg               | 0.128  | 0.125 |       | 0.108 |       | 0.1   | 0.078 |       |       |      | 0.094 | 0.087 | 0.089 | 0.095 |       |       |       |
|                              | Health Risk              | 34   | 33    |       | 29    |       | 26    | 21    |       |       |      | 25    | 23    | 24    | 25    |       |       |       |
| Chromium, Hexavalent         | Annual Avg               |  |       | 0.23  | 0.2   | 0.19  | 0.25  | 0.13  | 0.12  | 0.1   | 0.1  | 0.12  |       | 0.074 | 0.096 | 0.094 | 0.08  | 0.063 |
|                              | Health Risk              |  |       | 34    | 29    | 29    | 37    | 19    | 17    | 15    | 15   | 18    |       | 11    | 14    | 14    | 12    | 9     |
| <i>para</i> -Dichlorobenzene | Annual Avg               |  | 0.12  | 0.12  | 0.12  | 0.11  | 0.13  | 0.14  | 0.12  |       |      | 0.11  | 0.14  | 0.15  | 0.15  | 0.17  | 0.15  | 0.15  |
|                              | Health Risk              |  | 8     | 8     | 8     | 7     | 8     | 9     | 8     |       |      | 7     | 9     | 10    | 10    | 11    | 10    | 10    |
| Formaldehyde                 | Annual Avg               | 1.87   | 1.73  | 1.43  | 1.56  | 1.66  | 2.06  | 2.62  | 1.85  | 1.76  | 2.09 | 1.77  | 2.32  | 2.57  | 2.22  | 1.71  | 1.32  | 1.59  |
|                              | Health Risk              | 14   | 13    | 11    | 11    | 12    | 15    | 19    | 14    | 13    | 15   | 13    | 17    | 19    | 16    | 13    | 10    | 12    |
| Methylene Chloride           | Annual Avg               | 1.04   | 2.32  | 0.65  | 0.72  | 0.59  | 0.6   | 0.58  | 0.55  |       |      | 0.53  | 0.27  | 0.22  | 0.22  | 0.14  | 0.13  | 0.16  |
|                              | Health Risk              | 4  | 8     | 2     | 2     | 2     | 2     | 2     | 2     |       |      | 2     | <1    | <1    | <1    | <1    | <1    | <1    |
| Perchloroethylene            | Annual Avg               | 0.204  | 0.232 | 0.169 | 0.128 | 0.082 | 0.094 | 0.067 | 0.071 |       |      | 0.078 | 0.059 | 0.052 | 0.039 | 0.035 | 0.029 | 0.027 |
|                              | Health Risk              | 8  | 9     | 7     | 5     | 3     | 4     | 3     | 3     |       |      | 3     | 2     | 2     | 2     | 1     | 1     | 1     |
| Diesel PM <sup>3</sup>       | Annual Avg               | (2.5)  |       |       |       |       | (1.9) |       |       |       |      | (1.6) |       |       |       |       |       |       |
|                              | Health Risk              | (750)  |       |       |       |       | (570) |       |       |       |      | (480) |       |       |       |       |       |       |
| Average Basin Risk           | w/o Diesel PM            | 403  | 355   | 308   | 366   | 296   | 314   | 225   | 174   | 179   | 153  | 179   | 144   | 162   | 149   | 111   | 93    | 91    |
|                              | w/ Diesel PM             | (1153)   |       |       |       |       | (884) |       |       |       |      | (659) |       |       |       |       |       |       |

1 Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

3 The Diesel PM concentrations are estimates based on receptor modeling, and they are available for selected years. Currently, the Diesel PM estimates are being reviewed.

# San Francisco Bay Area Air Basin

## Alameda County: Fremont - Chapel Way

| Annual Average Concentrations and Health Risks |                                       |                              |            |            |            |            |            |            |           |            |            |            |            |            |            |           |           |           |
|--|---------------------------------------|------------------------------|------------|------------|------------|------------|------------|------------|-----------|------------|------------|------------|------------|------------|------------|-----------|-----------|-----------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991       | 1992       | 1993       | 1994       | 1995       | 1996       | 1997      | 1998       | 1999       | 2000       | 2001       | 2002       | 2003       | 2004      | 2005      | 2006      |
| Acetaldehyde                                   | Annual Avg                            | 1.28                         | 1.6        | 1.02       | 1.28       | 1.23       | 0.35       | 0.88       | 0.65      | 0.72       |            |            |            |            | 0.69       | 0.69      | 0.71      | 0.62      |
|  | Health Risk                           | 6                            | 8          | 5          | 6          | 6          | 2          | 4          | 3         | 4          |            |            |            |            | 3          | 3         | 3         | 3         |
| Benzene  | Annual Avg                            | 1.92                         | 1.67       | 1.21       | 1.35       | 1.25       | 1.24       | 0.58       |           | 0.76       | 0.61       | 0.53       | 0.439      | 0.418      | 0.356      | 0.286     |           | 0.295     |
|  | Health Risk                           | 178                          | 155        | 112        | 125        | 116        | 115        | 54         |           | 71         | 57         | 49         | 41         | 39         | 33         | 26        |           | 27        |
| 1,3-Butadiene                                  | Annual Avg                            | 0.283                        | 0.259      | 0.193      | 0.321      | 0.252      | 0.27       | 0.199      |           | 0.238      | 0.176      | 0.136      | 0.132      | 0.116      | 0.078      | 0.049     |           | 0.054     |
|  | Health Risk                           | 106                          | 97         | 72         | 120        | 95         | 101        | 75         |           | 90         | 66         | 51         | 50         | 43         | 29         | 19        |           | 20        |
| Carbon Tetrachloride                           | Annual Avg                            | 0.131                        | 0.127      |            | 0.105      |            | 0.101      | 0.076      |           |            |            | 0.095      | 0.085      | 0.089      | 0.096      |           |           |           |
|  | Health Risk                           | 35                           | 34         |            | 28         |            | 27         | 20         |           |            |            | 25         | 23         | 24         | 25         |           |           |           |
| Chromium, Hexavalent                           | Annual Avg                            |                              |            | 0.2        | 0.19       | 0.21       | 0.2        | 0.11       |           | 0.1        | 0.1        | 0.1        |            |            | 0.045      | 0.053     | 0.05      | 0.03      |
|  | Health Risk                           |                              |            | 30         | 28         | 32         | 30         | 16         |           | 15         | 15         | 16         |            |            | 7          | 8         | 8         | 5         |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              |            | 0.11       | 0.11       | 0.1        | 0.12       | 0.1        |           |            |            | 0.1        | 0.13       | 0.15       | 0.16       | 0.15      |           | 0.15      |
|  | Health Risk                           |                              |            | 7          | 7          | 7          | 8          | 7          |           |            |            | 7          | 9          | 10         | 11         | 10        |           | 10        |
| Formaldehyde                                   | Annual Avg                            | 1.84                         | 1.98       | 1.3        | 1.37       | 1.78       | 2.02       | 2.16       | 1.79      | 1.96       |            |            |            |            | 2.15       | 1.46      | 1.21      | 1.52      |
|  | Health Risk                           | 14                           | 15         | 10         | 10         | 13         | 15         | 16         | 13        | 14         |            |            |            |            | 16         | 11        | 9         | 11        |
| Methylene Chloride                             | Annual Avg                            | 0.76                         | 0.58       | 0.52       | 0.83       | 0.5        | 0.62       | 0.5        |           |            |            | 0.5        | 0.28       | 0.23       | 0.3        | 0.1       |           | 0.2       |
|  | Health Risk                           | 3                            | 2          | 2          | 3          | 2          | 2          | 2          |           |            |            | 2          | 1          | <1         | 1          | <1        |           | <1        |
| Perchloroethylene                              | Annual Avg                            | 0.189                        | 0.21       | 0.134      | 0.114      | 0.086      | 0.118      | 0.069      |           |            |            | 0.083      | 0.056      | 0.05       | 0.039      | 0.029     |           | 0.024     |
|  | Health Risk                           | 8                            | 8          | 5          | 5          | 3          | 5          | 3          |           |            |            | 3          | 2          | 2          | 2          | 1         |           | <1        |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |            |            |            |            |            |            |           |            |            |            |            |            |            |           |           |           |
|  | Health Risk                           | No Monitoring Data Available |            |            |            |            |            |            |           |            |            |            |            |            |            |           |           |           |
| <b>Total Health Risk</b>                       |                                       | <b>350</b>                   | <b>319</b> | <b>243</b> | <b>332</b> | <b>274</b> | <b>305</b> | <b>197</b> | <b>16</b> | <b>194</b> | <b>138</b> | <b>153</b> | <b>126</b> | <b>118</b> | <b>127</b> | <b>78</b> | <b>20</b> | <b>76</b> |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-27

*San Francisco Bay Area Air Basin***Contra Costa County: Concord - 2975 Treat Boulevard**

| Annual Average Concentrations and Health Risks |                                       |                              |            |            |            |            |            |            |            |            |            |      |      |      |      |      |      |      |
|--|---------------------------------------|------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------|------|------|------|------|------|------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991       | 1992       | 1993       | 1994       | 1995       | 1996       | 1997       | 1998       | 1999       | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| Acetaldehyde                                   | Annual Avg                            | 1.41                         |            |            | 1.39       | 1.46       | 0.62       | 0.86       | 0.76       |            | 0.87       |      |      |      |      |      |      |      |
|  | Health Risk                           | 7                            |            |            | 7          | 7          | 3          | 4          | 4          |            | 4          |      |      |      |      |      |      |      |
| Benzene  | Annual Avg                            | 1.84                         | 1.58       | 1.41       | 1.13       | 1.08       | 1.09       | 0.48       | 0.56       | 0.57       | 0.57       |      |      |      |      |      |      |      |
|  | Health Risk                           | 171                          | 147        | 130        | 105        | 100        | 101        | 44         | 52         | 53         | 53         |      |      |      |      |      |      |      |
| 1,3-Butadiene                                  | Annual Avg                            | 0.315                        | 0.265      | 0.253      | 0.305      | 0.232      | 0.242      | 0.149      | 0.176      | 0.192      | 0.155      |      |      |      |      |      |      |      |
|  | Health Risk                           | 118                          | 100        | 95         | 114        | 87         | 91         | 56         | 66         | 72         | 58         |      |      |      |      |      |      |      |
| Carbon Tetrachloride                           | Annual Avg                            | 0.13                         | 0.125      |            | 0.108      |            | 0.102      | 0.082      |            |            |            |      |      |      |      |      |      |      |
|  | Health Risk                           | 34                           | 33         |            | 29         |            | 27         | 22         |            |            |            |      |      |      |      |      |      |      |
| Chromium, Hexavalent                           | Annual Avg                            |                              |            |            | 0.19       | 0.18       | 0.21       | 0.11       | 0.11       |            | 0.1        |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |            |            | 28         | 27         | 32         | 16         | 17         |            | 15         |      |      |      |      |      |      |      |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              |            | 0.15       | 0.13       | 0.14       | 0.13       | 0.13       | 0.14       |            |            |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |            | 10         | 8          | 9          | 9          | 8          | 9          |            |            |      |      |      |      |      |      |      |
| Formaldehyde                                   | Annual Avg                            | 1.99                         |            |            | 1.99       | 1.69       | 2.21       | 2.3        | 2.05       |            | 2.64       |      |      |      |      |      |      |      |
|  | Health Risk                           | 15                           |            |            | 15         | 12         | 16         | 17         | 15         |            | 19         |      |      |      |      |      |      |      |
| Methylene Chloride                             | Annual Avg                            | 0.67                         | 0.51       | 0.66       | 0.54       | 0.54       | 0.55       | 0.55       | 0.5        |            |            |      |      |      |      |      |      |      |
|  | Health Risk                           | 2                            | 2          | 2          | 2          | 2          | 2          | 2          | 2          |            |            |      |      |      |      |      |      |      |
| Perchloroethylene                              | Annual Avg                            | 0.337                        | 0.419      | 0.39       | 0.204      | 0.098      | 0.147      | 0.082      | 0.102      |            |            |      |      |      |      |      |      |      |
|  | Health Risk                           | 13                           | 17         | 16         | 8          | 4          | 6          | 3          | 4          |            |            |      |      |      |      |      |      |      |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |            |            |            |            |            |            |            |            |            |      |      |      |      |      |      |      |
|  | Health Risk                           | No Monitoring Data Available |            |            |            |            |            |            |            |            |            |      |      |      |      |      |      |      |
| <b>Total Health Risk</b>                       |                                       | <b>360</b>                   | <b>299</b> | <b>253</b> | <b>316</b> | <b>248</b> | <b>287</b> | <b>172</b> | <b>169</b> | <b>125</b> | <b>149</b> |      |      |      |      |      |      |      |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-28



*San Francisco Bay Area Air Basin*

**Contra Costa County: Richmond - 13th Street**

| Annual Average Concentrations and Health Risks |                                       |                              |            |            |            |            |            |            |      |      |      |      |      |      |      |      |      |      |
|--|---------------------------------------|------------------------------|------------|------------|------------|------------|------------|------------|------|------|------|------|------|------|------|------|------|------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991       | 1992       | 1993       | 1994       | 1995       | 1996       | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| Acetaldehyde                                   | Annual Avg                            |                              |            | 0.78       |            | 0.92       | 0.36       | 0.59       |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |            | 4          |            | 4          | 2          | 3          |      |      |      |      |      |      |      |      |      |      |
| Benzene  | Annual Avg                            |                              | 1.92       | 1.54       | 1.76       | 1.7        | 1.44       | 1          |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              | 177        | 143        | 163        | 157        | 133        | 92         |      |      |      |      |      |      |      |      |      |      |
| 1,3-Butadiene                                  | Annual Avg                            |                              | 0.272      | 0.26       | 0.393      | 0.308      | 0.3        | 0.251      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              | 102        | 98         | 148        | 116        | 113        | 94         |      |      |      |      |      |      |      |      |      |      |
| Carbon Tetrachloride                           | Annual Avg                            |                              | 0.123      |            | 0.11       |            | 0.097      | 0.078      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              | 33         |            | 29         |            | 25         | 21         |      |      |      |      |      |      |      |      |      |      |
| Chromium, Hexavalent                           | Annual Avg                            |                              |            | 0.19       |            | 0.15       | 0.26       | 0.13       |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |            | 28         |            | 23         | 39         | 19         |      |      |      |      |      |      |      |      |      |      |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              | 0.14       | 0.12       | 0.12       | 0.1        | 0.12       | 0.19       |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              | 9          | 8          | 8          | 7          | 8          | 13         |      |      |      |      |      |      |      |      |      |      |
| Formaldehyde                                   | Annual Avg                            |                              |            | 1.08       |            | 1.32       | 2.22       | 4.27       |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |            | 8          |            | 10         | 16         | 31         |      |      |      |      |      |      |      |      |      |      |
| Methylene Chloride                             | Annual Avg                            |                              | 0.62       | 0.54       | 0.67       | 0.5        | 0.54       | 0.65       |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              | 2          | 2          | 2          | 2          | 2          | 2          |      |      |      |      |      |      |      |      |      |      |
| Perchloroethylene                              | Annual Avg                            |                              | 0.147      | 0.093      | 0.092      | 0.056      | 0.043      | 0.03       |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              | 6          | 4          | 4          | 2          | 2          | 1          |      |      |      |      |      |      |      |      |      |      |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |            |            |            |            |            |            |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | No Monitoring Data Available |            |            |            |            |            |            |      |      |      |      |      |      |      |      |      |      |
| <b>Total Health Risk</b>                       |                                       |                              | <b>329</b> | <b>295</b> | <b>354</b> | <b>321</b> | <b>340</b> | <b>276</b> |      |      |      |      |      |      |      |      |      |      |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-29

## *San Francisco Bay Area Air Basin*

### Contra Costa County: San Pablo - El Portal

| Annual Average Concentrations and Health Risks |                                       |                              |      |      |      |      |      |      |      |            |            |      |      |      |      |      |      |      |
|--|---------------------------------------|------------------------------|------|------|------|------|------|------|------|------------|------------|------|------|------|------|------|------|------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998       | 1999       | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| Acetaldehyde                                   | Annual Avg                            |                              |      |      |      |      |      |      |      |            | 0.55       |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |            | 3          |      |      |      |      |      |      |      |
| Benzene  | Annual Avg                            |                              |      |      |      |      |      |      |      | 0.56       | 0.42       |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      | 52         | 39         |      |      |      |      |      |      |      |
| 1,3-Butadiene                                  | Annual Avg                            |                              |      |      |      |      |      |      |      | 0.148      | 0.118      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      | 56         | 45         |      |      |      |      |      |      |      |
| Carbon Tetrachloride                           | Annual Avg                            |                              |      |      |      |      |      |      |      |            |            |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |            |            |      |      |      |      |      |      |      |
| Chromium, Hexavalent                           | Annual Avg                            |                              |      |      |      |      |      |      |      |            | 0.1        |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |            | 15         |      |      |      |      |      |      |      |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              |      |      |      |      |      |      |      |            |            |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |            |            |      |      |      |      |      |      |      |
| Formaldehyde                                   | Annual Avg                            |                              |      |      |      |      |      |      |      |            | 1.24       |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |            | 9          |      |      |      |      |      |      |      |
| Methylene Chloride                             | Annual Avg                            |                              |      |      |      |      |      |      |      |            |            |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |            |            |      |      |      |      |      |      |      |
| Perchloroethylene                              | Annual Avg                            |                              |      |      |      |      |      |      |      |            |            |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |            |            |      |      |      |      |      |      |      |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |      |      |      |      |      |      |      |            |            |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |            |            |      |      |      |      |      |      |      |
| <b>Total Health Risk</b>                       |                                       |                              |      |      |      |      |      |      |      | <b>108</b> | <b>111</b> |      |      |      |      |      |      |      |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

# San Francisco Bay Area Air Basin

## San Francisco County: San Francisco - Arkansas Street

| Annual Average Concentrations and Health Risks |                                       |                              |            |            |           |            |            |            |            |            |            |            |            |           |            |            |           |           |
|--|---------------------------------------|------------------------------|------------|------------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|-----------|------------|------------|-----------|-----------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991       | 1992       | 1993      | 1994       | 1995       | 1996       | 1997       | 1998       | 1999       | 2000       | 2001       | 2002      | 2003       | 2004       | 2005      | 2006      |
| Acetaldehyde                                   | Annual Avg                            | 1.32                         |            |            |           | 0.98       | 0.4        |            | 0.75       | 0.54       |            |            | 0.57       | 0.54      | 0.68       | 0.69       | 0.65      | 0.54      |
|  | Health Risk                           | 6                            |            |            |           | 5          | 2          |            | 4          | 3          |            |            | 3          | 3         | 3          | 3          | 3         | 3         |
| Benzene  | Annual Avg                            |                              | 1.49       | 1.25       |           | 1.07       | 0.95       | 0.53       | 0.51       | 0.63       | 0.65       | 0.48       | 0.376      |           | 0.386      | 0.329      | 0.23      | 0.299     |
|  | Health Risk                           |                              | 138        | 116        |           | 99         | 88         | 49         | 48         | 59         | 61         | 45         | 35         |           | 36         | 30         | 21        | 28        |
| 1,3-Butadiene                                  | Annual Avg                            |                              | 0.252      | 0.234      |           | 0.259      | 0.226      | 0.181      | 0.165      | 0.215      | 0.173      | 0.128      | 0.113      |           | 0.084      | 0.083      | 0.053     | 0.063     |
|  | Health Risk                           |                              | 95         | 88         |           | 97         | 85         | 68         | 62         | 81         | 65         | 48         | 42         |           | 32         | 31         | 20        | 24        |
| Carbon Tetrachloride                           | Annual Avg                            |                              | 0.124      |            |           |            | 0.1        | 0.078      |            |            |            | 0.095      | 0.087      |           | 0.094      |            |           |           |
|  | Health Risk                           |                              | 33         |            |           |            | 26         | 21         |            |            |            | 25         | 23         |           | 25         |            |           |           |
| Chromium, Hexavalent                           | Annual Avg                            |                              |            |            | 0.19      | 0.18       | 0.25       | 0.12       | 0.13       | 0.1        |            | 0.12       |            | 0.088     | 0.145      | 0.13       | 0.11      | 0.105     |
|  | Health Risk                           |                              |            |            | 29        | 26         | 37         | 18         | 19         | 15         |            | 18         |            | 13        | 22         | 20         | 17        | 16        |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              | 0.15       | 0.13       |           | 0.1        | 0.15       | 0.12       | 0.12       |            |            | 0.11       | 0.14       |           | 0.15       | 0.19       | 0.15      | 0.15      |
|  | Health Risk                           |                              | 10         | 9          |           | 7          | 10         | 8          | 8          |            |            | 7          | 9          |           | 10         | 13         | 10        | 10        |
| Formaldehyde                                   | Annual Avg                            | 1.71                         |            |            |           | 1.33       | 1.58       |            | 1.62       | 1.45       |            |            | 1.51       | 2.03      | 1.71       | 1.54       | 1.04      | 1.37      |
|  | Health Risk                           | 13                           |            |            |           | 10         | 12         |            | 12         | 11         |            |            | 11         | 15        | 13         | 11         | 8         | 10        |
| Methylene Chloride                             | Annual Avg                            |                              | 3.22       | 0.88       |           | 0.6        | 0.63       | 0.66       | 0.5        |            |            | 0.6        | 0.26       |           | 0.17       | 0.17       | 0.12      | 0.14      |
|  | Health Risk                           |                              | 11         | 3          |           | 2          | 2          | 2          | 2          |            |            | 2          | <1         |           | <1         | <1         | <1        | <1        |
| Perchloroethylene                              | Annual Avg                            |                              | 0.229      | 0.13       |           | 0.105      | 0.092      | 0.084      | 0.065      |            |            | 0.068      | 0.074      |           | 0.038      | 0.04       | 0.026     | 0.03      |
|  | Health Risk                           |                              | 9          | 5          |           | 4          | 4          | 3          | 3          |            |            | 3          | 3          |           | 1          | 2          | 1         | 1         |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |            |            |           |            |            |            |            |            |            |            |            |           |            |            |           |           |
|  | Health Risk                           | No Monitoring Data Available |            |            |           |            |            |            |            |            |            |            |            |           |            |            |           |           |
| <b>Total Health Risk</b>                       |                                       | <b>19</b>                    | <b>296</b> | <b>221</b> | <b>29</b> | <b>250</b> | <b>266</b> | <b>169</b> | <b>158</b> | <b>169</b> | <b>126</b> | <b>148</b> | <b>126</b> | <b>31</b> | <b>142</b> | <b>110</b> | <b>80</b> | <b>92</b> |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-31

*San Francisco Bay Area Air Basin***Santa Clara County: San Jose - 4th Street**

| Annual Average Concentrations and Health Risks |                                       |                              |            |            |            |            |            |            |            |            |            |            |           |      |      |      |      |      |
|--|---------------------------------------|------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----------|------|------|------|------|------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991       | 1992       | 1993       | 1994       | 1995       | 1996       | 1997       | 1998       | 1999       | 2000       | 2001      | 2002 | 2003 | 2004 | 2005 | 2006 |
| Acetaldehyde                                   | Annual Avg                            | 1.53                         | 1.55       | 1.41       | 1.58       | 1.27       | 0.35       | 1.04       | 0.97       | 0.77       | 0.93       | 0.79       | 0.76      |      |      |      |      |      |
|  | Health Risk                           | 7                            | 8          | 7          | 8          | 6          | 2          | 5          | 5          | 4          | 4          | 4          | 4         |      |      |      |      |      |
| Benzene  | Annual Avg                            | 3.02                         | 2.44       | 2.03       | 1.89       | 1.88       | 1.55       | 0.97       | 0.93       | 1.04       | 0.73       | 0.7        |           |      |      |      |      |      |
|  | Health Risk                           | 280                          | 226        | 188        | 175        | 174        | 144        | 89         | 86         | 97         | 68         | 65         |           |      |      |      |      |      |
| 1,3-Butadiene                                  | Annual Avg                            | 0.549                        | 0.385      | 0.436      | 0.485      | 0.385      | 0.348      | 0.311      | 0.287      | 0.293      | 0.227      | 0.193      |           |      |      |      |      |      |
|  | Health Risk                           | 207                          | 145        | 164        | 182        | 145        | 131        | 117        | 108        | 110        | 85         | 72         |           |      |      |      |      |      |
| Carbon Tetrachloride                           | Annual Avg                            | 0.127                        | 0.128      |            | 0.107      |            | 0.102      | 0.077      |            |            |            | 0.095      |           |      |      |      |      |      |
|  | Health Risk                           | 33                           | 34         |            | 28         |            | 27         | 20         |            |            |            | 25         |           |      |      |      |      |      |
| Chromium, Hexavalent                           | Annual Avg                            |                              |            | 0.29       | 0.25       | 0.25       | 0.33       | 0.17       | 0.13       | 0.11       | 0.1        | 0.13       |           |      |      |      |      |      |
|  | Health Risk                           |                              |            | 43         | 37         | 38         | 49         | 25         | 20         | 17         | 15         | 19         |           |      |      |      |      |      |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              |            | 0.12       | 0.12       | 0.1        | 0.12       | 0.14       | 0.12       |            |            | 0.12       |           |      |      |      |      |      |
|  | Health Risk                           |                              |            | 8          | 8          | 7          | 8          | 10         | 8          |            |            | 8          |           |      |      |      |      |      |
| Formaldehyde                                   | Annual Avg                            | 2.27                         | 2          | 2.09       | 1.83       | 2.16       | 2.28       | 2.7        | 2.56       | 2.24       | 2.69       | 2.24       | 2.27      |      |      |      |      |      |
|  | Health Risk                           | 17                           | 15         | 15         | 13         | 16         | 17         | 20         | 19         | 16         | 20         | 16         | 17        |      |      |      |      |      |
| Methylene Chloride                             | Annual Avg                            | 0.83                         | 6.65       | 0.66       | 0.58       | 0.8        | 0.69       | 0.55       | 0.75       |            |            | 0.5        |           |      |      |      |      |      |
|  | Health Risk                           | 3                            | 23         | 2          | 2          | 3          | 2          | 2          | 3          |            |            | 2          |           |      |      |      |      |      |
| Perchloroethylene                              | Annual Avg                            | 0.161                        | 0.153      | 0.1        | 0.094      | 0.064      | 0.069      | 0.068      | 0.096      |            |            | 0.088      |           |      |      |      |      |      |
|  | Health Risk                           | 6                            | 6          | 4          | 4          | 3          | 3          | 3          | 4          |            |            | 4          |           |      |      |      |      |      |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |            |            |            |            |            |            |            |            |            |            |           |      |      |      |      |      |
|  | Health Risk                           | No Monitoring Data Available |            |            |            |            |            |            |            |            |            |            |           |      |      |      |      |      |
| <b>Total Health Risk</b>                       |                                       | <b>553</b>                   | <b>457</b> | <b>431</b> | <b>457</b> | <b>392</b> | <b>383</b> | <b>291</b> | <b>253</b> | <b>244</b> | <b>192</b> | <b>215</b> | <b>21</b> |      |      |      |      |      |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

*San Francisco Bay Area Air Basin*

Santa Clara County: San Jose - Jackson Street

| Annual Average Concentrations and Health Risks |                                       |                              |      |      |      |      |      |      |      |      |      |      |      |      |            |            |            |            |
|--|---------------------------------------|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------------|------------|------------|------------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003       | 2004       | 2005       | 2006       |
| Acetaldehyde                                   | Annual Avg                            |                              |      |      |      |      |      |      |      |      |      |      |      |      | 0.84       | 0.82       | 0.78       | 0.82       |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |      |      |      |      |      | 4          | 4          | 4          | 4          |
| Benzene  | Annual Avg                            |                              |      |      |      |      |      |      |      |      |      |      |      |      | 0.577      | 0.502      | 0.414      | 0.383      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |      |      |      |      |      | 53         | 46         | 38         | 36         |
| 1,3-Butadiene                                  | Annual Avg                            |                              |      |      |      |      |      |      |      |      |      |      |      |      | 0.131      | 0.137      | 0.104      | 0.091      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |      |      |      |      |      | 49         | 51         | 39         | 34         |
| Carbon Tetrachloride                           | Annual Avg                            |                              |      |      |      |      |      |      |      |      |      |      |      |      | 0.096      |            |            |            |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |      |      |      |      |      | 25         |            |            |            |
| Chromium, Hexavalent                           | Annual Avg                            |                              |      |      |      |      |      |      |      |      |      |      |      |      | 0.098      | 0.1        |            | 0.053      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |      |      |      |      |      | 15         | 15         |            | 8          |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              |      |      |      |      |      |      |      |      |      |      |      |      | 0.15       | 0.15       | 0.15       | 0.15       |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |      |      |      |      |      | 10         | 10         | 10         | 10         |
| Formaldehyde                                   | Annual Avg                            |                              |      |      |      |      |      |      |      |      |      |      |      |      | 2.79       | 2.13       | 1.71       | 1.88       |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |      |      |      |      |      | 21         | 16         | 13         | 14         |
| Methylene Chloride                             | Annual Avg                            |                              |      |      |      |      |      |      |      |      |      |      |      |      | 0.19       | 0.16       | 0.13       | 0.14       |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |      |      |      |      |      | <1         | <1         | <1         | <1         |
| Perchloroethylene                              | Annual Avg                            |                              |      |      |      |      |      |      |      |      |      |      |      |      | 0.04       | 0.037      | 0.032      | 0.029      |
|  | Health Risk                           |                              |      |      |      |      |      |      |      |      |      |      |      |      | 2          | 1          | 1          | 1          |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |      |      |      |      |      |      |      |      |      |      |      |      |            |            |            |            |
|  | Health Risk                           | No Monitoring Data Available |      |      |      |      |      |      |      |      |      |      |      |      |            |            |            |            |
| <b>Total Health Risk</b>                       |                                       |                              |      |      |      |      |      |      |      |      |      |      |      |      | <b>179</b> | <b>143</b> | <b>105</b> | <b>107</b> |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-33

## San Joaquin Valley Air Basin

### Air Basin Summary

| TAC                          | Conc. <sup>1</sup> /Risk <sup>2</sup> | Annual Average Concentrations and Health Risks |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|------------------------------|---------------------------------------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                              |                                       | 1990   | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Acetaldehyde                 | Annual Avg                            | 1.94   | 1.84  | 1.38  | 1.73  | 1.29  | 0.54  | 1.28  | 1.19  | 1.3   | 1.56  | 1.09  | 1.15  | 1.24  | 1.34  | 1.14  | 1.42  | 1.33  |
|                              | Health Risk                           | 9  | 9     | 7     | 8     | 6     | 3     | 6     | 6     | 6     | 8     | 5     | 6     | 6     | 7     | 6     | 7     | 6     |
| Benzene                      | Annual Avg                            | 2.45   | 2.11  | 1.36  | 1.32  | 1.33  | 1.16  | 0.73  | 0.71  | 0.76  | 0.69  | 0.63  | 0.538 | 0.552 | 0.463 | 0.372 | 0.374 | 0.362 |
|                              | Health Risk                           | 227  | 196   | 126   | 122   | 123   | 107   | 68    | 66    | 71    | 64    | 58    | 50    | 51    | 43    | 34    | 35    | 34    |
| 1,3-Butadiene                | Annual Avg                            | 0.409  | 0.36  | 0.236 | 0.339 | 0.323 | 0.264 | 0.222 | 0.195 | 0.233 | 0.177 | 0.158 | 0.15  | 0.146 | 0.095 | 0.08  | 0.082 | 0.069 |
|                              | Health Risk                           | 154  | 135   | 89    | 127   | 121   | 99    | 83    | 73    | 88    | 67    | 59    | 56    | 55    | 36    | 30    | 31    | 26    |
| Carbon Tetrachloride         | Annual Avg                            | 0.128  | 0.129 |       | 0.109 |       | 0.098 | 0.077 |       | 0.114 |       | 0.096 | 0.086 | 0.091 | 0.097 |       |       |       |
|                              | Health Risk                           | 34   | 34    |       | 29    |       | 26    | 20    |       | 30    |       | 25    | 23    | 24    | 26    |       |       |       |
| Chromium, Hexavalent         | Annual Avg                            |  |       | 0.23  | 0.21  | 0.19  | 0.28  | 0.13  | 0.11  | 0.1   | 0.12  |       | 0.086 | 0.078 | 0.083 | 0.076 | 0.05  |       |
|                              | Health Risk                           |  |       | 34    | 31    | 29    | 42    | 20    | 16    | 15    | 18    |       | 13    | 12    | 13    | 11    | 8     |       |
| <i>para</i> -Dichlorobenzene | Annual Avg                            |  | 0.11  | 0.11  | 0.13  | 0.11  | 0.11  | 0.1   | 0.13  |       |       | 0.11  | 0.13  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  |
|                              | Health Risk                           |  | 7     | 7     | 9     | 7     | 8     | 7     | 9     |       |       | 7     | 9     | 10    | 10    | 10    | 10    | 10    |
| Formaldehyde                 | Annual Avg                            | 2.45   | 1.81  | 1.46  | 1.67  | 1.8   | 2.1   | 2.96  | 2.77  | 2.86  | 3.44  | 2.61  | 3.08  | 3.13  | 3.02  | 2.27  | 2.52  | 2.78  |
|                              | Health Risk                           | 18   | 13    | 11    | 12    | 13    | 15    | 22    | 20    | 21    | 25    | 19    | 23    | 23    | 22    | 17    | 19    | 20    |
| Methylene Chloride           | Annual Avg                            | 0.76   | 0.59  | 0.55  | 0.76  | 0.59  | 0.61  | 0.54  | 0.53  | 0.52  | 0.5   | 0.53  | 0.27  | 0.16  | 0.14  | 0.11  | 0.12  | 0.11  |
|                              | Health Risk                           | 3  | 2     | 2     | 3     | 2     | 2     | 2     | 2     | 2     | 2     | 2     | <1    | <1    | <1    | <1    | <1    | <1    |
| Perchloroethylene            | Annual Avg                            | 0.126  | 0.133 | 0.104 | 0.473 | 0.067 | 0.068 | 0.068 | 0.056 | 0.039 |       | 0.076 | 0.052 | 0.039 | 0.033 | 0.027 | 0.032 | 0.032 |
|                              | Health Risk                           | 5  | 5     | 4     | 19    | 3     | 3     | 3     | 2     | 2     |       | 3     | 2     | 2     | 1     | 1     | 1     | 1     |
| Diesel PM <sup>3</sup>       | Annual Avg                            | (2.6)  |       |       |       |       | (1.7) |       |       |       |       | (1.3) |       |       |       |       |       |       |
|                              | Health Risk                           | (780)  |       |       |       |       | (510) |       |       |       |       | (390) |       |       |       |       |       |       |
| Average Basin Risk           | w/o Diesel PM                         | 450  | 401   | 280   | 360   | 304   | 305   | 231   | 194   | 235   | 181   | 196   | 169   | 184   | 157   | 111   | 114   | 105   |
|                              | w/ Diesel PM                          | (1230)   |       |       |       |       | (815) |       |       |       |       | (586) |       |       |       |       |       |       |

1 Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

3 The Diesel PM concentrations are estimates based on receptor modeling, and they are available for selected years. Currently, the Diesel PM estimates are being reviewed.

Table C-34

# San Joaquin Valley Air Basin

## Kern County: Bakersfield - Chester Avenue

| Annual Average Concentrations and Health Risks |                                       |                              |            |            |            |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--|---------------------------------------|------------------------------|------------|------------|------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991       | 1992       | 1993       | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| Acetaldehyde                                   | Annual Avg                            | 1.87                         | 1.83       | 1.6        | 2          |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 9                            | 9          | 8          | 10         |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Benzene  | Annual Avg                            | 2.68                         | 2.22       | 1.54       | 1.47       |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 248                          | 205        | 143        | 136        |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 1,3-Butadiene                                  | Annual Avg                            | 0.389                        | 0.306      | 0.24       | 0.327      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 146                          | 115        | 90         | 123        |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Carbon Tetrachloride                           | Annual Avg                            | 0.127                        | 0.125      |            | 0.104      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 33                           | 33         |            | 27         |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Chromium, Hexavalent                           | Annual Avg                            |                              |            | 0.21       | 0.21       |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |            | 31         | 31         |      |      |      |      |      |      |      |      |      |      |      |      |      |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              |            | 0.12       | 0.17       |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |            | 8          | 11         |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Formaldehyde                                   | Annual Avg                            | 2.44                         | 1.62       | 1.36       | 1.85       |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 18                           | 12         | 10         | 14         |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Methylene Chloride                             | Annual Avg                            | 0.92                         | 0.65       | 0.52       | 0.99       |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 3                            | 2          | 2          | 3          |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Perchloroethylene                              | Annual Avg                            | 0.087                        | 0.127      | 0.075      | 1.48       |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 3                            | 5          | 3          | 59         |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |            |            |            |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |            |            |            |      |      |      |      |      |      |      |      |      |      |      |      |      |
| <b>Total Health Risk</b>                       |                                       | <b>460</b>                   | <b>381</b> | <b>295</b> | <b>414</b> |      |      |      |      |      |      |      |      |      |      |      |      |      |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-35

*San Joaquin Valley Air Basin*

Kern County: Bakersfield - 5558 California Avenue

| Annual Average Concentrations and Health Risks |                                       |                              |      |      |      |      |            |            |            |            |            |            |            |            |            |      |            |            |
|--|---------------------------------------|------------------------------|------|------|------|------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------|------------|------------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991 | 1992 | 1993 | 1994 | 1995       | 1996       | 1997       | 1998       | 1999       | 2000       | 2001       | 2002       | 2003       | 2004 | 2005       | 2006       |
| Acetaldehyde                                   | Annual Avg                            |                              |      |      |      |      | 0.49       | 1.59       | 1.22       | 1.27       | 1.69       | 1.19       | 1.27       | 1.37       | 1.51       |      | 1.65       | 1.43       |
|  | Health Risk                           |                              |      |      |      |      | 2          | 8          | 6          | 6          | 8          | 6          | 6          | 7          | 7          |      | 8          | 7          |
| Benzene  | Annual Avg                            |                              |      |      |      |      | 1.14       | 0.78       | 0.57       | 0.7        | 0.71       | 0.58       | 0.549      | 0.506      | 0.405      |      | 0.355      | 0.383      |
|  | Health Risk                           |                              |      |      |      |      | 106        | 72         | 53         | 65         | 66         | 54         | 51         | 47         | 37         |      | 33         | 35         |
| 1,3-Butadiene                                  | Annual Avg                            |                              |      |      |      |      | 0.206      | 0.211      | 0.16       | 0.2        | 0.153      | 0.126      | 0.138      | 0.099      | 0.063      |      | 0.062      | 0.063      |
|  | Health Risk                           |                              |      |      |      |      | 78         | 79         | 60         | 75         | 58         | 47         | 52         | 37         | 24         |      | 23         | 24         |
| Carbon Tetrachloride                           | Annual Avg                            |                              |      |      |      |      | 0.099      | 0.079      |            |            |            | 0.094      | 0.086      | 0.092      | 0.095      |      |            |            |
|  | Health Risk                           |                              |      |      |      |      | 26         | 21         |            |            |            | 25         | 23         | 24         | 25         |      |            |            |
| Chromium, Hexavalent                           | Annual Avg                            |                              |      |      |      |      | 0.26       | 0.13       | 0.1        | 0.1        | 0.1        | 0.1        |            | 0.078      | 0.053      |      | 0.045      | 0.03       |
|  | Health Risk                           |                              |      |      |      |      | 39         | 19         | 15         | 15         | 16         | 16         |            | 12         | 8          |      | 7          | 5          |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              |      |      |      |      | 0.11       | 0.11       | 0.12       |            |            | 0.11       | 0.13       | 0.15       | 0.15       |      | 0.15       | 0.15       |
|  | Health Risk                           |                              |      |      |      |      | 7          | 7          | 8          |            |            | 7          | 9          | 10         | 10         |      | 10         | 10         |
| Formaldehyde                                   | Annual Avg                            |                              |      |      |      |      | 1.92       | 3.48       | 3.12       | 2.99       | 3.67       | 2.79       | 3.44       | 3.15       | 3.43       |      | 2.61       | 2.77       |
|  | Health Risk                           |                              |      |      |      |      | 14         | 26         | 23         | 22         | 27         | 21         | 25         | 23         | 25         |      | 19         | 20         |
| Methylene Chloride                             | Annual Avg                            |                              |      |      |      |      | 0.54       | 0.64       | 0.5        |            | 0.5        | 0.58       | 0.26       | 0.1        | 0.11       |      | 0.09       | 0.09       |
|  | Health Risk                           |                              |      |      |      |      | 2          | 2          | 2          |            | 2          | 2          | <1         | <1         | <1         |      | <1         | <1         |
| Perchloroethylene                              | Annual Avg                            |                              |      |      |      |      | 0.092      | 0.119      | 0.039      |            |            | 0.065      | 0.058      | 0.047      | 0.037      |      | 0.043      | 0.056      |
|  | Health Risk                           |                              |      |      |      |      | 4          | 5          | 2          |            |            | 3          | 2          | 2          | 1          |      | 2          | 2          |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |      |      |      |      |            |            |            |            |            |            |            |            |            |      |            |            |
|  | Health Risk                           | No Monitoring Data Available |      |      |      |      |            |            |            |            |            |            |            |            |            |      |            |            |
| <b>Total Health Risk</b>                       |                                       |                              |      |      |      |      | <b>278</b> | <b>239</b> | <b>169</b> | <b>183</b> | <b>177</b> | <b>181</b> | <b>168</b> | <b>162</b> | <b>137</b> |      | <b>102</b> | <b>103</b> |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-36



# San Joaquin Valley Air Basin

## Fresno County: Fresno - 1st Street

| Annual Average Concentrations and Health Risks |                                       |                              |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
|--|---------------------------------------|------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991       | 1992       | 1993       | 1994       | 1995       | 1996       | 1997       | 1998       | 1999       | 2000       | 2001       | 2002       | 2003       | 2004       | 2005       | 2006       |
| Acetaldehyde                                   | Annual Avg                            |                              | 2.29       |            | 1.89       | 1.4        | 0.67       |            |            | 1.5        |            | 1.43       | 1.6        | 1.55       | 1.71       | 1.27       | 1.63       | 1.63       |
|  | Health Risk                           |                              | 11         |            | 9          | 7          | 3          |            |            | 7          |            | 7          | 8          | 8          | 8          | 6          | 8          | 8          |
| Benzene  | Annual Avg                            |                              | 2.42       | 1.34       | 1.35       | 1.44       | 1.24       | 0.79       | 1          | 0.83       | 0.8        | 0.73       | 0.61       | 0.631      | 0.546      | 0.403      | 0.408      | 0.387      |
|  | Health Risk                           |                              | 224        | 124        | 125        | 133        | 115        | 73         | 92         | 76         | 74         | 68         | 56         | 58         | 51         | 37         | 38         | 36         |
| 1,3-Butadiene                                  | Annual Avg                            |                              | 0.459      | 0.262      | 0.342      | 0.356      | 0.3        | 0.234      | 0.233      | 0.265      | 0.214      | 0.195      | 0.182      | 0.194      | 0.127      | 0.098      | 0.101      | 0.082      |
|  | Health Risk                           |                              | 173        | 99         | 129        | 134        | 113        | 88         | 87         | 100        | 80         | 73         | 68         | 73         | 48         | 37         | 38         | 31         |
| Carbon Tetrachloride                           | Annual Avg                            |                              | 0.122      |            | 0.108      |            | 0.099      | 0.078      |            |            |            | 0.095      | 0.086      | 0.089      | 0.097      |            |            |            |
|  | Health Risk                           |                              | 32         |            | 28         |            | 26         | 21         |            |            |            | 25         | 23         | 23         | 26         |            |            |            |
| Chromium, Hexavalent                           | Annual Avg                            |                              |            | 0.21       | 0.15       | 0.14       | 0.22       | 0.1        | 0.11       | 0.1        | 0.1        | 0.13       |            | 0.058      | 0.05       | 0.073      | 0.063      | 0.058      |
|  | Health Risk                           |                              |            | 31         | 22         | 21         | 33         | 16         | 16         | 15         | 15         | 20         |            | 9          | 8          | 11         | 9          | 9          |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              |            | 0.1        | 0.1        | 0.14       | 0.13       | 0.11       | 0.14       |            |            | 0.1        | 0.14       | 0.15       | 0.15       | 0.15       | 0.15       | 0.15       |
|  | Health Risk                           |                              |            | 7          | 7          | 9          | 8          | 7          | 9          |            |            | 7          | 9          | 10         | 10         | 10         | 10         | 10         |
| Formaldehyde                                   | Annual Avg                            |                              | 2.32       |            | 1.64       | 2.01       | 2.41       |            |            | 3.42       |            | 3.56       | 4.32       | 4.16       | 3.72       | 2.57       | 3          | 3.41       |
|  | Health Risk                           |                              | 17         |            | 12         | 15         | 18         |            |            | 25         |            | 26         | 32         | 31         | 27         | 19         | 22         | 25         |
| Methylene Chloride                             | Annual Avg                            |                              | 0.62       | 0.54       | 0.69       | 0.59       | 0.58       | 0.5        | 0.52       |            |            | 0.5        | 0.27       | 0.24       | 0.15       | 0.14       | 0.15       | 0.14       |
|  | Health Risk                           |                              | 2          | 2          | 2          | 2          | 2          | 2          | 2          |            |            | 2          | <1         | <1         | <1         | <1         | <1         | <1         |
| Perchloroethylene                              | Annual Avg                            |                              | 0.142      | 0.102      | 0.1        | 0.062      | 0.065      | 0.041      | 0.043      |            |            | 0.056      | 0.046      | 0.034      | 0.031      | 0.023      | 0.028      | 0.02       |
|  | Health Risk                           |                              | 6          | 4          | 4          | 2          | 3          | 2          | 2          |            |            | 2          | 2          | 1          | 1          | <1         | 1          | <1         |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
|  | Health Risk                           | No Monitoring Data Available |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| <b>Total Health Risk</b>                       |                                       |                              | <b>465</b> | <b>267</b> | <b>338</b> | <b>323</b> | <b>321</b> | <b>209</b> | <b>208</b> | <b>223</b> | <b>169</b> | <b>230</b> | <b>198</b> | <b>213</b> | <b>179</b> | <b>120</b> | <b>126</b> | <b>119</b> |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

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*San Joaquin Valley Air Basin*

## Stanislaus County: Modesto - I Street (Courthouse)

|                              |                                       | Annual Average Concentrations and Health Risks |           |           |           |           |           |           |           |      |      |      |      |      |      |      |      |      |
|------------------------------|---------------------------------------|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|------|------|------|------|------|------|------|------|
| TAC                          | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990   | 1991      | 1992      | 1993      | 1994      | 1995      | 1996      | 1997      | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| Acetaldehyde                 | Annual Avg                            |  | 1.51      | 1.37      | 1.75      | 1.44      | 0.51      | 1.17      | 1.25      |      |      |      |      |      |      |      |      |      |
|                              | Health Risk                           |  | 7         | 7         | 8         | 7         | 2         | 6         | 6         |      |      |      |      |      |      |      |      |      |
| Benzene                      | Annual Avg                            |  |           |           |           |           |           |           |           |      |      |      |      |      |      |      |      |      |
|                              | Health Risk                           |  |           |           |           |           |           |           |           |      |      |      |      |      |      |      |      |      |
| 1,3-Butadiene                | Annual Avg                            |  |           |           |           |           |           |           |           |      |      |      |      |      |      |      |      |      |
|                              | Health Risk                           |  |           |           |           |           |           |           |           |      |      |      |      |      |      |      |      |      |
| Carbon Tetrachloride         | Annual Avg                            |  |           |           |           |           |           |           |           |      |      |      |      |      |      |      |      |      |
|                              | Health Risk                           |  |           |           |           |           |           |           |           |      |      |      |      |      |      |      |      |      |
| Chromium, Hexavalent         | Annual Avg                            |  |           | 0.27      | 0.23      | 0.22      | 0.32      | 0.16      | 0.11      |      |      |      |      |      |      |      |      |      |
|                              | Health Risk                           |  |           | 40        | 34        | 33        | 48        | 25        | 17        |      |      |      |      |      |      |      |      |      |
| <i>para</i> -Dichlorobenzene | Annual Avg                            |  |           |           |           |           |           |           |           |      |      |      |      |      |      |      |      |      |
|                              | Health Risk                           |  |           |           |           |           |           |           |           |      |      |      |      |      |      |      |      |      |
| Formaldehyde                 | Annual Avg                            |  | 1.43      | 1.32      | 1.82      | 1.86      | 2.16      | 2.58      | 2.43      |      |      |      |      |      |      |      |      |      |
|                              | Health Risk                           |  | 11        | 10        | 13        | 14        | 16        | 19        | 18        |      |      |      |      |      |      |      |      |      |
| Methylene Chloride           | Annual Avg                            |  |           |           |           |           |           |           |           |      |      |      |      |      |      |      |      |      |
|                              | Health Risk                           |  |           |           |           |           |           |           |           |      |      |      |      |      |      |      |      |      |
| Perchloroethylene            | Annual Avg                            |  |           |           |           |           |           |           |           |      |      |      |      |      |      |      |      |      |
|                              | Health Risk                           |  |           |           |           |           |           |           |           |      |      |      |      |      |      |      |      |      |
| Diesel PM                    | Annual Avg                            | No Monitoring Data Available                   |           |           |           |           |           |           |           |      |      |      |      |      |      |      |      |      |
|                              | Health Risk                           |  |           |           |           |           |           |           |           |      |      |      |      |      |      |      |      |      |
| <b>Total Health Risk</b>     |                                       |  | <b>18</b> | <b>57</b> | <b>55</b> | <b>54</b> | <b>66</b> | <b>50</b> | <b>41</b> |      |      |      |      |      |      |      |      |      |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-38

# San Joaquin Valley Air Basin

## Stanislaus County: Modesto - 14th Street

| Annual Average Concentrations and Health Risks |                                       |                              |            |            |            |            |            |            |            |            |            |      |      |      |      |      |      |      |
|--|---------------------------------------|------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------|------|------|------|------|------|------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991       | 1992       | 1993       | 1994       | 1995       | 1996       | 1997       | 1998       | 1999       | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| Acetaldehyde                                   | Annual Avg                            |                              |            |            |            |            |            |            |            |            | 1.65       |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |            |            |            |            |            |            |            |            | 8          |      |      |      |      |      |      |      |
| Benzene  | Annual Avg                            | 2.25                         | 1.86       | 1.2        | 1.23       | 1.14       | 1.2        | 0.7        | 0.77       | 0.85       | 0.61       |      |      |      |      |      |      |      |
|  | Health Risk                           | 208                          | 172        | 111        | 114        | 105        | 111        | 65         | 71         | 78         | 56         |      |      |      |      |      |      |      |
| 1,3-Butadiene                                  | Annual Avg                            | 0.379                        | 0.353      | 0.224      | 0.348      | 0.293      | 0.298      | 0.236      | 0.208      | 0.26       | 0.162      |      |      |      |      |      |      |      |
|  | Health Risk                           | 142                          | 133        | 84         | 131        | 110        | 112        | 89         | 78         | 98         | 61         |      |      |      |      |      |      |      |
| Carbon Tetrachloride                           | Annual Avg                            | 0.128                        | 0.132      |            | 0.112      |            | 0.094      | 0.074      |            | 0.113      |            |      |      |      |      |      |      |      |
|  | Health Risk                           | 34                           | 35         |            | 30         |            | 25         | 20         |            | 30         |            |      |      |      |      |      |      |      |
| Chromium, Hexavalent                           | Annual Avg                            |                              |            |            |            |            |            |            |            |            | 0.1        |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |            |            |            |            |            |            |            |            | 15         |      |      |      |      |      |      |      |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              | 0.11       | 0.1        | 0.12       | 0.1        | 0.11       | 0.1        | 0.15       |            |            |      |      |      |      |      |      |      |
|  | Health Risk                           |                              | 7          | 7          | 8          | 7          | 7          | 7          | 10         |            |            |      |      |      |      |      |      |      |
| Formaldehyde                                   | Annual Avg                            |                              |            |            |            |            |            |            |            |            | 3.09       |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |            |            |            |            |            |            |            |            | 23         |      |      |      |      |      |      |      |
| Methylene Chloride                             | Annual Avg                            | 0.65                         | 0.61       | 0.55       | 0.65       | 0.62       | 0.58       | 0.5        | 0.59       | 0.51       |            |      |      |      |      |      |      |      |
|  | Health Risk                           | 2                            | 2          | 2          | 2          | 2          | 2          | 2          | 2          | 2          |            |      |      |      |      |      |      |      |
| Perchloroethylene                              | Annual Avg                            | 0.145                        | 0.15       | 0.118      | 0.109      | 0.087      | 0.053      | 0.044      | 0.052      | 0.035      |            |      |      |      |      |      |      |      |
|  | Health Risk                           | 6                            | 6          | 5          | 4          | 3          | 2          | 2          | 2          | 1          |            |      |      |      |      |      |      |      |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |            |            |            |            |            |            |            |            |            |      |      |      |      |      |      |      |
|  | Health Risk                           | No Monitoring Data Available |            |            |            |            |            |            |            |            |            |      |      |      |      |      |      |      |
| <b>Total Health Risk</b>                       |                                       | <b>392</b>                   | <b>355</b> | <b>209</b> | <b>289</b> | <b>227</b> | <b>259</b> | <b>185</b> | <b>163</b> | <b>209</b> | <b>163</b> |      |      |      |      |      |      |      |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-39

*San Joaquin Valley Air Basin*

## San Joaquin County: Stockton - Hazelton Street

| Annual Average Concentrations and Health Risks |                                       |                              |            |            |           |            |            |            |            |            |            |            |            |            |            |            |            |           |
|--|---------------------------------------|------------------------------|------------|------------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991       | 1992       | 1993      | 1994       | 1995       | 1996       | 1997       | 1998       | 1999       | 2000       | 2001       | 2002       | 2003       | 2004       | 2005       | 2006      |
| Acetaldehyde                                   | Annual Avg                            | 1.47                         | 1.75       | 1.07       | 1.31      | 1.1        |            | 0.9        | 0.9        | 1          | 1.07       | 0.64       | 0.59       | 0.8        | 0.81       | 0.87       | 0.99       | 0.93      |
|  | Health Risk                           | 7                            | 9          | 5          | 6         | 5          |            | 4          | 4          | 5          | 5          | 3          | 3          | 4          | 4          | 4          | 5          | 5         |
| Benzene  | Annual Avg                            | 2.01                         | 1.95       | 1.37       |           | 1.23       | 1.05       | 0.64       | 0.52       | 0.69       | 0.65       | 0.58       | 0.454      | 0.521      | 0.437      | 0.37       | 0.358      | 0.317     |
|  | Health Risk                           | 186                          | 181        | 127        |           | 113        | 97         | 60         | 48         | 64         | 60         | 54         | 42         | 48         | 40         | 34         | 33         | 29        |
| 1,3-Butadiene                                  | Annual Avg                            | 0.336                        | 0.321      | 0.217      |           | 0.281      | 0.25       | 0.206      | 0.181      | 0.206      | 0.18       | 0.155      | 0.13       | 0.146      | 0.096      | 0.079      | 0.085      | 0.063     |
|  | Health Risk                           | 126                          | 121        | 82         |           | 106        | 94         | 77         | 68         | 77         | 68         | 58         | 49         | 55         | 36         | 30         | 32         | 24        |
| Carbon Tetrachloride                           | Annual Avg                            | 0.131                        | 0.136      |            |           |            | 0.099      | 0.077      |            | 0.115      |            | 0.098      | 0.087      | 0.091      | 0.098      |            |            |           |
|  | Health Risk                           | 35                           | 36         |            |           |            | 26         | 20         |            | 30         |            | 26         | 23         | 24         | 26         |            |            |           |
| Chromium, Hexavalent                           | Annual Avg                            |                              |            | 0.22       | 0.25      | 0.25       |            | 0.14       |            |            | 0.1        | 0.12       |            | 0.123      | 0.13       | 0.123      | 0.12       | 0.063     |
|  | Health Risk                           |                              |            | 33         | 37        | 37         |            | 21         |            |            | 15         | 18         |            | 18         | 20         | 18         | 18         | 9         |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              | 0.1        | 0.1        |           | 0.1        | 0.11       | 0.1        | 0.11       |            |            | 0.11       | 0.13       | 0.15       | 0.15       | 0.15       | 0.15       | 0.15      |
|  | Health Risk                           |                              | 7          | 7          |           | 7          | 7          | 7          | 7          |            |            | 7          | 9          | 10         | 10         | 10         | 10         | 10        |
| Formaldehyde                                   | Annual Avg                            | 1.81                         | 1.88       | 1.24       | 1.38      | 1.56       |            | 2.35       | 2.24       | 2.33       | 2.68       | 1.61       | 1.48       | 2.07       | 1.91       | 1.79       | 1.94       | 2.16      |
|  | Health Risk                           | 13                           | 14         | 9          | 10        | 12         |            | 17         | 16         | 17         | 20         | 12         | 11         | 15         | 14         | 13         | 14         | 16        |
| Methylene Chloride                             | Annual Avg                            | 0.63                         | 0.5        | 0.6        |           | 0.5        | 0.75       | 0.53       | 0.5        | 0.5        | 0.5        | 0.53       | 0.27       | 0.14       | 0.16       | 0.12       | 0.12       | 0.11      |
|  | Health Risk                           | 2                            | 2          | 2          |           | 2          | 3          | 2          | 2          | 2          | 2          | 2          | <1         | <1         | <1         | <1         | <1         | <1        |
| Perchloroethylene                              | Annual Avg                            | 0.129                        | 0.113      | 0.12       |           | 0.066      | 0.061      | 0.068      | 0.09       | 0.033      |            | 0.108      | 0.053      | 0.035      | 0.03       | 0.022      | 0.024      | 0.018     |
|  | Health Risk                           | 5                            | 5          | 5          |           | 3          | 2          | 3          | 4          | 1          |            | 4          | 2          | 1          | 1          | <1         | 1          | <1        |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |            |            |           |            |            |            |            |            |            |            |            |            |            |            |            |           |
|  | Health Risk                           | No Monitoring Data Available |            |            |           |            |            |            |            |            |            |            |            |            |            |            |            |           |
| <b>Total Health Risk</b>                       |                                       | <b>374</b>                   | <b>375</b> | <b>270</b> | <b>53</b> | <b>285</b> | <b>229</b> | <b>211</b> | <b>149</b> | <b>196</b> | <b>170</b> | <b>184</b> | <b>139</b> | <b>175</b> | <b>151</b> | <b>109</b> | <b>113</b> | <b>93</b> |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-40

# San Diego Air Basin

## Air Basin Summary

| TAC                          | Conc. <sup>1</sup> /Risk <sup>2</sup> | Annual Average Concentrations and Health Risks |       |       |       |       |       |       |       |       |      |       |       |       |       |       |       |       |
|------------------------------|---------------------------------------|--|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|
|                              |                                       | 1990   | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999 | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Acetaldehyde                 | Annual Avg                            | 1.33   | 1.5   | 1.22  | 1.41  | 1.48  | 0.64  | 1.03  | 1     | 0.86  | 1.04 | 0.84  | 0.95  | 0.97  | 0.89  | 0.89  | 1.01  | 0.85  |
|                              | Health Risk                           | 6  | 7     | 6     | 7     | 7     | 3     | 5     | 5     | 4     | 5    | 4     | 5     | 5     | 4     | 4     | 5     | 4     |
| Benzene                      | Annual Avg                            | 2.25   | 1.7   | 1.48  | 1.16  | 1.39  | 0.98  | 0.76  | 0.76  | 0.76  | 0.86 | 0.65  | 0.505 | 0.491 | 0.483 | 0.371 | 0.404 | 0.362 |
|                              | Health Risk                           | 208  | 158   | 137   | 107   | 129   | 90    | 71    | 70    | 70    | 79   | 60    | 47    | 45    | 45    | 34    | 37    | 34    |
| 1,3-Butadiene                | Annual Avg                            | 0.333  | 0.257 | 0.258 | 0.312 | 0.307 | 0.242 | 0.208 | 0.198 | 0.196 | 0.22 | 0.159 | 0.136 | 0.12  | 0.089 | 0.074 | 0.073 | 0.068 |
|                              | Health Risk                           | 125  | 97    | 97    | 117   | 115   | 91    | 78    | 75    | 74    | 83   | 60    | 51    | 45    | 33    | 28    | 27    | 26    |
| Carbon Tetrachloride         | Annual Avg                            | 0.132  | 0.127 |       | 0.103 |       | 0.099 | 0.077 |       |       |      | 0.094 | 0.086 | 0.092 | 0.093 |       |       |       |
|                              | Health Risk                           | 35   | 34    |       | 27    |       | 26    | 20    |       |       |      | 25    | 23    | 24    | 25    |       |       |       |
| Chromium, Hexavalent         | Annual Avg                            |  |       | 0.24  | 0.19  | 0.16  | 0.18  | 0.11  | 0.11  | 0.1   | 0.1  | 0.1   |       | 0.045 | 0.05  | 0.03  | 0.043 | 0.05  |
|                              | Health Risk                           |  |       | 36    | 28    | 23    | 27    | 16    | 16    | 15    | 15   | 15    |       | 7     | 8     | 5     | 6     | 8     |
| <i>para</i> -Dichlorobenzene | Annual Avg                            |  | 0.1   | 0.11  | 0.13  | 0.15  | 0.12  | 0.11  | 0.13  |       |      |       | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  |
|                              | Health Risk                           |  | 7     | 8     | 8     | 10    | 8     | 7     | 8     |       |      |       | 10    | 10    | 10    | 10    | 10    | 10    |
| Formaldehyde                 | Annual Avg                            | 1.64   | 1.53  | 1.26  | 1.76  | 2.25  | 2.13  | 2.62  | 2.62  | 2.27  | 2.67 | 2.23  | 2.59  | 2.99  | 2.68  | 2.19  | 2.42  | 2.08  |
|                              | Health Risk                           | 12   | 11    | 9     | 13    | 17    | 16    | 19    | 19    | 17    | 20   | 16    | 19    | 22    | 20    | 16    | 18    | 15    |
| Methylene Chloride           | Annual Avg                            | 0.59   | 0.83  | 1.34  | 1.13  | 0.73  | 0.63  | 0.59  | 0.57  |       | 0.53 | 0.76  | 0.17  | 0.16  | 0.16  | 0.13  | 0.14  | 0.14  |
|                              | Health Risk                           | 2  | 3     | 5     | 4     | 3     | 2     | 2     | 2     |       | 2    | 3     | <1    | <1    | <1    | <1    | <1    | <1    |
| Perchloroethylene            | Annual Avg                            | 0.282  | 0.269 | 0.263 | 0.2   | 0.207 | 0.249 | 0.147 | 0.125 |       |      | 0.089 | 0.061 | 0.06  | 0.047 | 0.037 | 0.041 | 0.037 |
|                              | Health Risk                           | 11   | 11    | 11    | 8     | 8     | 10    | 6     | 5     |       |      | 4     | 2     | 2     | 2     | 1     | 2     | 1     |
| Diesel PM <sup>3</sup>       | Annual Avg                            | (2.9)  |       |       |       |       | (1.9) |       |       |       |      | (1.4) |       |       |       |       |       |       |
|                              | Health Risk                           | (870)  |       |       |       |       | (570) |       |       |       |      | (420) |       |       |       |       |       |       |
| Average Basin Risk           | w/o Diesel PM                         | 399  | 328   | 309   | 319   | 312   | 273   | 224   | 200   | 180   | 204  | 187   | 157   | 160   | 147   | 98    | 105   | 98    |
|                              | w/ Diesel PM                          | (1269)   |       |       |       |       | (843) |       |       |       |      | (607) |       |       |       |       |       |       |

1 Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.  
 2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.  
 3 The Diesel PM concentrations are estimates based on receptor modeling, and they are available for selected years. Currently, the Diesel PM estimates are being reviewed.

Table C-41

*San Diego Air Basin*

## San Diego County: Chula Vista

| Annual Average Concentrations and Health Risks |                                       |                              |            |            |            |            |            |           |            |            |           |            |            |            |           |           |           |           |
|--|---------------------------------------|------------------------------|------------|------------|------------|------------|------------|-----------|------------|------------|-----------|------------|------------|------------|-----------|-----------|-----------|-----------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991       | 1992       | 1993       | 1994       | 1995       | 1996      | 1997       | 1998       | 1999      | 2000       | 2001       | 2002       | 2003      | 2004      | 2005      | 2006      |
| Acetaldehyde                                   | Annual Avg                            | 1.1                          | 1.21       | 0.99       | 1.16       | 1.32       | 0.64       | 0.83      | 0.91       | 0.7        | 0.91      | 0.75       | 0.78       | 0.75       | 0.72      | 0.74      | 0.86      | 0.71      |
|  | Health Risk                           | 5                            | 6          | 5          | 6          | 6          | 3          | 4         | 4          | 3          | 4         | 4          | 4          | 4          | 3         | 4         | 4         | 3         |
| Benzene  | Annual Avg                            | 2                            | 1.21       | 1.03       | 0.8        | 1.08       | 0.81       |           | 0.63       | 0.61       |           | 0.55       | 0.421      | 0.419      |           | 0.341     | 0.358     |           |
|  | Health Risk                           | 186                          | 112        | 95         | 74         | 100        | 75         |           | 58         | 56         |           | 51         | 39         | 39         |           | 32        | 33        |           |
| 1,3-Butadiene                                  | Annual Avg                            | 0.278                        | 0.183      | 0.184      | 0.225      | 0.262      | 0.205      |           | 0.162      | 0.153      |           | 0.136      | 0.11       | 0.107      |           | 0.07      | 0.064     |           |
|  | Health Risk                           | 105                          | 69         | 69         | 85         | 98         | 77         |           | 61         | 57         |           | 51         | 41         | 40         |           | 26        | 24        |           |
| Carbon Tetrachloride                           | Annual Avg                            | 0.132                        | 0.129      |            | 0.101      |            | 0.097      |           |            |            |           | 0.093      | 0.086      | 0.091      |           |           |           |           |
|  | Health Risk                           | 35                           | 34         |            | 27         |            | 26         |           |            |            |           | 25         | 23         | 24         |           |           |           |           |
| Chromium, Hexavalent                           | Annual Avg                            |                              |            | 0.24       | 0.2        | 0.17       | 0.2        | 0.11      | 0.1        | 0.1        | 0.11      | 0.1        |            | 0.05       | 0.063     | 0.03      | 0.038     | 0.03      |
|  | Health Risk                           |                              |            | 37         | 30         | 25         | 29         | 16        | 15         | 15         | 16        | 16         |            | 8          | 9         | 5         | 6         | 5         |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              | 0.1        | 0.11       | 0.13       | 0.12       | 0.11       |           | 0.13       |            |           |            | 0.15       | 0.15       |           | 0.15      | 0.15      |           |
|  | Health Risk                           |                              | 7          | 7          | 8          | 8          | 7          |           | 8          |            |           |            | 10         | 10         |           | 10        | 10        |           |
| Formaldehyde                                   | Annual Avg                            | 1.26                         | 1.3        | 1.1        | 1.46       | 2.08       | 1.81       | 2.1       | 2.37       | 2          | 2.49      | 2.14       | 2.54       | 2.56       | 2.3       | 1.93      | 2.08      | 1.88      |
|  | Health Risk                           | 9                            | 10         | 8          | 11         | 15         | 13         | 15        | 17         | 15         | 18        | 16         | 19         | 19         | 17        | 14        | 15        | 14        |
| Methylene Chloride                             | Annual Avg                            | 0.58                         | 0.59       | 0.81       | 1.01       | 0.57       | 0.57       |           | 0.62       |            |           | 0.65       | 0.16       | 0.13       |           | 0.12      | 0.13      |           |
|  | Health Risk                           | 2                            | 2          | 3          | 3          | 2          | 2          |           | 2          |            |           | 2          | <1         | <1         |           | <1        | <1        |           |
| Perchloroethylene                              | Annual Avg                            | 0.236                        | 0.229      | 0.208      | 0.144      | 0.132      | 0.146      |           | 0.103      |            |           | 0.078      | 0.057      | 0.048      |           | 0.031     | 0.036     |           |
|  | Health Risk                           | 9                            | 9          | 8          | 6          | 5          | 6          |           | 4          |            |           | 3          | 2          | 2          |           | 1         | 1         |           |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |            |            |            |            |            |           |            |            |           |            |            |            |           |           |           |           |
|  | Health Risk                           | No Monitoring Data Available |            |            |            |            |            |           |            |            |           |            |            |            |           |           |           |           |
| <b>Total Health Risk</b>                       |                                       | <b>351</b>                   | <b>249</b> | <b>232</b> | <b>250</b> | <b>259</b> | <b>238</b> | <b>35</b> | <b>169</b> | <b>146</b> | <b>38</b> | <b>168</b> | <b>138</b> | <b>146</b> | <b>29</b> | <b>92</b> | <b>93</b> | <b>22</b> |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-42

# San Diego Air Basin

## San Diego County: El Cajon - Redwood Avenue

| Annual Average Concentrations and Health Risks |                                       |                              |            |            |            |      |            |            |            |            |            |            |            |            |            |            |            |            |
|--|---------------------------------------|------------------------------|------------|------------|------------|------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991       | 1992       | 1993       | 1994 | 1995       | 1996       | 1997       | 1998       | 1999       | 2000       | 2001       | 2002       | 2003       | 2004       | 2005       | 2006       |
| Acetaldehyde                                   | Annual Avg                            | 1.56                         | 1.78       | 1.46       | 1.66       |      |            | 1.23       |            |            | 1.17       | 0.92       | 1.11       | 1.2        | 1.06       | 1.04       | 1.16       | 0.99       |
|  | Health Risk                           | 8                            | 9          | 7          | 8          |      |            | 6          |            |            | 6          | 4          | 5          | 6          | 5          | 5          | 6          | 5          |
| Benzene  | Annual Avg                            | 2.5                          | 2.2        | 1.94       | 1.51       |      | 1.14       | 0.86       | 0.89       | 0.91       | 0.98       | 0.74       | 0.588      | 0.563      | 0.561      | 0.402      | 0.449      | 0.399      |
|  | Health Risk                           | 231                          | 203        | 179        | 140        |      | 106        | 79         | 82         | 84         | 91         | 69         | 54         | 52         | 52         | 37         | 42         | 37         |
| 1,3-Butadiene                                  | Annual Avg                            | 0.387                        | 0.332      | 0.331      | 0.398      |      | 0.279      | 0.252      | 0.235      | 0.24       | 0.24       | 0.182      | 0.162      | 0.133      | 0.101      | 0.077      | 0.082      | 0.073      |
|  | Health Risk                           | 145                          | 125        | 125        | 150        |      | 105        | 95         | 88         | 90         | 90         | 68         | 61         | 50         | 38         | 29         | 31         | 28         |
| Carbon Tetrachloride                           | Annual Avg                            | 0.131                        | 0.125      |            |            |      | 0.1        | 0.078      |            |            |            | 0.095      | 0.086      | 0.093      | 0.093      |            |            |            |
|  | Health Risk                           | 35                           | 33         |            |            |      | 27         | 21         |            |            |            | 25         | 23         | 24         | 24         |            |            |            |
| Chromium, Hexavalent                           | Annual Avg                            |                              |            | 0.24       | 0.18       |      |            | 0.1        | 0.11       |            | 0.1        | 0.1        |            | 0.04       | 0.038      |            | 0.048      | 0.07       |
|  | Health Risk                           |                              |            | 36         | 26         |      |            | 16         | 17         |            | 15         | 15         |            | 6          | 6          |            | 7          | 11         |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              |            | 0.12       | 0.13       |      | 0.12       | 0.11       | 0.13       |            |            |            | 0.15       | 0.15       | 0.15       | 0.15       | 0.15       | 0.15       |
|  | Health Risk                           |                              |            | 8          | 8          |      | 8          | 7          | 8          |            |            |            | 10         | 10         | 10         | 10         | 10         | 10         |
| Formaldehyde                                   | Annual Avg                            | 2.01                         | 1.76       | 1.42       | 2.06       |      |            | 3.14       |            |            | 2.84       | 2.32       | 2.63       | 3.41       | 3.05       | 2.45       | 2.76       | 2.28       |
|  | Health Risk                           | 15                           | 13         | 10         | 15         |      |            | 23         |            |            | 21         | 17         | 19         | 25         | 22         | 18         | 20         | 17         |
| Methylene Chloride                             | Annual Avg                            | 0.59                         | 1.07       | 1.87       | 1.25       |      | 0.7        | 0.61       | 0.52       |            | 0.52       | 0.87       | 0.19       | 0.18       | 0.18       | 0.14       | 0.14       | 0.17       |
|  | Health Risk                           | 2                            | 4          | 7          | 4          |      | 2          | 2          | 2          |            | 2          | 3          | <1         | <1         | <1         | <1         | <1         | <1         |
| Perchloroethylene                              | Annual Avg                            | 0.329                        | 0.308      | 0.319      | 0.256      |      | 0.352      | 0.168      | 0.147      |            |            | 0.1        | 0.065      | 0.072      | 0.059      | 0.043      | 0.045      | 0.04       |
|  | Health Risk                           | 13                           | 12         | 13         | 10         |      | 14         | 7          | 6          |            |            | 4          | 3          | 3          | 2          | 2          | 2          | 2          |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |            |            |            |      |            |            |            |            |            |            |            |            |            |            |            |            |
|  | Health Risk                           | No Monitoring Data Available |            |            |            |      |            |            |            |            |            |            |            |            |            |            |            |            |
| <b>Total Health Risk</b>                       |                                       | <b>449</b>                   | <b>399</b> | <b>385</b> | <b>361</b> |      | <b>262</b> | <b>256</b> | <b>203</b> | <b>174</b> | <b>225</b> | <b>205</b> | <b>175</b> | <b>176</b> | <b>159</b> | <b>101</b> | <b>118</b> | <b>110</b> |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-43

## Sacramento Valley Air Basin

### Air Basin Summary

| TAC                          | Conc. <sup>1</sup> /Risk <sup>2</sup> | Annual Average Concentrations and Health Risks |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|------------------------------|---------------------------------------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                              |                                       | 1990   | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
| Acetaldehyde                 | Annual Avg                            | 1.29   |       |       | 1.37  | 1.04  | 0.39  | 1.03  | 1.05  | 0.92  | 1.23  | 0.83  | 0.74  | 1.14  | 1.04  | 1.09  | 1.15  | 0.92  |
|                              | Health Risk                           | 6  |       |       | 7     | 5     | 2     | 5     | 5     | 4     | 6     | 4     | 4     | 6     | 5     | 5     | 6     | 4     |
| Benzene                      | Annual Avg                            | 2.02   | 1.88  | 1.35  | 1     | 1.02  | 0.8   | 0.56  | 0.55  | 0.5   | 0.56  | 0.45  | 0.422 | 0.443 | 0.406 | 0.406 | 0.335 | 0.268 |
|                              | Health Risk                           | 187  | 174   | 125   | 92    | 95    | 74    | 51    | 51    | 47    | 52    | 42    | 39    | 41    | 38    | 38    | 31    | 25    |
| 1,3-Butadiene                | Annual Avg                            | 0.378  | 0.332 | 0.283 | 0.288 | 0.221 | 0.186 | 0.176 | 0.16  | 0.154 | 0.128 | 0.119 | 0.125 | 0.116 | 0.094 | 0.093 | 0.08  | 0.051 |
|                              | Health Risk                           | 142  | 125   | 106   | 108   | 83    | 70    | 66    | 60    | 58    | 48    | 45    | 47    | 44    | 35    | 35    | 30    | 19    |
| Carbon Tetrachloride         | Annual Avg                            | 0.123  | 0.123 |       | 0.109 |       | 0.099 | 0.078 |       |       |       | 0.094 | 0.088 | 0.09  | 0.093 |       |       |       |
|                              | Health Risk                           | 33   | 32    |       | 29    |       | 26    | 21    |       |       |       | 25    | 23    | 24    | 25    |       |       |       |
| Chromium, Hexavalent         | Annual Avg                            |  |       | 0.17  | 0.14  | 0.13  | 0.18  | 0.11  | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.053 | 0.05  | 0.068 | 0.058 | 0.041 |
|                              | Health Risk                           |  |       | 26    | 21    | 19    | 26    | 16    | 15    | 15    | 15    | 15    | 15    | 8     | 8     | 10    | 9     | 6     |
| <i>para</i> -Dichlorobenzene | Annual Avg                            |  |       | 0.11  | 0.1   | 0.2   | 0.14  | 0.11  | 0.14  |       |       | 0.1   | 0.13  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  |
|                              | Health Risk                           |  |       | 7     | 7     | 14    | 9     | 7     | 10    |       |       | 7     | 9     | 10    | 10    | 10    | 10    | 10    |
| Formaldehyde                 | Annual Avg                            | 1.57   |       |       | 1.77  | 1.75  | 1.91  | 2.76  | 2.92  | 2.52  | 3.61  | 2.51  | 2.41  | 3.79  | 3.53  | 2.76  | 2.68  | 2.54  |
|                              | Health Risk                           | 12   |       |       | 13    | 13    | 14    | 20    | 22    | 19    | 27    | 18    | 18    | 28    | 26    | 20    | 20    | 19    |
| Methylene Chloride           | Annual Avg                            | 0.65   | 0.56  | 0.55  | 0.98  | 0.66  | 0.53  | 0.54  | 0.52  |       | 0.6   | 0.57  | 0.29  | 0.08  | 0.08  | 0.07  | 0.08  | 0.07  |
|                              | Health Risk                           | 2  | 2     | 2     | 3     | 2     | 2     | 2     | 2     |       | 2     | 2     | 1     | <1    | <1    | <1    | <1    | <1    |
| Perchloroethylene            | Annual Avg                            | 0.071  | 0.074 | 0.063 | 0.052 | 0.165 | 0.049 | 0.055 | 0.052 |       |       | 0.058 | 0.027 | 0.025 | 0.018 | 0.015 | 0.021 | 0.015 |
|                              | Health Risk                           | 3  | 3     | 3     | 2     | 7     | 2     | 2     | 2     |       |       | 2     | 1     | 1     | <1    | <1    | <1    | <1    |
| Diesel PM <sup>3</sup>       | Annual Avg                            | (2.5)  |       |       |       |       | (1.6) |       |       |       |       | (1.2) |       |       |       |       |       |       |
|                              | Health Risk                           | (750)  |       |       |       |       | (480) |       |       |       |       | (360) |       |       |       |       |       |       |
| Average Basin Risk           | w/o Diesel PM                         | 385  | 336   | 269   | 282   | 238   | 225   | 190   | 167   | 143   | 150   | 160   | 157   | 162   | 147   | 118   | 106   | 83    |
|                              | w/ Diesel PM                          | (1153)   |       |       |       |       | (705) |       |       |       |       | (520) |       |       |       |       |       |       |

1 Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

2 Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

3 The Diesel PM concentrations are estimates based on receptor modeling, and they are available for selected years. Currently, the Diesel PM estimates are being reviewed.

Table C-44



# Sacramento Valley Air Basin

## Butte County: Chico - Manzanita Avenue

| Annual Average Concentrations and Health Risks |                                       |                              |      |      |            |            |            |            |           |            |            |            |            |            |            |            |            |           |
|--|---------------------------------------|------------------------------|------|------|------------|------------|------------|------------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|-----------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991 | 1992 | 1993       | 1994       | 1995       | 1996       | 1997      | 1998       | 1999       | 2000       | 2001       | 2002       | 2003       | 2004       | 2005       | 2006      |
| Acetaldehyde                                   | Annual Avg                            |                              |      |      | 1.55       | 1.11       | 0.54       | 1.15       | 1.17      | 0.96       | 1.41       | 0.89       | 1.1        | 1.33       | 1.14       | 1.32       | 1.4        | 1         |
|  | Health Risk                           |                              |      |      | 8          | 5          | 3          | 6          | 6         | 5          | 7          | 4          | 5          | 6          | 6          | 6          | 7          | 5         |
| Benzene  | Annual Avg                            |                              |      |      | 1.1        | 1.14       | 0.85       | 0.67       |           | 0.55       | 0.64       | 0.52       | 0.499      | 0.544      | 0.449      | 0.533      | 0.427      | 0.297     |
|  | Health Risk                           |                              |      |      | 102        | 106        | 78         | 62         |           | 51         | 59         | 48         | 46         | 50         | 42         | 49         | 40         | 28        |
| 1,3-Butadiene                                  | Annual Avg                            |                              |      |      | 0.295      | 0.249      | 0.205      | 0.216      |           | 0.17       | 0.149      | 0.142      | 0.157      | 0.154      | 0.111      | 0.132      | 0.108      | 0.057     |
|  | Health Risk                           |                              |      |      | 111        | 94         | 77         | 81         |           | 64         | 56         | 54         | 59         | 58         | 42         | 50         | 41         | 21        |
| Carbon Tetrachloride                           | Annual Avg                            |                              |      |      | 0.108      |            | 0.1        | 0.079      |           |            |            |            | 0.088      | 0.087      | 0.093      |            |            |           |
|  | Health Risk                           |                              |      |      | 29         |            | 26         | 21         |           |            |            |            | 23         | 23         | 24         |            |            |           |
| Chromium, Hexavalent                           | Annual Avg                            |                              |      |      | 0.15       | 0.13       | 0.16       | 0.1        | 0.1       | 0.1        | 0.1        | 0.1        | 0.1        | 0.058      | 0.048      | 0.075      | 0.058      | 0.038     |
|  | Health Risk                           |                              |      |      | 23         | 19         | 24         | 16         | 15        | 15         | 15         | 15         | 15         | 9          | 7          | 11         | 9          | 6         |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              |      |      | 0.1        | 0.13       | 0.1        | 0.12       |           |            |            |            | 0.13       | 0.15       | 0.15       | 0.15       | 0.15       | 0.15      |
|  | Health Risk                           |                              |      |      | 7          | 8          | 7          | 8          |           |            |            |            | 9          | 10         | 10         | 10         | 10         | 10        |
| Formaldehyde                                   | Annual Avg                            |                              |      |      | 2.08       | 1.78       | 2.04       | 2.99       | 3.42      | 2.63       | 4.15       | 2.76       | 3.25       | 4.47       | 3.82       | 3.4        | 3.28       | 2.63      |
|  | Health Risk                           |                              |      |      | 15         | 13         | 15         | 22         | 25        | 19         | 31         | 20         | 24         | 33         | 28         | 25         | 24         | 19        |
| Methylene Chloride                             | Annual Avg                            |                              |      |      | 0.81       | 0.5        | 0.53       | 0.58       |           |            |            |            | 0.36       | 0.09       | 0.07       | 0.08       | 0.09       | 0.07      |
|  | Health Risk                           |                              |      |      | 3          | 2          | 2          | 2          |           |            |            |            | 1          | <1         | <1         | <1         | <1         | <1        |
| Perchloroethylene                              | Annual Avg                            |                              |      |      | 0.057      | 0.265      | 0.047      | 0.049      |           |            |            |            | 0.024      | 0.024      | 0.015      | 0.014      | 0.028      | 0.011     |
|  | Health Risk                           |                              |      |      | 2          | 11         | 2          | 2          |           |            |            |            | <1         | 1          | <1         | <1         | 1          | <1        |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |      |      |            |            |            |            |           |            |            |            |            |            |            |            |            |           |
|  | Health Risk                           | No Monitoring Data Available |      |      |            |            |            |            |           |            |            |            |            |            |            |            |            |           |
| <b>Total Health Risk</b>                       |                                       |                              |      |      | <b>300</b> | <b>258</b> | <b>234</b> | <b>220</b> | <b>46</b> | <b>154</b> | <b>168</b> | <b>141</b> | <b>182</b> | <b>190</b> | <b>159</b> | <b>151</b> | <b>131</b> | <b>89</b> |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-45

*Sacramento Valley Air Basin***Butte County: Chico - Salem Street**

| Annual Average Concentrations and Health Risks |                                       |                              |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--|---------------------------------------|------------------------------|------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991       | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| Acetaldehyde                                   | Annual Avg                            | 1.27                         |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 6                            |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Benzene  | Annual Avg                            | 1.96                         | 1.91       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 182                          | 177        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 1,3-Butadiene                                  | Annual Avg                            | 0.403                        | 0.361      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 151                          | 136        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Carbon Tetrachloride                           | Annual Avg                            | 0.123                        | 0.123      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 32                           | 33         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Chromium, Hexavalent                           | Annual Avg                            |                              |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Formaldehyde                                   | Annual Avg                            | 1.49                         |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 11                           |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Methylene Chloride                             | Annual Avg                            | 0.53                         | 0.57       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 2                            | 2          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Perchloroethylene                              | Annual Avg                            | 0.047                        | 0.054      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 2                            | 2          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | No Monitoring Data Available |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| <b>Total Health Risk</b>                       |                                       | <b>386</b>                   | <b>350</b> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-46

# Sacramento Valley Air Basin

## Placer County: Roseville - North Sunrise Boulevard

| Annual Average Concentrations and Health Risks |                                       |                              |      |      |      |            |            |            |            |            |           |            |            |            |            |           |           |           |
|--|---------------------------------------|------------------------------|------|------|------|------------|------------|------------|------------|------------|-----------|------------|------------|------------|------------|-----------|-----------|-----------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991 | 1992 | 1993 | 1994       | 1995       | 1996       | 1997       | 1998       | 1999      | 2000       | 2001       | 2002       | 2003       | 2004      | 2005      | 2006      |
| Acetaldehyde                                   | Annual Avg                            |                              |      |      |      | 0.96       | 0.25       | 0.9        | 0.93       | 0.88       |           | 0.77       | 0.39       | 0.95       | 0.93       | 0.87      | 0.89      | 0.84      |
|  | Health Risk                           |                              |      |      |      | 5          | 1          | 4          | 4          | 4          |           | 4          | 2          | 5          | 5          | 4         | 4         | 4         |
| Benzene  | Annual Avg                            |                              |      |      |      | 0.91       | 0.75       | 0.44       | 0.46       | 0.45       | 0.48      | 0.39       | 0.344      | 0.343      | 0.363      | 0.278     | 0.244     | 0.239     |
|  | Health Risk                           |                              |      |      |      | 84         | 70         | 40         | 42         | 42         | 44        | 36         | 32         | 32         | 34         | 26        | 23        | 22        |
| 1,3-Butadiene                                  | Annual Avg                            |                              |      |      |      | 0.194      | 0.167      | 0.135      | 0.121      | 0.138      | 0.107     | 0.096      | 0.093      | 0.078      | 0.078      | 0.054     | 0.051     | 0.045     |
|  | Health Risk                           |                              |      |      |      | 73         | 63         | 51         | 46         | 52         | 40        | 36         | 35         | 29         | 29         | 20        | 19        | 17        |
| Carbon Tetrachloride                           | Annual Avg                            |                              |      |      |      |            | 0.099      | 0.077      |            |            |           | 0.094      | 0.087      | 0.093      | 0.093      |           |           |           |
|  | Health Risk                           |                              |      |      |      |            | 26         | 20         |            |            |           | 25         | 23         | 24         | 25         |           |           |           |
| Chromium, Hexavalent                           | Annual Avg                            |                              |      |      |      | 0.13       | 0.19       | 0.11       | 0.1        | 0.1        | 0.1       | 0.1        |            | 0.048      | 0.053      | 0.06      | 0.058     | 0.045     |
|  | Health Risk                           |                              |      |      |      | 19         | 29         | 16         | 15         | 15         | 15        | 15         |            | 7          | 8          | 9         | 9         | 7         |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              |      |      |      | 0.28       | 0.17       | 0.1        | 0.15       |            |           | 0.1        | 0.13       | 0.15       | 0.15       | 0.15      | 0.15      | 0.15      |
|  | Health Risk                           |                              |      |      |      | 19         | 11         | 7          | 10         |            |           | 7          | 9          | 10         | 10         | 10        | 10        | 10        |
| Formaldehyde                                   | Annual Avg                            |                              |      |      |      | 1.71       | 1.78       | 2.52       | 2.42       | 2.42       |           | 2.25       | 1.57       | 3.12       | 3.23       | 2.12      | 2.07      | 2.45      |
|  | Health Risk                           |                              |      |      |      | 13         | 13         | 19         | 18         | 18         |           | 17         | 12         | 23         | 24         | 16        | 15        | 18        |
| Methylene Chloride                             | Annual Avg                            |                              |      |      |      | 0.82       | 0.54       | 0.5        | 0.5        |            |           | 0.52       | 0.23       | 0.08       | 0.09       | 0.06      | 0.08      | 0.06      |
|  | Health Risk                           |                              |      |      |      | 3          | 2          | 2          | 2          |            |           | 2          | <1         | <1         | <1         | <1        | <1        | <1        |
| Perchloroethylene                              | Annual Avg                            |                              |      |      |      | 0.065      | 0.051      | 0.061      | 0.063      |            |           | 0.047      | 0.031      | 0.026      | 0.022      | 0.016     | 0.014     | 0.019     |
|  | Health Risk                           |                              |      |      |      | 3          | 2          | 2          | 3          |            |           | 2          | 1          | 1          | <1         | <1        | <1        | <1        |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |      |      |      |            |            |            |            |            |           |            |            |            |            |           |           |           |
|  | Health Risk                           | No Monitoring Data Available |      |      |      |            |            |            |            |            |           |            |            |            |            |           |           |           |
| <b>Total Health Risk</b>                       |                                       |                              |      |      |      | <b>219</b> | <b>217</b> | <b>161</b> | <b>140</b> | <b>131</b> | <b>99</b> | <b>144</b> | <b>114</b> | <b>131</b> | <b>135</b> | <b>85</b> | <b>80</b> | <b>78</b> |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-47

*Sacramento Valley Air Basin*

## Sacramento County: Citrus Heights - Sunrise Boulevard

| Annual Average Concentrations and Health Risks |                                       |                              |            |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--|---------------------------------------|------------------------------|------------|------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| TAC  | Conc. <sup>1</sup> /Risk <sup>2</sup> | 1990                         | 1991       | 1992       | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| Acetaldehyde                                   | Annual Avg                            | 1.32                         |            |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 6                            |            |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Benzene  | Annual Avg                            | 2.08                         | 1.85       | 1.41       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 192                          | 171        | 130        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 1,3-Butadiene                                  | Annual Avg                            | 0.353                        | 0.302      | 0.307      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 133                          | 114        | 115        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Carbon Tetrachloride                           | Annual Avg                            | 0.124                        | 0.123      |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 33                           | 32         |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Chromium, Hexavalent                           | Annual Avg                            |                              |            |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |            |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| <i>para</i> -Dichlorobenzene                   | Annual Avg                            |                              |            | 0.11       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           |                              |            | 7          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Formaldehyde                                   | Annual Avg                            | 1.66                         |            |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 12                           |            |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Methylene Chloride                             | Annual Avg                            | 0.76                         | 0.54       | 0.5        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 3                            | 2          | 2          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Perchloroethylene                              | Annual Avg                            | 0.095                        | 0.094      | 0.076      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | 4                            | 4          | 3          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Diesel PM                                      | Annual Avg                            | No Monitoring Data Available |            |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | Health Risk                           | No Monitoring Data Available |            |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| <b>Total Health Risk</b>                       |                                       | <b>383</b>                   | <b>323</b> | <b>257</b> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

<sup>1</sup> Concentrations for Hexavalent Chromium are expressed as ng/m<sup>3</sup>, and concentrations for Diesel PM are expressed as µg/m<sup>3</sup>. Concentrations for all other TACs are expressed as ppb.

<sup>2</sup> Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-48

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APPENDIX D  
Surface Area, Population, and  
Average Daily Vehicle Miles Traveled

**Appendix D: *Surface Area, Population, and Average Daily Vehicle Miles Traveled***

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## Introduction

This appendix provides information on the square mile surface area, population, and average number of vehicle miles traveled (VMT) each day in California. The trend data for population and daily VMT cover the period 1980 through 2020. Data are listed for each air basin, for each county within each air basin, and for the State as a whole. In cases where a county is split between two or more air basins, the data reflect only that portion of the county within the respective air basin. It is important to note that the average daily VMT listed in the following tables has been divided by 1000.

Surface areas were calculated based on United States Census Bureau data from the 2000 Census. The surface areas shown reflect land portions of air basins only and exclude water bodies, including bays, lakes, and rivers.

The population data were derived from reports developed by the California Department of Finance (DOF), Demographic Research Unit. Split county fractions for 1990 and 2000 were derived using census 1990 and 2000 data. County and air basin fractions for years not listed above were interpolated. The population data do not reflect any adjustment for the estimated census undercount.

The estimates of daily VMT for the years 1980 through 2020 are found in ARB's revised motor vehicle emissions inventory model, EMFAC2007 (refer to [www.arb.ca.gov/msei/msei.htm](http://www.arb.ca.gov/msei/msei.htm)). The VMT estimates have been revised from those published in the last year's Almanac that were based on EMFAC2002 version 2.2. The current VMT estimates reflect changes in vehicle population, mileage accrual rates, and the data provided by regional transportation planning agencies (RTPAs). For future calendar years, the VMT estimates in large urbanized areas are provided by RTPAs as an output of their travel demand models. For recent years (2000-2005), the VMT is calculated as the product of vehicle population from Department of

Motor Vehicles (DMV) data and mileage accrual rates (annual miles traveled by type and age of vehicle) calculated from the Bureau of Automotive Repair database for the Smog Check program. For historical years (pre-2000), the VMT is calculated as the product of vehicle population backcast from DMV data and mileage accrual rates. The changes made in EMFAC2007, including revised DMV data, revised accrual rates based on more current Smog Check data, redistribution of heavy-duty truck VMT based on survey data, and updated VMT data from RTPAs, combine to lower VMT in some regions and raise VMT in other regions. More detailed information about the methodologies used in developing both the population and VMT trends is available from the ARB staff at (916) 445-8699.

## California

**Surface Area = 155959 square miles**

| Parameter           | 1980     | 1985     | 1990     | 1995     | 2000     | 2005     | 2010     | 2015     | 2020     |
|---------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Population          | 23782000 | 26402401 | 29828496 | 31711849 | 34098740 | 37004660 | 39246767 | 41549270 | 43851741 |
| Avg. Daily VMT/1000 | 403567   | 538319   | 691048   | 733629   | 799848   | 955233   | 958078   | 1033400  | 1104522  |

Table D-1

## Great Basin Valleys Air Basin

Surface Area = 13986 square miles

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 27700 | 27900 | 29370 | 30942 | 32332 | 33353 | 34478 | 35286 | 36093 |
| Avg. Daily VMT/1000 | 914   | 987   | 1139  | 1085  | 1095  | 1370  | 1475  | 1694  | 1954  |

Table D-2

## Alpine County

Surface Area = 739 square miles

| Parameter           | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
|---------------------|------|------|------|------|------|------|------|------|------|
| Population          | 1100 | 1100 | 1094 | 1171 | 1205 | 1242 | 1377 | 1409 | 1441 |
| Avg. Daily VMT/1000 | 30   | 32   | 40   | 41   | 45   | 57   | 59   | 68   | 79   |

Table D-3

## Inyo County

Surface Area = 10203 square miles

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 17900 | 18000 | 18198 | 18371 | 18201 | 18599 | 18396 | 18400 | 18404 |
| Avg. Daily VMT/1000 | 547   | 546   | 670   | 647   | 665   | 808   | 873   | 1001  | 1155  |

Table D-4

## Mono County

Surface Area = 3044 square miles

| Parameter           | 1980 | 1985 | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|------|------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 8700 | 8800 | 10078 | 11400 | 12926 | 13512 | 14705 | 15477 | 16248 |
| Avg. Daily VMT/1000 | 337  | 409  | 429   | 397   | 385   | 505   | 543   | 625   | 720   |

Table D-5

## Lake County Air Basin

Surface Area = 1258 square miles

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 36800 | 45600 | 50962 | 56630 | 58605 | 64180 | 69259 | 74468 | 79676 |
| Avg. Daily VMT/1000 | 870   | 1151  | 1307  | 1496  | 1503  | 1819  | 2001  | 2324  | 2744  |

Table D-6

## Lake Tahoe Air Basin

*Surface Area = 224 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 36205 | 36237 | 39330 | 43690 | 46883 | 53586 | 58121 | 64309 | 70497 |
| Avg. Daily VMT/1000 | 769   | 869   | 1000  | 1140  | 1161  | 1268  | 1404  | 1626  | 1896  |

Table D-7

## El Dorado County

*Surface Area = 157 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 27680 | 27520 | 29955 | 32837 | 34531 | 38235 | 41049 | 44623 | 48197 |
| Avg. Daily VMT/1000 | 585   | 617   | 695   | 777   | 777   | 844   | 937   | 1090  | 1276  |

Table D-8 A portion of El Dorado County lies within the Mountain Counties Air Basin.

## Placer County

*Surface Area = 66 square miles*

| Parameter           | 1980 | 1985 | 1990 | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|------|------|------|-------|-------|-------|-------|-------|-------|
| Population          | 8525 | 8717 | 9375 | 10853 | 12352 | 15351 | 17072 | 19686 | 22300 |
| Avg. Daily VMT/1000 | 184  | 252  | 305  | 363   | 384   | 424   | 467   | 536   | 620   |

Table D-9 Portions of Placer County lie within the Mountain Counties and Sacramento Valley Air Basins.

## Mojave Desert Air Basin

*Surface Area = 27287 square miles*

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015    | 2020    |
|---------------------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
| Population          | 357420 | 485698 | 676413 | 749355 | 822397 | 923323 | 975761 | 1034503 | 1093241 |
| Avg. Daily VMT/1000 | 6745   | 11130  | 20896  | 22712  | 24999  | 34411  | 34880  | 40184   | 44740   |

Table D-10

## Kern County

*Surface Area = 3786 square miles*

| Parameter           | 1980  | 1985  | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 82560 | 96324 | 111407 | 115376 | 112781 | 130587 | 137093 | 149069 | 161044 |
| Avg. Daily VMT/1000 | 1879  | 2677  | 3359   | 3662   | 4010   | 5149   | 5806   | 6866   | 7942   |

Table D-11 A portion of Kern County lies within the San Joaquin Valley Air Basin.

## Los Angeles County

*Surface Area = 1522 square miles*

| Parameter           | 1980  | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 97504 | 160542 | 231253 | 262112 | 300762 | 321004 | 328476 | 335134 | 341792 |
| Avg. Daily VMT/1000 | 1927  | 3082   | 5740   | 5527   | 5883   | 7981   | 8164   | 9531   | 10546  |

Table D-12 A portion of Los Angeles County lies within the South Coast Air Basin.

## Riverside County

*Surface Area = 3054 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 10449 | 13048 | 18537 | 22199 | 25880 | 32062 | 35942 | 40180 | 44416 |
| Avg. Daily VMT/1000 | 336   | 433   | 807   | 875   | 1012  | 1386  | 1458  | 1804  | 2140  |

Table D-13 Portions of Riverside County lie within the Salton Sea and South Coast Air Basins.

## San Bernardino County

*Surface Area = 18923 square miles*

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 166907 | 215784 | 315216 | 349668 | 382974 | 439670 | 474250 | 510120 | 545989 |
| Avg. Daily VMT/1000 | 2603   | 4938   | 10990  | 12648  | 14094  | 19895  | 19452  | 21983  | 24112  |

Table D-14 A portion of San Bernardino County lies within the South Coast Air Basin.

## Mountain Counties Air Basin

*Surface Area = 12226 square miles*

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 229578 | 272823 | 346018 | 385722 | 411003 | 450949 | 477342 | 515267 | 553190 |
| Avg. Daily VMT/1000 | 5967   | 7522   | 9662   | 10720  | 11055  | 13811  | 14805  | 16823  | 18982  |

Table D-15

## Amador County

*Surface Area = 593 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 19500 | 22200 | 30462 | 33395 | 35327 | 38221 | 39287 | 40772 | 42257 |
| Avg. Daily VMT/1000 | 548   | 653   | 872   | 982   | 986   | 1225  | 1346  | 1545  | 1780  |

Table D-16

## Calaveras County

*Surface Area = 1020 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 20900 | 25000 | 32466 | 38352 | 40740 | 45711 | 49599 | 54645 | 59691 |
| Avg. Daily VMT/1000 | 658   | 768   | 1049  | 1213  | 1221  | 1586  | 1755  | 2023  | 2335  |

Table D-17

## El Dorado County

*Surface Area = 1553 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| Population          | 58820 | 71580 | 97350 | 112073 | 124012 | 137315 | 147422 | 160257 | 173092 |
| Avg. Daily VMT/1000 | 1374  | 1815  | 2283  | 2733   | 2874   | 3706   | 3780   | 4156   | 4413   |

Table D-18

A portion of El Dorado County lies within the Lake Tahoe Air Basin.

## Mariposa County

*Surface Area = 1451 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 11200 | 12500 | 14422 | 16450 | 16985 | 18281 | 18608 | 19608 | 20607 |
| Avg. Daily VMT/1000 | 282   | 324   | 456   | 502   | 475   | 577   | 642   | 741   | 856   |

Table D-19

## Nevada County

*Surface Area = 958 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005   | 2010   | 2015   | 2020   |
|---------------------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| Population          | 52500 | 64700 | 79019 | 87059 | 92393 | 100227 | 106910 | 116911 | 126912 |
| Avg. Daily VMT/1000 | 1442  | 1997  | 2402  | 2579  | 2666  | 3184   | 3429   | 3921   | 4522   |

Table D-20

## Placer County

*Surface Area = 908 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 11958 | 15143 | 20499 | 21790 | 22457 | 27908 | 31036 | 35789 | 40542 |
| Avg. Daily VMT/1000 | 322   | 446   | 506   | 581   | 746   | 988   | 1034  | 1169  | 1251  |

Table D-21

Portions of Placer County lie within the Lake Tahoe and Sacramento Valley Air Basins.

## Plumas County

*Surface Area = 2553 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 17400 | 18600 | 19779 | 20823 | 20713 | 21557 | 21067 | 21025 | 20983 |
| Avg. Daily VMT/1000 | 327   | 362   | 489   | 528   | 562   | 682   | 757   | 875   | 1032  |

Table D-22

## Sierra County

*Surface Area = 953 square miles*

| Parameter           | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
|---------------------|------|------|------|------|------|------|------|------|------|
| Population          | 3100 | 3200 | 3318 | 3560 | 3645 | 3514 | 3530 | 3592 | 3654 |
| Avg. Daily VMT/1000 | 74   | 82   | 104  | 95   | 96   | 118  | 130  | 149  | 173  |

Table D-23

## Tuolumne County

*Surface Area = 2235 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 34200 | 39900 | 48703 | 52220 | 54731 | 58215 | 59883 | 62668 | 65452 |
| Avg. Daily VMT/1000 | 940   | 1075  | 1501  | 1507  | 1429  | 1745  | 1932  | 2244  | 2620  |

Table D-24

***North Central Coast Air Basin******Surface Area = 5156 square miles***

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 506400 | 565800 | 623037 | 645899 | 714230 | 743389 | 787044 | 825998 | 864950 |
| Avg. Daily VMT/1000 | 9864   | 13153  | 16546  | 16926  | 18206  | 20398  | 21330  | 22121  | 23017  |

Table D-25

***Monterey County******Surface Area = 3321 square miles***

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 292100 | 327400 | 356797 | 360350 | 403946 | 425055 | 453292 | 479326 | 505359 |
| Avg. Daily VMT/1000 | 5764   | 7526   | 9445   | 9501   | 10475  | 11926  | 12245  | 12752  | 13339  |

Table D-26

***San Benito County******Surface Area = 1389 square miles***

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 25200 | 29900 | 36911 | 44347 | 53790 | 57700 | 62530 | 68039 | 73547 |
| Avg. Daily VMT/1000 | 821   | 1105  | 1428  | 1607  | 1671  | 2025  | 2027  | 2136  | 2255  |

Table D-27

***Santa Cruz County******Surface Area = 445 square miles***

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 189100 | 208500 | 229329 | 241202 | 256494 | 260634 | 271222 | 278633 | 286044 |
| Avg. Daily VMT/1000 | 3279   | 4522   | 5673   | 5818   | 6060   | 6447   | 7058   | 7233   | 7423   |

Table D-28

## North Coast Air Basin

*Surface Area = 12339 square miles*

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 244387 | 258167 | 286742 | 303199 | 310977 | 325519 | 333829 | 346372 | 358913 |
| Avg. Daily VMT/1000 | 5535   | 6305   | 8049   | 8159   | 8048   | 9264   | 10101  | 11513  | 13209  |

Table D-29

## Del Norte County

*Surface Area = 1008 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 18300 | 19100 | 24426 | 27862 | 27497 | 29355 | 29126 | 29946 | 30765 |
| Avg. Daily VMT/1000 | 450   | 437   | 598   | 601   | 551   | 643   | 703   | 807   | 944   |

Table D-30

## Humboldt County

*Surface Area = 3572 square miles*

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 108900 | 110600 | 119370 | 124979 | 126857 | 132434 | 133136 | 136327 | 139518 |
| Avg. Daily VMT/1000 | 2365   | 2632   | 3325   | 3307   | 3241   | 3702   | 4017   | 4588   | 5360   |

Table D-31

## Mendocino County

*Surface Area = 3508 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020   |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Population          | 67000 | 73400 | 80574 | 83753 | 86555 | 90487 | 94300 | 97482 | 100664 |
| Avg. Daily VMT/1000 | 1632  | 1875  | 2402  | 2473  | 2463  | 2867  | 3153  | 3653  | 4228   |

Table D-32

## Sonoma County

*Surface Area = 1071 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 38187 | 42267 | 49347 | 53128 | 57085 | 59218 | 63825 | 69195 | 74564 |
| Avg. Daily VMT/1000 | 793   | 1042  | 1298  | 1379  | 1400  | 1582  | 1722  | 1879  | 1988  |

Table D-33

A portion of Sonoma County lies within the San Francisco Bay Area Air Basin.

## Trinity County

*Surface Area = 3179 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 12000 | 12800 | 13025 | 13477 | 12983 | 14025 | 13442 | 13422 | 13402 |
| Avg. Daily VMT/1000 | 295   | 319   | 426   | 399   | 393   | 470   | 506   | 586   | 689   |

Table D-34

## Northeast Plateau Air Basin

*Surface Area = 14788 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 70500 | 75200 | 81007 | 83873 | 88038 | 91919 | 92112 | 92746 | 93379 |
| Avg. Daily VMT/1000 | 1784  | 1973  | 2612  | 2794  | 2452  | 2991  | 3134  | 3571  | 4192  |

Table D-35

## Lassen County

*Surface Area = 4557 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 21800 | 24300 | 27693 | 28891 | 33977 | 35696 | 36954 | 37593 | 38232 |
| Avg. Daily VMT/1000 | 415   | 462   | 613   | 715   | 697   | 820   | 907   | 1042  | 1223  |

Table D-36

## Modoc County

*Surface Area = 3944 square miles*

| Parameter           | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
|---------------------|------|------|------|------|------|------|------|------|------|
| Population          | 8700 | 9400 | 9685 | 9983 | 9570 | 9813 | 9547 | 9416 | 9285 |
| Avg. Daily VMT/1000 | 172  | 179  | 217  | 234  | 219  | 257  | 283  | 325  | 381  |

Table D-37

## Siskiyou County

*Surface Area = 6287 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 40000 | 41500 | 43629 | 44999 | 44491 | 46410 | 45611 | 45737 | 45862 |
| Avg. Daily VMT/1000 | 1197  | 1332  | 1782  | 1845  | 1536  | 1914  | 1944  | 2204  | 2588  |

Table D-38

## Sacramento Valley Air Basin

*Surface Area = 14994 square miles*

| Parameter           | 1980    | 1985    | 1990    | 1995    | 2000    | 2005    | 2010    | 2015    | 2020    |
|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Population          | 1500924 | 1688217 | 1977544 | 2155490 | 2353225 | 2636019 | 2925202 | 3259235 | 3593262 |
| Avg. Daily VMT/1000 | 30025   | 38728   | 50471   | 54826   | 57268   | 71433   | 73601   | 82374   | 89914   |

Table D-39

## Butte County

*Surface Area = 1639 square miles*

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 144900 | 161600 | 183229 | 197464 | 203857 | 216401 | 228020 | 244375 | 260730 |
| Avg. Daily VMT/1000 | 2619   | 3257   | 4344   | 4546   | 4480   | 5362   | 5751   | 6239   | 7430   |

Table D-40

## Colusa County

*Surface Area = 1151 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 12900 | 14600 | 16300 | 17833 | 18926 | 21315 | 22697 | 24517 | 26337 |
| Avg. Daily VMT/1000 | 382   | 463   | 564   | 581   | 574   | 737   | 781   | 917   | 1086  |

Table D-41

## Glenn County

*Surface Area = 1314 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 21500 | 22900 | 24827 | 26398 | 26640 | 28523 | 29348 | 30649 | 31950 |
| Avg. Daily VMT/1000 | 611   | 753   | 845   | 880   | 747   | 920   | 969   | 1132  | 1367  |

Table D-42

## Placer County

*Surface Area = 429 square miles*

| Parameter           | 1980  | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 97917 | 114940 | 145031 | 178912 | 217796 | 270671 | 301005 | 347102 | 393198 |
| Avg. Daily VMT/1000 | 2404  | 2989   | 3851   | 4729   | 6034   | 8947   | 8373   | 9461   | 10055  |

Table D-43

Portions of Placer County lie within the Lake Tahoe and Mountain Counties Air Basins.



### Sacramento County

*Surface Area = 966 square miles*

| Parameter           | 1980   | 1985   | 1990    | 1995    | 2000    | 2005    | 2010    | 2015    | 2020    |
|---------------------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| Population          | 787900 | 890700 | 1046870 | 1120733 | 1233557 | 1379103 | 1555848 | 1751264 | 1946679 |
| Avg. Daily VMT/1000 | 14730  | 19621  | 25096   | 27114   | 27090   | 32513   | 33091   | 35567   | 37370   |

Table D-44

### Shasta County

*Surface Area = 3785 square miles*

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 116600 | 129100 | 147966 | 159742 | 164672 | 180984 | 196464 | 212193 | 227922 |
| Avg. Daily VMT/1000 | 2336   | 2867   | 3886   | 4019   | 4100   | 5188   | 5663   | 6582   | 7632   |

Table D-45

### Solano County

*Surface Area = 511 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| Population          | 63807 | 75977 | 98287 | 109170 | 121903 | 129541 | 139838 | 155125 | 170411 |
| Avg. Daily VMT/1000 | 1794  | 2341  | 3712  | 4116   | 4731   | 5705   | 5970   | 7425   | 7969   |

Table D-46

A portion of Solano County lies within the San Francisco Bay Area Air Basin.

### Sutter County

*Surface Area = 603 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015   | 2020   |
|---------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| Population          | 52600 | 57800 | 64814 | 74167 | 79528 | 90627 | 95757 | 103807 | 111856 |
| Avg. Daily VMT/1000 | 995   | 1253  | 1684  | 1845  | 1921  | 2443  | 2922  | 3534   | 4196   |

Table D-47

### Tehama County

*Surface Area = 2951 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 39100 | 44000 | 49866 | 54573 | 55933 | 61378 | 62442 | 65383 | 68323 |
| Avg. Daily VMT/1000 | 1026  | 1149  | 1752  | 1763  | 1736  | 2279  | 2427  | 2825  | 3317  |

Table D-48

### Yolo County

*Surface Area = 1013 square miles*

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 113900 | 123500 | 141773 | 154603 | 170004 | 188858 | 222277 | 246659 | 271040 |
| Avg. Daily VMT/1000 | 2423   | 3154   | 3592   | 4008   | 4577   | 5733   | 5812   | 6535   | 7007   |

Table D-49

### Yuba County

*Surface Area = 631 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995  | 2000  | 2005  | 2010  | 2015  | 2020  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Population          | 49800 | 53100 | 58581 | 61895 | 60409 | 68618 | 71506 | 78161 | 84816 |
| Avg. Daily VMT/1000 | 705   | 881   | 1145  | 1225  | 1278  | 1606  | 1842  | 2157  | 2485  |

Table D-50

## *Salton Sea Air Basin*

*Surface Area = 6304 square miles*

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 230077 | 270397 | 354144 | 422147 | 469910 | 568471 | 631366 | 702883 | 774399 |
| Avg. Daily VMT/1000 | 5782   | 7545   | 11915  | 13396  | 12093  | 16213  | 17138  | 19798  | 22306  |

Table D-51

## **Imperial County**

*Surface Area = 4174 square miles*

| Parameter           | 1980  | 1985  | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 92500 | 98600 | 110074 | 136183 | 143596 | 164221 | 178201 | 196294 | 214386 |
| Avg. Daily VMT/1000 | 2421  | 2693  | 3660   | 3815   | 4004   | 5008   | 5562   | 6473   | 7563   |

Table D-52

## **Riverside County**

*Surface Area = 2129 square miles*

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 137577 | 171797 | 244070 | 285964 | 326314 | 404250 | 453165 | 506589 | 560013 |
| Avg. Daily VMT/1000 | 3361   | 4852   | 8255   | 9581   | 8089   | 11205  | 11576  | 13325  | 14743  |

Table D-53

Portions of Riverside County lie within the Mojave Desert and South Coast Air Basins.

## *San Diego Air Basin and County*

*Surface Area = 4200 square miles*

| Parameter           | 1980    | 1985    | 1990    | 1995    | 2000    | 2005    | 2010    | 2015    | 2020    |
|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Population          | 1873300 | 2109300 | 2504897 | 2615201 | 2836158 | 3057000 | 3258951 | 3446262 | 3633572 |
| Avg. Daily VMT/1000 | 32722   | 45636   | 65250   | 68235   | 74567   | 87944   | 86948   | 91223   | 96987   |

Table D-54

## San Francisco Bay Area Air Basin

*Surface Area = 5340 square miles*

| Parameter           | 1980    | 1985    | 1990    | 1995    | 2000    | 2005    | 2010    | 2015    | 2020    |
|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Population          | 5095406 | 5473956 | 5874273 | 6182722 | 6646802 | 6904411 | 7337485 | 7736635 | 8135781 |
| Avg. Daily VMT/1000 | 93109   | 111964  | 132558  | 141224  | 154959  | 163790  | 170505  | 183332  | 194476  |

Table D-55

## Alameda County

*Surface Area = 738 square miles*

| Parameter           | 1980    | 1985    | 1990    | 1995    | 2000    | 2005    | 2010    | 2015    | 2020    |
|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Population          | 1109500 | 1196000 | 1276100 | 1335230 | 1453053 | 1503790 | 1651164 | 1757655 | 1864145 |
| Avg. Daily VMT/1000 | 21249   | 25726   | 30002   | 30270   | 33456   | 36218   | 39569   | 42329   | 45448   |

Table D-56

## Contra Costa County

*Surface Area = 720 square miles*

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005    | 2010    | 2015    | 2020    |
|---------------------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
| Population          | 658500 | 710900 | 806315 | 872804 | 956372 | 1025900 | 1116298 | 1221690 | 1327081 |
| Avg. Daily VMT/1000 | 12629  | 15708  | 19083  | 20742  | 22858  | 25768   | 26550   | 28340   | 29621   |

Table D-57

## Marin County

*Surface Area = 520 square miles*

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 222700 | 220200 | 229887 | 238409 | 248225 | 252195 | 252440 | 251850 | 251260 |
| Avg. Daily VMT/1000 | 3602   | 4340   | 5248   | 5501   | 5991   | 6269   | 6325   | 6650   | 7009   |

Table D-58

## Napa County

*Surface Area = 754 square miles*

| Parameter           | 1980  | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 99300 | 102900 | 111017 | 117269 | 124984 | 133526 | 142121 | 154034 | 165946 |
| Avg. Daily VMT/1000 | 2040  | 2326   | 2732   | 3345   | 3710   | 4216   | 4728   | 5127   | 5440   |

Table D-59

## San Francisco County

*Surface Area = 47 square miles*

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 680500 | 727500 | 723187 | 739863 | 780974 | 794850 | 816230 | 818388 | 820545 |
| Avg. Daily VMT/1000 | 8785   | 10521  | 12084  | 12237  | 12775  | 12942  | 12789  | 13500  | 14235  |

Table D-60

## San Mateo County

*Surface Area = 449 square miles*

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 588100 | 617300 | 648162 | 675919 | 710732 | 721350 | 747134 | 766937 | 786740 |
| Avg. Daily VMT/1000 | 11882  | 13706  | 16192  | 18133  | 20124  | 19096  | 20235  | 21600  | 22761  |

Table D-61

## Santa Clara County

*Surface Area = 1291 square miles*

| Parameter           | 1980    | 1985    | 1990    | 1995    | 2000    | 2005    | 2010    | 2015    | 2020    |
|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Population          | 1300200 | 1410500 | 1495296 | 1573477 | 1692760 | 1760741 | 1844146 | 1925569 | 2006992 |
| Avg. Daily VMT/1000 | 24573   | 29169   | 33996   | 36547   | 40206   | 41306   | 41896   | 45701   | 48916   |

Table D-62

## Solano County

*Surface Area = 318 square miles*

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 173393 | 197323 | 244177 | 258531 | 275304 | 292553 | 315809 | 350331 | 384853 |
| Avg. Daily VMT/1000 | 3273   | 4196   | 5440   | 5436   | 6063   | 7230   | 7571   | 8432   | 8807   |

Table D-63

A portion of Solano County lies within the Sacramento Valley Air Basin.

## Sonoma County

*Surface Area = 504 square miles*

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 263213 | 291333 | 340132 | 371220 | 404398 | 419506 | 452143 | 490181 | 528219 |
| Avg. Daily VMT/1000 | 5076   | 6272   | 7781   | 9013   | 9776   | 10745  | 10842  | 11653  | 12239  |

Table D-64

A portion of Sonoma County lies within the North Coast Air Basin.

## San Joaquin Valley Air Basin

*Surface Area = 23490 square miles*

| Parameter           | 1980    | 1985    | 1990    | 1995    | 2000    | 2005    | 2010    | 2015    | 2020    |
|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Population          | 1979840 | 2275776 | 2645311 | 2972667 | 3212615 | 3658320 | 3959518 | 4389922 | 4820322 |
| Avg. Daily VMT/1000 | 32804   | 41697   | 58326   | 68389   | 77176   | 98950   | 103176  | 115884  | 129484  |

Table D-65

## Fresno County

*Surface Area = 5963 square miles*

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015    | 2020    |
|---------------------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
| Population          | 517400 | 582800 | 670250 | 755971 | 804341 | 892325 | 949961 | 1032308 | 1114654 |
| Avg. Daily VMT/1000 | 7738   | 9910   | 13251  | 15763  | 17464  | 21547  | 22756  | 25481   | 28198   |

Table D-66

## Kern County

*Surface Area = 4355 square miles*

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 323540 | 377476 | 436585 | 503592 | 552592 | 639837 | 671715 | 730392 | 789068 |
| Avg. Daily VMT/1000 | 6565   | 8423   | 11344  | 12677  | 14852  | 19818  | 19857  | 22610  | 25545  |

Table D-67

A portion of Kern County lies within the Mojave Desert Air Basin.

## Kings County

*Surface Area = 1391 square miles*

| Parameter           | 1980  | 1985  | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 74200 | 83900 | 101866 | 115865 | 130085 | 146487 | 156334 | 170543 | 184751 |
| Avg. Daily VMT/1000 | 1055  | 1345  | 1927   | 2822   | 3127   | 4048   | 4201   | 4634   | 5100   |

Table D-68

## Madera County

*Surface Area = 2136 square miles*

| Parameter           | 1980  | 1985  | 1990  | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| Population          | 63900 | 74800 | 88506 | 109941 | 124545 | 142837 | 150278 | 167122 | 183966 |
| Avg. Daily VMT/1000 | 1625  | 1970  | 2425  | 2725   | 3375   | 4392   | 5435   | 6304   | 7327   |

Table D-69

## Merced County

*Surface Area = 1929 square miles*

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 135500 | 157000 | 179400 | 199020 | 211247 | 244320 | 277715 | 319273 | 360831 |
| Avg. Daily VMT/1000 | 2892   | 3440   | 5386   | 6043   | 6652   | 8683   | 8915   | 10231  | 11582  |

Table D-70

## San Joaquin County

*Surface Area = 1399 square miles*

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 350200 | 417200 | 481939 | 522089 | 569072 | 664369 | 747149 | 868306 | 989462 |
| Avg. Daily VMT/1000 | 5490   | 7334   | 10225  | 12293  | 13863  | 18112  | 18754  | 20973  | 23566  |

Table D-71

## Stanislaus County

*Surface Area = 1494 square miles*

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 267700 | 302000 | 373650 | 415341 | 451030 | 510858 | 559051 | 606446 | 653841 |
| Avg. Daily VMT/1000 | 3608   | 4528   | 7752   | 8845   | 9761   | 12401  | 11915  | 13082  | 14339  |

Table D-72

## Tulare County

*Surface Area = 4824 square miles*

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 247400 | 280600 | 313115 | 350848 | 369703 | 417287 | 447315 | 495532 | 543749 |
| Avg. Daily VMT/1000 | 3831   | 4747   | 6016   | 7221   | 8082   | 9949   | 11343  | 12569  | 13827  |

Table D-73

## South Central Coast Air Basin

Surface Area = 7887 square miles

| Parameter           | 1980   | 1985    | 1990    | 1995    | 2000    | 2005    | 2010    | 2015    | 2020    |
|---------------------|--------|---------|---------|---------|---------|---------|---------|---------|---------|
| Population          | 988800 | 1119300 | 1255854 | 1319020 | 1407693 | 1497799 | 1578438 | 1636071 | 1693703 |
| Avg. Daily VMT/1000 | 15280  | 20840   | 28757   | 29642   | 32257   | 37805   | 39847   | 43236   | 46356   |

Table D-74

### San Luis Obispo County

Surface Area = 3304 square miles

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 156600 | 184200 | 217808 | 230223 | 248107 | 262593 | 277437 | 291356 | 305274 |
| Avg. Daily VMT/1000 | 3093   | 4255   | 5655   | 5787   | 6295   | 7498   | 8292   | 9504   | 10892  |

Table D-75

### Santa Barbara County

Surface Area = 2737 square miles

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 300000 | 338200 | 368953 | 383717 | 400932 | 419678 | 440337 | 452178 | 464019 |
| Avg. Daily VMT/1000 | 5205   | 6888   | 9510   | 9151   | 9633   | 10943  | 12446  | 13460  | 14613  |

Table D-76

### Ventura County

Surface Area = 1845 square miles

| Parameter           | 1980   | 1985   | 1990   | 1995   | 2000   | 2005   | 2010   | 2015   | 2020   |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Population          | 532200 | 596900 | 669093 | 705080 | 758654 | 815528 | 860664 | 892537 | 924410 |
| Avg. Daily VMT/1000 | 6982   | 9697   | 13592  | 14704  | 16329  | 19364  | 19109  | 20272  | 20851  |

Table D-77

## South Coast Air Basin

Surface Area = 6480 square miles

| Parameter           | 1980     | 1985     | 1990     | 1995     | 2000     | 2005     | 2010     | 2015     | 2020     |
|---------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Population          | 10604663 | 11698030 | 13083594 | 13745292 | 14687872 | 15996422 | 16727861 | 17389313 | 18050763 |
| Avg. Daily VMT/1000 | 161397   | 228818   | 282561   | 292884   | 323009   | 393767   | 377734   | 397696   | 414267   |

Table D-78

### Los Angeles County

Surface Area = 2538 square miles

| Parameter           | 1980    | 1985    | 1990    | 1995    | 2000    | 2005    | 2010     | 2015     | 2020     |
|---------------------|---------|---------|---------|---------|---------|---------|----------|----------|----------|
| Population          | 7402796 | 8030358 | 8629028 | 8839010 | 9277658 | 9902051 | 10132531 | 10337916 | 10543300 |
| Avg. Daily VMT/1000 | 112914  | 156791  | 182709  | 181641  | 193986  | 229225  | 211882   | 219707   | 225189   |

Table D-79

A portion of Los Angeles County lies within the Mojave Desert Air Basin.

### Orange County

Surface Area = 789 square miles

| Parameter           | 1980    | 1985    | 1990    | 1995    | 2000    | 2005    | 2010    | 2015    | 2020    |
|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Population          | 1944800 | 2166300 | 2411976 | 2604532 | 2863529 | 3061094 | 3260162 | 3393153 | 3526144 |
| Avg. Daily VMT/1000 | 28849   | 43196   | 55940   | 60031   | 67138   | 78333   | 78937   | 82529   | 85272   |

Table D-80

### Riverside County

Surface Area = 2024 square miles

| Parameter           | 1980   | 1985   | 1990   | 1995    | 2000    | 2005    | 2010    | 2015    | 2020    |
|---------------------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| Population          | 521774 | 651556 | 925658 | 1070642 | 1206877 | 1495125 | 1676041 | 1873630 | 2071219 |
| Avg. Daily VMT/1000 | 8295   | 12324  | 21330  | 25384   | 32792   | 47891   | 49080   | 54224   | 58942   |

Table D-81

Portions of Riverside County lie within the Mojave Desert and Salton Sea Air Basins.

### San Bernardino County

Surface Area = 1129 square miles

| Parameter           | 1980   | 1985   | 1990    | 1995    | 2000    | 2005    | 2010    | 2015    | 2020    |
|---------------------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| Population          | 735293 | 849816 | 1116932 | 1231108 | 1339808 | 1538152 | 1659127 | 1784614 | 1910100 |
| Avg. Daily VMT/1000 | 11339  | 16507  | 22582   | 25828   | 29093   | 38318   | 37835   | 41236   | 44864   |

Table D-82

A portion of San Bernardino County lies within the Mojave Desert Air Basin.

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APPENDIX E  
Natural Sources

**Appendix E: *Natural Sources***

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## Introduction

Appendix E contains estimates of emissions from natural processes occurring in terrestrial, marine, or aquatic ecosystems. Natural source air emissions include a variety of compounds and occur as a result of geologic or meteorological activity (such as petroleum seeps, or wildfires), or living processes by flora and fauna (such as emissions from vegetation foliage, or from soil microbes). Emissions resulting from anthropogenic activities, such as soil ammonia (NH<sub>3</sub>) emissions resulting from fertilizer application, burning of agricultural crop residues, prescribed burning of natural areas, wildfires that are managed for resources benefit, and windblown dust from crop fields and pastures are provided in Chapter 2. Windblown dust emissions from dry lake beds have also not been included.

For this edition of the Almanac, categories of natural sources include geogenic (petroleum seeps) and biogenic (vegetation) sources, and wildfires. Other categories may be added in future editions. Natural emissions are strongly affected by seasonal influences on factors such as temperature and moisture conditions, or wind regimes. Emissions during “peak season” are often orders of magnitude greater than emissions during dormant periods. Emissions for some categories (for example see Figure E-1) are therefore reported with respect to time of year, in addition to annual averages. Emissions can fluctuate greatly from year-to-year due to variation in meteorology or land cover/land use. Methods for forecasting future natural emissions due to changes in climate or land cover/land use remain in the realm of on-going scientific research, and have not been applied in this edition of the Almanac.

## Statewide

### Natural Source Emissions (tons/day, annual average)

| Category                     | ROG         | CO          | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-------------|-------------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>2225</b> | <b>2482</b> | <b>79</b>       | <b>24</b>       | <b>253</b>       | <b>215</b>        | <b>76</b>       |
| Biogenic Sources*            | 2067        | 0           | 0               | 0               | 0                | 0                 | 15              |
| Geogenic Sources*            | 29          | 0           | 0               | 0               | 0                | 0                 | 36              |
| Wildfires**                  | 128         | 2482        | 79              | 24              | 253              | 215               | 25              |

\* Biogenic and geogenic emissions are not year-specific.

\*\* Wildfire emissions reflect 10-year averages.

Table E-1

## Biogenic Sources

Biogenic volatile organic compounds (BVOCs) are emitted into the atmosphere from terrestrial ecosystems such as vegetation. BVOCs include isoprene, monoterpenes, methylbutenol (MBO), and other biogenic VOCs (OVOCs). These compounds are of interest because of their roles in atmospheric chemistry and climate. In the presence of anthropogenic NO<sub>x</sub> compounds, isoprene has been found to play a significant role in ozone chemistry. Monoterpenes and MBO are moderately reactive. OVOCs are a general category comprised of less reactive compounds, such as methanol and acetone. Isoprene, monoterpenes, MBO, and a fraction of the OVOCs are considered as reactive organic gas (ROG).

Plant BVOC emissions vary by compound and by orders of magnitude among various plant species. BVOCs play roles in plant physiology and chemical defense from pests and plant diseases. BVOC emissions are strongly influenced by environmental factors such as temperature and sunlight. Biophysical and environmental mechanisms controlling the synthesis and emission of isoprene, monoterpenes, and MBO have been studied across a variety of plant species and landscapes. Less is known about OVOCs. As a result, the BVOC research community has developed BVOC emission models, which have been routinely applied by the climate research, air quality, and emissions modeling community. A statewide model was developed to estimate BVOC emissions from vegetation over the course of a calendar year. The model runs at a 4 km x 4 km spatial resolution and generates hourly emissions of isoprene, monoterpenes, MBO, and OVOCs. Emissions from vegetation were estimated from plant species leaf mass and emission factors, and environmental adjustment algorithms representing light and temperature dependence of BVOC emissions. Leaf mass density estimates, used to scale emissions from leaf to landscapes, were based on Geographic Information System (GIS) land use/land cover databases, species leaf weight factors, and monthly satellite leaf area index

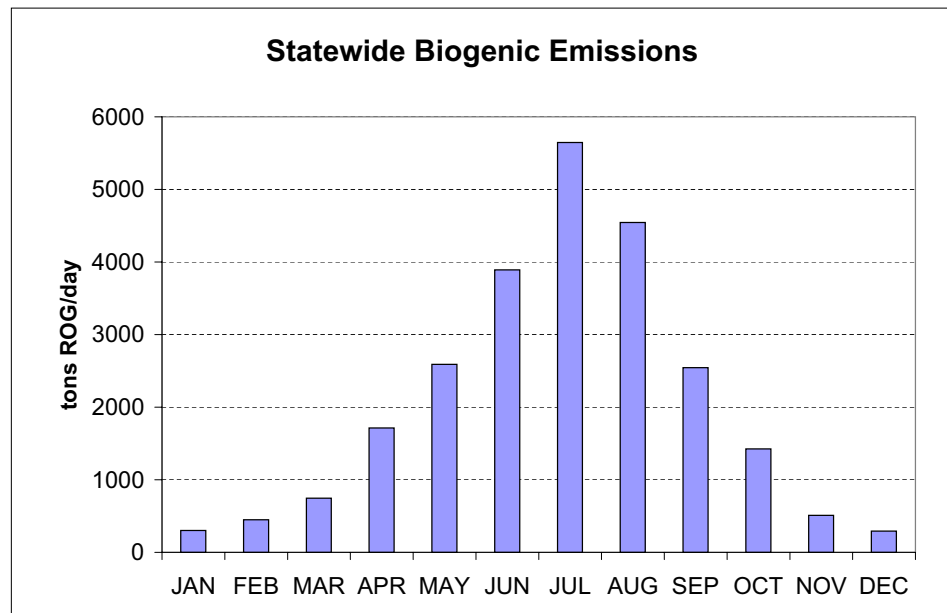


Figure E-1

(LAI) data. Temporal and spatial variation in the model was driven by monthly estimates of leaf mass densities and hourly light and temperature. The annual statewide emission of BVOC (reported here as ROG) is estimated to be over 750,000 tons, composed of 37 percent isoprene, 30 percent MBO, 24 percent monoterpenes, and nine percent OVOC. As shown in Figure E-1, the majority of biogenic emissions are produced during the ozone season (May through October).

## *Geogenic Sources*

Petroleum gas and oil seeps occur naturally in California and have been active for millennia. Oil and gas seeps form where oil or natural gas emerge from subsurface sources to the ground or water surface. Seeps are associated with water springs in which oil floats to the surface of the water, and gas bubbles out into the atmosphere. Large seeps may be comprised of nearly pure oil, asphaltum, or semisolid bitumen. Most seeps are mixed with varying amounts of sand, clay, and biomass debris. Terrestrial seep flows vary with the seasons, with elevated flows occurring during warm weather. Seismic activity can create new seeps or cause increased flows from existing seeps. Major marine seeps are located off the coast of Santa Barbara County. Other seeps occur in regions of oil and gas production throughout the state.

## Wildfires

A wildfire is a natural event that burns a variety of vegetation types ranging in age, size, and density. This wildfire category does not include prescribed fires such as agriculture burning, forest management fires, or Wildland Fire Use (WFU). A prescribed burn is a fire ignited by a planned management action whereas a WFU is a naturally ignited lightning fire that is managed for resources benefit.

Wildfires can vary significantly from year to year; an area may have extreme wildfire behavior one year and none the following year. Emissions for PM<sub>10</sub>, PM<sub>2.5</sub>, CO, NO<sub>x</sub>, SO<sub>2</sub>, NO<sub>2</sub>, NH<sub>3</sub>, CH<sub>4</sub>, and ROG (Total Non-Methane Hydrocarbon, reported here as ROG) are estimated by air basin and county. About 97 percent of wildfires occur between May and October, with August as the highest month. The wildfire emission estimates presented in this Almanac are based on a 10-year average that was calculated from actual 1994-2003 wildfire activity. Figure E-2 is a map showing all of the wildfires that burned between 1994 and 2003 in California. The tables that follow show the 10-year average emissions per air basin and county.

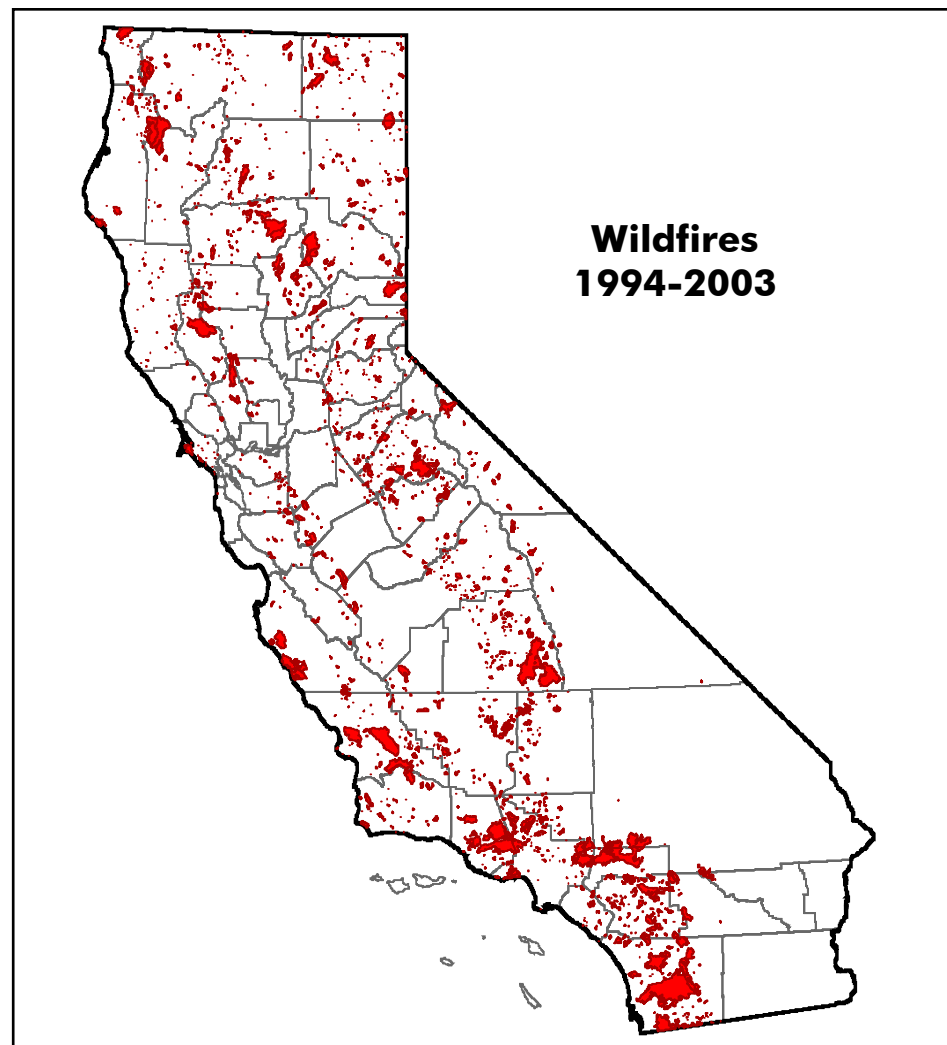


Figure E-2

## Great Basin Valleys Air Basin

Natural Source Emissions (tons/day, annual average)

| Category                     | ROG       | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>37</b> | <b>8</b> | <b>0</b>        | <b>0</b>        | <b>1</b>         | <b>1</b>          | <b>3</b>        |
| Biogenic Sources             | 36        | 0        | 0               | 0               | 0                | 0                 | 2               |
| Geogenic Sources             | 0         | 0        | 0               | 0               | 0                | 0                 | 1               |
| Wildfires                    | 1         | 8        | 0               | 0               | 1                | 1                 | 0               |

Table E-2

## Alpine County

| Category                     | ROG      | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>9</b> | <b>0</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 9        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |

Table E-3

## Inyo County

| Category                     | ROG      | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>7</b> | <b>2</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>2</b>        |
| Biogenic Sources             | 7        | 0        | 0               | 0               | 0                | 0                 | 1               |
| Geogenic Sources             | 0        | 0        | 0               | 0               | 0                | 0                 | 1               |
| Wildfires                    | 0        | 2        | 0               | 0               | 0                | 0                 | 0               |

Table E-4

## Mono County

| Category                     | ROG       | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>21</b> | <b>6</b> | <b>0</b>        | <b>0</b>        | <b>1</b>         | <b>1</b>          | <b>1</b>        |
| Biogenic Sources             | 21        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0         | 6        | 0               | 0               | 1                | 1                 | 0               |

Table E-5

## Lake County Air Basin

Natural Source Emissions (tons/day, annual average)

| Category                     | ROG       | CO         | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|------------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>64</b> | <b>124</b> | <b>4</b>        | <b>1</b>        | <b>13</b>        | <b>11</b>         | <b>2</b>        |
| Biogenic Sources             | 55        | 0          | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0          | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 9         | 124        | 4               | 1               | 13               | 11                | 1               |

Table E-6



## Lake Tahoe Air Basin

### Natural Source Emissions (tons/day, annual average)

| Category                     | ROG      | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>3</b> | <b>1</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 3        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0        | 1        | 0               | 0               | 0                | 0                 | 0               |

Table E-7

## El Dorado County

| Category                     | ROG      | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>2</b> | <b>1</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 2        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0        | 1        | 0               | 0               | 0                | 0                 | 0               |

Table E-8

A portion of El Dorado County lies within the Mountain Counties Air Basin.

## Placer County

| Category                     | ROG      | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>1</b> | <b>0</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 1        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |

Table E-9

Portions of Placer County lie within the Mountain Counties and Sacramento Valley Air Basins.

## Mojave Desert Air Basin

### Natural Source Emissions (tons/day, annual average)

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>39</b> | <b>95</b> | <b>3</b>        | <b>1</b>        | <b>10</b>        | <b>8</b>          | <b>5</b>        |
| Biogenic Sources             | 36        | 0         | 0               | 0               | 0                | 0                 | 1               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 3               |
| Wildfires                    | 4         | 95        | 3               | 1               | 10               | 8                 | 1               |

Table E-10

## Kern County

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>25</b> | <b>41</b> | <b>1</b>        | <b>0</b>        | <b>4</b>         | <b>4</b>          | <b>1</b>        |
| Biogenic Sources             | 23        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 3         | 41        | 1               | 0               | 4                | 4                 | 0               |

Table E-11

A portion of Kern County lies within the Mojave Desert Air Basin.

## Los Angeles County

| Category                     | ROG      | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>6</b> | <b>0</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 6        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |

Table E-12

A portion of Los Angeles County lies within the South Coast Air Basin.

## Riverside County

| Category                     | ROG      | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>0</b> | <b>2</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>1</b>        |
| Biogenic Sources             | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0        | 0        | 0               | 0               | 0                | 0                 | 1               |
| Wildfires                    | 0        | 2        | 0               | 0               | 0                | 0                 | 0               |

Table E-13

Portions of Riverside County lie within the Salton Sea and South Coast Air Basins.

## San Bernardino County

| Category                     | ROG      | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>8</b> | <b>52</b> | <b>1</b>        | <b>0</b>        | <b>5</b>         | <b>4</b>          | <b>3</b>        |
| Biogenic Sources             | 6        | 0         | 0               | 0               | 0                | 0                 | 1               |
| Geogenic Sources             | 0        | 0         | 0               | 0               | 0                | 0                 | 2               |
| Wildfires                    | 1        | 52        | 1               | 0               | 5                | 4                 | 1               |

Table E-14

A portion of San Bernardino County lies within the Mojave Desert Air Basin.

## Mountain Counties Air Basin

### Natural Source Emissions (tons/day, annual average)

| Category                     | ROG        | CO         | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|------------|------------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>330</b> | <b>396</b> | <b>12</b>       | <b>4</b>        | <b>40</b>        | <b>34</b>         | <b>6</b>        |
| Biogenic Sources             | 305        | 0          | 0               | 0               | 0                | 0                 | 1               |
| Geogenic Sources             | 0          | 0          | 0               | 0               | 0                | 0                 | 1               |
| Wildfires                    | 25         | 396        | 12              | 4               | 40               | 34                | 4               |

Table E-15

### Amador County

| Category                     | ROG       | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>15</b> | <b>1</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 15        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0         | 1        | 0               | 0               | 0                | 0                 | 0               |

Table E-16

### Calaveras County

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>39</b> | <b>15</b> | <b>0</b>        | <b>0</b>        | <b>2</b>         | <b>1</b>          | <b>0</b>        |
| Biogenic Sources             | 38        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 1         | 15        | 0               | 0               | 2                | 1                 | 0               |

Table E-17

### El Dorado County

| Category                     | ROG       | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>50</b> | <b>5</b> | <b>0</b>        | <b>0</b>        | <b>1</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 49        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0         | 5        | 0               | 0               | 1                | 0                 | 0               |

Table E-18

A portion of El Dorado County lies within the Lake Tahoe Air Basin.

### Mariposa County

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>36</b> | <b>15</b> | <b>0</b>        | <b>0</b>        | <b>2</b>         | <b>1</b>          | <b>0</b>        |
| Biogenic Sources             | 35        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 1         | 15        | 0               | 0               | 2                | 1                 | 0               |

Table E-19

### Nevada County

| Category                     | ROG       | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>36</b> | <b>7</b> | <b>0</b>        | <b>0</b>        | <b>1</b>         | <b>1</b>          | <b>0</b>        |
| Biogenic Sources             | 36        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 1         | 7        | 0               | 0               | 1                | 1                 | 0               |

Table E-20

### Placer County

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>28</b> | <b>34</b> | <b>1</b>        | <b>0</b>        | <b>3</b>         | <b>3</b>          | <b>0</b>        |
| Biogenic Sources             | 26        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 2         | 34        | 1               | 0               | 3                | 3                 | 0               |

Table E-21

Portions of Placer County lie within the Lake Tahoe and Sacramento Valley Air Basins.

### Plumas County

| Category                     | ROG       | CO         | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|------------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>51</b> | <b>161</b> | <b>5</b>        | <b>1</b>        | <b>16</b>        | <b>14</b>         | <b>2</b>        |
| Biogenic Sources             | 43        | 0          | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0          | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 8         | 161        | 5               | 1               | 16               | 14                | 2               |

Table E-22

### Sierra County

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>20</b> | <b>38</b> | <b>1</b>        | <b>0</b>        | <b>4</b>         | <b>3</b>          | <b>1</b>        |
| Biogenic Sources             | 17        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 3         | 38        | 1               | 0               | 4                | 3                 | 0               |

Table E-23

### Tuolumne County

| Category                     | ROG       | CO         | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|------------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>54</b> | <b>120</b> | <b>4</b>        | <b>1</b>        | <b>12</b>        | <b>10</b>         | <b>2</b>        |
| Biogenic Sources             | 46        | 0          | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0          | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 8         | 120        | 4               | 1               | 12               | 10                | 1               |

Table E-24

## North Central Coast Air Basin

### Natural Source Emissions (tons/day, annual average)

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>73</b> | <b>44</b> | <b>1</b>        | <b>0</b>        | <b>5</b>         | <b>4</b>          | <b>2</b>        |
| Biogenic Sources             | 72        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 1               |
| Wildfires                    | 1         | 44        | 1               | 0               | 5                | 4                 | 0               |

Table E-25

## Monterey County

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>51</b> | <b>41</b> | <b>1</b>        | <b>0</b>        | <b>4</b>         | <b>4</b>          | <b>2</b>        |
| Biogenic Sources             | 50        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 1               |
| Wildfires                    | 1         | 41        | 1               | 0               | 4                | 4                 | 0               |

Table E-26

## San Benito County

| Category                     | ROG       | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>17</b> | <b>3</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 17        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0         | 3        | 0               | 0               | 0                | 0                 | 0               |

Table E-27

## Santa Cruz County

| Category                     | ROG      | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>5</b> | <b>0</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 5        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |

Table E-28

## North Coast Air Basin

### Natural Source Emissions (tons/day, annual average)

| Category                     | ROG        | CO         | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|------------|------------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>373</b> | <b>393</b> | <b>14</b>       | <b>4</b>        | <b>41</b>        | <b>35</b>         | <b>6</b>        |
| Biogenic Sources             | 363        | 0          | 0               | 0               | 0                | 0                 | 1               |
| Geogenic Sources             | 0          | 0          | 0               | 0               | 0                | 0                 | 1               |
| Wildfires                    | 9          | 393        | 14              | 4               | 41               | 35                | 4               |

Table E-29

## Del Norte County

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>27</b> | <b>39</b> | <b>1</b>        | <b>0</b>        | <b>4</b>         | <b>3</b>          | <b>1</b>        |
| Biogenic Sources             | 24        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 3         | 39        | 1               | 0               | 4                | 3                 | 0               |

Table E-30

## Humboldt County

| Category                     | ROG       | CO         | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|------------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>86</b> | <b>149</b> | <b>5</b>        | <b>2</b>        | <b>16</b>        | <b>13</b>         | <b>2</b>        |
| Biogenic Sources             | 81        | 0          | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0          | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 5         | 149        | 5               | 2               | 16               | 13                | 1               |

Table E-31

## Mendocino County

| Category                     | ROG        | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|------------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>118</b> | <b>6</b> | <b>0</b>        | <b>0</b>        | <b>1</b>         | <b>1</b>          | <b>1</b>        |
| Biogenic Sources             | 117        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0          | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0          | 6        | 0               | 0               | 1                | 1                 | 0               |

Table E-32

## Sonoma County

| Category                     | ROG       | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>23</b> | <b>0</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 23        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0         | 0        | 0               | 0               | 0                | 0                 | 0               |

Table E-33

A portion of Sonoma County lies within the San Francisco Bay Area Air Basin.

## Trinity County

| Category                     | ROG        | CO         | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|------------|------------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>119</b> | <b>198</b> | <b>7</b>        | <b>2</b>        | <b>21</b>        | <b>17</b>         | <b>3</b>        |
| Biogenic Sources             | 118        | 0          | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0          | 0          | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 2          | 198        | 7               | 2               | 21               | 17                | 2               |

Table E-34

## Northeast Plateau Air Basin

### Natural Source Emissions (tons/day, annual average)

| Category                     | ROG        | CO         | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|------------|------------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>283</b> | <b>212</b> | <b>7</b>        | <b>2</b>        | <b>22</b>        | <b>19</b>         | <b>6</b>        |
| Biogenic Sources             | 269        | 0          | 0               | 0               | 0                | 0                 | 2               |
| Geogenic Sources             | 0          | 0          | 0               | 0               | 0                | 0                 | 2               |
| Wildfires                    | 14         | 212        | 7               | 2               | 22               | 19                | 2               |

Table E-35

## Lassen County

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>59</b> | <b>47</b> | <b>1</b>        | <b>0</b>        | <b>5</b>         | <b>4</b>          | <b>2</b>        |
| Biogenic Sources             | 56        | 0         | 0               | 0               | 0                | 0                 | 1               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 1               |
| Wildfires                    | 3         | 47        | 1               | 0               | 5                | 4                 | 0               |

Table E-36

## Modoc County

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>57</b> | <b>52</b> | <b>2</b>        | <b>1</b>        | <b>5</b>         | <b>5</b>          | <b>2</b>        |
| Biogenic Sources             | 54        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 1               |
| Wildfires                    | 3         | 52        | 2               | 1               | 5                | 5                 | 1               |

Table E-37

## Siskiyou County

| Category                     | ROG        | CO         | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|------------|------------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>166</b> | <b>113</b> | <b>4</b>        | <b>1</b>        | <b>12</b>        | <b>10</b>         | <b>2</b>        |
| Biogenic Sources             | 159        | 0          | 0               | 0               | 0                | 0                 | 1               |
| Geogenic Sources             | 0          | 0          | 0               | 0               | 0                | 0                 | 1               |
| Wildfires                    | 8          | 113        | 4               | 1               | 12               | 10                | 1               |

Table E-38

## Sacramento Valley Air Basin

### Natural Source Emissions (tons/day, annual average)

| Category                     | ROG        | CO         | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|------------|------------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>379</b> | <b>379</b> | <b>12</b>       | <b>4</b>        | <b>39</b>        | <b>33</b>         | <b>8</b>        |
| Biogenic Sources             | 367        | 0          | 0               | 0               | 0                | 0                 | 1               |
| Geogenic Sources             | 0          | 0          | 0               | 0               | 0                | 0                 | 3               |
| Wildfires                    | 12         | 379        | 12              | 4               | 39               | 33                | 4               |

Table E-39

### Butte County

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>44</b> | <b>89</b> | <b>3</b>        | <b>1</b>        | <b>9</b>         | <b>8</b>          | <b>1</b>        |
| Biogenic Sources             | 41        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 3         | 89        | 3               | 1               | 9                | 8                 | 1               |

Table E-40

### Colusa County

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>23</b> | <b>15</b> | <b>1</b>        | <b>0</b>        | <b>2</b>         | <b>1</b>          | <b>1</b>        |
| Biogenic Sources             | 22        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 1               |
| Wildfires                    | 1         | 15        | 1               | 0               | 2                | 1                 | 0               |

Table E-41

### Glenn County

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>19</b> | <b>37</b> | <b>1</b>        | <b>0</b>        | <b>4</b>         | <b>3</b>          | <b>1</b>        |
| Biogenic Sources             | 17        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 3         | 37        | 1               | 0               | 4                | 3                 | 0               |

Table E-42

### Placer County

| Category                     | ROG      | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>7</b> | <b>0</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 7        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |

Table E-43 Portions of Placer County lie within the Lake Tahoe and Mountain Counties Air Basins.

### Sacramento County

| Category                     | ROG       | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>10</b> | <b>0</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 10        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0         | 0        | 0               | 0               | 0                | 0                 | 0               |

Table E-44

### Shasta County

| Category                     | ROG        | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|------------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>167</b> | <b>49</b> | <b>2</b>        | <b>1</b>        | <b>5</b>         | <b>4</b>          | <b>1</b>        |
| Biogenic Sources             | 166        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0          | 0         | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 1          | 49        | 2               | 1               | 5                | 4                 | 0               |

Table E-45

### Solano County

| Category                     | ROG      | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>4</b> | <b>0</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 4        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |

Table E-46 A portion of Solano County lies within the San Francisco Bay Area Air Basin.

### Sutter County

| Category                     | ROG      | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>3</b> | <b>0</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 3        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |

Table E-47

### Tehama County

| Category                     | ROG       | CO         | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|------------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>71</b> | <b>170</b> | <b>5</b>        | <b>2</b>        | <b>17</b>        | <b>15</b>         | <b>2</b>        |
| Biogenic Sources             | 66        | 0          | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0          | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 4         | 170        | 5               | 2               | 17               | 15                | 2               |

Table E-48

## Sacramento Valley Air Basin (continued)

### Natural Source Emissions (tons/day, annual average)

#### Yolo County

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>16</b> | <b>17</b> | <b>1</b>        | <b>0</b>        | <b>2</b>         | <b>2</b>          | <b>1</b>        |
| Biogenic Sources             | 15        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0         | 17        | 1               | 0               | 2                | 2                 | 0               |

Table E-49

#### Yuba County

| Category                     | ROG       | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>15</b> | <b>0</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 15        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0         | 0        | 0               | 0               | 0                | 0                 | 0               |

Table E-50

## Salton Sea Air Basin

### Natural Source Emissions (tons/day, annual average)

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>11</b> | <b>12</b> | <b>0</b>        | <b>0</b>        | <b>1</b>         | <b>1</b>          | <b>5</b>        |
| Biogenic Sources             | 10        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 4               |
| Wildfires                    | 1         | 12        | 0               | 0               | 1                | 1                 | 0               |

Table E-51

## Imperial County

| Category                     | ROG      | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>3</b> | <b>0</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>4</b>        |
| Biogenic Sources             | 3        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0        | 0        | 0               | 0               | 0                | 0                 | 4               |
| Wildfires                    | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |

Table E-52

## Riverside County

| Category                     | ROG      | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>8</b> | <b>12</b> | <b>0</b>        | <b>0</b>        | <b>1</b>         | <b>1</b>          | <b>1</b>        |
| Biogenic Sources             | 7        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 1        | 12        | 0               | 0               | 1                | 1                 | 0               |

Table E-53

Portions of Riverside County lie within the Mojave Desert and South Coast Air Basins.

## San Diego Air Basin and County

### Natural Source Emissions (tons/day, annual average)

| Category                     | ROG       | CO         | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|------------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>76</b> | <b>138</b> | <b>4</b>        | <b>1</b>        | <b>14</b>        | <b>12</b>         | <b>2</b>        |
| Biogenic Sources             | 67        | 0          | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0          | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 9         | 138        | 4               | 1               | 14               | 12                | 1               |

Table E-54



## San Francisco Bay Area Air Basin

### Natural Source Emissions (tons/day, annual average)

| Category                     | ROG        | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|------------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>106</b> | <b>49</b> | <b>2</b>        | <b>1</b>        | <b>5</b>         | <b>4</b>          | <b>1</b>        |
| Biogenic Sources             | 105        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0          | 0         | 0               | 0               | 0                | 0                 | 1               |
| Wildfires                    | 1          | 49        | 2               | 1               | 5                | 4                 | 1               |

Table E-55

### Alameda County

| Category                     | ROG       | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>11</b> | <b>2</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 11        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0         | 2        | 0               | 0               | 0                | 0                 | 0               |

Table E-56

### Contra Costa County

| Category                     | ROG       | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>11</b> | <b>0</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 11        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0         | 0        | 0               | 0               | 0                | 0                 | 0               |

Table E-57

### Marin County

| Category                     | ROG      | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>7</b> | <b>4</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 7        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0        | 4        | 0               | 0               | 0                | 0                 | 0               |

Table E-58

### Napa County

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>27</b> | <b>37</b> | <b>1</b>        | <b>0</b>        | <b>4</b>         | <b>3</b>          | <b>1</b>        |
| Biogenic Sources             | 26        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 1         | 37        | 1               | 0               | 4                | 3                 | 0               |

Table E-59

### San Francisco County

| Category                     | ROG      | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>1</b> | <b>0</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 1        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |

Table E-60

### San Mateo County

| Category                     | ROG      | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>7</b> | <b>0</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 7        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |

Table E-61

### Santa Clara County

| Category                     | ROG       | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>29</b> | <b>6</b> | <b>0</b>        | <b>0</b>        | <b>1</b>         | <b>1</b>          | <b>0</b>        |
| Biogenic Sources             | 29        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0         | 6        | 0               | 0               | 1                | 1                 | 0               |

Table E-62

### Solano County

| Category                     | ROG      | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>3</b> | <b>0</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 3        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |

Table E-63

A portion of Solano County lies within the Sacramento Valley Air Basin.

### Sonoma County

| Category                     | ROG       | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>10</b> | <b>1</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 10        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0         | 1        | 0               | 0               | 0                | 0                 | 0               |

Table E-64

A portion of Sonoma County lies within the North Coast Air Basin.

**San Joaquin Valley Air Basin****Natural Source Emissions (tons/day, annual average)**

| Category                     | ROG        | CO         | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|------------|------------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>235</b> | <b>348</b> | <b>11</b>       | <b>3</b>        | <b>35</b>        | <b>30</b>         | <b>19</b>       |
| Biogenic Sources             | 211        | 0          | 0               | 0               | 0                | 0                 | 1               |
| Geogenic Sources             | 0          | 0          | 0               | 0               | 0                | 0                 | 14              |
| Wildfires                    | 24         | 348        | 11              | 3               | 35               | 30                | 3               |

Table E-65

**Fresno County**

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>64</b> | <b>15</b> | <b>0</b>        | <b>0</b>        | <b>1</b>         | <b>1</b>          | <b>3</b>        |
| Biogenic Sources             | 63        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 3               |
| Wildfires                    | 1         | 15        | 0               | 0               | 1                | 1                 | 0               |

Table E-66

**Kern County**

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>19</b> | <b>17</b> | <b>1</b>        | <b>0</b>        | <b>2</b>         | <b>1</b>          | <b>4</b>        |
| Biogenic Sources             | 18        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 4               |
| Wildfires                    | 1         | 17        | 1               | 0               | 2                | 1                 | 0               |

Table E-67

A portion of Kern County lies within the Mojave Desert Air Basin.

**Kings County**

| Category                     | ROG      | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>4</b> | <b>1</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>2</b>        |
| Biogenic Sources             | 4        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0        | 0        | 0               | 0               | 0                | 0                 | 2               |
| Wildfires                    | 0        | 1        | 0               | 0               | 0                | 0                 | 0               |

Table E-68

**Madera County**

| Category                     | ROG       | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>38</b> | <b>3</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>1</b>        |
| Biogenic Sources             | 38        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0        | 0               | 0               | 0                | 0                 | 1               |
| Wildfires                    | 0         | 3        | 0               | 0               | 0                | 0                 | 0               |

Table E-69

**Merced County**

| Category                     | ROG      | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>6</b> | <b>1</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>2</b>        |
| Biogenic Sources             | 6        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0        | 0        | 0               | 0               | 0                | 0                 | 2               |
| Wildfires                    | 0        | 1        | 0               | 0               | 0                | 0                 | 0               |

Table E-70

**San Joaquin County**

| Category                     | ROG      | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>8</b> | <b>0</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>1</b>        |
| Biogenic Sources             | 8        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0        | 0        | 0               | 0               | 0                | 0                 | 1               |
| Wildfires                    | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |

Table E-71

**Stanislaus County**

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>13</b> | <b>16</b> | <b>1</b>        | <b>0</b>        | <b>2</b>         | <b>1</b>          | <b>1</b>        |
| Biogenic Sources             | 12        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 1               |
| Wildfires                    | 1         | 16        | 1               | 0               | 2                | 1                 | 0               |

Table E-72

**Tulare County**

| Category                     | ROG       | CO         | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|------------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>82</b> | <b>296</b> | <b>9</b>        | <b>3</b>        | <b>30</b>        | <b>25</b>         | <b>5</b>        |
| Biogenic Sources             | 61        | 0          | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0          | 0               | 0               | 0                | 0                 | 1               |
| Wildfires                    | 21        | 296        | 9               | 3               | 30               | 25                | 3               |

Table E-73

## South Central Coast Air Basin

### Natural Source Emissions (tons/day, annual average)

| Category                     | ROG        | CO         | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|------------|------------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>123</b> | <b>120</b> | <b>4</b>        | <b>1</b>        | <b>12</b>        | <b>10</b>         | <b>5</b>        |
| Biogenic Sources             | 93         | 0          | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 23         | 0          | 0               | 0               | 0                | 0                 | 4               |
| Wildfires                    | 8          | 120        | 4               | 1               | 12               | 10                | 1               |

Table E-74

## San Luis Obispo County

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>36</b> | <b>62</b> | <b>2</b>        | <b>1</b>        | <b>6</b>         | <b>5</b>          | <b>3</b>        |
| Biogenic Sources             | 32        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 2               |
| Wildfires                    | 4         | 62        | 2               | 1               | 6                | 5                 | 1               |

Table E-75

## Santa Barbara County

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>54</b> | <b>12</b> | <b>0</b>        | <b>0</b>        | <b>1</b>         | <b>1</b>          | <b>1</b>        |
| Biogenic Sources             | 35        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 19        | 0         | 0               | 0               | 0                | 0                 | 1               |
| Wildfires                    | 0         | 12        | 0               | 0               | 1                | 1                 | 0               |

Table E-76

## Ventura County

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>33</b> | <b>46</b> | <b>1</b>        | <b>0</b>        | <b>5</b>         | <b>4</b>          | <b>2</b>        |
| Biogenic Sources             | 26        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 4         | 0         | 0               | 0               | 0                | 0                 | 1               |
| Wildfires                    | 3         | 46        | 1               | 0               | 5                | 4                 | 0               |

Table E-77

## South Coast Air Basin

### Natural Source Emissions (tons/day, annual average)

| Category                     | ROG       | CO         | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|------------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>86</b> | <b>164</b> | <b>5</b>        | <b>2</b>        | <b>17</b>        | <b>14</b>         | <b>6</b>        |
| Biogenic Sources             | 76        | 0          | 0               | 0               | 0                | 0                 | 3               |
| Geogenic Sources             | 0         | 0          | 0               | 0               | 0                | 0                 | 1               |
| Wildfires                    | 11        | 164        | 5               | 2               | 17               | 14                | 2               |

Table E-78

## Los Angeles County

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>34</b> | <b>65</b> | <b>2</b>        | <b>1</b>        | <b>7</b>         | <b>6</b>          | <b>2</b>        |
| Biogenic Sources             | 30        | 0         | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 1               |
| Wildfires                    | 4         | 65        | 2               | 1               | 7                | 6                 | 1               |

Table E-79

A portion of Los Angeles County lies within the Mojave Desert Air Basin.

## Orange County

| Category                     | ROG      | CO       | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|----------|----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>9</b> | <b>2</b> | <b>0</b>        | <b>0</b>        | <b>0</b>         | <b>0</b>          | <b>0</b>        |
| Biogenic Sources             | 9        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Geogenic Sources             | 0        | 0        | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 0        | 2        | 0               | 0               | 0                | 0                 | 0               |

Table E-80

## Riverside County

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>24</b> | <b>38</b> | <b>1</b>        | <b>0</b>        | <b>4</b>         | <b>3</b>          | <b>1</b>        |
| Biogenic Sources             | 22        | 0         | 0               | 0               | 0                | 0                 | 1               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 2         | 38        | 1               | 0               | 4                | 3                 | 0               |

Table E-81

Portions of Riverside County lie within the Mojave Desert and Salton Sea Air Basins.

## San Bernardino County

| Category                     | ROG       | CO        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | NH <sub>3</sub> |
|------------------------------|-----------|-----------|-----------------|-----------------|------------------|-------------------|-----------------|
| <b>Natural Sources Total</b> | <b>19</b> | <b>59</b> | <b>2</b>        | <b>1</b>        | <b>6</b>         | <b>5</b>          | <b>3</b>        |
| Biogenic Sources             | 15        | 0         | 0               | 0               | 0                | 0                 | 2               |
| Geogenic Sources             | 0         | 0         | 0               | 0               | 0                | 0                 | 0               |
| Wildfires                    | 4         | 59        | 2               | 1               | 6                | 5                 | 1               |

Table E-82

A portion of San Bernardino County lies within the Mojave Desert Air Basin.

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# APPENDIX F

**Lists of Figures and Tables  
for Chapters 1 through 5**

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## *Glossary of Air Quality Terms*

**Air:** So-called “pure” air is a mixture of gases containing about 78 percent nitrogen; 21 percent oxygen; less than one percent of carbon dioxide, argon, and other gases; and varying amounts of water vapor.

**Air Basin:** A land area with generally similar meteorological and geographic conditions throughout. To the extent possible, air basin boundaries are defined along political boundary lines and include both the source and receptor areas. California is currently divided into 15 air basins.

**Air District:** A political body responsible for managing air quality on a regional or county basis. California is currently divided into 35 air districts.

**Air Monitoring:** Sampling for and measuring of pollutants present in the atmosphere.

**Air Pollution:** Degradation of air quality resulting from unwanted chemicals or other materials occurring in the air.

**Air Pollution Control District (APCD):** An agency with authority to regulate stationary, indirect, and area sources of air pollution (e.g., power plants, highway construction, and housing developments) within a given county, and governed by a district air pollution control board composed of the elected county supervisors.

**Air Quality Management District (AQMD):** A group of counties or portions of counties, or an individual county specified in law with authority to regulate stationary, indirect, and area sources of air pollution within the region and governed by a regional air pollution control board comprised mostly of elected officials from within the region.

**Air Quality Management Plan (AQMP):** A plan prepared by an APCD / AQMD, for a county or region designated as a nonattain-

ment area, for the purpose of bringing the area into compliance with the requirements of the national and/or California ambient air quality standards. AQMPs are incorporated into the State Implementation Plan (SIP).

**Air Quality Standard (AQS):** The prescribed level of a pollutant in the outside air that should not be exceeded during a specific time period to protect public health. Established by both federal and state governments.

**Air Toxics:** A generic term referring to a harmful chemical or group of chemicals in the air. Substances that are especially harmful to health, such as those considered under U.S. EPA’s hazardous air pollutant program or California’s AB 1807 and / or AB 2588 air toxics programs, are considered to be air toxics. Technically, any compound that is in the air and has the potential to produce adverse health effects is an air toxic.

**Ambient Air Quality Standards (California-CAAQS or National-NAAQS):** Health- and welfare-based standards for outdoor air which identify the maximum acceptable average concentrations of air pollutants during a specified period of time.

**Area-wide Sources (also known as “Area Sources”):** Stationary sources of pollution (e.g., water heaters, gas furnaces, fireplaces, and woodstoves) that are typically associated with homes and non-industrial sources. Area-wide sources do not include mobile sources. The California Clean Air Act requires air districts to include area-wide sources in the development and implementation of their Air Quality Maintenance Plan. Under the federal air toxics program, an area-wide source is defined as any source that emits less than 10 tons per year of a single hazardous air pollutant (HAP) or 25 tons per year of all HAPs.

**Attainment Area:** A geographical area identified to have air quality as good as, or better than, the national and/or California ambient air quality standards. An area may be an attainment area for one pollutant and a nonattainment area for others.

**California Clean Air Act (CCAA):** A California law passed in 1988 which provides the basis for air quality planning and regulation independent of federal regulations. A major element of the Act is the requirement that local air districts in violation of the CAAQS must prepare attainment plans which identify air quality problems, causes, trends, and actions to be taken to attain and maintain California's air quality standards by the earliest practicable date.

**Criteria Air Pollutant:** An air pollutant for which acceptable levels of exposure can be determined and for which an ambient air quality standard has been set. Examples include: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, PM<sub>10</sub>, and PM<sub>2.5</sub>.

**Climate Change:** A change in the temperature of the earth's troposphere. Climate change has occurred in the past as a result of natural influences, but the term is most often used in reference to the warming predicted by computer models to occur as a result of increased emissions of greenhouse gases.

**Design Value (DV):** The concentration that is compared to the standard for the purpose of determining attainment status.

**Emission Inventory:** An estimate of the amount of pollutants emitted into the atmosphere from major mobile, stationary, area-wide, and natural source categories over a specific period of time such as a day or a year.

**Emission Standard:** The maximum amount of a pollutant that is allowed to be discharged from a polluting source such as an automobile or smoke stack.

**Environmental Justice:** The fair treatment of people of all races and incomes with respect to development, implementation, and enforcement of environmental laws, regulations, and policies.

**Expected Peak Day Concentration (EPDC):** See Peak Indicator

**Exceedance:** A measured level of an air pollutant higher than the national or state ambient air quality standards.

**Exposure:** The concentration of the pollutant in the air multiplied by the population exposed to that concentration over a specified time period.

**Exposure Assessment:** Measurement or estimation of the magnitude, frequency, duration and route of exposure to a substance for the populations of interest.

**Federal Clean Air Act (FCAA):** A federal law passed in 1970 and amended in 1974, 1977 and 1990 which forms the basis for the national air pollution control effort. Basic elements of the act include national ambient air quality standards for major air pollutants, mobile and stationary control measures, air toxics standards, acid rain control measures, and enforcement provisions.

**Hydrocarbon:** A general term used to describe compounds comprised of hydrogen and carbon atoms. Hydrocarbons are classified as to how photochemically reactive they are: relatively reactive or relatively non-reactive.

**Mean:** Average.

**Mobile Sources:** Sources of air pollution such as automobiles, motorcycles, trucks, off-road vehicles, boats, and airplanes (compare with Stationary Sources).

**Nonattainment Area:** A geographic area that does not meet either a State or federal standard for a given pollutant. This area usually consists of an air basin or county, but can be any geographic area defined by the U.S. EPA.

**Nonattainment Transitional:** A subcategory of the nonattainment designation category for State standards that signals progress and implies the area is nearing attainment.

**Peak Indicator:** Using a statistical process, it is a site-specific and pollutant-specific value that represents the concentration expected to be exceeded once per year, on average, based on the distribution of data for the monitoring site. The calculation procedure uses data collected at the monitoring site for a three-year period. For example, the 2004 peak indicator is calculated using data for the years 2002, 2003, and 2004. The site with the highest peak indicator for a region is used for the long-term trends in the almanac. It is also referred to as the California Design Value or the Expected Peak Day Concentration.

**Precursor Emissions:** Emissions which form pollutants in the atmosphere due to the reaction of themselves with each other or with sunlight. Ozone is formed in the atmosphere when hydrocarbon and  $\text{NO}_x$  react in the presence of sunlight. Particulate Matter (PM) is a complex pollutant that can be formed from the reaction of gaseous precursors such as  $\text{NO}_x$ , ROG,  $\text{SO}_x$ , and ammonia.

**Reactive Organic Gas (ROG):** A reactive chemical gas, composed of non-methane hydrocarbons that may contribute to the formation of smog. Also sometimes referred to as non-methane organic gases (NMOGs).

**Risk Assessment:** An evaluation of risk which estimates the relationship between exposure to a harmful substance and the likelihood that harm will result from that exposure.

**State Implementation Plan (SIP):** A plan prepared by states and submitted to U.S. EPA describing how each area will attain and maintain national ambient air quality standards. SIPs include the technical foundation for understanding the air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and modeling analyses.

**Stationary Sources:** Non-mobile sources such as power plants, refineries, and manufacturing facilities which emit air pollutants (compare with Mobile Sources).

**Total Organic Gases (TOG):** All gases consisting of substances containing carbon, except carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.

**Toxic Air Contaminant (TAC):** An air pollutant, identified in regulation by the ARB, which may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential hazard to human health. TACs are considered under a different regulatory process (California Health and Safety Code section 39650, et seq.) than pollutants subject to CAAQSs. Health effects from TACs may occur at extremely low levels, and it is typically difficult to identify levels of exposure which do not produce adverse health effects.

**Vehicle Miles Traveled (VMT):** The miles traveled by motor vehicles over a specified length of time (e.g., daily, monthly, or yearly) or over a specified road or transportation corridor.

**Volatile Organic Compounds (VOC):** A group of chemicals that react in the ambient air with nitrogen oxides in the presence of heat and sunlight to form ozone. Examples of VOCs include gasoline fumes and oil-based paints. This group of chemicals does not include methane or other compounds determined by U.S. EPA to have negligible photochemical reactivity.